

Bridges 2016 poetry anthology

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To cite this article: Caleb Emmons (2017): Bridges 2016 poetry anthology, Journal of Mathematics and the Arts, DOI: [10.1080/17513472.2016.1264263](https://doi.org/10.1080/17513472.2016.1264263)

To link to this article: <http://dx.doi.org/10.1080/17513472.2016.1264263>



Published online: 19 Jan 2017.



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BOOK REVIEW

Bridges 2016 poetry anthology, edited by Sarah Glaz, Phoenix, AZ, Tesselations Publishing, 2016, 84 pp., \$19.95 (softcover), ISBN-13: 978-1-938664-18-2

The *Bridges 2016 Poetry Anthology* features the mathematical poetry of 23 contemporary mathematicians and poets. The anthology begins with a short introduction by the editor, followed by four poems each by the 11 poets who read at the 2016 Bridges conference in Jyväskylä, Finland, and then two poems each by Bridges poets of previous years. The anthology is the latest in a progression of similar collections. Perhaps the oldest similar book is Hubert Cremer's 1927 *Carmina Mathematica und andere poetische Jugendsünden* [2] (though this volume features only poetry by Cremer himself rather than collecting the works of many poets). The most influential is arguably *Against Infinity: An Anthology of Contemporary Mathematical Poetry* [7] edited by Ernest Robson and Jet Wimp. Sarah Glaz, the editor of the currently reviewed anthology also edited the *Bridges 2013 Poetry Anthology* [3], and co-edited with JoAnne Growney the 2008 volume *Strange Attractors: Poems of Love and Mathematics* [5].

What is mathematical poetry? Clearly it is a subset of poetry, but a highly non-convex one. This fact is highlighted by Glaz in the introduction:

[The poems] use mathematical language as metaphor, play with geometric and symbolic imagery, treat mathematical results or history of mathematics as content for poems, allow mathematical properties to drive poetic structure, and propose mathematics itself as commentary on life, ideas, and emotions.

This diversity is a wonderful thing – the poems pile in heaps like the motley fruits of some exotic street market – but it does seem to make analysis harder. To combat this, I found it enlightening to impose a classification system on mathematical poetry. (Librarians will be pleased to learn I dub it the **MLS** system.) First introduce three tags:

- **M**: Mathematics is a *major subject* of the poem. The poem makes observations about, or provides instruction in, mathematics.
- **L**: The poem applies mathematical *language or imagery* to something non-mathematical.
- **S**: The *structure* of the poem is inspired or informed by mathematics.

Then for each poem, each tag is applied (or not) independently. The astute reader will already have worked out that this system produces eight categories: **M**, **L**, **S**, **ML**, **MS**, **LS**, **MLS**, and, for those poems garnering no tags, category **O**. Tagging occasionally required a judgment call, but I strove to be thorough and consistent in these cases.

Poems garnering the **M** tag, such as Michael Bartholomew-Biggs' 'A Beginner's Guide to Optimization,' Emily Grosholz' 'In Praise of Fractals' and Madhur Anand's 'Garam Masala', are often pedagogical in nature. For example, Anand's poem, concerning the growth and transport of spices in garam masala, concludes with '...Gauss proved the highest/average density, the greatest fraction of space / in infinite regular arrangement, is constant.' Often these types of poems (deliciously and jarringly) switch between everyday experience and the mathematics that underpins it, as the reader is led to a deeper understanding of both.

Other times category **M** poems explore mathematics from a non-traditional (and often lighthearted) point of view. Larry Lesser's 'Dogs Know' reacts to a *College Mathematics Journal* paper entitled 'Do dogs know calculus?' Lesser, over the course of several stanzas, muses convincingly that dogs also know algebra, statistics, probability and trigonometry.

A great example of a category **L** poem is Tom Petsini's 'Spheres.' The first stanza describes a four-year-old girl (perhaps the speaker's daughter) blowing bubbles. In the second stanza, the speaker contemplates the 'shimmering image of the earth' reflected in the bubble for a moment until the girl reaches out and destroys it. The final stanza leaves the speaker wondering 'Will I ever breathe such form into my poem?' The bubbles, though they exist in reality, are a proxy for the ideal mathematical sphere. The speaker seems to desire that his poems be perfect, but transitory, and that he should glory in this impermanence.

It is not unusual for mathematical poems to contain allusions to well-known literature (and this is independent of the **L** tag). Hence we have Manfred Stern's title 'Georg Cantor: I am the \aleph and the ω ,' clearly echoing 'I am the alpha and the omega.' And Carol Dorf gives us her poem 'The Zero – Taught Us – Phosphorus' which is nearly identical in title to Emily Dickinson's 'The Zeroes – taught us – Phosphorus.' Dorf has taken many of the words and images from Dickinson's poem and recast them as an effective homage to Marie Curie.

Sometimes the link with classical poetry is even stronger: Francisco José Craveiro de Carvalho's poem 'Geometry' begins by reproducing Richard Brautigan's identically named poem: 'A circle / comes complete / with its / own grave.' De Carvalho opines that this may be generalized to 'every closed curve / comes complete / with its / own grave.' (Aside: it should probably be *every simple closed curve*..., because the image becomes too convoluted if the curve has self-intersections). De Carvalho's poem is about mathematics, so gets an **M**, but it does not itself use the mathematical image to say something about life. Shall we tag Brautigan's original poem with an **L**?

Mathematically structured (**S**) poems have a special place in my heart, especially if the result jumps off the page in a visually pleasing way. Mathematically inspired poetic forms are often like a sestina on steroids, imposing incredibly rigid constraints on the poet.

When the mathematical aspect of the poem is structural or otherwise stylistic, it might go unnoticed. Thus, several of the poems in the anthology are appended with an 'Author's Note' explaining this aspect of the poem. At their most effective, these notes lead to a nice 'Aha!' moment that might otherwise have been missed. For example, Mike Naylor's 'Run, hero, run!' poem carries the note: 'The poem *Run, Hero, Run!* was inspired, and is structured, by the binary numbers 0 to 7.' The poem's simple text (in which the rhyming words 'hero' and 'run' have replaced 0 and 1) is superimposed on an image of a tyrannosaurus rex chasing a person. This poem is an example of one in which the structure is so rigid it does not leave much wiggle-room for the author. The poem is strongly suggestive of what I see as the intersection of binary numbers and fantasy – video games. Reading the poem, I can almost hear the beeping and pinging of old Atari 2600 background music as little sprites sprint across a pixelated screen. Such hyper-rigid structure makes these poems almost like (mathematically) 'found art' in which both the reader and author can share in the sense of discovery.

Another example of an **S** poem carrying an 'Author's Note' is Dan May's 'adore.' In order to compose the poem, May chose seven words ('weather,' 'beats,' 'silver,' 'drone,' 'circles,' 'keys' and 'leaves') and placed them in the vertices of a Fano plane. A strict set of rules regarding how the words must appear then guide the writing of the actual poem. For the interested poet, we find a reference to an article [6] coauthored by May himself. Without the note, I might not have explicitly noticed the mathematical structure of May's poem. The word repetition produces an effect similar to that of a sestina, and naturally leads to euphony if the seed words are selected carefully (as May's were). However, the language did feel at points a bit

forced, as though the words were strung together the way they were because they had to be, resulting in phrases that are a bit bland.

Another poem categorized simply as **S** was Manfred Stern's 'The First Digits of π .' This poem has been translated from the German by Glaz and Stern. For quite a while I was wondering about the mathematical aspect of the poem at all, until I noted that the stanzas contain 3, 1, 4, 1, 5, 9 and 2 lines, respectively. The title should have tipped me off sooner! There are many poetic forms based on the digits of π [4], and this is a particularly easy-going one. In any case, I am wondering if there was some additional twist in the original German. The poem is ostensibly about a parsonage, but the parsonage is likely a metaphor for something, though I was unable to decipher what (this poem may yet require an **M** tag depending on the answer). In tone, it reminded me of the hazy, lazy grandeur of Coleridge's 'Kubla Khan.'

Mathematical poetry lives in the space between mathematics and literature. So it is natural that the poetry itself would exploit and explore (and even try to *bridge*) this gap. The category **ML** is the natural home for these sort of poems. One example is Vera Schwarcz's 'Abstract Equilibrium.' The poem discusses game theory, claiming that computers can rediscover the Nash equilibrium. The heart of the poem is Schwarcz's assertion that 'Machines can simulate / a two player game, / not live it, as we did.' She is claiming that even if computers come to understand the same mathematics as humans, their 'experience' of it will be fundamentally different from (and inferior to) a human's. However in the next stanza this thought is undercut by claiming the difference is that humans have 'more variables' and 'more silent love.' So the ultimate conclusion of whether computers, as their complexity increases, could have experiences akin to a human is left open.

Poems in the **MS** category are perhaps the airiest, most ephemeral of mathematical poems, reaching toward the exosphere as exquisite fractal ice-temples. (Are these the type of poems the machines will write after the singularity?) In this anthology, I identified two poems in this category: Mike Naylor's 'Water's Edge' and Alice Major's 'Honeycomb Conjectures.' Naylor's poem discusses the coastline paradox (proposed by Lewis Fry Richardson and expanded by Benoit Mandelbrot) that the length of a coastline is not well defined because of its fractal nature. The lines of the poem begin to wobble and become longer and longer as they bend themselves into fractal-like shapes. Meanwhile the speaker tells of how, on each successive walk along a coastline he attempts to follow the shoreline ever more faithfully, concluding 'For the measure of the water's edge is as endless as the sea...' (I found Naylor's four poems to be a highlight of the anthology.)

The only poems in this anthology that I categorized as **LS** were those of Kaz Maslanka. He has a very distinctive style; most of his poems consist of emotive words inserted into mathematical formulae. For example in 'Golden Fear' we see the continued fraction [fear; fear, fear, fear, ...] (written in expanded fractional form in the poem) converging to the title. Maslanka's poems invite you to reflect on these emotions in the context of the formula, and assume the requisite mathematical knowledge. 'Golden Fear' seems to be saying that fear, though confusing and seemingly unstoppable, actually converges to a bounded value. And further, that this value appears naturally, has long been hailed as a perfect quantity in art, and is good ('golden').

Poems in the category **MLS** 'have it all' – which may or may not be a good thing. It is easily possible that such a poem would suffer by trying to accomplish too much. Philip Holmes' 'Gaps' – the sole poem in this category – overcomes this problem by only being slightly structurally formatted. The subject of Holmes' poem is Cantor's Dust, and he does an admirable job of explaining the iterative process that can be used to form this set. The poem itself does have a gap in the middle, and is repetitive (though not completely so) in the first and third parts. (It would be interesting to see if the structural aspect could have been strengthened

without compromising the other strengths of this poem.) The poem has a very pedagogical start, but turns to mathematical imagery in the end. In the final stanzas Holmes compares a human life to Cantor's Dust, as the gaps in our memories multiply until, 'only the best-rehearsed / of memories remain.'

By definition, category **O** poems defy easy classification and hence vary greatly. For a few I struggled to find rationale for inclusion in the anthology (other than that the author had written other mathematical poems). Other **O** poems are true gems to which none of the tags quite apply. Gizem Karaali's 'A Mathematician's Villanelle' is such a poem. As a villanelle, the poem has a mathematical structure, but I decided not to tag well-accepted poetic forms such as the sestina, villanelle, haiku, etc., with an **S** except if the poem itself is self-referential in this aspect. The subject is not mathematics itself, but the experience of being a mathematician: the repeating lines are 'When first did I learn to cherish the bittersweet taste of mathematics / Must have come later, after the games, the limericks, the lyrics.' And the imagery is humanistic rather than mathematical (which seems appropriate for an editor of the *Journal of Humanistic Mathematics*).

How has mathematical poetry changed over time? To take a brief look at this question I also tagged the poems in *Against Infinity* [7]. Figure 1 shows Venn diagrams of the categorization of the 66 poems in the Bridges anthology versus the 77 poems in [7]. As you can see, Robson and Wimp included significantly more more poems in **L** and **S**, and also more poems with these tags paired with at least one other tag. They also included fewer **O** poems. One could interpret these changes as a shift away from *using mathematics* toward exploring the *experience of doing mathematics*. This assertion should be taken with a large grain of salt, however, since the decision criterion for inclusion was quite different between the two anthologies; this would be an interesting question to follow up on.

It was only after composing the bulk of this review that I allowed myself the pleasure of reading Bob Grumman's thorough and insightful review of the *2013 Bridges Poetry Anthology*. I found it quite ironic that in concluding he mentions his (abandoned) 'visions of making an insightful taxonomical study of its poems.' And in the introduction to [7] the editors flatly state 'Our conclusion was that any system for classifying the poetry would reduce the charms of

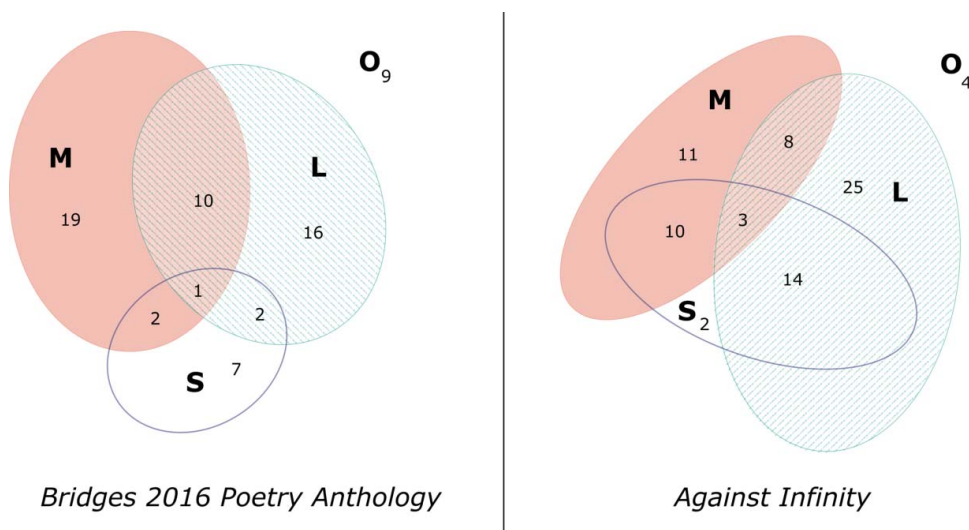


Figure 1. Venn diagrams showing the categorization of the poems in the anthology under review and [7], respectively.

variety, discovery and surprise for the reader and vitiate the aesthetic quality of the book as a whole.' Perhaps others were wise to avoid this trap and I have fallen into it. Nevertheless I am not sorry for attempting such a classification scheme, if only for my own benefit. It certainly led me to much closer reading of each poem as I struggled to figure out what it was about, and turned a magnifying glass on each author's use of language and poetic structure. I thereby gained a heightened enjoyment of the anthology, and I would invite the reader to be likewise rewarded for undertaking close readings.

To whom would I recommend this anthology? A look at the first sentence from the Author's Note in Scott Buchanan's *Poetry and Mathematics* [1] is apropos:


This book might be dedicated to the proposition that each human being is both a poet and a mathematician, but perhaps it might better be dedicated to two human beings who were superb masters of poetry and mathematics, Dante and Kepler.

In that vein, let me say: this book might be recommended to each human being, but perhaps it might better be recommended to human beings who are superb masters of poetry or mathematics. Some of the poems require specialist knowledge, some are esoteric, some just downright nerdy. But many are thought-provoking, amusing, even beautiful. I heartily recommend the book to you as a (presumably Dante- or Kepleresque) reader of the *Journal of Mathematics and the Arts*.

References

- [1] S. Buchanan, *Poetry and Mathematics*, J.B. Lippincott Company, Philadelphia, PA, 1962.
- [2] H. Cremer, *Carmina Mathematica*, Verlag J.A. Mayer, Aachen, 1927.
- [3] S. Glaz (ed.), *Bridges 2013 Poetry Anthology*, Tessellations Publishing, Phoenix, AZ, 2013.
- [4] S. Glaz, *Poems structured by integer sequences*, *J. Math. Arts* 10 (2016).
- [5] S. Glaz and J. Growney (eds.), *Strange Attractors: Poems of Love and Mathematics*, CRC Press, Boca Raton, FL, 2008.
- [6] D. May and C. H. Wika, *Galaxies Containing Infinite Worlds: Poetry from Finite Projective Planes*, in *Proceedings of Bridges 2015: Mathematics, Music, Art, Architecture, Culture*, K. Delp, C. S. Kaplan, D. McKenna and R. Sarhangi, eds., Tessellations Publishing, Phoenix, AZ, 2015, pp. 259–266.
- [7] E. Robson and J. Wimp (eds.), *Against Infinity: an Anthology of Contemporary Mathematical Poetry*, Primary Press, Parker Ford, PA, 1979.

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<http://dx.doi.org/10.1080/17513472.2016.1264263>