

Domestic Science in the Poetry of Alice Major

by Neil Querengesser

The split between the discourses of science and letters that began in the nineteenth century led to a continuing debate throughout much of the twentieth on the relative importance of each. This debate took many shapes, but it is perhaps most infamously reflected in the polemical pugilism of F. R. Leavis's response to C. P. Snow's *The Two Cultures* (see also Huxley 1-3 and Kimball) that appeared to leave an unbridgeable gulf between the two discourses. And while this separation may have been obscured in recent years by the impulse towards a theoretical leveling of many traditionally distinct discourses, it is still perceptible in many contexts and certainly has proven a fertile ground for the modern poetic imagination. In Canadian poetry, scientific themes and topics appear in the works of writers as diverse as E. J. Pratt, A. M. Klein, Margaret Avison, Gwendolyn MacEwen, Christopher Dewdney, Paulette Jiles, and Dennis Cooley, to name only a few. While some of them, like Pratt, incorporate scientific themes and ideas into relatively traditional poetic discourse, others like Dewdney confront the clash of the rational and imaginative, the public and private, by inventing radically different linguistic forms that reflect the tensions of those discourses. However, the works of one of the most interesting contemporary Canadian poets, Alice Major, reflect a different response altogether toward this apparent split between languages of the scientific and the literary.

Major, an Edmonton writer whose poetic publications include *Time Travels Light* (1992), *Lattice of the Years* (1998), *Scenes from the Sugar Bowl Cafe* (1998), *Tales for an Urban Sky* (1999), and *Corona Radiata* (2000), incorporates the scientific into her poetry in a subversively radical fashion. Superficially, much of her poetry deals with such familiar topics as gestation, childhood and adolescence, immigration, friendship, marital and familial relationships, as well as those aspects of household management—cooking, cleaning, gardening, dusting, painting, knitting, etc.—the study of which has been called, since the mid-1800s, “domestic science” and which has been, until recent decades, the stereotypical province of females. Yet many of these same poems incorporate vocabulary and concepts of the physical (stereotypically male) sciences—references to

Fibonacci numbers, black holes, and Planck constants—that ordinarily would seem at odds with domestic topics. It is through Major’s matter-of-fact incorporation of scientific vocabulary and concepts into her lyric poetry that the reader is invited—if not challenged—to reconsider the various implications of the implied split between the scientific and the literary, even as s/he is invited to reconsider traditional gender-based oppositions.

In her essay “Some Call It Fiction: On the Politics of Domesticity,” Nancy Armstrong argues that traditional constructions of history have privileged the political and economic [read masculine] over the cultural and social [read feminine] (60). Arguably, despite the protestations of Leavis and others, throughout the twentieth century scientific discourse has also been privileged over literary discourse, with similarly gendered undercurrents. And analogously, so have sciences such as mathematics, physics, and chemistry been traditionally privileged over the “domestic.” In this context, a profitable way to read Major’s poems is to see them as subtly complex challenges to all of these traditional views, especially the latter two, through their integration of concepts and terminology from the physical sciences into the depiction of everyday life and relationships. Titles like “Glide symmetry,” “Algorithmic compressibility,” “many worlds theory,” and “event horizon,” often accompanied by condensed explanatory notes, introduce poetic depictions of domestic relationships and events that when first comprehended may seem to have little to do with the title or concept or at most to employ the concept as an illustrative trope. Further analysis reveals, however, that rather than serving as metaphorical adornments, these concepts are essential to the construction of textual meaning.

From a purely linguistic perspective, any distinctions between words used scientifically or poetically are artificial. There is no inherently or naturally scientific language any more than there is such a poetic language. These apparent—but nevertheless forceful—differences exist as a result of complex learned constructions shaped by the various interpretive communities of these discourses. As Stanley Fish has put the matter in a larger context, “... norms are not imbedded in the language ... but inhere in an institutional structure within which one hears utterances as already organized with reference to certain assumed purposes and goals” (306). In this context, Huxley’s mid-twentieth century contention that “the purity of scientific language is not the same as the purity of literary language” (12), that the scientist “purifies ... by simplifying and jargonizing” while the literary artist does so by “deepening and extending, by enriching with allusive harmonics, with overtones of association and undertones of sonorous magic”

(13), while it may still reflect a common conception of the differences between these discourses, nevertheless assumes them to be—misleadingly—substantially distinctive.

The distinctions begin to blur when analysis of the rhetorical and persuasive strategies of the discourses is emphasized over analysis of the specifics of content or vocabulary. For example, Nobel prize-winning chemist Roald Hoffman demonstrates through his stylistic analysis of scientific journal articles that, while these articles reflect an ostensible striving for what Huxley has termed “purity,” the context of this supposedly refined discourse incorporates a substantial amount of dross. Hoffman, an accomplished poet himself, claims that the impersonal “objective” style of these articles covers much “suppressed tension,” a tension that when revealed gives us “a recognition of the deep humanity of the creative act in science” (57). The scientific article, while reporting the facts, is “unreal” in that its very structure and vocabulary obscure what is essentially human about scientific “creation and discovery” (61), rendering it “*not* a true representation of what transpired or what was learned, but ... a constructed text” (64). Hoffman’s points reflect the perceived traditional opposition between the discourses of science and lyric poetry, the former normally being seen as objective and impersonal, and the latter normally being seen as subjective and personal. Yet while there is arguably nothing inherently objective or subjective in the words themselves, as they acquire their connotations according to the conscious and unconscious assumptions of the reading community, the differences are, at least superficially, still very strong and persuasive. What Major does in her poems is, on at least one level, to massage and transform those differences into a kind of “hybrid” discourse. The “objective” qualities of the science she incorporates into her poetry still remain, but they are also transmuted into something not quite the same, even as the subjective qualities of the lyric are altered through their proximity to the scientific.

This process can be seen in Major’s use of scientific annotations and explanations that appear to exist outside the lyric proper but can actually be read as integral parts of it. These annotations are not strictly scientific themselves, but appear to be slightly interpolated by the lyric voice, occupying an ambiguous position between the poems “proper” and a “genuine” annotation, giving both the notes and their poetic referents a privileged position. The scientific elements are foregrounded, as they wouldn’t necessarily have been had they been annotated after the fact, such as by an editor in a later edition. This creates some interesting layers of meaning in the poems. For example, Major prefaces the poems in the “Distances Inter-

lock” section of *Lattice of the Years* with a quotation from the famous twentieth century astrophysicist Arthur Stanley Eddington, who once wrote: “Space is not a lot of points close together; / it is a lot of distances interlocked” (*Lattice* 47). Two things immediately stand out in this quotation. The first is the informality and simplicity of its diction. Eddington’s use of “a lot” and words no more complicated than “interlocked” are at odds with the much more complex vocabulary and formulae needed to discuss general relativity and quantum physics. The second is the fact that the quotation is formatted as poetry; each of the parallel clauses occupies a separate line, which is not the case in the original text. While the alliterative and assonantal qualities of these clauses are poetic, Eddington was unlikely thinking about poetry when he wrote them.¹ Regardless of his intentions, the words have been gently and effectively appropriated to the realm of the lyric. The quotation in itself, while it has profound physical implications, is not too difficult for the non-specialist to comprehend. Nevertheless, at the bottom of the introductory page occurs a four-line explanation that may or may not take the reader closer to Eddington’s meaning:

Eddington meant space is not a smooth, uniform set of point [sic] that make up a passive stage on which events occur. Space is actually a series of distances, relationships—from the scale over which subatomic interactions take place to the scale on which galaxies move. (*Lattice* 47)

While this gloss may be helpful, what is not mentioned is that Eddington’s words are actually part of his larger criticism of one aspect of Albert Einstein’s theory of relativity, a criticism with which Einstein himself agreed and that caused him to drop some arguments which he realized were “invalid” (Lo 2). The point is that Eddington’s comments, while seemingly simple, had a radical influence on the development of modern scientific theory, an influence subtly understated by their appropriation by Major. The poems that follow in this section are effectively infused with the implications of these words. Just to give one example, the lines

We are stretched, a thin web
of blood, a tissue of relation,
over the globe’s three quarters...
(*Lattice* 54)

brilliantly employ the concept of interlocking distances, of the inseparableness of “things,” alluding as they do to the web of a universe expanding since the big bang. The allusion is not necessarily absent or any less force-

ful without Eddington's words, but it acquires an added dimension as the reader's attention is in turn stretched between these lines at the end of the section and Eddington's at the beginning. Thus, through the annotative—almost exclusive—foregrounding of the “scientific” concepts, which are then carefully assimilated into the larger “lyric” element, Major begins the dissolution of traditional boundaries between these discourses.

Just as with her quotations and annotations, Major carefully selects her scientific vocabulary for both its accuracy and its suggestiveness, further blurring the boundaries between scientific and poetic discourse. Words like “lattice,” “symmetry,” “glide,” “transit,” “manifold,” and “curve,” for example, have both precise scientific definitions and resonant lyrical connotations. For example, the word “lattice” in the title *Lattice of the Years* acquires multiple poetic and scientific meanings as the poems unfold. The *OED* definitions of the term “lattice” include, in part, “A structure made of laths, or of wood or metal crossed and fastened together,” “Any regular arrangement of points or point-like entities that fills a space, area, or line; *spec.* a crystal lattice or a space lattice” and “A partially ordered set in which every pair of elements has an infimum and a supremum.” While the third, mathematical, definition may or may not be implied, elements of the first two definitions provide insight into the overlap between the lyric and the scientific in much of the text. Images of “lattices” as trellises, fencing, and other common domestic structures and crisscross patterns, recur in subtle and pleasing ways throughout the book, in such lines as the following description of farmland near Hanna, Alberta:

Land lies in a domestic dream
a quilted landscape in the pale spring sun

its spreading pattern pieced together from fields
in textile textures prepared for sowing...

(*Lattice* 43)

The “domestic” art of quilting is seamlessly crossed with the “science” of agriculture in these lines into an effortlessly constructed lattice through the “sowing” /sewing pun. Lines in a later poem—“Pink granite veined with quartz. Fact-sharp edges” (*Lattice* 52)—also cross the softness of such words as “[p]ink” and “veined” with the hardness of “granite” and “quartz,” alluding moreover to the lattice of crystalline structures on the one hand and on the other to the apparent but ultimately elusive fact-sharp edges indicated by the poem's words themselves.

Overall, the book's five sections—"Symmetry group," "These are not my bones," "Distances interlock," "Summing over two," and "Epithalamion"—create through their interlocking themes and techniques a kind of poetic latticework that takes the reader on a series of diverging and converging paths from the speaker's childhood to middle-age, aptly reflecting the book's title. Although one cannot pretend to a completely unifying reading, it is possible to establish one or more patterns of construction that allow for enriched understanding. An analysis of individual poetic elements of this complex "lattice" reveals some of the intermingling of the scientific and lyric discourse.

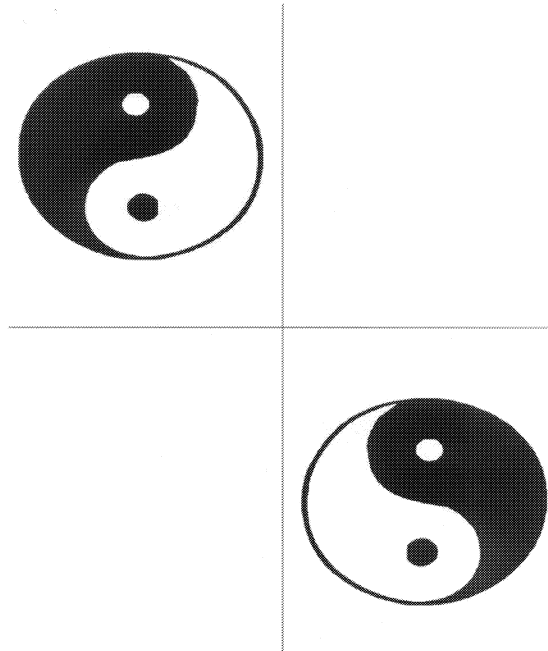


Fig. 1. Glide symmetry. The figure has been reflected and translated on the plane.

The first section, "Symmetry group," comprises five poems titled according to different types of mathematical symmetry. The fourth of these, "glide symmetry," is a term for the transformation of a shape involving a mirror plane reflection of that shape (effectively turning the shape 180° on its axis) as well as a glide plane translation (a shift of the shape to another location without a change in its dimensions) (see fig. 1). The reflection symmetry can be seen in the fact that the two parts of the poem are formally mirror images. The first half of the poem, consisting of three

sections of seven, five, and two lines, is left-justified. The second half—consisting of three sections of two, five, and seven lines, the first half inverted—is right-justified. The margin justification and the quite ordinary separation of the two halves on the top and bottom of the page are aspects of the translation symmetry. The poem’s lyrical glide symmetry emerges as we read of a relationship between a senescent woman and her adult child whose lives not only reflect each other’s but have undergone a transformational shift. But rather than reducing this relationship to a mathematical formula, the poem nudges our understanding closer to that indeterminate and richly suggestive territory between words and experience. Thus, the title invites us to consider a series of images in the first half—

Your mother is gazing out the window
where September sky floats, cantorial,
clear away. Streaks of high cirrus
pencil the blue, curved gently at the ends
like the curls of a good child.
And you watch her. Her pink sweater
buttoned high across her chest.—

with a corresponding series in the second half:

The music ends. Into the silence
your mother says, “He has a cry
in his voice.” As if the words
had floated to her from a years-ago
September. Her lucid moment hovers.
We reach for it—a swan’s
white feather drifting down.
(*Lattice* 14)

Much from the first passage is immediately recognizable, albeit in a mirrored image, in the second, as the “mother,” “he,” and the speaker/observer are flipped 180 degrees. Other images glide slightly along with these figures, such as the image first signified by the “streaks of high cirrus” in “a years-ago / September” now signified by “a swan’s / white feather.” The mathematics of this symmetrical arrangement is clearly not reductive; rather, the scientific and lyric aspects of the verse are each enriched by the dual, ultimately irresolvable, reading that they invite.

The fifth of the “Symmetry group” poems is entitled “Symmetries of dilation.” In mathematics, dilation involves the proportional increase of all aspects of the shape so that its overall symmetry stays the same. This can

be realized in many different ways. Unlike the poem “glide symmetry,” this poem’s visual shape does not reflect its topic, which is located in the simile of a “baby nautilus” in the first line, the growth of whose shell reflects a logarithmic spiral² (see fig. 2), an elegant example of what is called spiral similarity, a “combination of a central dilation and a rotation about the same centre” (“Spiral”). The poem deals with the widening experience of grief from youth to adulthood—hence the appropriateness of the “baby nautilus” simile—concluding

The great griefs
loom ahead. Their mouths open wider
and wider, create
the laminate structure of loss—
sea creatures building a universe
of spiralled pearl.

(*Lattice* 15)

While the trope is not exclusive to Major’s poetry—the images of Yeats’s “widening gyres” are perhaps the most famous poetic examples of the type—the poem is notable for the implicit self-referentiality of her terminology which resists the easy assimilation of the scientific by the lyric and vice-versa, enhancing the meaning of each.

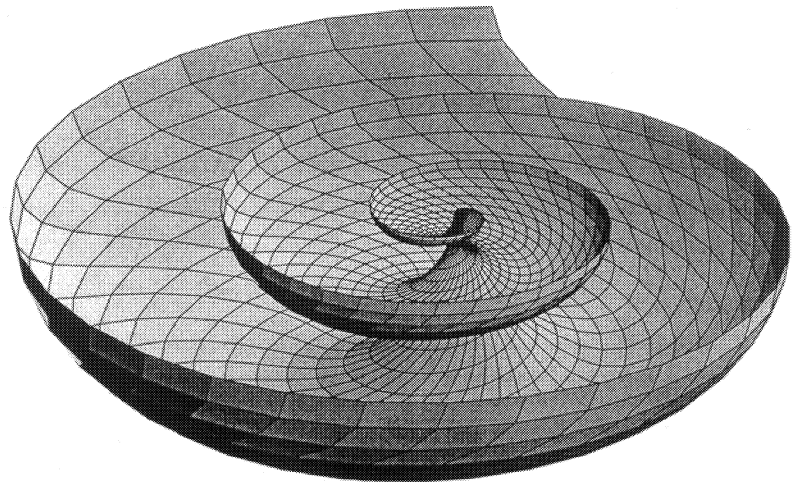


Fig. 2. Nautilus figure derived from equations of a Fibonacci sequence.

Two final examples, a pair of poems embodying the contrast between classical and quantum physics, offer an understated reading not only of this contrast but of the relationship of scientific paradigms to a traditional poetic theme: the marriage relationship. The poem “time travel is a one-way street” drolly illustrates the principle of entropy embodied in the second law of classical thermodynamics.³ Thus the image of dust collecting under a bed illustrates simultaneously physical entropy, a failing marriage, and poor housekeeping skills—not necessarily in that order. The speaker concludes:

the second
law of emotional dynamics locks me ineluctably
into narrative
one event following the other

making ordinary marriages
the hardest ones to live

(*Time* 24)

Nature, the relationship, and the desire to dust are all running low; and there is apparently no reversing the process.

The mood of resignation to deterministic certainties in “time travel is a one-way street” may be profitably contrasted with the mood in “many worlds theory.” In the collection *Time Travels Light*, this poem is printed on the facing page of “time travel is a one-way street.” And like the former it also deals with a failing relationship. However, here the poet’s fears of an irrevocable breakdown of the relationship are articulated within the context of a theory from quantum physics, the “many worlds theory,” from which the poem takes its title. A central axiom of quantum physics is that the probability that any particular particle will take a given path can never be predicted. Its possible paths are described in terms of a “wave function.” Once the path of the particle has been observed, the probability is certain, and the wave function is said to have “collapsed.” However, if a “many worlds theory” is hypothesized, the wave function need not collapse, since every possible particle can and will take every possible path available to it, hence leading to an infinite number of coexisting universes where every possible combination of paths is constantly being traveled by every single particle. While the complexities of this theory ultimately frustrate all but the most mathematical attempts at explanation,⁴ its possibilities can be, if not “experienced,” at least better apprehended through a poem such as “many worlds theory,” which again combines a complex physical theory

with the complexities of human relationships. The theory is particularly appealing to the poet who tells her partner that she will not “collapse [his] world ... / [making] the same small decision again and again / to keep our world from branching” into the “coraliferous future” (see fig. 3) while nevertheless envying “the woman who [in another world] is alone,” “fingering a branch of coral” and “writing my poems” (*Time* 25). The “many worlds theory,” which may, albeit with some difficulty, be conceivable at the subatomic level, is obviously problematic at the level of “domestic” human relationships, but Major employs it with an elegant simplicity in a poem that challenges the reader’s conceptions of both the mathematical function and the particular human relationship while also providing a challenging lyric counterpoint to the classical determinism of “time travel is a one-way street.”

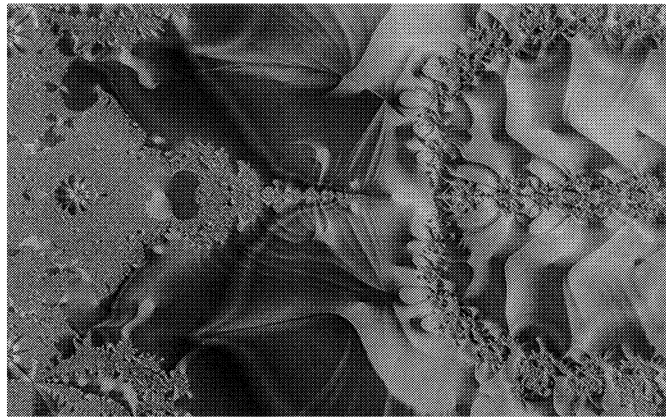


Fig. 3. “Deep Coral.” Digitally-created image by “Hawk.” Reprinted with permission. <http://www.art.net/~starhawk/deepcoral.jpg>

In *Reliable Knowledge*, physicist John Ziman examines the differences between scientific and other forms of discourse. At one point he observes that while “[t]here is nothing fundamentally wrong with physics as such ... it is an inappropriate model for *all* consensible and potentially consensual knowledge,” arguing that “there are other reliably consensible forms of intersubjective communication than those trimmed to the logic of mathematics” (30). The denotative and empirical necessities of scientific discourse protect it to a much larger extent than poetic discourse from the vicissitudes of the deconstructive impulse. But the need for precision and fixity is by no means guaranteed by words. By ranging widely over the ter-

ritory of the physical sciences, Major locates a variety of scientific concepts that both underpin and mingle in the foreground with the more “lyrical” or “poetic” features of her text, but never dominating nor, in the poems where they appear, never too subordinate. Just as the “process of [mathematical] formalization produces an abstract entity that satisfies its defining relations perfectly but which has been stripped of all other attributes” (Ziman 14), so the lyrical process produces the opposite, with at least minimally ambiguous relationships rich in connotative attributes. Major’s best poems reflect this graceful marriage of the scientific and the lyric, giving new meaning to an old term, “domestic science.”

Notes

1. Indeed, Eddington prefaces his antithesis with the phrase “To put the conclusion rather crudely—” (Eddington 10). Nevertheless, the reader should not allow Eddington’s assessment of his own words to influence his or her interpretation of them. In this case, Eddington’s obvious scientific leanings have trumped his lyrical.
2. This is essentially the same as a graph created by a Fibonacci sequence, a sequence in which the first terms are 1 and 1 and each succeeding term is the sum of the two numbers immediately preceding. This sequence is integral to what is known as “the golden ratio” (1.618), an essential basis of symmetry in both the arts and sciences.
3. “[T]he second law of thermodynamics ... ultimately states that every process that a thermodynamic system may undergo can go in one direction only and that the opposite process, in which both the system and its surroundings would be returned to their original states, is impossible” (“Thermodynamics”).
4. For an interesting discussion of this topic, with a minimum of mathematical formulae, see Gribbin’s book, *In Search of Schrödinger’s Cat*. Erwin Schrödinger’s thought experiment involving a hapless cat in a box filled with a capsule of poison gas is central to his explanation of the theory behind a collapsed wave function (sans equations). The implicit cruelty of such an image (albeit imaginary) suggests yet another area of exploration in terms of the relationship between the scientific and the literary, one which is, however, beyond the scope of the present essay.

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