

A coat of ashes

A collection of poems,
incorporating a metafictional narrative

and

Poetry, Daoism, physics and systems theory: a poetics

A set of critical essays

This thesis is presented for the degree of

Doctor of Philosophy

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Abstract

This thesis comprises a book-length creative work accompanied by a set of essays. It explores how poetry might bring together spiritual and scientific discourses, focusing primarily on philosophical Daoism (Taoism) and contemporary physics. Systems theory (the science of complex and self-organising systems) is a secondary focus of the creative work and is used metaphorically in theorising the writing process.

The creative work, “A coat of ashes”, is chiefly concerned with the nature of being. It asks, “What is?”, “What am I?” and, most urgently, “What matters?”. To engage with these questions, it opens a space in which voices expressing scientific and spiritual worldviews may be heard on equal terms. “A coat of ashes” contributes a substantial number of poems to the small corpus of Daoist-influenced poetry in English and adds to the larger corpus of poetry engaging with the sciences. The poems are offset by a metafictional narrative, “The Dream”, which may be read as an allegory of the writing journey and the struggle to combine discourses.

The four essays articulate the poetics of “A coat of ashes” by addressing its context, themes, influences, methodology and compositional processes. They contribute to both literary criticism and writing theory. Like the creative work, they focus on dialogues between rationalist or scientific discourses and subjective or spiritual ones.

The first essay, “An introduction”, discusses the thesis itself: its rationale, background, components, limitations and implications. The second, “Singing the quantum”, reviews scholarship discussing the influence of physics on poetry, then examines figurative representations of physics concepts in selected poems by Rebecca Elson, Cilla McQueen and Frederick Seidel. These poems illustrate how contemporary poetry can interpret scientific concepts in terms of subjective human concerns.

The third essay, “Let the song be bare”, discusses existing Daoist poetry criticism before considering Daoist influences in the poetry of Ursula K. Le Guin, Randolph Stow and Judith Wright. These non-Indigenous poets with a strong awareness of the sciences have, by adopting Daoist-inflected senses of the sacred, been able to articulate the tension engendered by their problematic relationships with colonised landscapes. Moreover, the changing aesthetic of Wright’s later poetry reflects a struggle between Daoist quietism and European lyric commentary.

The final essay, “Animating the ash”, reflects on the process of writing poetry, using examples from “A coat of ashes” to construct a theoretical synthesis based on Daoism, systems theory and contemporary poetics. It proposes a novel way to characterise the nature and emergence of the hard-to-define quality that makes a poem a poem. This essay also discusses some of the Daoist and scientific motifs that occur in the creative work.

As a whole, this project highlights the potential of both the sciences and the more ancient ways of knowing — when seen in each other’s light — to help us apprehend the world’s material and metaphysical nature and live harmoniously within it.

Keywords: poetry, creative writing, writing experiments, complexity and poetry, emergence and poetry, Daoism and poetry, physics and poetry, science and poetry, literature and science, English literature, Australian poetry, American poetry, British poetry, New Zealand poetry, twentieth-century poetry, Rebecca Elson, Cilla McQueen, Frederick Seidel, Ursula K. Le Guin, Randolph Stow, Judith Wright

Declaration

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A handwritten signature in cursive script, reading "Janet Jackson", written over a single horizontal line.

Janet Ruth Jackson

27 September 2018

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An earlier version of “Let the song be bare” entitled “Jackson on Daoism and the poetry of Randolph Stow, Judith Wright and Ursula K. Le Guin” was published in *The High Window*, Issue 7, April 2017.

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Research outputs

Book of poems

Jackson. (in press). *A coat of ashes*. Canberra, Australia: Recent Work Press.

Essay

Jackson. (2017). Jackson on Daoism and the poetry of Randolph Stow, Judith Wright and Ursula K. Le Guin. *The High Window*, 7. <http://thehighwindowpress.com>

Creative paper

Jackson. (2017). A Dao of poetry? Non-intentional composition, emergence, and intertextuality. In *The Authorised Theft: Writing, Scholarship, Collaboration Papers — the Refereed Proceedings of the 21st Conference of the Australasian Association of Writing Programs*. <http://www.aawp.org.au/publications/the-authorised-theft-papers/>

Poems

Jackson. (2015). “The light.” *Writ Poetry Review*, 3. <http://www.writreview.com.au>

Jackson. (2016). “[]” and “words on waking.” *foam:e*, 13. <http://foame.org>

Jackson. (2016). “A coat of ashes.” *Poetry Matters*, 27.

Jackson. (2016). “Check my legs.” *Tamba*, 59.

Jackson. (2017). “Calculus” and “white furniture.” *Meniscus*, 5(1). <http://www.meniscus.org.au>

Jackson. (2017). “lamps.” *Cordite*, 57. <http://cordite.org.au>

Jackson. (2017). “One, two, three.” *The High Window*, 8. <http://thehighwindowpress.com>

Jackson. (2017). “Touched all over” and “Stupider and stupider.” *LiNQ*, 42. <http://journals.jcu.edu.au/linq>

Jackson. (2017, May 24). "The catbeing." *Uneven Floor*. <http://unevenfloorpoetry.blogspot.com>

Jackson. (2018). "skinvisible" and "Turnings". *Axon: Creative Explorations*, 8(1).
<http://www.axonjournal.com.au>

Jackson. (2018, June 30). "Returning to the root." *The Canberra Times, Panorama* p. 17.

A coat of ashes

The centre

The Dao produces the One.

The One turns into the Two.

The Two give rise to the Three.

The Three bring forth the myriad of things.

Is that a system of mathematical axioms?



Number the number beyond
all numbers
Count the myriad things of Heaven
and Earth
Lay out the way
simplicity
brings forth complexity:
a dove, a flock of doves,
a window, Facebook, this text,
finger, chest,
spinal cord,
heart
and all its blood

Say pi
because a circle is never complete

Say i
for the square root of minus one:
one step in a direction
that can't be taken

Fabricate a qubit
holding a mixture
of no and yes
immanent, imminent
superposed until measured

What lies like truth at the centre
without a name?



Take a direction opposite to all directions
Send a message back from the farthest shore

Construct a non-commutative algebra
in which x plus y needn't equal y plus x
but x can't ever mean one
and y can't ever be two
let alone i or π
Construct a mathematics
in which nothing
may be counted

Look in, in to the Planck time,
the dream moment of birth,
where our physics fails
as quantum and gravity clash
and the cosmos is crushed to a jot
immanent, imminent
a tiny infinite Not

Look in, in to the Planck scale,
ten to the minus thirty-three centimetres,
beyond which our flesh of cells and instruments,
in principle, can't see
Where our physics fails
as quantum and gravity clash
and our systems of coordinates,
our here/there, then/when, this/that,
names, numbers,
are not

Take a selfie at the end of the rainbow
Stand between parallel mirrors and tweet
the farthest reflection

Show
how formlessness
gives rise to form:

a dove, a flock of doves,
a window, Facebook, this text,
finger, chest,
spinal cord,
heart

The blood, the valves, the walls
but not
the chambers.

What lies
like truth
at the centre?



Look in, in, turn away from doves and windows
Forget the myriad things of Heaven and Earth
Theorise the theory of all
theories, model the principle
of principles

Define the space within
all spaces, the algebra
underlying all algebras, the axioms
that (impossibly) lead to all theorems

Number the number beyond all numbers
Diagram the set of sets
Take a selfie
at the end of the rainbow
Send a message back from the farthest shore.

Notes

The first stanza is from Chapter 42 of the *Dao De Jing* (Laozi, trans. Wang Keping, 1998). References to the *Dao De Jing*, which is a collection of short poems, are given as chapter numbers to permit comparison between translations.

One, two, three

The child can't do a cartwheel.
She can do a headstand, a handstand,
but a cartwheel needs momentum, a swinging centre
of gravity. The child doesn't know
momentum, centres, gravity.
She blames her mother's

ski-slope lawn, fenced off in the middle
of a hillside farm. Far below the river lurks
among giant trees. Far above is the boundary fence
and the forested climb she completed once
to peep at the house on top. Her father calls
its owner mad. When she does a handstand

the child doesn't think of the river,
the trees, the mountain, the madman.
She thinks green blades,
soft-sharp, flattening
under fingers. Ants. Beetles.
Her father mows the grass

infrequently. It spreads thick runners, yellow-white,
with bright chlorophyll arrowheads. Her father talks
war at them, but he's not a fighter. The child
can do a headstand, a handstand
but never thinks to think
if I can do that

I can turn a cartwheel. A cartwheel is only
a moving handstand. At school she sees the others
cartwheeling freely on the flat lawns.
Her father is the gardener. He keeps it
well, wanders in it like Wittgenstein. The others
make fun of him. The child watches

their cartwheels. Asks. One, two,
three, they laugh. But the child is not co-
ordinated. She doesn't have her count
together. The numbers come
in space, away
from tummy, hips,

knees. She tries again. Runs,
throws her hands down
to the grass, heaves her bottom over.
It isn't a cartwheel.
Never that flinging feeling.
Her legs will not go up and over. It needs

more force, she thinks.
Runs faster, heaves harder.
It never works.
Never at school
on the flat lawns in front
of everyone. Never on the scraggy

home slope, where the shape of things pulls her down,
away from the mountain and the madman's house,
down, down to the river,
and her mother is framed in the kitchen window
saying Be careful! Oh, do
be careful!

The silicon lip of the precipice

In my dream there wasn't a magpie
warbling caroling arguing garbling
back and forth back and forth
with another about resources

There wasn't a lorikeet,
shrieking competing wreaking clichéd
havoc in the last remaining
clichéd freaking shivering tuart trees

There wasn't a raven
hahring and harking electric on the lines,
calling conversing drak, black, smack,
crack on the concrete lawns

In my dream there weren't sixteen
lightly birded hedged picketed lines
There was only the edge of everything
The silicon lip of the precipice and you

on it
with your eyes
like the ice that's about to melt,
and in your grip

a broken bottle, its razor neck
like a talon or a hooked beak,
bald as a silver dollar
or a Jolly Roger, you

on it
with your eyes
warding off my tooth and clichéd
nail and greedy breathing

it happened

they died moaning the structure
of their skins failed

as I sat above
the sea in a human space
white chairs white gravel
a high Hellenic shore
they came out of the sea

the whales bloated with water
moaning a terrible noise the sea
emptying of whales

the only survivors were babies
in the dream these babies had fur
saved by brown fur
we were going to have to care
for them now their mothers
were corpses it happened

the same night I saw
the rockets

there was a war
there's always a war
two or three seas away
gunships submarines at
each other but

as I sat above
the sea in a human space
white chairs white gravel
a high Hellenic shore
they came out of the sea

just there
in the bay two rockets

shot out of the sea
a terrible noise
flew as high as a skyscraper
faltered turned
dived burning
into the sea it happened

the same night the whales

she said it was caused

the marine biologist
in her blue-piped khaki
overall said with her brown
ponytail said when I asked
no

it's not just here

it's global

all the whales

the whole world

at the same moment

it was caused

by the war she said

The light

The light has to get somewhere, touch something, to exist
You take acid as we're sitting in the air
The old woman pours whitewash over her husband's head
We're on the left
There's no box, no comfort zone
Anything but raw paper is a compromise
Two girls with acne and stringy bleached hair
Occupy Wall Street
A month in the hole
In solitary
The way to connect is to work together
I had a clear vision
Looming orange clouds, an apocalyptic sunset
Something that makes you smaller or channels your movement

The light has to get somewhere
A curve through spacetime
A function
A journey, transmission, idea
In the dream we're on a plane, rows of seats, going somewhere
We don't know what we want but it isn't this
People keep pets
The husband is grey and decrepit
If your mother couldn't hold you while you cried
hold yourself now
Try to hide yourself
If you throw up the next morning
does that mean you've poisoned yourself?
When you look for yourself as a thing
there is nothing there

The light has to get somewhere, touch something
Is that the same t-shirt?
Occupy Breastfeeding
Howl, keen, be the banshee of yourself, announcing your death
I take scissors out of your hand

You're taking acid
Seeing the nothing inside yourself
A curve through spacetime
A function
A journey, transmission, idea
In touching something, the light
is not destroyed, but changed
In the dream
the husband is grey and decrepit
The woman pours whitewash
Anything but raw paper is a compromise
The noises when I cried and cried frightened me

The light has to get somewhere, touch something, to exist
People keep pets instead
Curl into a ball, try to hide yourself
We don't know what we want but it isn't this
Fenced in, fenced out
You in the aisle seat
I in the middle
Light is nothing, only
potential
When you look for yourself as a thing
there is nothing
The way to connect is to work
against each other
In touching something, the light
is not destroyed, but changed
Reflected, absorbed, refracted
Tear at your clothes and hair, bite yourself

The light has to get somewhere
I smile a little
Acid, you're taking acid
Light is nothing, only
potential, just
an idea
Occupy Everything

Looming orange clouds
The window seat free
No-one looking out
This is not conditional
A month in the hole
Two months
Give you time to think
What if the neighbours come
and try to cheer me up?
Not depressed
Not ill
Don't need anything
In full control
of self, life, responses
An adult
Tear at your clothes and hair, bite yourself
I don't know what I want
If your father couldn't hold you while you cried
hold yourself now
In touching something, the light
is not destroyed, but changed
Polarised, amplified, focussed
There's no box
This is not
conditional
You don't have to be
a good boy, a good girl
I had a clear vision
The light
has to touch something

skinvisible

facing each other
one truth apart

— Kevin Gillam

i this
thing
itchy with text

*Your voice is an underground stream
hiding small eyeless creatures
Touching you is breaking something*

again we
pass
masked
in black
filmed
skinvisible
the huge unsaid
suspended
wired

again we
pass
filmed
in black
framed
in bits
skinvisible
maintain our com-
position

particles ex-
changed only
in theory
functions col-

lapsed only
in thought

Your voice is an underground stream

Touching you is

i this thing itchy

with text

breaking something

Notes

Epigraph: Gillam (2009), p. 14.

On eating shepherd's pie from a plastic takeaway box

Thank you for your flesh

I hope

a prayer was

said for your software

as the abattoir crashed it

with an electric bolt,

unplugged it

with a blade

Thank you for your muscle

I hope a ritual

farewelled

your memory, the shape

of mother, two teats,

woolled udder's

press against nose

your process, the way

your tail felt flicking,

anus releasing its pebbles,

heart leaping

I hope you

walked

on grass

among trees

under sun

played, ran, chased,

lay down between warm bodies

as stars flocked

above you

Thank you for your membranes

I hope some words were spoken

to lay to rest

your script, the fear of

dog, horror of ape,

the vowel rising in your throat,
the rush to follow the others
your inputs, the shove on your eardrums
of shouts and motors,
the force under cloven pointes
of dirt, concrete, metal grid

When my instructions said *eat*
your components were made
available

Your salt, minerals, proteins
are turning into
my marrow

your fats and sugars
powering
my motion, my thought,
my words

You becoming me, I
becoming you

as I sit
on grass
among trees
under sun
licking the fangs of my
plastic fork

thinking of cleared forests and
industrial farms

and trying to make a prayer
for

Notes

How abattoirs kill animals is described by RSPCA Australia (2014).

between

Driving between Pinjarra and Dwellingup, between
wire-fenced paddocks, stubble, wan dead logs,
I thought, what am I doing here? What am
I doing here? Then I thought,

blasting along at twenty-five metres per second,
raising no visible dust where I touch the
tarmac at four spinning steel-belted rubber
tangents, riding on air, I'm not

here. I'm actually not
here. Because I'd

slowed down
to make art,

two Recreational Vehicles loomed in my mirrors,
blurred past my window, zoomed away
and out. At eleven o'clock

there arose a beautiful horse,
brown and white with white-fringed feet,
but it wasn't possible to speak with her.

The other way, the long way

In my dream the road we'd always taken
was choked with grasses and little trees
People don't go this way any more, I said
They go round the other way, the long way
My car was bumping, straining, stalling
My fists were tight on the wheel

In my dream the checkout woman
peeled and sliced my apples
She was much younger than me
She came from another country
whose customs ours had adopted
I wanted my apples whole

I didn't say that: I said don't!
Don't peel them! Don't cut them!
She sniffed
frowned
stopped peeling
kept slicing

The white slices with red peel
looked good but were not
what I wanted
She put them in a paper box
with a cellophane top
I paid

She carried the box to my car
and got in the front to drive me home
It was part of the service
I screamed at her Kate! (her name
was Kate, like my yoga teacher)
Get out of my car!
She whimpered and ran

I jumped in
whammed the door shut
looked around at the back seat
my kids sitting there small
Put your belts on! I roared
and howled out of the carpark

but the way was choked
with pricklebushes and little trees
My car was bumping, straining, stalling
My fists were tight on the wheel
Come on! Come on! I hissed
but I couldn't get home

Should I have let her drive?
How would it have felt
to sit in the back with my children
eating apple slices
and let the woman from another country
take us round the long way?

lamps

I tend to lean my death forward instead of supporting my fate in alignment spine pegs and gravity working together as they should. Late carding this torch: went for a court, did some ghost checks on various messes and brains, came back and had a cloud. Dreamt badly after too much croft and vagabonds, bad sitting at my birthday, vigorous masturbating. The better the orgasm the less careful I am of my drag. But it bleeds okay now. Just a little stiff. The bigness is low; if anything it's in the chug dumps, not the clag dumps. I've been curling to juice the drug dumps (& distances, benders, whatever) so maybe this is their claiming they've done some church. I can peg much further forward in seated forward robes now. Trace's intermediate plaster rating away the dreams. Afraid of talking over, afraid of curving myself. Not afraid of raids, as such, but of lamps. Unable to run from a predator.

That

Train station

Hungry

Twelve minutes to wait

Five dollars

Plastic wrap

White factory bread

Margarine

Stiff tomato

Square of solidified cheesepaste

Perforated steel bench

I sat

Man

Woman

Unknown language

Toddler

Sat

Stuck-out chubby legs

Small shoes

I turned toward him

Smiled

He looked into my eyes for half a second

without speaking or moving his face.

His pupils and irises were deep and black.

Train

Pantograph

SLINGS ONLY — NO HOOKS

That was it! I thought. What I've been looking for.

In the open dark field of the child's clean eyes,

the What and Not I saw

was That. And him and all his kind the cells of it.

The Dream

The big white duck has returned to find me still sitting looking for the Way. I've been able to sit here for days, not bothered by anyone. No-one has come to check my ID. I don't have one. There are no police or transit guards in this landscape.

The white duck says the Way is where we put our feet and she is going to walk with me. It is necessary to walk. She says the time for sitting and trying to read the landscape is over. It's time to get up and move.

I'm afraid to move because it means choosing a path.

The white duck says that rather than scanning ahead warily with the eyes I should allow the feet to determine the path. One foot then the next.

Okay, what can we see? I stand up to see what we can see. The duck looks pleased.

Undulating fields and woods, little stone houses, something in the distance obscured by haze.

No. We're not on a hill. We're down near the river. What can we see if we actually look?

I'm afraid to think it.

As far as the next hill? Grass on the ground and daisies. The daisies say come. Step among us, our white and yellow smiles, our information.



In our bare eyes we walk up the gentle slope through dewy grass and daisies on a gleaming morning decorated with light fluffy clouds.

The hill becomes steeper. The daisies thin out as we climb until there is only grass and at the summit some scattered rocks. From here there is a view.

It's only a small hill — don't get too grandiose.

Which way are we going? West? Ursula Le Guin says somewhere that there are only two directions, Away and Home. If you go away for long enough do you arrive at Home?

Who knows.

To our left the grass slopes away toward a tangle of dense dark bushes. To our right, which must be north, slender trees stand in a valley, concealing the river that flows there running east toward the sea. And in front of us, to the west, is a path. It begins a little way down the hill: a narrow track of pebble-dotted dun-coloured dirt. The slope is scattered with sheep. Their path meanders down toward the base of the hill, where trees mark the edge of a long wooded slope that slowly ascends toward the sky.

– Come on, white duck, let's follow it.

On either side the sheep have eaten the daisies. They crop the grass and baa to one another.

The pebbles are loose, and the path becomes increasingly steep as it wanders toward the trees. Sheep have four steady legs; ducks are squat and rarely trip; but I have two long human legs.

If I weren't carrying a staff I might fall.

My staff is black. It's strong and very light; I think it's made of carbon fibre. It has tips of shiny stainless steel. Five diamonds constellate in one end of its body.

Is it not too valuable a thing to be carrying along the Way? Would it not be better to have any old stick from a pathside tree or from the ground and discard or lose and replace it as I go?

No. It may not be magical — except that everything is, especially carbon fibre — but it's my something.

We continue down the slope toward the shadowy trees. Perhaps we will meet someone coming the other way who has been in the trees and can tell us what we may find there.



This morning is the first of official winter. Every morning the first morning but this one especially. The sky, because I have human eyes, is azure. The sun at 30 degrees and climbing its winter wedge sends a lemon oil gleam onto everything.

My staff reflects a black gleam and diamonds.

My boots are short and black with flat flexible soles, a toe for each of my toes, a leather tongue and a lace. I'm wearing Western robes: blue jeans, a grey t-shirt and a black corduroy jacket. I carry a small backpack made of tough grey nylon. Beside my desk I have a big blue one with wheels, but on the path you need to sling things close to your body.

In the backpack I have a red and purple scarf, a black woollen hat that I don't need in this sunshine, and maybe other things. If I could have worn a monk's robe made of yak wool or whatever I would not need all these complicated garments, this bag — but I'm not an Eastern monk; I'm a product of the West dressed accordingly.

My boots, however, are strangers everywhere.

Can it be winter? There are so many green things here and so much sunlight and warmth. Where are we? In some place where — or time when — winter is warm? On a planet without seasons? Or, like Alice through the looking glass, am I in two places at once? Yes, that must be it. It's the first day of winter in Fremantle but in the other country it seems to be spring.

We go down the path into the trees, which are unfamiliar: slim pale trunks, medium height, leaves like small plates with wavy edges. The duck knows their name and why they have these leaves but she doesn't tell me. In the filtered sunlight under the trees a small stream runs northeast toward the east-flowing river. Beside the streambank is a small clearing with lightly lichenized grey stones and pale grass.

We drink. The stream is narrow enough to leap across (or flap, in the case of the duck) but after drinking we rest for a while, quietly, listening to the water trickling clearly by.



Outside the window there's a hole in the street. At the counter in a fluorescent vest a man orders take-away. "Three sugars? No worries! Nine thirty, thanks mate."

There is no coffee by the stream. We were hoping to meet someone but the air became crowded with full questions and empty answers.

Soberly we rise and jump and flap across the water. As we land a wild duck, brown-green, shudders into the air from the bank reeds with a terrific fearful quacking. I am sorry.

– She will come back, counsels the white duck. Walk on.

The queer trees are all around us, evenly spaced, far enough apart to walk through. The ground slopes slowly upward away from the stream.

I don't know which way to go.

– Walk roughly west, says the duck.

Which way is that? The trees are all the same. The forest floor is all the same: dead versions of the disc-shaped leaves, tufts of grass, and lovely but disorienting dappled light.

– This way, says the duck, leading off between two trees that seem no different from the rest.

I look back briefly. On the opposite bank, at the place we leapt from, a sheep is coming down to drink.

The duck walks slowly ahead, steadily choosing pairs of trees to pass between.

It grows quieter and quieter.

No other animals, no wind. The air on the cusp between warmth and chill.

My boots are almost silent. The fallen discs don't crackle but seem to flex as I step on them. We walk on into the silence without speaking, the duck leading the way.

My heartbeat and slow breath are the only sounds, the uncold air the only touch, the streamwater's ghost the only taste, the pale grainy trunks and dappled ground the only sight. The air smells spacious and resinous. In front of me the duck's white back and steady head lead on.

As we walk the shadows slowly shrink, then slowly begin to lengthen. The air temperature doesn't change. The silence remains silent. We walk between north trees and south trees as the slow slope changes from yang to yin.

When the smell begins to change the shadows are almost as long as they were when we leapt the stream.

When the pattern of the trees begins to change we have been silent so long we are not sure we can speak again or want to speak again or will ever know what to say.



Le Guin says: "What if I talked like a woman right here in public?" She says: "Our roots are in the dark ... Not in the light that blinds, but in the dark that nourishes, where human beings

grow human souls.” She says: “Success is somebody else’s failure.” I am not going to get there.¹

She says to get to utopia go sideways or around or backwards or don’t go at all: back into a crevice like a porcupine and tell a story. Logically she says, using their weapons against them, “if utopia is a place that does not exist ... the way to get there is by the way that is not a way.”

Perhaps my white duck’s name is Ursula. How romantic and childish — but one must be to not-get-there.



Utopia. A place, a condition, made of process not structure, was it? An organism not a machine, that was it. An organism whose impetus is not to grow but to continue to exist. So we redefine our self to include the group and ecosystem and planet and if only it were that easy.

I am not going to get there because...

Because I will not get there alone. Because I will not succeed by making others fail. Because I can no longer build on a foundation of Hunger, of gnawing emptiness, of poverty. Because there is a positive Hunger. Because I will keep my hands open.

She says lyric poetry aims to defeat time. Fiction, she says, should be written in the past tense to give it a sense of time so our minds can work with it.

Time, I say, is how our brains make sense of things changing.

She says the present tense creates distance, not immediacy, because we are taken out of time.

But I am walking *now*. And that means I will not get there.

It’s late afternoon in the other country and the smell has begun to change. Before it was resinous, but now there’s a hint of earth or mud and perhaps (or is it my imagination?) a hint of smoke.

Yes, a hint of smoke.

The trees are thinning. The slope is increasing.

¹ The quotations in this paragraph and the next are from Le Guin (1992), pp. 115–117 and p. 93, respectively.

Suddenly there are no more trees. Gorse and heather bushes, low and sparsely flowered, grow here and there on the steep stony ground. Between them a narrow dirt path winds uphill toward a round reddish hut. Ursula says she has been here before.

– Did you fly? I ask.

– No, I walked, she says. Following my guide. It is the only way to get here.

– Is it Cold Mountain?

– It doesn't have a name.

– Someone lives here, I say. That hut has smoke coming from the chimney. Is there a hermit or monk of the mountain?

– Sometimes there is, sometimes there is not, she says.

She gazes up the slope toward the hut. A glorious bantam rooster — green red black feathers, long curvaceous tail, steady red comb and wattle — is perched on a boulder below the sparse branches and dark pointy leaves of a crabbed old tree.

– Is that a yew tree? I say.

– Yes, and you planted it, Ursula says. Good evening, Aldous.

The rooster bobs his head at her. His comb and wattle quiver.

The hut is made of lumpy stone, a russet-coloured stone with a lot of iron in it. The door is a rectangle of thick cloudy perspex hung on machined brass hinges, with a brass handle shaped like a cow's tail. It hangs between walls at least three feet thick, above a doorstep made of polished grey-blue stone with a doormat of artificial grass. We wipe. Ursula likes the feel of it on her webbed feet and laughs and wipes again.

Inside the hut a person of indeterminate gender is banging pots and singing in a language I do not know. Do we knock? How do we knock?

I stand on the mat, waiting to see what those who have gone ahead of me will do.



The door opens and reveals the person, metal pot and wooden spoon in hand, smiling broadly from a young fair-skinned face under a red woollen hat. A bright pink shirt with black polkadots trails over loose black trousers and long bare toes.

As we step inside, the door closes itself softly behind us.

The interior is one room. On the circular wall, patches of white render cling to the russet stone like leftover snow. There are no windows, yet the room is evenly lit with a quiet light. The floor is a large piece of blue-grey stone, glassy as if it has been melted. Across the middle runs a low bookcase. On its near side the floor is largely covered by a rug that would once have been colourful.

In the far wall, facing west, is a wooden back door. To its left a dull stainless-steel industrial bench holds a few pots and dishes. To the right of the wooden door is a pile of fuel: sticks, bricks of compressed paper, thick little logs and lumps. Next to the pile a fire licks behind the glass door of a small stove. A large kettle, dull silvery metal, high wooden handle, emits from its swan-necked spout a soft trickle of steam that fades away as it rises.

The roof is a high transparent dome. Through it the sky is a deep evening blue.



The person gestures with the spoon, asking us to sit. Ursula and I settle ourselves on the red green orange rug, I crosslegged, she with legs tucked under, feathered body grounded. There seems to be no need to speak.

The person lays down pot and spoon and busies with kettle and enamel mugs, white with blue rims. Soon my hands are weighted with a yellowish noodle soup. I hesitate.

Ursula dips her bill into the wide mouth of the mug in front of her. She lifts her head and swallows, holding her bill high and jiggling her neck.

– It is given, she says. This is the house of the Student, provided with student food.

There are indeed many books in the bookcase, and papers on a low, angled writing desk before a flat round brownish cushion.

I sip at the soup and dip the spoon for the noodles. When did I last eat? That question makes no sense in this country. Yet the light is fading, the sky-dome darkening. The stove bounces red photons off the white parts of the walls.

The Student moves toward an electric lamp on the wall near the desk. The lamp is made of long wires that end in clusters of LEDS, gathered multiply like the stamens of a sunflower.

– Later? I say. Let’s wait for the stars.



My coffee is too hot to drink yet. Weak coffee. Must stick to weak. Even weak the addiction is bad enough.

But in the other country we are waiting for the stars.

Ursula eating her soup makes a slurping dabbling sound. The Student is sitting opposite us, crosslegged on the rug.

Apart from the writing desk and bookcase, there is little furniture. By the stove a clothes rack with a few garments coathangered. A big wooden chest, its ornate carvings just visible in the firelight.

It would be warmer to have the stove in the middle of the room but things aren’t always as we want them.

– The stars, says the Student. Stretching chest and neck I look up through the dome, which lightly reflects the firelight.

Soup forgotten, I gaze at a heaven I have never seen. There are not only stars. There are nebulae and clusters. There are not only silver pinheads. There are cloudy swathes of red and yellow and indigo. It’s like the photos on the website of the International Dark Sky Association. For a moment I think of a sunset; but the sun has gone behind the Student’s mountain, the mountain and its planet and Student turning away for the night to look at the stars.

– You go to sleep looking at that, I say.

– Yes, says the Student. It’s very comforting.

– Do you wonder what’s out there?

– I can see what’s there.

– Things too small to see, I mean.

– There’s nothing too small to see.

– This person can see into the atoms, I scoff.

Ursula turns her head on one side and regards me, one eye pointing out my childishness, one pointing at something I most certainly cannot see.



If the roof is a clear dome why did we not notice this as we approached the hut?

Because we had assumed the roof would be made of something obvious like shingles or iron or thatch. Or perhaps the dome is cloaked by some spell or technology to look like nothing.

– Doesn’t it get hot in the daytime? I ask the Student.

– No, it becomes shady. Sometimes it’s like a curtain or a cloud. Sometimes dappled like leaves. Occasionally it’s black like a cave, with one or two points of light. Sometimes it’s like being under the sea. It’s never glaring or burning.

– How do you control it?

– I can’t.

– How does it work?

– That’s what I’m trying to understand, but the books aren’t much help.



From the wooden chest the Student takes bedding and lays it out on the floor. For the duck there is a nest of quilted cloth. For me and the Student there are thin futons and quilts.

We go out through the back door, under that sky, to say goodnight to our bodies. Ursula finds a shrub near a low building I presume is the chicken-house, but there is no outhouse.

– I go for a walk, says the Student from under a bush, catching my look. I use different places. Sometimes something eats it but other times it dries in the sun and I can use it as fuel.

What we do with our shit is *important*.

There is only one Student so the shit is spread thin.

Back inside we wash at the Student's sink, hanging our clothes on the rack and on pegs in the wall, sponging ourselves with water from the kettle and the single tap. I'm surprised that there's plumbing. I shouldn't be: there's not only an electric lamp but a roof that changes with the light.

All of this requires maintenance. On the Way, if this is the Way, who does the facilities management? Surely facilities management is not the Way?

– One can follow the Way while setting stone upon stone or word upon word or icing upon cake or hand upon hand, says Ursula.

– Where does your food come from? I ask the Student.

– No more questions today. It's time to sleep, says the Student, banking the fire.

– Are you a man or a woman?

The Student is as naked as I am but their gender is not apparent in the firelight.

– I'm neither and both. Does it matter?

– I don't know.

– Good night, says Ursula pointedly from her nest. Don't you have a dream?



When I wake the sky through the dome is pale blue but I can't see the sun. The air inside the hut smells of coffee.

I sit up. The hut is quiet: nobody else is inside.

I dress quickly and roll up my bedding. The others have put theirs away. I feel it might be wrong to open the chest, so I stack my bedding on the rug beside it.

Coffee and bread have been left out on the bench but first I must relieve myself. Outside the hut the bushes and the chicken-house send long shadows across the ground. Somewhere nearby a bird whistles a tune; another at a distance echoes it. Near the hut's back door grows what I take to be a peach tree. Its leaves are just beginning to bud.

I can't see anyone — no Student, no duck, no rooster. They must have gone for walks in the dawn, leaving me to my dreams.

I pour coffee, perch on the only seat — a tall kitchen stool — and eat the bread. In the gentle dome daylight I sit, sipping the coffee, enjoying the warmth of the stove, wondering what to do.



If I stay until the Student returns I will have chosen to remain at least for a while and help maintain the facilities. The kitchen floor could use a scrub. The fuel pile is low and untidy. The drain is slow when I wash my plate and mug.

I leave them on the draining board, grab my pack and staff, and with a lingering look at the domed roof and the remarkable lamp, I leave. I leave by the front door not to encounter the absent outhouse or the path to the chickenhouse, which needs a sweep. I leave by the front door facing the dawn.

Perhaps I will come back when the peaches are ripe.

You are always here, says Ursula's voice in my mind. You planted the yew tree, remember? Not the peach tree, which grew from a thrown-out pit fifty years ago, but the yew tree you planted.

Okay, I say, but I must go where I can't see it. If I wait for the peaches I'll scrub and sweep and read and the Student will study and study but refuse to tell me anything and nobody else will come and I'll get lonely and tired and want to murder the Student, split my soul, destroy myself.

A little way from the front door the path reaches a junction. I could go back down into the trees. I could take the right-hand path, up into the clouds. But I take the left-hand path; it follows the contour of the mountain, taking me southward. Later perhaps it will turn west.

After a hundred metres or so the path leads into a group of tall boulders with lichen painting their faces and prickly bushes growing from their wrinkles. As I move into the shade between the boulders I hear the rooster crow. It's not not not the Way, he says. The Way you can go is not the Way.



Why have I slunk into the shadows between tall boulders?

So I can't be seen — can't be interrupted. Can't see — can't be influenced.

But why did Ursula leave me?

Because sometimes a choice must be made alone.

But Aldous said it is not the Way. Did he mean I should stay and scrub the floor? Read the Student's books? Engage in debate? Make the Student tell me everything that has been learned of the dome and the lamp and the mountain? Surely that is not Dao. Force. Surely that is not what the rooster meant.

The path slowly turns west, contouring around the mountain, a high secret pass about five feet wide. It's very quiet. I feel safe here, if a little cold. On either side the rocks are considerably taller than I am but still on a human scale, like the walls of a grand old house. They curve away above the path.

There is no view.

But the stone is intricate with tracings of mica and grey green orange lichen.

Deeper in, the pass becomes narrower, dimmer. Here the lower parts of the rocks are bare and the lichen starts just above my eye level, making fractal curlicues of alga and fungus in an infinite symbiotic loop.



I have stopped to look. I take off my pack and sit to rest against the cool rocks. The walls make my breath sound huge. *Ham, sa. Ham... sa.*

The strip of sky above is becoming more blue.

Suddenly a few metres to my left a brown bird flaps into the air with a squawk and a call and a squawk and recedes.

Silence again.

Footsteps. Supple, quiet steps, amplified by the walls, coming from the left, the way I just came.

I leap up and ready myself, head up, legs braced.

The soft steps grow louder until around the bend comes the bright figure of the Student in the spotted pink shirt under blue denim dungarees. My heart sinks a little.

If it shows on my face the Student appears not to notice. They look at my backpack on the ground and my staff leaning bright-tipped against the stones.

They are carrying nothing. I wait for them to speak.



The Student seems to be waiting to see what I do. I don't trust myself to speak, so I pick up my staff to walk. I thrust my backpack at the Student to carry.

I don't. I sling it on my back as always. My very own baggage. I can't remember what's in it.

Hermione's beaded bag has whatever you need. Books. A tent. Healing potions. Easy fixes for the little things. Nothing for the big things — no sword of Gryffindor. The sword comes out of a hat.

Thinking of magic swords and wizards' hats I begin wordlessly to walk. The Student's footsteps follow.

As the path curves slowly westward around the giant body of the mountain I walk steadily, the Student a few paces behind. The path is dust-dry and tawny brown. Between the rocks our soft footsteps raise furry echoes like drums played with brushes.

We walk.

The skystrip brightens infinitesimally with each of our steps until suddenly on the back of my head I feel the pressure of sun.

– Here comes yang, I say. On the wall above my right eye the lichens are ablaze in the yanglight, turning it to colour, turning it to sugar.

– We're halfway, I say. We're facing due west.

– How do you know? says the Student.

– I don't know how I know, I say. But have *you* never been in here?

– No. It wasn't here before you came.

– It wasn't here? All this stone?

– I never saw it.

We walk.

– How do you know this comes out? they ask.

– I don't, I say. I don't know what it does.

– The white duck might know, they say. If she were here she could fly ahead and scout.

– That's why she's not here, I say. But things always come out. The circle turns.

– If you say so, says the Student.



I'm on the train expressing toward Perth.

Yang has arrived, the bright side of the mountain, but we have not. We continue to walk the corridor, curving now slightly northwest. The lichens bask in the sugary yangsun.

After a time, perhaps half an hour of our steps, there appears a gap. A gap between the southwall rocks. A low rectangular hole, as wide as one lean body. Mine or the Student's.

Within the gap is darkness. We can't see into it.

– That's weird, says the Student.

– No, I say. It'll come clear if we choose to go through it.

The path ahead is bright with sun. Sun on every dustmote, every stone, until it curves out of sight.

I set my pack on the ground and rummage in it. My water bottle is thick translucent greyblue plastic with a soft silicone nozzle. I flip up the nozzle and drink, then offer it to the Student.

The Student pouts in disgust at the saliva-coated nozzle and wipes it carefully, first on the left side of their spotted shirt then again on the right. Squirts a little water out to rinse.

– Don't waste it, I say.

The Student drinks.

– Do you have any food? they ask.

– No.

The Student drinks the rest of my water and puts down the bottle.



Outside the window above my desk it is just beginning to be spring. A month has passed and a minute.

The lintel of the gap is at breast height. To go through we will have to crouch or kneel.

– A door for a child, says the Student. Do you think it leads to Narnia? Middle Earth, Earthsea, Lilliput?

– No — it leads to truth, not fiction, I say.

– Do you think there's any food behind it? says the Student.

– I don't know, but if there is I don't suppose it'll be instant noodles, I say.

The gap is like a little stargate, but there's no physics to explain it. I'm sorry if that disappoints you, if you were expecting hard science, a wormhole or something, but I am a poet and a programmer. The gap is a blank portal, a greyblack hole like a turned-off screen. Whatever is there has not yet been rendered.

The Student extends an arm toward the gap.

– Don't do that! I snap. The whole self or nothing.

Before I can say anything else the Student grabs the empty waterbottle, crouches, tosses it at the gap. It bounces back, whizzes past the Student's lowered ear, thuds against the opposite rockwall and rolls toward my feet.

I pick it up. It's full of water.

I suppose it's water.

– Give me that, says the Student, grabbing it out of my hand, snapping up the nozzle and sucking.

– Tastes weird, the Student says.

– Is it water? I ask.

– Yes but it tastes weird ... sweet ... little bit metallic ... very clean ... You try it, they say, passing it to me.

– It might be poison, I say.

– Why would you poison it? they say. I feel fine. Refreshed, no longer thirsty.

I unscrew the lid and sniff. It smells of nothing.

I take a sip. It tastes like rainwater from the tank behind my childhood home. A steel tank, the outside coated in red, the inside galvanised with bright zinc to delay the rust. I would be sent out by my mother with the water jug to fill it from the tap on the tank, an old brass tap with a flat lever.

– Do you think, says the Student ... do you think if I tossed an empty lunchbox it would —

– With apples, I say. Apricots, vegetables. There would be a great deal of cabbage and big hairy runner beans.

– Figs?

– Yes but they would all have been pecked by birds.



So does this thing lead to my childhood farm? I was hoping it might lead to space, the space between the planets, the space between the nucleus and the electron, some other space.

Can I, we, choose where it leads? Is this a point at which I will be forced to make a choice? Or can I, we, step, squeeze, through, and see what's there?

It might lead into cyberspace, into L-space,² or a desert, or a hell. It might be full of *people*.

– Anyway, says the Student, we don't have a lunchbox.

– Or any food container and just as well, I say. And it wouldn't anyway. Fill with figs.

– Yes it would, argues the Student, and we could sit here and eat till we ...

– Till we shat ourselves, I say.

We can't go through! We haven't read enough! We should have stayed in the hut with the books. But we didn't.



An hour of writing and still not the courage. Student experiments, thought experiments, but not the Thing.

Tomorrow. In the morning. Even though it isn't supposed to be a writing day.



Dome cafe, over the river.

The gap the gap the gap the gap. The gap has the same proportions as the screen of my mobile phone. A rectangle with soft corners. It is a blank screen set in the stone. It is a piece, an area of the game, that has not yet been rendered.

Which pill is it, the red pill the blue I can never remember. But this is not that Matrix and this blank screen, this portal, does not lead out of it but deeper into it. I am imagining all kinds of possibilities.

- It leads into space: a sheer drop off the side of the mountain into vast nothingness or sunlit blue air, and we fall, fall, fall and we can't die as such or the story stops.
- It leads to the other side of the world.
- It leads to Flatland.

² In Terry Pratchett's *Discworld* novels, L-space is the magical realm that connects all libraries.

- It leads to Neverland.
- It leads to the front row of a U2 concert.
- It leads to in bed with some lover.
- It leads to a cupboard in a creepy old shop.
- It leads to another tunnel path like this one.
- It leads to a cave tunnel: hours of awful crawling, or — horrors! — underwater swimming.

– Are we going to do this, then? we say in unison, then laugh.

– We could just go along a bit and see what’s round that corner, I suggest, pointing down the yangpath.

– Won’t it be more of the same? says the Student.

– Probably.

I stare at the ground for a moment.

– Are you afraid? I ask.

– No, just curious, says the Student. You?

– You know I’m terrified.

The Student shrugs and sighs.

– We have to strip naked, I say, and leave everything here.

I take a big drink from the bottle of sweet water, then set it down against the opposite rockwall. To its right I place my backpack. I remove my boots and line them up beside the backpack, left, right, my socks rolled inside them. I strip to my underwear, folding my clothes in a neat pile beside the boots. The Student has done the same, leaving a tidy bundle of garments opposite mine.

– Is this enough? they ask.

– No, we have to be naked.

- Why?
- Because everything must be rendered from scratch. We can't go in with anything made.
- What about your titanium tooth? they laugh.
- That's part of me, like a bone. It *is* a bone.
- That's silly, says the Student. Superstitious. Not the truth.
- You're right, I say. It isn't the truth. The truth is I'm less afraid naked. I'm fearless naked, feeling the air on my skin, the earth against my soles, the position of my limbs.
- And carrying nothing?
- Yes. So my hands are free.
- Must I be naked too? Really?
- Yes.
- This is so weird, they say.
- No weirder than that roof of yours, I say.
- It *isn't* mine, they say.

A silence.

We laugh.

- Oh, come on! we say in unison and strip off our underwear and drop it on our piles.
- Check? I say.
- Take off those earrings, they say.
- And that bellybutton jewel, I say.

We take off our jewellery and lay it on top of our clothes.

My staff is leaning near the far side of the gap. I take it in both hands, run them along its cool smooth length, hold for a moment its silver tips, finger its five inset diamonds.

I lean it against the wall beside my water bottle.

Lay it in the dirt, whispers Ursula's voice in my head. You have to lay it down in the dirt.

I take it up again and hold it horizontal. My fingers curl around it as it lies across my palms. The Student is silent, watching.

Everything glints in the sunlight: my skin, my toenails, the dirt, the rocks, the lichen, the molecules of the air, the carbon-fibre surface, the silver tips, the diamonds in their unknown constellation.

Let us go, sings a voice inside the diamonds.

I am holding my breath. The Student watches.

Lay it in the dirt, says Ursula in my head again.

I take a breath, because I have to.

Lay it down, says Ursula-in-my-head.

Lay it down, says Randolph-Stow-in-my-head.

Lay it down, and let's see what happens, says Aunt Mary from a high distance within the blackness of the staff.

Lay it down, says my father. You're an adult.

Lay it down, say my children. For God's sake, lay it down!

Why are you holding that thing? says one of my PhD supervisors.

What *is* that thing? says the other.

Refugees always think they'll come back to get their things, their buried treasure. But the land changes and when they return, if they ever can, the hiding place is gone, or the cache is gone, or the treasure is no longer worth anything.

Sit here and die then, says Ursula-in, spitefully. Sit here and starve.

Or walk on in the sun and get know-where, says Randolph-in, sadly. Carry the rod, if you must, but it won't strike water.

I look at my waterbottle. It's empty.

I return my gaze to the staff, hoping it has turned into a worthless stick, but it gleams brighter than ever and its weight is loud on my hands. I take a deep breath, exhale, and try to bend to lay down the staff, but my hips are stuck, my back is stuck, my shoulders, arms and grip are stuck and my breath is blocked in my chest.

– *Katsu!* yells the Student. I jerk and release the staff, which flies forward, clatters against the rockwall, falls to the dirt and lies there, gleaming, the diamonds not visible, their faces buried in the path.

– *Katsu! Katsu! Katsu!* shouts the Student grabbing my arm. I hate to cross a road holding onto anyone ... they might fall, pull me under a truck ...

– *Katsu! Katsu!* and yanks me toward the gap, fingers tight on my forearm.

At this second my phone its rocknroll ringtone whereisit whereisit my pocket I miss it *Good*
Instead of calling back I text Bad moment! Call u later.

Well done, whispers the chorus.

The Student's left hand is the first flesh to pass through the skin of the gap.

[]

the universe	an opera
composed	of enormous
and microscopic	silences

The Millennium Simulation

For those who are afraid, this
is what we are.

Made of spots and threads of light,
it looks like a giant brain, tissue
microscoped. Each neuron, gathered
axons, spot of light, plays
a cluster
of galaxies. Each drift
of connective tissue, teased-out wisp
of dandelion clock, mimes a trace
of dark matter. The scale indicator
reads one
gigaparsec: two billion light-years.
No commentary, no soundtrack.
The great column
of colonies of shining globules and filaments
turns in majestic silence.

For those who are afraid,
this.

The view zooms in: the ship flies closer.
Among the lights, black gaps appear,
spread, become *caves*
of space, of holding
everything

apart. Gravity
and Light. Play it
again. Listen. Is that

a sussuration? Whispers, waves, pings
along the filaments? What is it?

This.

For those who are afraid.

Notes

The Millennium Simulation Project:
Max Planck Institute for
Astrophysics (n.d.).

Caves of space: Randolph Stow,
"From *The Testament of*
Tourmaline" (Stow, 1966/2012,
p. 147).

between the bones of my temples

the silence has no colour no temper
and yet is as warm as my blood
according to Husserl, Descartes'
cogito includes not just thinking
as red as my reddest meat
on paper fingers riffle
but also feelings desires
I love therefore
in my throat a clicky gulp
refrigerator snargles and screees
I am if you're human love is a thing
of the flesh we don't speak of
its discordant gasmetal anthem
the wide sigh of a car passing
even platonic
love is about physical

the silence is the liquid inside
my eyes like ultrasound gel
the Enlightenment without love is
yang without yin anarchy without
a transmission medium the sounds so cold
the riffle white the sigh a black swathe
empathy or land unable to touch

that is the god that
when my breath goes out of my nostrils
goes out and becomes all the air
justifies murder in the name
drives the father to sell
the silence between
the stars in space my ears
into slavery that instructs
the mother abandon her
between the bones of my temples
a crow's voice from a blue

baby that legislates
the lovers they cannot
aeroplane's voice collecting sky
spitting it everywhere

but the Divine if you actually
experience for example
the rails singing green heralding
a crow's open voice
by the Headless Way
is love benevolent

Notes

Husserl (2004), pp. 140–141.

Headless Way: The Shollond Trust
(2015).

Wake

My last doll is dead.

I made it with a porcelain face
and body

A petticoat, a pinafore

I was trying to play
by the rules, play
pretend

but the porcelain became flesh

The doll stood up on its little legs
flexed its newly-made hands
grabbed at my hem

Its clean blue eyes looked straight into mine

I made an enormous prayer for it and recited it to the sky

I held my hands still
averted my eyes
Every one of me
cried

Then

the watcher
in the cortex
pronounced the doll dead
It lay on its back
eyes no longer
looking

Someone in the right hemisphere
tried dreams in lurid 3D

The doll in a locked basement
sitting in tears on a metal shelf
among cartons of yellowed papers

But truth
is truth. My last doll

is dead. If I ever make another
it will not be a doll but something real.
I will have no more dolls,
no more Frankenstein creations.

Dead
the doll is weirdly heavy
I lay it in a ten-inch plywood box
Nail down the lid

A place for everything...
Maybe I can put the dead doll box
in the bottom of the cupboard with my dress shoes

No
I might want to wear the shoes again
one day

Maybe I can bury the dead doll box
in the garden

No
I want to sit there
see things grow

Maybe I can take the dead doll box
deep into the smoothpale tallness
of the wandoo forest east of the city
Dig its grave alone and weeping
among granite outcrops
and prickly dryandra

No
The ground there is hard

Maybe I can burn
the box, the body

To generate enough heat
I'd have to pile up all my books

my laptop my albums my guitar
sweet-and-sour power chords
skin-and-sweat backbeats
The sounds and all the words
all the worlds and certainly my dress shoes
My whole goddamn wardrobe
Douse it with petrol and
torch it

I'd glide away airy and lucent
like the music of Mozart or Haydn
Sunlit
diatonic
clear
The music of the Enlightenment
Of thinking
you have
the answer

Glide away lucent, a cellophane sheet
ready to be blown by the next breeze
wrap around the next gift

No
I would still be this bone and meat
these earthbound feet

I would find the box charred in the ashes
the doll intact
the dead eyes still blue ...

Neither earth nor fire will do. I must
unbox the doll
sling it on my back
and walk
Leave the city, its little forest
Venture off the hem of the map
Discover the river coiled in the cleft

of the valley at the root of heaven and earth

Wake the grandmother who sleeps there

She will bathe the dead doll in the water

invite the winds to toss its hair

(like this like this)

carry its weight up a mountain (like this)

leave it exposed to be stripped by carrion birds

(like this like this)

and let its bones rest heavy

(come birds)

for as long as memory

lasts

A coat of ashes

I fell into conversation with an ash-smeared and completely naked sadhu ...

— William Dalrymple

If I leave I will not order boxes
There will be no packaging tape
 no moving men
 no truck
I will take none of it

A blanket, a water bottle
A coat of ashes
A poem attributed
 to the wrong author
A corrupt index
A broken database
A partial catalogue of songs
A blanket, a water bottle
A coat of ashes
A sky, a sun, a system
 of monosyllables
The pure tone
 of each electron
The pure functions
The math inside the atom
The muscles connecting
 the trunk to the legs
The tendons connecting
 the moon to the earth
The ligaments connecting
 the brain to the bones
A blanket,
A coat of ashes

Notes

Epigraph: Dalrymple (2010),
pp. x–xi.

That girdle!

A movement in the outerverse
A quantum jump, a state change starting a wave
As far as we've got in thousands of years
A vegetable attached to a rock
Calling for Mother in the night
I at the surface don't see the drip
I see the wave, not the jump
Ripples in the pooliverse
Someone says that there is no rock
 and that *there is no rock* is the rock
Stop — write poems to the rock
Stretching toward the moon
Supposed to just go a-ha
That Gödel! His theorem!
The calling voice
The fear of the brain dissolving
The plant that flowers every spring
The projection of a larger movement
The seed calling for the sun, the rain
The sprouted seed
The sudden rhythm
The things the body wants
The tree that must always grow more branches
The voice that depends on darkness
Tomorrow the heartbeat ripples are gone
Tomorrow there is almost no rain
To love them anyway
To not care that they're broken
To stop
Waves appear on the surface
Waves also descend through the water
 and hit the bottom and bounce
Without a cogito, without a poem

on the path

Walking
shall we render *dào* as walk?

Working
shall we render *dào* as work?

An ibis proceeding
at an angle to the wind
beats its wings
as many times as necessary
then lays them out along the air

We don't know how the ibis
breathes

Our language has separate words
for breath and breathe
speech and speak
being and be
way and go

Raining
shall we render *dào* as rain?

It is always
raining

A tiny sock lies
on the path
BONDS
it says

The Sage and the Physicist

The Physicist does not tell me not to study.

The Sage does not furnish his text with citations.

The Sage does not postulate gravity and light.

The Physicist is silent on yin, yang and qi.

The Physicist does not claim that Name is the Mother.

The Sage does not construct a non-commutative algebra.

The Sage does not calculate quarks and anti-quarks that suddenly spawn from the void.

The Physicist does not intone verses that have lost their oral context.

The Physicist does not say Dao *engenders One* which *engenders Two* which *engenders Three*.

The Sage does not mention that Higgs thing that splits the trinity.

The Sage does not theorise strong and weak and bright electromagnetic.

The Physicist does not invoke a mysterious *Three* that *engenders the ten thousand things*.

The Physicist does not invoke a mysterious *Three* that *engenders the ten thousand things*.

The Sage does not theorise strong and weak and bright electromagnetic.

The Sage does not mention that Higgs thing that splits the trinity.

The Physicist does not say Dao *engenders One* which *engenders Two* which *engenders Three*.

The Physicist does not intone verses that have lost their oral context.

The Sage does not calculate quarks and anti-quarks that suddenly spawn from the void.

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The Physicist is silent on yin, yang and qi.

The Sage does not postulate gravity and light.

The Sage does not furnish his text with citations.

The Physicist does not tell me not to study.

Notes

The quoted text is from the *Dao De Jing* (Laozi, trans. Addiss & Lombardo, 1993, Chapter 42).

the analogy

a kind of bomb nothing ever the same after it
a program can act on itself
in the textuality of the Dao
so that people can read about how to do it

a language that allows for infinite loops
feedback with a microphone and speaker

a squeal that blows your equipment
we must carry the analogy through thoroughly

one level mirrors its metalevel
it is not a total mystery

hinges on understanding not
appears to be a fiction

about how to do it
because the writing

the godelnumbering is the beautiful thing
the proof relies on the fact

that any derivation is an arithmetical
function of two natural numbers one

is the godel number
of the statement being derived the other

is the godel number
of the derivation itself

a kind of bomb
the whole that cannot be

the world the book is divided into
explains the knowledge itself

number theory chinese dna

if a system is powerful enough to encode

information about itself

godel's predicate *dào kě dào* ... a dna

that codes for enzymes that will destroy it

a program can act on itself as input data

because the writing was

the beautiful thing

of escher's drawing of two hands drawing each other

the whole that cannot be

explained in terms of the parts

appears to be a fiction

in *the textuality of the Dao*

the hub of a wheel where the spokes point

Notes

Godel's theorem is explained by Hofstadter (1979), from whom the quoted fragments in stanzas 3–5 are taken (p. 708), and who also discusses feedback, DNA and Escher's drawings.

The quoted fragment in the first and final stanzas is from Miller (2003), p. 149.

The Chinese fragment in stanza 14 is the first three words of the *Dao De Jing*; the image of the hub occurs in chapter 11.

The upper bound

Text taken from Google searches on *quark supercluster*
and *ten thousand things taoism*

10^{-21} , 1 zeptometer

10000.html

61 megaparsecs, diameter of the local

About 60 million light-years away in the constellation of Virgo

A Chill Book, A Chill Philosophy

A Chinese way of saying “myriad things”

A dense soup of electron & quark plasma that provides

And does not strive. It flows in places

And the largest voids and filaments

Are the sum of entities generated

By the joining of yin and yang.

Cartoon Guide to the Fascinating Realm

Cats, toasters, people, the sun

Chapter 16 — weed’s home page

Covering all aspects of Taoist history

Diameter (in metres) of the Virgo Supercluster

Empty yourself of everything. Let the mind rest at peace.

Galaxy clusters arrange themselves

I have been reading the Tao Te Ching

In dwelling, be...

In the past years, several attempts have been made

In the philosophical schools.

In these writings Lao Tzu sets out

isbn=3662495090

Is fundamental

Its name is the Virgo Supercluster

John Cage: The ten thousand

Language versions, the line which

Lao Tzu and I have noticed

Means “All created things”. Chapter 1

Measuring the observable universe

Merely a biological drawback
Myriad creatures definition
Named objects and things of the universe

Non-dual consciousness
On a larger scale is something
Once thought to be the largest
Our galaxy, our local
Our local group of galaxies is being pulled
qid=201202215063142AATHvCU
Quarks combine to form particles called hadrons, the most stable of which
Returning to the beginning of things, or to one's own childhood
Rise and fall while the Self watches
Subcomponents of quarks and leptons

Superclusters are typically seen
That tiny dot that you can hardly make out
The Big Bang, Second Edition
The Big Bang, Third Edition
The Canon of Reason and Virtue
the_hermitage/intro.
There really isn't much of a creation myth
The Tao Te Ching (incomplete)
The ten thousand creatures and all plants and trees
The ten thousand things summary
The translator accepted the following version:

The Universe by Numbers
The upper bound
The Virgo Supercluster or the Local Supercluster
This is when the theory starts to go wrong.
This page relates
To connote the material diversity of the universe
To represent accurately in our minds
Two Up-Quarks and one Down-Quark. Right?

Universe Today
Upper limit (in metres) on the size of the quark
Very difficult to represent

Water drop, Cell, DNA

What exactly are superclusters and filaments and voids

When the self retreats

With regions of such size collapsing under their own gravity

www.mother-god.com

You are More Important Than a Quark

trace

This dropped
as a bird fluttered free
from a claw. This:
black waves, soft sines
gathered and stitched
along a wand. This

is not an artefact. Between
its closed hooked ranks
its flaw, a slit, diffracts
the light. I long
to give the smooth folds
of this to my fingers, take
its intricate truth, but if

I caress, my adamant
digits will unrender this,
unpick, unzip, split, crush,
scramble its whispered Is.

On the turned face
of my fist, with the breathy tip
of this, I tickle the trace
of a wish.

Spangles

The Tao that can be trodden is not | The random clicks of a geiger
All in the world know | Sun flung spangles, dancing coins
Not to value and employ men | Through very short times of space
The Tao is the emptiness | Between the bones of my temples

Heaven and Earth do not act | Their books do not proceed
The valley spirit dies | The mountain spirit rises up
Heaven is long-enduring and earth | Of newly-minted leptons
The highest excellence | Spun in a synchrotron's shining turn

It is better to leave a vessel unfilled | Or leave it out in the rain
When the intelligent and animal | Meet, the ands are given back
The thirty spokes unite in the one | For thirty years of protest
Colour's five hues | Music's ∞ harmonies

Favour and disgrace would seem equally | Luminous compared to concrete
We look at it, and we do | Nothing we don't know how to do
The skilful masters in old times | Had cunts that curved space
The vacancy should be brought | To the feet of the blonde-eyed anarchists

In the highest antiquity, did not know | The arguments of men
When the Great Tao | Counting the sounds of an acausal realm
If we could renounce our sageness | Without going bankrupt
When we renounce learning | And watch repeats of a reality show

The grandest forms of active force | Are all derived from hunger
The partial becomes complete | For something even more precious
Abstaining from speech marks him who is | Who truly glarks the light
He who stands on his tip toes | Still can't reach the bulb

Notes

The left-hand half-lines are the opening words of each of the first 24 chapters of the *Dao De Jing* (Laozi, trans. Legge, 1891/2008),

selected according to a metrical pattern.

The sources of the right-hand quotations are, respectively: Friedman & Donley (1985), p. 120; Joyce (1922/2000), p. 45; Joyce (1922/2000), p. 45; Durrell (1952), p. 31; Friedman & Donley (1985), p. 120; Jackson (2012).

A lepton is a certain type of elementary particle, such as an electron; it is also a small ancient Greek coin.

The mathematical symbol ∞ in line 12 reads “infinity”.

“Glark” is computer hacker jargon: to understand something's meaning from its context.

The socks surrender

Socks, after KonMari, sushi-rolled and set
in lines. I am a little girl again,
singing a pattern, stripes and blacks.
Like so many backs. Moslems crouched
in a crowded mosque. Buddhists prostrated
before a statue. Yogis curled
in child's pose. I am

seventeen again. Bono raises
the white flag. On a Sunday,
Bloody Sunday. This is not
a rebel song. I was blind but now

a little girl again.
To the Divine. One
another. The young
Irish, their hope. 33

years ago. I was blind
singing a pattern.
I was blind
before a statue.

But now

Notes

KonMari is a Japanese-inspired
method of decluttering and
organising devised by Marie
Kondo. <http://konmari.com>

a beach

to make something of
the light glinting off the foam
the latest model of

universe feels no causality a phase space of
thoughts like a bladderweed ripe with bubbles
to make something of

the dream in response to the presence of
the light in successive waves
the latest model of

particles burst like washed-up loops of
an ocean we build a beach
to make something of

what is missing of
the light travelling through an abyss
the latest model of

sacredness becomes an emergent property of
ten thousand crystals dissolved
to make something of
the latest model of

Selective Logging

(Dwellingup, Western Australia)

Foresters (said the sign) choose trees
for particular purposes.

A *perfect tree*, tall, straight,
is taken for construction.

The handrails of the treetop
viewing platform. Its planks.
Its high, deep-planted poles.

The new stumps
of an old cottage. Its rough rafters.
Its window-frames, weatherboards.

So a twisted tree is allowed
to grow, like Zhuangzi said?

Blossoms for singing
honeyeaters, shade
for meditators?

Sometimes (said the sign)
a perfect tree
is left to seed the forest.

A twisted tree might do
for an occasional table,
sanded slice of gnarl or burl
on a tripod of lumpy branches,
or a spinning top,
a candlestick,
a sculpture
of the spirit of the trees.

And a perfect tree, a truly
perfect tree,
might well enfold enough depth
to make a bass guitar,

or encode enough delicate strength
to form
a cello.

Notes

Zhuangzi, trans. Watson (1968),
p. 35.

“Enfold” alludes to the enfolding of
information in the “implicate order”
that physicist David Bohm (1980,
Chapter 6, pp. 140–171) has
suggested may underlie the
universe.

to matter & thrum

When I looked in the book I found:

Time is the temple — Time itself and Space —
observed, marked out, to make the sacred place
on the four-quartered sky, the inwalled ground.

— Ursula K. Le Guin

If I'm good, Lord, if my karma serves,
will you bring me back as a bass guitar?

Known by the fingers, slung from the shoulders
of Adam Clayton, Esperanza Spalding,
Robbie Shakespeare, some nextdoor kid,
whichever altar you choose...

If I'm good, Lord, if my karma serves,
will you let me embody your sinous groove
the one & one & two in one
of your snake-limbed dance? Reassemble me
from spruce & steel, pass me from hand
to hand, give me one purpose only?

To underpin. To intone, hum,
to murmur, mutter, to matter & thrum
the flow notes, womb notes, Lam, Ram,
the low tones that ground the Om.

Make me make the floor of the chord,
the salt & ochre, the heavy water,

the earth, the rock, the dub, the step,
the harmonics, waves, weaving fields,
the neutron, proton, quarks, gluon,
the Higgs, the mystical boson.

Will you bring me, Lord?

If I'm good, Lord?

Notes

The epigraph is from
"Contemplation at McCoy Creek"
(Le Guin, 2016, p. 17).

Turning off time

I hid all the clocks.

Got up when I wanted,
went to bed when I wanted,
ate when I wanted.

My brain wailed for its numbers.

It's hungry time, teatime, I said.
Restless. Walk time.
Tired. Bedtime.

In the middle of the dark
my brain demanded a number.

Let's lie here
and see what
happens, I said.
It's dark time.

When we awoke the sun
was almost above the treetops
and the house next door.
After a few days

my brain forgot
the numbers. We went
to a shop, but it was about
to close. We practised yoga

at sunset, just as the gurus
recommend. Before we slept
we went outside to the night

to contemplate the Pointers,
their movement
up the sky.

September 1

in spring sunlight
the silver lizard's
ancient skin

The skink is five million years old
It runs under the raised base of a metal post
to catch a three hundred million year old bug
The post is as old as Earth
The fence: two winters

The skink emerges, scampers, pauses
Filtering the rain of wavelengths
its scaly integument glistens,
passes heat into blood

It's day one of Spring
Early Djilba
On the post's steel body
at the edge of a weld
rust shoves aside grey paint

At the University Library

What will be lost

The curved white chairs at round white tables
The white benchtops whose ends bend around to be legs
The pillar labelled Information, ringed with screens
The ebooks and online journals
The paywalls

The woman who issues from a glass-walled room
Her bright blue lanyard, her freckled collarbone
The ancient lift that takes me to the stacks and back
The red scanline of the self-check machine
The clunk as it unlocks my book

The coffee dregs in a cardboard cup
The puzzle of which bin it goes in
The perspex security scanners
The golden loops inside them, their invisible intangible field
The doorway named after someone
The idea that everything that counts may be found here

What has been lost

The card catalogues in their dark wooden drawers
The brass frames around the drawer labels
The librarians behind their counters
The counters

The thick china rims of the cheap stackable mugs
The cafe ceiling with its dangling teabag tags
The idea that you might throw a teabag
The idea that your teabag might stick

The photocopier room
The change machine
The papery rustle of the Science Citation Index
The sense that, somehow, everything was here

What was lost

A wetland

A hunting ground

Many black swans

A thousand chanted centuries

An infinite number of spirits

A pattern of rainfall

The names of stars and stones

The knowledge that everything was here

Thirteen ways of looking at an unseen bird

In response to “Learning the Name” by Ursula K. Le Guin

Read its name in English, such as *crow* or *Swainson’s thrush*.

Read its name in Latin.

Look at a picture of a bird of its species and sex.

Write an equation to model its flocking behaviour.

Add its decaying nest to your collection.

Find its bones among black nightshades in the ruins of a harvested field.

Look at the bars on your window, the iron latch on your door.

Study the tree where you think it hides.

Close your eyes and count the shape of its song.

Transcribe its cry into dots and sticks on lines.

Look at your own ears.

Measure the lips of the day-white moon. Threads of sunlight hanging between blue hills. Your
eye in a raindrop. The face of a gnat.

Stand under the tree until it shits on the sphere of your head.

Notes

“Learning the Name”:
Le Guin (2012), p. 121.

Meditation

The horse snorts and bucks and pulls at the reins
But I am not the horse

I'm not his rider either
jouncing her brain up and down
trying to recite calm words

I am the trees and posts
beside the path, the stones, the earth
beneath the hooves, the sky within
which he moves

Not the magpies and skydivers spooking him
Not rain, rainbow, sun, drenching and drying him
I am sky itself
all the way to space

And when he has had his run
I am the stable,
the frame, the six walls
and half-door view
to which at last
he returns

Calculus

We look for it
in some tiny place
A structure in the brain
A microtubule in a cell
A curled 11-dimensional string

We imagine it
a field, laid out
on spacetime, a matrix
of infinitesimal
points

We try to find it
by going back in time
or collapsing in,
shrinking towards
a singularity

But infinitesimal and singularity
are concepts from calculus,
limits of infinite journeys
We find ourselves caught
in Zeno's paradox

trying to touch the hub
between the spokes, the doorway
between the jambs, the pause

between the breaths, the ma
between the fragment
and the phrase

Notes

Microtubule: "We proposed in the mid 1990s that consciousness depends on biologically 'orchestrated' coherent quantum processes in collections of microtubules within brain neurons" (Hameroff & Penrose, 2014, p. 39).

Ma: Haiku, an introduction (Wilson, n.d.)

What is Tao?

Erasure from Zhuangzi, translated by Thomas Merton

out a hand
down a foot
a knee
like a dance what
is Tao?

when I first began
I would see me
all in one mass

after three years I saw

but now I see
with the eye free to work
space finds its own way
I cut no joint chop no bone

a year I have used this
it has cut
its edge
keen
when this finds space
there is all the room

I feel slow down watch
hold back move
and whump the part falls away
like a clod of earth

then I the blade
stand still
clean and put it away

Notes

Source: Zhuangzi, trans. Merton
(2010, pp. 45–47).

The Dream Continues

I start to curl into a crouch to fit through, but the gap has become the whole sky, the whole earth, the blank screen of Everything all around us ... and holding the Student's cool, firm hand I spread myself, floating in Savasana, take a long breath in (the air renders itself sweet and balmy) and wait.



At my desk rolling a tennis ball under my feet to massage my fuckedup fascia. Wearing layers, wrapped in the heater-blanket. Anything but naked. But the naked is in the mind. In the dream.

In the dream we are floating in a savasana that is not horizontal, not vertical, has no Cartesian coordinates, is not affected by any force, any curvature of spacetime, Newton's imagination, Einstein's, ways of doing the maths.

So what directions are there, in this updownless non-state? Ursula might say there are two: Away and Home.

From my laptop speakers an Irish singer stretches a moment of surrender.

The poets talk about Home, going home, but here there is only Away. I am gone. The path is gone, the rockwalls are gone. The Student's hand is still there, no longer holding mine but with fingers lightly touching, their right touching my outstretched left, and I can feel that they are very still.

My eyes are open, but I can't see anything.

I can't hear anything.

The Irish singer is trying to get through to God.

Drums, electric bass.

A Voice comes down the line and tells him to shut up. Shut down, it says. Start again.

Guitars. The musicians channel the Sound.

I am gone. The path, rockwalls, lichen, the Student's mountain, the weird trees, the stream, sheep hill, daisies, stones — all gone. There's no line, no horizon ... only Listening ... and I've

known something like it before. *in the crush of sun and planet, / in the arc of eyes of angels ...*³
This listening, this enormous Not, this silent space between the ears and all around me fills,
becomes, is, full to the quarks with sound.



Floating at the hub, indwelling at the hub, as the spokes turn beyond me constantly cycling,
exchanging places.

My daughter is afraid to die because life seems bad to her, filled with love that cannot be
embodied.

The same thing that makes one person want to die makes another terrified of death. She says:
the idea that this is all there is, eighty years of this ... We agree that it doesn't make sense,
which is why most people don't believe it. The trick is, perhaps, to identify with the whole. The
whole universe, the whole of history, the whole future.



We are hanging at the hub.

It isn't a state of body, a state of mind, a state of anything. We are gone. I think when we come
back (to ourselves) we will be, we are, lying on earth, an earth, a ground, we will, we have,
landed somewhere — but for now we are gone. Into negative capability where writing
experiments can take place in a space, a field, in the silent cacophony, the rowdy harmony, of
the loud Dao.



We are Gone. Hanging open in Nothing.

We can come back here. We have always will always know[n] how to be here. We are always
here.



A gong sounds. A deep Tibetan gong echoing off a mountain. A gong sounding over the other
sounds of the loud Dao. A gong that is a call.

³ Jackson (2010).

The Student's hand is no longer touching mine.

I *am* the Student, naked and genderless. I *am* the Student.

How does my Student body feel?

Complete, it feels complete. All of the subsystems present and functioning.

It feels relaxed in its nakedness. It feels empty and clean ... empty and clean of thoughts but with a library at its back, a dictionary, an encyclopaedia, several lifetimes of knowledge, experiences ... like a phone running no apps but connected to the Cloud, the Web. A space waiting — not waiting: there is no longing — a space *available* for something to happen, to be, to tell.



The eyes are closed and see nothing yet. The tongue tastes nothing in the closed mouth. The ears hear nothing.

The nose is the first to notice anything since the body must breathe to be. The skin inside the nose feels an air that is warm, but not hot, not dry, not humid, and slightly tinted with a smell of old books and woodsmoke. Anything else? The scent of lemons. Of baked bread. Of someone's body, someone's clean sweat.

Judging by the pull of what I suppose is gravity I'm lying flat on my back but I can't yet feel on what.

Do not open the eyes yet. Let the ears listen.

The ears begin to take in sounds from the air, fourier-transforming them into elements, notes, lines on the ear's spectrogram. The brain starts naming conjunctions of sound. The wind at a distance, breezing in leaves. I must be indoors because the wind exists only as sound.

The sound of a fire, nearby, to my right, crackling and snapping as its dragon spirit eats some sappy wood.

Near the fire the sound of a clock. A mechanical clock, perhaps a mantel clock, tick-tocking evenly.

It chimes once.

The sound of someone turning the page of a book, a little beyond my feet. The light sigh of a breath, a person settling down after action.

My body is naked but covered to the neck by something soft, light, warm. I'm lying flat, supine, on something firm but soft. Leather, I think. I explore it a little with my hands. The areas I'm not lying on are cool.

The clock ticks on. The person turns another page.



A bald white man has come to share my table, sitting at the end to my left, eschewing the larger space directly opposite me. He is typing on the screen of a tablet he has set up on a stand. His nails are too long and click against the screen. Sarah comes in. There are now seven of us spread out in the room.

I consider my eyes now, my dominant human sensors. Beyond my skin there must be a lot of light: my closed eyelids deliver not blackness but a mottled blur of darkness and red. I don't want to open my eyes and force my brain to render whatever ceiling is present and, worse, find out who the reader is, render their words. Once I do, there'll be no going back.

I make up possibilities for the reader and their book. People I'd like to meet. People whose books I've read. People from the past, from Germany, from China. People I have no hope of rendering accurately.

Perhaps, then, the reader is a fictional character. Someone who's reading at one o'clock in the afternoon — or at one o'clock in the morning by a bright light.

A dove calls outside, and another answers. Probably daytime, then.

A wooden knock, a few feet behind my head. The door. I keep my eyes closed.

"Come in." A soft male voice. A northern English accent? Hint of the owl's hoot in that "come". Like myself. Or the person I was. I don't know now who I am, if I am anyone, whether I can even speak.

Another knock. "Is that you, Paragraph?" calls the Reader, more loudly. "Deaf as ever," he mutters. "Come in, will you?" he calls.

A person called Paragraph?

Clunk of the latch. The door doesn't creak or scratch but I know it's open because the air cools and the sound of the wind intensifies. The door shuts with a soft thump and I hear the scuff of feet being wiped.

"I heard you had a guest ..."

A crisp female voice, plummy, English, old.

"This is the Author," says the Reader. "Arrived suddenly in the night, as they do, quite naked."

"Lady or gentleman?"

"You know, I couldn't tell. I had a hell of a time deciding which blanket to use — tossed a coin in the end."

"One of your old Roman ones?"

"No, no — a modern one. Twelve pee, if you must know. Seemed a bit cheap, but it worked."



Lee Smolin proposes that the laws of the universe, of physics, evolve over time.⁴ My artist daughter confronted with this said, "Well, *yeah!*" I don't know what I think of Smolin's proposal but I do know that physics could use a paradigm shift, and *that* would certainly qualify!

He also proposes that there is only one universe (fair enough) and that time is real, not an illusion. *I* think the whole question — of whether or not things are objectively real — should be thrown away. What is real depends on how *we* define realness.

I wonder whether the universe spawns as we go, as we travel — is not waiting enormously out there to be found. Perhaps it spawns as we look into it. Later in the book Smolin talks about how mathematical constructs are like that but he doesn't use the word *spawn*.

But that's real life. Hahaha. In the dream I'm wondering where I am and whether to continue pretending to be unconscious. Since I can hear the Reader's breathing, he would surely have noticed mine change when I awakened. If I awakened.

The Reader offers Paragraph tea, which she accepts. To my right I hear a chair creak as she sits, another as he rises.

⁴ Unger & Smolin (2014).

“How are you, anyway, Stanley?” she says.

Stanley? I was expecting something quirkier. Clinking teacups somewhere beyond my feet, he answers her. “Oh, much as usual. Still going through it all.”

“And the book?” she asks.

“It makes no sense. Here you are.”

“Thank you.”

Chaircreak of his sitdown. A sipping pause.

“Is it well-written?” Her voice.

“Oh, yes. You can’t fault it. But it makes no sense.”

“You said that about *my* book, once.”

“Ah, but I’ve learned a lot since you arrived. Broadened my reading.”

“So you have,” she laughs. “Is there nothing here that can help you understand the book?”

A pause.

“Other than him, I mean,” says Paragraph. “Her. Whatever!”

“They,” says the Reader. “And they’re no use anyway, *sound asleep* like that. Hey, you there!”
Something prods my ankle. “D’you want some tea?”

“Yes please,” I murmur, still not opening my eyes. The body is not thirsty but it seems impossible to refuse.

“Please stop pretending to be dead,” says the Reader. “We want to talk to you.”

Oh no. They’ll have questions with answers I can’t articulate.

Keeping head and body still, I open my eyes and move them to look around. The room is quite large. The ceiling is covered in crossed timbers the colour of dark honey, with many little books carved in relief. Between the beams the squares of ceiling are pale.

I'm lying on a large divan. At my left its back, padded with maroon leather, blocks my view. Light is coming strongly from that direction. There must be a window, but all I can see are books. All four walls seem to be lined to the ceiling with books, except to my right, where the blackened grey stone of the chimney breast intrudes.

A man looms into view near my right knee. Mousey hair, pale skin. "Here's your tea." He clunks what sounds like a heavy ceramic mug onto a wooden surface just beyond my feet. I roll to my right, take my weight on my arms, and push myself to sitting. The blanket over me falls around my waist, exposing my torso, but I don't pull it up. The fire opposite me is small, but enough.

The blanket is pink. The Reader's coin must have fallen to the yin side.

I reach for the tea with my left hand, which feels light and insubstantial. Holding the mug with both hands, I sip. The tea is hot, black, sweet, spiced with cinnamon and nutmeg.

The Reader is sitting to my left, Paragraph to my right, in big armchairs that match the divan. The Reader — Stanley — is wearing a grey woollen sweater and brown corduroy pants, with scuffed brown leather shoes. His face is pale, round and ordinary. He is neither fat nor lean. He relaxes back in his chair, crossing his legs, regarding me over his mug. The book is open on the floor near his left foot, its bright covers splayed to the ceiling.

Paragraph is a thin, not-quite-elderly woman, sitting straight. Grey hair in a bun, a few tendrils loose around her pearl-dropped ears and lengthy neck. If her fineboned English face is made up, the effect is very subtle. She wears a 1920s flapper dress of purple and white vertical stripes, a white cashmere wrap, black tights, and black Doc Marten boots.

I am *not* going to initiate a conversation. I already wrote all that poetry.

But perhaps it's the Student, not the Author, to whom they wish to speak.

"So you're the Author," says the Reader. (Stanley!)

I try to think of a reply and after a few false starts decide on Milne. "*Specification of the resulting postmetaphysical thematics proves difficult to sustain*," I venture.⁵

Paragraph titters, but the Reader — Stanley! — says only, "Indeed."

⁵ Milne (2006), p. 180.

“Why are you called Stanley?” I ask.

He shows no surprise that I know his name. “You tell me.”

“A screwdriver set in the back of my cupboard. A knife with exchangeable blades,” I say.

His eyes glint.

“*It makes no sense*,” I quote him.

“And yet,” he says, “it is clearly not the rantings of a lunatic. I looked up the sources, followed the notes. The bibliography is longer than the text.”

“It always is,” I say. “But usually unwritten.”

He smiles. “Yes, and probably better that way.” He pauses, looking uncertain.

I give up. “Did you want to ask me something?” I say.

“Yes! However did you write it?”

“I don’t know.”

“But you kept your notebooks?”

“Yes but that doesn’t help. I ... the records show only how I ... how the ... how I tried to create an environment in which poems might emerge. How they emerge is a mystery ... is not possible to know.”

“Neuroscience? Theory of creativity?”

“Only make it recede. The thing you can say is not the thing. Laozi said it and science can’t alter it. The great Untruth ...”

“Laozi wasn’t a real person. He’s a fiction.”

“Perhaps — but a useful one. Just like science. Are you a scientist?”

“Only on my days off,” he says.

I suck at my tea.

“The great Untruth,” he muses. “Why didn’t you call it that?”

“Others can call it great, or slight. Truth, or lies. Useful, or useless. For me it’s just what happened. The way the energy went. The way the phrases bent.”

“Rhythm,” he says.

I remain silent. Paragraph puts down her tea and gets up in her flapper dress and Doc Martens and does a little stomping dance, clapping her long, thin, ring-laden hands and squeaking a little.

“Are you taking the piss?” I say.

“No,” she says.

How do I deal with these people?

“Do sit down, Paragraph,” he says. “You’re making my guest uncomfortable.” She sits.

“Was there anything you wanted to ask me?” I say to her.

“Aren’t you cold?” she says, looking at my torso.

“No.”

She frowns.

The Reader is sitting very straight. He seems to be waiting to see what I will do.

I stand up; the blanket falls. Paragraph catches her breath. Half squatting I gather the blanket, fold it carefully, and lay it on the divan. “May I?” I ask, indicating the rows of books.

“Go ahead,” says the Reader.

I move around the booklined walls, starting at the wall opposite the door and working to my left. There are books about almost everything, organised by topic. Science, history, philosophy, biography. The politics of war. Comparative religion. Poetry has three metres of floor-to-ceiling wall space, organised by country. Within each country there are labelled categories. My previous books are there, shelved under *Australian Women*.

Literary theory and analysis have their own three metres. Then there are literary novels, this time shelved alphabetically, going on and on. They end at the door. After the door there are

practical books: cookery, gardening, health, childcare. There are no science fiction or fantasy novels, no children's books, no books on popular culture.

I grasp the round brass doorknob.

Paragraph gets up. "You'll freeze out there!" she says. She does not offer me her white cashmere wrap.

"Do you have a *grey* blanket?" I ask the Reader. Stanley.

"No. But take that coat," he says, indicating a long grey trenchcoat hanging on the back of the door. It's too big and smells musty, but its satin lining is nice on my skin. I fasten the large buttons and buckle the belt. The coat hangs almost to my ankles.

"Thank you," I say, and open the door.



Barefoot in the trenchcoat I face whatever may be out there.

Gravity is Earth-normal. The sky is a reassuring blue with white fluffy clouds, like a child's painting, one sun in the top right corner.

I don't try to get my bearings from the sun. Just don't.

Always before this I have needed bearings. North south east west. Riverwards. Mountainwards. Home. Away.

What do you *want* to see? asks the sky. What do *you* want to see? What under the feet? What into the nostrils? What before the eyes? The ears?

What about the book? I ask.

Leave the book with the Reader, says the sky. Let him and that Paragraph argue about it and wash your dirty teacup and put away the pink blanket until another author arrives. There's always another. What do *you* want to see?

I put my hands in the coat's large pockets. In the right pocket I find a notebook and pen. The notebook is about the size of my hand, with a hard yellow cover. Its spine has a place for the pen.

I open it. The pages are blank, lined in faint blue.

A ghost in the world

I stand on the doorstep.

What do you want to see? says the sky.

I don't want to see anything.

I'm tired of seeing, moving, searching.

I want to sit somewhere, be still, listen.

Somewhere no-one will expect me to talk.

Somewhere I am no-one.

A ghost in the world.

Zhuangzi says chasing even that
is not the Way. You're chasing an object:
something outside you that always recedes.
The quiet place is inside you
in all the sounds of space.
What do you want to hear? says the sky.

No more questions, I say.

I want to hear the lap-slap of wavelets at the edge of a lake

I want to hear a dove coo / and another answer

I want to hear a car pass without being afraid it will kill us all with its carbon

I want to hear a man whistling / as he walks to his place / of work

I want to hear the ten pm train / without wondering / in what year it will cease to run

I want to sleep / without dreaming / that all the butterflies die at once and are not
reborn

Without dreaming / of a strange sour land / too hot to inhabit

I want to wake up without that / in the back of my head

People carry on

as if death will never come

Making five year plans, ten year plans, investing

People carry on as if death will arrive tomorrow

Eating, drinking ...

In spacetime, says the sky,
or in Hawking & Hartle's imaginary time,
every moment, then now when,
always
is
You can carry yourself
as if death has / already come
A sadhu, a monk, a ghost in the world ...
Or just a practitioner
of *wu wei*:
not here,
not anyone,
exerting no
force



I put the notebook away and look around. I'm standing on a doorstep in a village in a valley. A stream runs softly down from my right and bends away to my left. On the opposite bank is a path. On each side sits a ragged line of small houses — grey stone walls, steep roofs curving outwards Chinese-style — among unfenced gardens of jumbled plants and low trees. Between the houses directly opposite are a tree with round red fruit and a dark green patch that might be kale. Beyond them a steep hillside rises, all boulders and bluish green heath.

I cross the stream on a little stone bridge and go slowly down the valley.

Around the bend the path opens out onto a large village green. On my right is a small timber pavilion. Across from me, large trees shelter a couple of old men on a slatted seat reading newspapers.

I climb the steps of the pavilion. In its centre is a grey stone bench that looks too heavy for the timber floor. I sit, and close my eyes to listen.



How long have I been sitting here? It was one o'clock by the Reader's clock and now the sun is lower. Across the green the shadows of the trees are lengthening.

Across the grass comes a woman in a long Edwardian dress of faded green silk and a long, grubby, ruffle-edged white linen apron. With her hair in an auburn bun she walks erectly up the pavilion's three steps, bearing a tray of jam tarts. Suddenly I'm hungry.

A Mad Hatter materialises standing on my right, in his far hand a floral teapot, in his near hand a matching cup and saucer. On the green a small white rabbit grazes steadily without looking up.

This is ridiculous.

But the tall figures, the woman, the Hatter, are silent. They offer me their tarts and tea. More goddamned tea — is there no coffee in this country?

I take a tart with my left hand, and with my right the saucer bearing the full cup of black liquid. The figures hover.

I set the cup and saucer beside me on the bench and take a bite of the tart. Jam sweet and plummy, pastry meltingmoment lush. That's nice, that's nice. In my head my mother's voice, pitched high for my babyself.

I swallow twice, but pastry-jam still clags my mouth. I take a mouthful of the tea — warm, bitter, sweet — and swill it around my gums.

I want the tall hovering figures to disappear, she with her stained apron, he with his bashed-in hat of once-red felt, his craggy hill of a face. "How can I work," I snap, "with you lot breathing down my neck?" The white rabbit looks up then pops out of existence leaving a patch of well-fertilised lawn where it sat.

"Drink your tea," growls the Hatter.

"I don't want tea; I want metaphors."

"*I want* never got anything," the woman sweetly intones.

"I don't want jam tarts; I want a bowl of rice."

"You like jam tarts," she says.

"That's true," I concede, "but can't you let me be? I just wanted to sit and listen."

They look at me sadly.

“O-kay,” I say. “Won’t you sit down?” The bench is wide enough for three.

They sit, she on my left, he on my right. “Not too close!” I say. Their body warmth is disturbing. “Now *do* something,” I say. “Something of your own. So I can work.”

The woman gets out some knitting, the Hatter a book.

They still feel so *close*. Their gifts are still in my hands.

I throw the half-eaten tart across the grass where it rolls and shatters. A few black birds descend to fight over the crumbs. The woman tsks and clicks her needles. The man humphs.

What the hell are they doing here? How can I free myself?

You can’t. You have to accept their presence.

I smash the cup and saucer against the heavy planks at my feet. The woman starts and the man growls, but neither of them move.

The cafe soundsystem wails, *I’m a man. I spell M. A. N. Maynnnnn.*

I tried going into a cave. I tried the Student’s hut. Coffee and coffee and coffee. Walking away away. The Reader and Paragraph. Ursula and Aldous.

The old men with their newspapers are packing up to leave. Going home to their wives, their cats.

I tried throwing away all the evidence, all the old things. I tried nakedness.

Wait and see, say Laozi, Zhuangzi. Just wait.



On the opposite side of the green it ends in trees and darkness. The green is at the end of the village, at the end of the path. There are buildings only on the village side. A low public toilet block of plain brown brick.

Can’t I go somewhere where you shit in the fresh air? Away from the Mad Hatter and the hovering vintage-aproned tartwoman, the afternoon-tea prison? Why must it be that or the dark woods? Where else is there?

Down the rabbit-hole, murmurs someone in my head. It's not the Hatter. He doesn't talk about rabbit-holes. He's trapped at tea. With floral pot. His book: an old pulp sci-fi novel. Not the tartwoman. She's knitting. The white rabbit?

I dematerialised him. I couldn't dematerialise the others — they're too large, too close.

I don't want to go into the dark woods. I can see them ahead of me, but they don't call me to explore them. Perhaps later a guide will take me through them: a troll or a goblin, maybe. Up the Faraway Tree?

Or back into the village, the Chinesey roofs, the Englishy walls, the incomplete library, the canon of Paragraphs?

Down the rabbit-hole? No. Down the rabbit-hole is bright with electric light and flaming torches and full of crazy activity, Cheshire cats, mad Queens, horrible pigbabies, battling Tweedledees, and people being cruel to elegant flamingos, turning them upside down and making them into equipment.

And that rabbit is late, late, late — it's all about time. No, no, that's not the way. Making up all that. Slaying something with a vorpal sword. You left your vorpal whateveritwas behind. And you've made a good start, dematerialising the rabbit so you can't find the hole.

Why am I addressing myself in the second person?

The notebook is open on my lap. The Hatter and the tartwoman knit and read and ignore me. The contents of my head don't interest them.

I am to sit here and wait for the night. No houses. No dark woods. No rabbit-hole. No shelter but this wall-less hut with its cold stone bench.

I'm afraid of the cold, not the dark. Of being cold and hungry.

"Can I have some more tarts?" I ask. "Please? I'm sorry."

"It's all right," she says. She lays her knitting on the bench beside her and bends to pick up the tart tray, which she had set down on the planks. I take three tarts. In the left pocket of the coat there's a crumpled plastic bag. I shake it open and put in the tarts. There are two fruit mince pies on the tray now, and I take those too.

“Do you have any fruit?” I ask. She rummages in her dress, rustling the silk, and brings out a small red apple.

“Thank you,” I say.

She nods. Then she stands up. And walks away, taking the tray, down the steps and across the grass to the left, toward the village. At the edge of the green she stops. I can see her there in the twilight, waiting. She has left her knitting on the bench.

The Mad Hatter has found another teacup. Another saucer. He stands up, pours, then sets down cup, saucer and teapot in place of himself on the bench.

“I’m sorry,” he says, looking a little sad.

“Don’t be,” I say. “You’ve done really well.”

“Will you be all right?” he says.

“I don’t know, but it doesn’t matter,” I say.

“No,” he agrees. He pulls from inside his jacket a red knitted teacosy and puts it on the pot. Its summit has a pompon. “Perhaps I’ll see you later,” he says.

“I don’t think so,” I say. “But if you go to Stanley’s house, my books are there.”

“Goodbye,” we say in unison. Then he picks up the tartwoman’s knitting and walks away to where she is waiting. They set off down the path. I turn away.

I touch the red cut wool of the Hatter’s pompon. It’s still warm from his body.



Where do you go when you close your eyes? Use images from all five senses.

I’m sitting on a stone bench in a wooden pavilion overlooking a village green surrounded by trees and a few buildings. The houses are grey stone with Chinese roofs, upturned at the corners. The trees are tall: there’s a forest. Quite possibly bears.

It’s just getting dark. I’m waiting for the dark. The green is empty.

I'm wearing only a big grey trenchcoat. Its silk lining is smooth, cool with its caterpillar thread, warm with my mammal blood. My head and hands and feet are bare. The air touching their skin is beginning to chill.

My breath sighs in and out. A woman's voice in the distance calls to someone. A faint breeze is susurrating in the trees.

I smell the pavilion, its oiled wood. The grass as it relaxes from photosynthesis and begins its night respiration. A hint of woodsmoke from people's fires.

In my mouth there's a lingering of tea and jam. I suck up saliva and wash it back over my tongue. It comes up blank, a nothing, the taste of space.

her wings

The monster is très cool, uber beautiful
in moist black leather, as large as an
elephant, with four legs, firm flesh,
a dragon's tail and grace. I do not know

whether to be afraid. It does not seem vicious
or vile. There is no stench of stagnant drains
or carrion. It smells of haemoglobin. Cambium.
Of still air among leaves.

I am standing at its left side.
Its broad wings are raised.
Upon its thorax, behind its forelegs,
level with my eyes,

I lay my right palm, fingers
pointing at the tremendous
shoulder, feeling the insistence
of a big bass heart.

The monster's blood is warm,
but cooler than mine. Her name
is Creativity. She holds her wings
high, tenting me while I touch.

The soft split

I've been trying to grow wings by flying.

It doesn't work.

If you're a magpie chick
you need your mum,
dad, big brothers,
the whole arguing clan
to bring you food
and chase away monsters.
Your wings are ready
before your brain.

When your mum coaxes you out of the nest
she has to catch you before you hit
until you get
the hang.
After that there's work to do.
Trees to defend.
Babies to feed.

If you're a caterpillar
and you've had some luck
chewing leaf, evading beak,
you need a safe corner
and time to spin.
It's quiet
and it takes
a while. When
you fly it just
happens. Then your whole thing
is to mate. Longing,
bliss. A week or two
in the air. A special place
for the soft split of laying.
Then floating away on what's left

of the wings. Drifting
out, shattered to quarks.

The catbeing

A sleeping catbeing,
black white ochre body curled,
furred cheek turned
 (Her free ear flicks
 as I shift on the wooden stool,
 as my sock scuffs the floor)
The catbeing, catmind, lithe catbody
has made her toilette
 (as Eliot said)
and now takes her repose

Pets are banned
But she is not my pet
Responsibility is claimed
by Unit 33
Kipper, their collar calls her
 (A motorbike dopplers past:
 her head lifts, then subsides)
She is the gentlest
of the three local catbeings,
the one most partial to humans
 (or, at least, to me)
She has come to my room for refuge,
for a pause in her difficult war
with the powerful catbeing from
beyond the fence
whom I stroked at lunchtime
but did not admit

The weary catbeing has come to rest
on the faded quilt I use
as a meditation seat
I unfold it to cat dimensions,
smooth its green 70s geometries
flat on the scarred sofa
 (catbeings enjoy a soft bed)

She kneads and stretches and washes,
clips her claws with her teeth,
clamping and yanking,
then works through a sequence of postures
until, eventually, she settles.

(I unplug the phone)

Her spine is an opening parenthesis,
a yang matched by the yin of her tail
All along her rounded back
her filaments stand proud, separate,
like iron filings inscribing
the north and south of a magnetic field.
The purring catbeing, earthed, live,
is locus, nexus, nucleus —
a cluster of cells making waves
of Thursday afternoon peace.

Turnings

Return is how the Way moves.

— Laozi

not enough windows — electric light at noon

electric light at noon — not enough windows

a wood stove just like
my mother's — rusting away

rusting away — my mother's
like just a wood stove

a garden screen, weathered planks
hung on firm posts — my yoga wall

my yoga wall — hung on firm posts,
weathered planks screen a garden

a chime made
of tuned aluminium tubes
suspended by little strings
in what seems to be silence

silence in what seems to be
suspended by little strings
of tuned aluminium tubes
made a chime

Notes

Epigraph: Laozi, trans. Le Guin
(1997, Chapter 40).

Returning to the root

Tao is the way
trees curve
their branches, twigs,
leaves,
and hang, with
gravity and
 against it, with
 the wind and

 resisting it, bodying
 its blow and
 the pull of earth,
 shaping
the strength of xylem
and pith,
making their green love
visible:

Tao is the way
trees turn,
 away from gravity,
 toward
 the sun, their star,
 its photons:
 the bosons its bits
 emit

as their holds on each other
slip:

Tao is the way trees, deep in dirt and light,
compose a form too fine for the I to see.

A dumb Daoist

trying

to lose

perspective

and see

the butterfly

opening his letterbox

the odd man from Unit 3

who could be anyone

each red

bottlebrush flower

its particular angle

morning sun

waking

every new leaf

a dumb Daoist

weeping

Open an eye at the surface

In virtual reality

my son told me

you can now move a ball

with your mind

A helmet with electrodes

gathered the waves

An experimental subject

gradually learned

A digital exoskeleton

slowly adapted

In a matrix within the Matrix

a sphere rose and fell

In a dream I tele the lights on and off

by focusing

my head

A wink of radiance reflects from a puddle,

blinks through the slits

of my eyes

A ripple appears: an ocean echoes

as something falls at random from nowhere

as someone's roof

chaotically drips

Open an eye at the surface

and think in the imperative voice

sync your mind to a ball

rethink a cafe to contain a Pokemon

hyperlink your thoughts to a dream

blink on and off the lights

While I worked on this,

gravity waves were detected

I lit a candle

for a friend in rehab

He had to crash because this, this matrix, is
our world

Before it rises, it bottoms
That is its nature

He had to deep
cycle the battery

In this world the next the last
in dreams we all can fly

Neuroscience I expect
knows why

I and eye are still
at the water's rim

From here we can't see far
so the world looks flat and straight

The ocean has no curvature, the arrow
no parabola

In India by focusing the mind
a yogi stopped
a train

In Jamaica by touching it with his staff
an obeah started
an engine

I didn't add
to my database
the unreliable sources

Two black holes a billion years ago
slammed, are slamming, slam together

To feel space shift
we need a long long laser

When the black hole crash tsunami
finally touches the shore

it's so nothing it has no anything
until another nothing asks

A fine coherent beam

of nothing

The laser twitches as the ripple passes

The tiny echo

February 2016

Gravitational waves
were detected last week, I said.

What are they? she asked.

It's Einstein's theory of General Relativity, I said.
Think of space (spacetime, I should have said)
as a rubber sheet.

Where there are heavy things on it,
like stars and planets, it bends
downwards. That's gravity.

Oh! she said. Of course!

Yes, like ripples, I said. Einstein predicted it
years ago, and now he's been proved correct. Of course.

But gravity is very weak.
It takes something huge
to make a tiny echo.
They detected the tiny echo
of two black holes whomping together
(my two fists punched each other)
a billion years ago.

A billion years, she said.

Yes, I said. It's all over the web.
Everyone knows.

I didn't know, she said.

On looking at the Pointers

It looks as if spatial distances do not exist for electrons.

— Michael Heller

O being
on Proxima B, are you
made of liquid
water and chains
of carbon? Hair,
feather, scale,
bark, or something else?
Photon sensors adapted
to Proxima's red? What do you
call the Centaurs? How
do the constellations look
from there? Are you
looking back
at us, yellow Sol
in your sky? Have your
people, like mine, measured
the light-years, and counted
four? O being
on Proxima B, closest
exoplanetary soul
there's likely to be,

is a lepton of my heart
entangled with a lepton
in yours (whatever you use
as a heart) from a time
when they could touch, way back
near the Beginning, in a dream
in which they touch, way in
at the Beginning? If so,

I send you love. Using
the top-down causality
of my organic complex system,

I spin my lepton to yin
so yours may spin to yang.
O being on Proxima B,
can you feel the sunshine?

Notes

Proxima B is a potentially Earth-like planet orbiting the star nearest us, Proxima Centauri, a red dwarf.

Proxima Centauri is too faint to be seen with the naked eye, which I was using. It is thought to be a third star of the Alpha Centauri system, which is the “trailing” member of the two Pointers that accompany the Southern Cross. Alpha Centauri looks like one star, but a telescope reveals it as two stars orbiting one another.

<http://freestarcharts.com/alpha-centauri>

Epigraph: Heller (2008), p. 258.

Top-down causality: Capra & Luisi (2014), pp. 205–206.

**Poetry, Daoism, physics
and systems theory: a poetics**

An introduction

The ambition of the literary artist is to speak about the ineffable, to communicate in words what words were never meant to convey.

— Aldous Huxley (1970, p. 12)

This thesis explores how poetry might mediate between scientific and spiritual discourses, focusing primarily on physics and philosophical Daoism (Taoism). Systems theory (the science of complex and self-organising systems) also informs both the creative work and my reflections on the process of writing it. The creative work, “A coat of ashes”, is a collection of poems counterpointed by a metafictional narrative entitled “The Dream”. “A coat of ashes” is chiefly concerned with the nature of being. It asks, “What is?”, “What am I?” and, most urgently, “What matters?”. To engage with these questions, I have developed what is, for me, a satisfying artistic synthesis based on conversations between internalised voices representing scientific and spiritual worldviews.

Some clarification of terminology is necessary here. Although I refer to discourses that originate on opposite sides of the world, I avoid wherever possible the terms *Western* and *Eastern*, which have often been associated with prejudiced attitudes and disregard for cultural distinctions. However, they are sometimes needed in order to discuss contrasts or refer collectively to certain sets of points on the global spectrum of thinkers and ideas.

Since they have many potential connotations, the terms *spiritual* and *scientific* also require clarification. In this thesis, to be spiritual means to involve a sense of connectedness, transcendence, awe or reverence. It does not imply belief in deities, ghosts or other incorporeal beings, or association with organised religion. *Science*, *the sciences*, and *scientific* are used in their precise modern sense: they refer to research disciplines like physics or climatology, which investigate the world via the scientific method (Ellerton, 2016), and to those disciplines’ theories, methodologies and discourses. Where it makes sense to do so, I write *the sciences*, rather than *science*, to suggest this precise definition and to indicate that I am not referring to technology or its social or environmental consequences, or to other fields of endeavour that are sometimes likened to sciences.

Poetry is one such field. However, since it does not rely on the scientific method, it is not a science and, in my view, need not be compared to one. It is, however, a useful form of inquiry. Writing poetry can generate knowledge about existing in the world. Questions, ideas, insights

and analogies may emerge in tandem with the text. Creative writing, as Dominique Hecq (2015) comments, is a way of “seeing, knowing and being”. It provides “a perspective, an epistemology and an ontology” (p. 27). Writing poetry is also research into writing poetry: an exploration of what [more] might be done in poetry, how it might be done, under what conditions, and with what effects. Writing poetry is also a way of finding out about language, whether constructively, by building with it, deconstructively, by testing assumptions about it, or ontologically, by creating a space in which it insists on arising.

My interest in physics and Daoism arose from questions about being: matter and energy, consciousness and death, individual and social existence. They are questions many people no doubt contemplate: what is all this? What am I? What matters? Physics provides an answer to the first question: everything is matter and energy, and these are ultimately patterns of information (Hawking, 1988; Majid, 2008). Systems theory addresses the second: a human being is a complex system, composed of smaller systems and embedded in greater systems (Capra & Luisi, 2014).

The third question, however, is much more difficult. Pattiann Rogers (2001), a poet whose writing is anchored in both scientific understanding and a profound spirituality, discusses what she terms “our cosmology” (p. 2): the contemporary science-based picture of the universe and our position within it. She points out that a striking feature of this picture is that we can critique it: it changes and develops as we ask new questions about the universe. Rogers argues that for our “soul” (p. 1) to feel comfortable with contemporary existence, we must embrace science-based cosmology and bring to it new questions, including spiritual ones.

Both Fay Zwicky (1994, pp. 34–39) and Christopher Edwards (2000, pp. 8–12) observe that during the twentieth century, an increasing number of Westerners began to look among the Asian traditions for an alternative to Western philosophies and religions, which, for them, no longer offered a satisfactory sense of humanity’s place on the Earth. My own position is similar. Living during both the twentieth and twenty-first centuries, I have become increasingly interested in non-Western understandings of existence, partly because of my increasing concern about social and environmental crises. For me, an ethical life requires something other than faith in science and technology or belief in a personal saviour. It demands what Rogers might term a spiritual re-visioning: a new understanding that welcomes both scientific ways of knowing and those of older traditions in order to fully apprehend our place in nature and foster a reverent respect for it.

Daoism

One possible basis for such a re-visioning is philosophical Daoism, which arose in China around 24 centuries ago. Its attitudes are expressed in two foundational texts. The first is the *Dao De Jing* (Tao Te Ching or Tao Teh Ching), traditionally attributed to Laozi (Lao Tzu or Lao Tse). The second is the eponymous *Zhuangzi*, whose primary author's name is also romanised as Chuang Tzu and Chuang-Tse. Both these books date from the third or fourth centuries BCE (Coutinho, n.d.; Laozi & Waley, 1958, pp. 86, 127–128). Especially for English-language readers, they are the primary sources of Daoist philosophy, which I henceforth call Daoism. (Daoism has another aspect: a Chinese religious tradition, which has temples, priests and venerated spiritual beings [Miller, 2003].) The following explanation is based on both of the foundational texts as well as selected English-language secondary works, some of which are introductory (Capra, 2010, pp. 107–118, 145–148; Harrison, 2013, pp. 131–144; Laozi & Waley, 1958; Watts, 1979) and some detailed (Chen & Ji, 2016; Laozi & Wang Keping, 1998; Moeller, 2004).

The Chinese word 道, *dào* — in English usually *Dao* or *Tao* — literally means *way*. It stands for the way the cosmos works: the universal principle and process of flow, change, cycle and relationship; the ineffable unity of all things; and the way everything arises from emptiness, or *wu*, which Wang Keping (1998) translates as “Being-Without-Form” (pp. 7, 22, 28–33) because it is not equivalent to the Western metaphysical concept of nothing, nonbeing or nonexistence (p. 33); it is closer to formlessness, void, or primal chaos (Capra, 2010, pp. 211–212).

Daoism emphasises that language is inadequate to describe the nature of existence, even though, paradoxically, the naming and distinguishing of things, because it allows us to perceive them as separate entities, is, in a sense, what brings them into existence. *Dao* also means *tell* or *speak*, and the *Dao De Jing*'s first line, “*dào kě dào fēi cháng dào*” (Laozi & Hatcher, 2007, p. 55), could be rendered as a caveat: *the principle one can speak of is not the true principle*. The words of Laozi, or anyone else, are merely limited approximations to an indescribable reality that is only for convenience referred to as *Dao*.

Dao also translates as *to follow a way*. In this sense, it connotes a way of living. Daoists avoid force and coercion, aiming to work harmoniously with, not against, the nature, the Way, the flows and cycles, of social and ecological systems. “Yielding is Tao's practice,” says Laozi (trans. Addiss & Lombardo, 1993, Chapter 40). Daoism values silence, listening, humility, mindful presence, and the shedding of ego and attachment: not only going quietly in the world,

but emptying the mind in meditation in order to let go of language's limitations and become aware of "what is and / what is beyond it", as Ursula K. Le Guin ("English", 2012, p. 87) puts it. Daoists see humans as embodied, not only in a human frame, but within the biosphere, Earth, and universe, all of which are seen as our greater bodies or selves. Laozi says: "He who values the world in the same way as he values his body / Can be entrusted with the world" (Laozi, trans. Wang, 1998, Chapter 13).

Through the principle of yin and yang, Daoism emphasises polarity, rather than opposition. Literally, yin and yang are a mountain's dark and light sides, which gradually change places as the sun moves. A cosmic, ecological or social system cycles between extremes, and if we stand back and look at the whole we can see that what seemed to be opposites are merely two ends of a continuum. Darkness, light, and change are inevitable and necessary. Cultivating a Daoist mindset can help one make peace with being human even if the world seems fragile and turbulent, as Chinese civilisation seemed during the Warring States Period when Daoism arose.

It is probably no coincidence that a significant number of influential recent poets have been influenced by Daoism or by the closely-related philosophy of Zen Buddhism (Johnson & Paulenich, 1991; Schelling, 2005). Furthermore, many contemporary poets, including myself, owe a substantial debt to the original Imagists, whose aesthetic, through the translations and commentaries made by Ernest Fenollosa and Ezra Pound, was strongly influenced by Chinese and Japanese writing (Stalling, 2010, pp. 33–96).

Australian poet John Leonard (2010) (not the well-known anthologist and publisher) argues that Daoist reading or practice will give people "a different and deeper perspective on what they already know and value, rather than necessarily overturning or superseding their former beliefs" (p. 7). My own experience regarding the sciences supports this view. One reason Asian spiritual philosophies (such as Buddhism, Daoism, and the more philosophical manifestations of Hinduism) appeal to many Western thinkers is that their models of existence may be seen as analogous to those of contemporary sciences, including physics, as Fritjof Capra (2010) famously observes in *The Tao of Physics*. (The 2010 edition discusses physicists' responses to the original 1975 edition and covers subsequent scientific developments, notably systems theory.)

The insights of Daoism, in particular, share striking similarities with those of the sciences. The way everything arises from emptiness parallels the cosmology of contemporary physics, where the universe emerges out of nowhere in a so-called Big Bang, and where matter is, paradoxically, a natural consequence of its absence, because the quantum-mechanical

uncertainty principle implies that the void continually spawns (and usually reabsorbs) pairs of particles (Close, 2009b, pp. 130–140, 162, 166; Hawking, 1988, pp. 46–47, 105–106).

Moreover, systems-theoretic models of chaotic, complex and self-organising processes may be seen as mathematical expressions of the Daoist insight that form arises naturally from chaos and vice versa (Briggs & Peat, 1989).

It is worth noting that the helically flowing system of hexagrams of the *Yi Jing* (*I Ching*, or Book of Changes) an even more ancient Chinese text that was greatly influential in the development of Daoist thought (Liu & Cleary, 1986), is a mathematical model based on observations of the systems of nature. Wai-Lim Yip (Yip, 1993, pp. 150–160) explains in some detail how this system — with its sky, earth, mountain, lake, wind, thunder, fire and water metaphors, and its yin–yang combinations represented as eight trigrams and 64 hexagrams — models and predicts the changing situations that occur in interconnected systems such as the climate, the biosphere, the human frame, families and societies. The hexagrams represent the behavioural or topological stages of a system, which gradually transform into one another as yin elements change to yang and vice versa.

Physics

For the non-specialist, contemporary physics presents a particular challenge: it is the most abstractly mathematical of sciences, the most mysterious, the most divorced from commonplace experience. Furthermore, its two main branches, relativity theory and quantum mechanics, reveal a counterintuitive picture of space, time, energy and matter (Close, 2004, 2009a, 2009b; Davies, 1992, 2008; A. J. Friedman & Donley, 1985; Hawking, 1988, 1996; Hawking & Penrose, 1996; Heisenberg, 1952; Majid, 2008; Montwill & Breslin, 2011; Penrose, 1999; Polkinghorne, 2002).

Relativity theory implies that parallel lines can meet — because of gravity, which is the curvature of the four-dimensional topology called spacetime — and that two observers, if moving relative to one another, may obtain different measurements of a length, a timespan, or, dizzyingly, the order in which events occur — which calls into question the idea of causality. Time is seen as a dimension, existing all at once, on the same conceptual footing as space.

In 1919, special relativity theory, which Albert Einstein had published in 1905, was experimentally confirmed by a team led by Arthur Eddington. In November 1919, this news was reported in the media. Until then, relativity theory had not been widely publicised, and

outside scientific circles it was known only to the more avant-garde artists and writers, who had also been challenging received wisdom about space and time. But now it created a sensation. It generated an enormous amount of discussion, including magazine articles and cartoons, and its impact on people's ideas about life, and consequently on literature, should not be underestimated, as Alan Friedman and Carol Donley (1985, pp. 9–17) emphasise. Most significantly, it demonstrates that because of our “limited experience”, “common sense” (pp. 65–66) does not always serve, and that two observers can see things differently but both be correct.

It was relativity theory that made Einstein a celebrity, but he won his 1922 Nobel Prize for his role in the development of quantum mechanics. Quantum mechanical theory was established in detail during the 1920s by Paul Dirac, Werner Heisenberg, Erwin Schroedinger and others (A. J. Friedman & Donley, 1985; Montwill & Breslin, 2011). Quantum mechanics, more deeply than relativity, undermines “common sense” and the mechanistic worldview based on Aristotelian logic, Cartesian reductionism and Newtonian mechanics. Not only do physicists observe beams of electrons or light behaving either like waves or like streams of particles, depending on how they choose to do their experiments, but it turns out that matter and energy are, essentially, made of nothing. For example, experiments have shown that the entire mass of an electron is contributed by its electric charge (Durrell, 1952, p. 28). Where an electron occurs, there is no tiny ball of material but merely an electrical potential, which is not concentrated in one point but is spread out as an oscillating field of possibility. It is like a harmonic vibration in a guitar string — without the string. The subatomic realm is best understood as consisting not of tangible smidgens but of happenings: transformations, behaviours, states and relationships. The universe is made of constantly-changing patterns of information. Physicists represent these patterns using mathematical symbols organised into matrices (arrangements of numbers) and equations.

The impact of quantum mechanics on epistemology and ontology is discussed in depth by Heisenberg (1952, pp. 11–26), who is famous for the quantum-mechanical uncertainty principle. This impact is more profound than that of relativity, which does not challenge objectivism or determinism. (Although relativity shows that observers travelling at different velocities get different measurements, their measurements are not independent: if you know their relative velocities, you can use one's results to predict those of the other, which means their results are effectively the same [A. J. Friedman & Donley, 1985, pp. 65–66].) In quantum mechanics, however, the wave/particle duality (among other things) undermines the idea that an observer can stand objectively outside what they are observing (Heisenberg, 1952, p. 14), and the uncertainty principle debunks the idea that science can, in principle, precisely measure

everything. Determinism is also undermined: at what is thought to be the most fundamental level of existence, events occur by chance (A. J. Friedman & Donley, 1985, pp. 120–128). A radioactive nucleus, for example, emits its quanta of radiation at random intervals.

Systems theory

During the late nineteenth and early twentieth centuries, as geological, living and social systems began to be studied, it became apparent to many scientists that reductionist methods were insufficient. Complex, multivariate, self-organising entities — such as streams of water, shoals of fish, living organisms, brains, ecosystems, corporations and economies — must also be studied holistically, because their behaviours and properties emerge from internal relationships in a way that cannot be predicted by studying their parts. Such properties are termed emergent. The parts, taken separately, need not possess the property. To put it another way, emergence is the means by which a whole may be greater than the sum of its parts. Aliveness and organism are emergent properties of biological systems (Briggs & Peat, 1989; Capra & Luisi, 2014).

Systems theory is the study of the principles applicable to collections of interrelating parts. The term originates from a paper by biologist Ludwig von Bertalanffy (1950), who remarks:

In the past centuries, science tried to explain phenomena by reducing them to an interplay of elementary units which could be investigated independently of each other. In contemporary modern science, we find in all fields conceptions of what is rather vaguely termed “wholeness”. (Bertalanffy, 1950, p. 134)

As von Bertalanffy observes, apparently unrelated entities often behave in the same large-scale manner. Busy freeways, for example, develop turbulence uncannily similar to that of fast-flowing rivers (Briggs & Peat, 1989, p. 45). The same equations model entire classes of systems, using variables that measure not individual components but their behaviours and constraining factors: for example, the overall speed and volume of water molecules or cars and the width and shape of a stream or road. This kind of mathematics, known as nonlinear dynamics or complexity theory, developed tremendously from the 1970s onwards as computers became powerful enough to accomplish the necessary modelling. Its branches include fractal geometry and chaos theory. The latter is used to model chaotic systems, such as the Earth’s climate. In a chaotic system, complex, unpredictable large-scale behaviour arises from simple relationships, and, conversely, strikingly ordered arrangements suddenly emerge from extreme disorder (Briggs & Peat, 1989; Capra & Luisi, 2014).

Systemic models shed a great deal of light on the nature of self-regenerating systems, notably living organisms, and promise new insights into the nature of cognition (Capra & Luisi, 2014, pp. 129–181, 252–274). They are also helpful in understanding computer networks, businesses, cities, nations, and many other entities arising from human interaction, as well as the ecosystems of which we are parts. Reality may be seen as consisting of networks within networks; entities are organised gatherings of interdependent parts interacting according to overall dynamic principles. The universe, as von Bertalanffy (1950) puts it, “appears as a tremendous hierarchical order of organised entities, leading, in a superposition of many levels, from physical and chemical to biological and sociological systems” (p. 7).

The essays

Kim Lasky (2013) recommends that a writing exegesis should express “knowledge” (p. 16) about writing that has been gained via the creative process. Such knowledge, as Lasky observes, can be difficult to articulate. Nevertheless, “writers have been doing this for some time, and calling it poetics”. This implies, and Lasky suggests, that a creative writing exegesis should be a poetics. The historical concept of poetics is not specific to poetry; as Lasky explains, it stems from Aristotle’s *Poetics* (330BC) and denotes “the study of principles and forms of literary composition” (p. 14). Referring to exegetical writings of recent novelists and poets, such as Seamus Heaney, Lasky argues that a poetics is a way to “articulate a critical stance” (p. 18) toward one’s work. It may discuss the creative writing “traditions” (p. 17) one’s work draws upon and helps to create; it may examine the work’s broader discursive and textual context, including other disciplines; and it may reflect on the writing process (pp. 14–26). This set of essays aims to do all three.

The parts of this thesis represent a web of interrelated thoughts, not a linear sequence. Although I have followed convention by discussing others’ work before my own, the three essays that follow this Introduction could have been ordered differently; likewise, each essay presents only one possible arrangement of its component ideas. Similarly, the order of the poems is merely one possible route through the various poetic locations — one that I find aesthetically pleasing and suggestive of one possible kind of spiritual journey. For both the creative work and the thesis as a whole, my aim is that they should, like complex systems, be greater than the sum of their parts, allowing various ideas and voices to weave together in the mind, forming a fluidly changing network that connects with other ideas and voices to become part of greater webs of discourse. This fluid network of ideas — or perhaps the idea of it! — constitutes my poetics.

“Singing the quantum” adopts a literary case study approach to consider contemporary poetry’s engagement with physics. After reviewing scholarship discussing the influence of physics on poetry, it examines how poems in three collections — *A Responsibility to Awe* by Rebecca Elson (2001), *anti gravity* by Cilla McQueen (1984) and *The Cosmos Poems* by Frederick Seidel (in *The Cosmos Trilogy*, 2003, pp. 1–67) — use figurative language, particularly metaphor, to interpret physics concepts. I focus on figurative language because it is unavoidable when talking about the abstract mathematical world-picture presented by physics. Using Gillian Beer’s (1996, pp. 185–186) observation that scientific concepts are not merely translated but transformed when they are used in literary works, I argue that contemporary poets are able to fulfil William Wordsworth’s prediction that poets would someday interpret scientific concepts in human terms. The poems I have chosen to discuss differ significantly from one another in style, but all achieve one of my own ambitions: while vivifying the subatomic and the cosmic, they are deeply grounded in embodied human experience, using a broad range of metaphors to make extensive explicit reference to physics.

“Let the song be bare” examines the influence of Daoism on English-language poetry, drawing on perspectives provided by existing English-language Daoist poetry criticism. Once again I adopt a case-study approach, looking at the work of Le Guin, Randolph Stow and Judith Wright. These poets were well-informed about the sciences, including post-classical physics (Bennett, 1990, p. 374; Gibson, 2015, pp. 146–158; Le Guin, 1975). Hence, their poems bring together scientific and spiritual perspectives — a central aim of my own project. These poets’ work, like my own, arises from a settler colonial context (LeFevre, 2015), and I argue that this influenced their ecological and spiritual perspectives, and that the stylistic development of Wright’s later poetry suggests tension between European lyricism and Daoist quietism.

In “Animating the ash”, I reflect on my compositional process and methods, using examples from “A coat of ashes” to construct a theoretical synthesis based on Daoism, systems theory and contemporary poetics. Using an analogy with biological systems, I argue that a poem’s essential quality, which Glyn Maxwell (2012) characterises as a “creature” (p. 29) and Jane Hirshfield (2015) likens to a “sense of breathing aliveness” (p. 3), is an emergent property that arises during the compositional process. For this to occur, a text must have sufficient complexity and organisation, as well as a suitable environment: most vitally, a well-developed writerly self-reflexivity involving the internalisation of both a critical reader and a safely bounded yet playfully chaotic mental creative space. In writing “A coat of ashes” I used a systematic writing and editing practice to frame this space and invite into it the disparate discursive voices. I argue that some of my methods are akin to *wu wei*, the Daoist principle of working non-coercively

with natural flows, and that such methods facilitate the emergence of creaturely poems. “Animating the ash” also discusses how some of the poems interpret scientific and Daoist concepts.

Some theorists use the terms *creaturely* and *creatureliness* in a different, yet related, sense. Isabel Karremann (2015), for example, discusses “creaturely poetics” (p. 96), a critical praxis that de-emphasises human-centred perspectives and acknowledges the shared animality of humans and other living beings by “privileging non-human frames of reference” (p. 96) in order to highlight their “semiotic competence” (p. 97) — their meaningfulness. Maxwell (2012), however, assumes that a poem expresses a “human” (p. 29) perspective. Although I have adopted Maxwell’s terminology, my conception of creatureliness also draws on Hirshfield’s (2015) much more general notion of “breathing aliveness” (p. 3). Moreover, an effort to deprivilege human perspectives underlies several of my poems. For example, “The catbeing”, in which the sleeping cat is a “nexus” affecting its surroundings by generating “waves ... of peace”, may be read as suggesting a feline connectedness akin to the animal potential that Karremann terms “creaturely agency” (p. 102).

Limitations

My case studies include no conceptual writers or Language poets. (In “Singing the quantum” I discuss one poem by J. H. Prynne, whose writing is useful in understanding how Language poetry incorporates scientific vocabulary.) Although such writers’ non-traditional compositional methods are a significant influence on “A coat of ashes”, my project differs substantially from theirs. Moreover, these writers are already the subject of a great deal of commentary, including much discussion of how the sciences may have influenced the structure and form of their works. Therefore, I have chosen poets with relatively conventional styles, selecting six who are especially relevant to my project because, in my view, their works articulate a broad awareness of contemporary discourses, including sciences, and vigorously manifest the creaturely quality that makes a poem work.

I have chosen not to discuss poems specifically engaging with systems theory, partly because systems theory is only a few decades old, but also because the systems perspective is already inherent in the ecological concerns of a great deal of contemporary poetry and criticism. Moreover, writing about poetry from a Daoist perspective means writing about poems that express the place of humanity within the Earth’s systems.

Zen Buddhism shares many aspects of Daoism, and has influenced many American and Australian poets, including Judith Wright (J. Brown, 2009; Capp, 2010; Flood, 1999; Johnson & Paulenich, 1991; Levy, 2012; McCauley, 2010; Schelling, 2005). However, discussing Zen influences on poetry is beyond my scope. In the case of Wright, I endeavour to focus on uniquely Daoist elements, but Zen and Daoist influences cannot always be separated.

Characters in “The Dream” may be read as representing aspects of my writing self. Some of these are internalisations of influential figures, including parental ones. Furthermore, some characters have gender, but some do not. These factors suggest that it might be productive to discuss “The Dream” in the light of psychoanalytic or gender theories. However, such discussions are beyond the scope of the present project.

Possibilities for future research

An aim of “Let the song be bare” is to inspire further Daoist criticism of the poems of Wright, Stow and Le Guin, as well as those of other poets of non-Chinese descent. (Le Guin’s poetry has received very little critical attention of any kind.) Yip (1993, pp. 126–137) discusses three further twentieth-century American poets whose writings are substantially influenced by Daoism, Chinese poetry, and Zen: Kenneth Rexroth, Charles Tomlinson and Gary Snyder. Of these, Rexroth appears to be the most strongly and definitively influenced by Daoism. Likewise, there is scope for considerable further criticism and comparison of the works of Elson, Seidel and McQueen, and for further discussion of how concepts from physics (and other sciences) are transformed in poetry using figurative language and other forms of imagery and description.

Future creative or critical projects might involve comparing, contrasting or combining ideas from the *Yi Jing* and systems theory, or investigating the connections between Daoism and European philosophy. A number of authors have noted parallels between Daoism and the thinking of certain phenomenologists and post-structuralist theorists, most notably Jacques Derrida (Chen & Ji, 2016, pp. 125–136; Morris, 1998; Zhang, 1985) and Martin Heidegger (Clarke, 2002, p. 288; Froese, 2006), but also Julia Kristeva, Roland Barthes and Mikhail Bakhtin (Yip, 1993, pp. 160–161).

The theoretical synthesis developed in “Animating the ash” could be adopted or adapted to reflect on future poetry projects. This would provide an opportunity to assess to what extent it is applicable beyond the context of “A coat of ashes”.

Significance and impact

The poems have been accepted for publication as a book by Recent Work Press, the publishing arm of the International Poetry Studies Institute at the University of Canberra. Several have already been published in literary journals. The refereed proceedings of the Australasian Association of Writing Programs' 2016 conference includes 10 poems from this project and some of my early theoretical ideas (Jackson, 2017a). An earlier version of "Let the song be bare" (Jackson, 2017b) has been published in *The High Window*, a British-based international poetry journal.

"A coat of ashes" contributes a substantial number of poems to the small corpus of Daoist-influenced poetry in English and adds to the larger corpus of poetry engaging with the sciences. "The Dream" contributes to both writing theory and fiction: it is an exegetical experiment as well as a narrative one. It may be read as an allegorical journal of the research and writing process, which it represents as a Daoist spiritual pilgrimage. The narrator, representing the writing self, journeys through fictional landscapes and meets characters representing further internal selves involved in text-making. Within "A coat of ashes", "The Dream" functions as a conceptual framework, suggesting the way poems arise within an internally framed creative space, and providing an alternative expression of the struggle to combine discourses. Moreover, as noted under "Limitations" above, it is an experiment in writing genderless characters. It uses the word *they* where a pronoun is needed. The results suggest that this usage can work but is sometimes confusing. As with the word *you*, the reader is forced to rely on context.

The case-study essays reveal, and significantly address, substantial opportunities for literary scholarship. The poems of Elson, McQueen, Seidel, Stow and Le Guin warrant more sustained criticism than they have so far received, as well as wider readerships. Stow's and Le Guin's works, like Wright's, have the potential to inspire environmental concern and action. Furthermore, it appears I am the first scholar to examine the Daoist influences in Wright's works. "Let the song be bare" demonstrates the breadth and depth of such influences in the lives and works of Wright, Stow and Le Guin, and synthesises the perspectives of existing Daoist scholarship. "Singing the quantum", too, takes a road less travelled, by discussing how figurative language has been used to interpret physics concepts. This provides a new view of how poetry relates to physics and to the sciences in general. "Singing the quantum" also provides an up-to-date review of scholarship on poetry's engagements with physics, unearthing some very recent works, some useful older works, and an unusually comprehensive library of anthologies.

“Animating the ash” contributes to writing theory. It proposes new theoretical and methodological perspectives by considering how the relationships of poetry writing to Daoism and systems theory are connected with existing theories of authorship.

The creative work and exegesis reflect various dialogues between rationalist or scientific discourses and subjective or spiritual ones, and demonstrate the usefulness of combining discourses. They suggest that if the sciences and the more ancient ways of knowing are invited to meet on equal terms, they will help us better understand the world in both its material and metaphysical aspects in order to live within it harmoniously and ethically.

Singing the quantum: physics metaphors in the poetry of Rebecca Elson, Cilla McQueen and Frederick Seidel

In 1802 William Wordsworth suggested that someday poets might use their skill to give readers a full apprehension of scientific discoveries by

carrying sensation into the midst of the objects of the science itself. The remotest discoveries ... will be as proper objects of the Poet's art as any upon which it can be employed, if the time should ever come when these things shall be familiar to us, and the relations under which they are contemplated by the followers of these respective sciences shall be manifestly and palpably material to us ... (1802/2009, p. 167)

Wordsworth's contention was that scientific discoveries needed to be made "familiar" and "material" before poets would be able to work with them — not that poets would be the ones who would familiarise them. As James Rivers explains (1967, p. 10), Wordsworth, and other nineteenth-century writers who made similar predictions, did not think that poets would make scientific findings accessible to the non-specialist (as today's popular-science writers have done), but that they would examine the deeper meaning of scientific discoveries using what Matthew Arnold later called poetry's "grand power" — the ability to move beyond the literal:

The grand power of poetry is its interpretive power ; by which I mean, not a power of drawing out in black and white an explanation of the mystery of the universe, but the power of so dealing with things as to awaken in us a wonderfully full, new and intimate sense of them ... (Arnold, 1865/1937, p. 81, punctuation as in original)

If Wordsworth could have time-travelled to 1955, he might have been disappointed to find the great physicist Richard Feynman lamenting that poets were not yet expressing the awe scientists experience during their work:

Is nobody inspired by our present picture of the universe? The value of science remains unsung by singers, so you are reduced to hearing, not a song or a poem, but an evening lecture about it. This is not yet a scientific age. (1955, p. 14)

Over sixty years later, poems exploring scientific subjects have not become as widespread as Feynman might have hoped. Sampling a broad range of recent publications indicates that, although there are notable exceptions (for example, scientist–poets like Roald Hoffmann, well-informed “nature poets” like Pattiann Rogers, and poets such as J. H. Prynne who experiment with scientific jargon), contemporary poets, on the whole, do not often attempt to interpret scientific discoveries. Yet poets can watch television shows like Brian Cox’s *Wonders of the Universe* (BBC, 2016), read introductory books like Stephen Hawking’s (1988) *A Brief History of Time*, and apply for residencies at science centres (Barraclough, 2015). This implies that scientific subjects remain relatively “unsung” for reasons more complex than lack of awareness.

Helen Small (2012, p. 34) suggests that some contemporary poets may find alluding to scientific subjects problematic because such allusion could be read as acquiescing to cultural or economic dominance of scientific discourses. Victoria MacKenzie (2013) notes that since the beginning of the twentieth century, the status of science

as a form of knowledge has become so elevated that for many people it has become the *only* acceptable form of knowledge. The epistemological dominance of science has had an impact on the perceived value and usefulness of the arts. (MacKenzie, 2013, p. 2)

As MacKenzie explains, while many people now believe science provides objective, value-free facts, “[t]he knowledge that we get from literature and other arts has been consigned to a form of subjective knowledge at best, and this fact-value dichotomy has been damaging for the status of the arts” (pp. 2–3). One could argue that the real difficulty facing arts and humanities practitioners is not that scientific knowledge is thought to be objective, but that “subjective knowledge” is undervalued, as the words “consigned” and “at best” imply. Perhaps the many poets who do not explicitly refer to the sciences feel it is more valuable or interesting to use their writing to inquire into more obviously subjective matters, such as social problems.

Secondly, poets, unless they happen also to be scientists, are likely to struggle to achieve more than a surface acquaintance with a scientific discipline, because of the barrier presented by technical concepts, specialised vocabulary and mathematical notation. Kelly Cherry (2001)

remarks that communicating between today's scientific and poetic domains is like establishing exchange between ethnic groups whose languages differ: "translation" (p. 37) is essential.

Translation, however, is never straightforward. As Gillian Beer (1996) observes, when concepts are carried from one discipline to another they are not translated but transformed. This is partly because even if the terms used are the same, the audience is not. The discipline-specific meanings of terms arise from shared assumptions, and a different audience will share a different set of assumptions. In poetry, furthermore, scientific subject matter appears in an incomplete manner, often in the form of "the fugitive allusion, the half-understood concept, the evasive reference" (p. 185). Beer points out that "scientific material does not have clear boundaries once it has entered literature. Once scientific arguments and ideas are read outside the genre of the scientific paper and the institution of the scientific journal, change has already begun" (p. 186). Moreover, all sorts of people discuss and interpret scientific concepts, and this "free reception is not likely to leave scientific problems intact within the expository terms already established by scientists" (p. 195). Instead, they are "transformed" and become "involved in social and artistic questioning".

In the case of physics, this transformation necessarily involves figurative language. Post-classical physics is a particularly challenging discipline for the non-specialist, not only because its worldview is counterintuitive, but also because it describes a universe that can be spoken of accurately only in mathematical notation. Even the words physicists themselves use, such as *big bang*, *wave* and *particle*, cannot be taken literally. They are the vehicles of metaphors; their corresponding tenors are mathematical abstractions. Bonamy Dobrée (1953) reads Lawrence Durrell's (1952) analysis of the relationship between physics and Modernist poetry as implying that "you cannot sing the quantum" (Dobrée, p. 663). Dobrée is referring to descriptive or didactic poetry — the kind of writing once practised by Lucretius or Erasmus Darwin — and, indeed, the mathematical entities described by quantum mechanics and relativity theory are very difficult to render as concrete imagery, as Rivers also observes (1967, pp. 232–234). The concepts are, in Wordsworth's terms, extremely "remote" from everyday experience.

Nevertheless, poets have been variously influenced by post-classical physics. Some have been inspired to experiment with form, structure and compositional method, and some have adopted a content-based approach, experimenting with imagery and description. There is, of course, a continuum, not a dichotomy, between these approaches; however, distinguishing them reveals a little-explored avenue of enquiry. Many critics have discussed the apparent influence of relativity or quantum mechanics on the compositional aspects of poetry, such as form and structure, or on the conceptions of time or subjectivity implied by poems. However, few

scholars have substantially investigated how poets have used imagery or description to experiment with physics motifs. Figurative language is an especially powerful source of imagery; moreover, it cannot be avoided, even by physicists, when describing post-Newtonian physical theories. Therefore, it is reasonable to suppose that a reader desiring an enhanced understanding of transactions between physics and poetry would do well to examine how poets use figurative language, such as metaphor, to transform physics concepts. In this essay, therefore, I consider physics metaphors in works by Rebecca Elson (1960–1999), Cilla McQueen (1949–) and Frederick Seidel (1936–), three contemporary poets who have had particular reasons for bringing physics into their writing.

Quantum poetics

Post-classical physics, almost since its inception, has been used to construct theories about poetry and other artistic genres. Michael Friedman (2016) provides a useful longer summary of the history of this kind of criticism, and briefly discusses contemporary poets Andrew Joron and Jorie Graham. Physics-based poetic theories are termed *quantum poetics* by a number of authors. The best-known is perhaps Daniel Albright (1997), whose book *Quantum Poetics* applies a wave and particle analogy to the work of early Modernist poets, primarily W. B. Yeats, Ezra Pound and T. S. Eliot, discussing evidence for the influence of relativity and quantum mechanics on those writers' ideas about poetics. However, the term *quantum poetics* was used earlier by Patricia Monaghan (1995), whose thesis *Quantum Poetics: Science and Spirit in Twentieth Century American Poetry* studies five American Modernist poets, including Wallace Stevens, suggesting that they invented poetic styles analogous to quantum and relativistic conceptions of space and time. Monaghan draws parallels between the problems of using English to express spiritual experiences and those of using it to express the concepts of modern physics.

In *Einstein as Myth and Muse*, Alan Friedman and Carol Donley (1985), respectively a physicist and a literary critic, examine in detail the effects of relativity, quantum mechanics and Einstein's personal fame on the broader culture and on literature in particular. They consider the influence of physics on the free-verse innovations of poets such as William Carlos Williams, Charles Olson, Muriel Rukeyser and Robert Duncan, examining their essays as well as their poems and noting, for example, that Olson borrows vocabulary from relativity theory (pp. 77–78). Olson is also intrigued by the quantum-mechanical principle of complementarity, and Duncan refers to the uncertainty principle. These poets use the flexible, provisional nature of

“reality” as a rationale for using flexible “open forms” when writing (p. 134). Friedman and Donley also discuss Dadaism and its use of chance in composition, relating this to the nondeterminism of quantum events (pp. 137–138).

Similarly, Durrell’s (1952) book *A Key to Modern British Poetry* sets out to help readers overcome the apparent difficulty of much Modernist writing by showing how literature, since the Victorian era, has been affected by changes in the broader intellectual milieu. Durrell emphasises the ways in which relativity and quantum mechanics have changed how people see the world, and, consequently, how poetry is written. In doing this, he provides useful insights into the physics. His analysis is slightly flawed, however: as Friedman and Donley point out, he conflates the “two different revolutions in physics” (A. J. Friedman & Donley, 1985, p. 87) by using terminology from relativity when referring to quantum theory (Durrell, 1952, p. 26).

Donald Gibson (2015), in his thesis *Twentieth-Century Poetry and Science: Science in the Poetry of Hugh MacDiarmid, Judith Wright, Edwin Morgan, and Miroslav Holub*, contends that the shifting time references in some of Judith Wright’s work, notably her 1946 poem “The Moving Image” (Wright, 1994, pp. 3–6), are based on relativity theory. Gibson (2015, pp. 146–158) supports this interpretation with biographical evidence of Wright’s interest in physics. Although the biographical evidence is convincing, the overall argument is less so. One could just as easily argue that Wright was influenced by treatments of time in film or literature.

Like Friedman and Donley, Peter Middleton (2015) in *Physics Envy* discusses how during the twentieth century a number of American poets borrowed concepts from physics to theorise about writing poetry. His main argument is that in response to the elevated cultural status of the sciences, especially physics, in mid-century America, these poets set out to reinvent poetry and poetics as research disciplines comparable to sciences. He considers the writings of Olson, Duncan and several other poets writing around the time of the Second World War. Then, focusing on the late twentieth century, he discusses Lyn Hejinian, Ron Silliman and other Language poets, noting their arguments that poetry is a means of “experiment and inquiry” (p. 20) capable of investigating such concerns as the constitution of the human individual and the nature of “time and space” (p. 21).

In two earlier articles, Middleton (2005, 2014) presents similar examinations of twentieth-century American poetry. In another (Middleton, 2013), he discusses how several UK-based Language poets, including J. H. Prynne (1936–), incorporate specialised vocabulary, including that of physics, into their poems, taking phrases from seemingly unrelated fields of knowledge and juxtaposing them apparently at random to create disjunctive collages of text. In another

essay, Middleton observes how in Language poetry a piece of scientific wording may appear like

a torn strip of language peeling at one edge stuck on the surface of the poem like imitation wood paper in a Cubist painting. Seen from one inner perspective, it merges with the aesthetic medium; from another it breaks out at right angles to the plane of the art. (Middleton, 2009, pp. 948–949)

This concept of strips provides an insight into how and why scientific and mathematical text — and other kinds of jargon — have been appropriated into certain poetry, such as the following lines from one of Prynne’s more straightforward poems, “Again in the Black Cloud”:

Round and round there is descent through
the leader stroke, flashes of light over slopes, fear
grips the optic muscle. Damage makes perfect:
“reduced cerebral blood flow and oxygen utilisation
are manifested by an increase in slow frequency waves,
a decrease in alpha-wave activity, an increase in
beta-waves, the appearance of paroxysmal potentials.”

And constantly the
child line dips into sleep, the
more than countably infinite hierarchy of
higher degree causality conditions
setting the reverse signs of memory and dream.
...

Run at 45° to the light cones, this cross-
matching of impaired attention
feels wet streaking down the tree bark,
a pure joy at a feeble joke. (Prynne, 1999, pp. 230–231)

Read aloud, this extract shows how Prynne integrates the jargon into a smooth flow of sound and at the same time floodlights its strangeness. Prynne provides no help for the uninitiated — or for the initiated. For example, even if we know that a “light cone” is a concept from relativity theory (Hawking, 1988, pp. 25–29), there is no point trying to make sense of the term in the context of the poem.

Some critics suggest that Language poems incorporating fragments of scientific jargon are trying to deconstruct or recontextualise that jargon as a way of resisting the sciences' perceived authority. Michael Whitworth (2012), for example, discussing Prynne alongside earlier poets, contends that scientific vocabulary which seems out-of-place in poems is intended to highlight an otherness beheld in the sciences. He uses the term "non-assimilation" (p. 108), making an analogy with ethnic or class relations. However, it could just as easily be the case that a poet uses scientific words for purely aesthetic reasons, such as their texture or, as Small (2012, p. 31) suggests, their sound. One could also argue that Language or collage poetry refuses to assimilate not only with the sciences but with everything else as well. Moreover, once specialist vocabulary is taken out of its native context (such as the scientific paper or journal) it is necessarily recontextualised, because, as Beer (1996, pp. 185–186) points out, its new audiences bring to it new sets of assumptions.

Prynne's own commentary implies that such recontextualisation is vital to him:

Individual words are placed in close relation in a new way, so that it is not easy to guess how the meaning of one relates to the meaning of the other. Sometimes a whole string of words seems to be making uncertain or doubtful connections, so that when the reader or translator consults a full, inclusive dictionary the different meanings for each word all seem at least partly possible ... (unpublished note quoted in Brinton, 2017, para. 8).

Any serious poet exploits the multiple connotations of words, but in the work of Prynne and similar Language poets this multivalency is so extreme that meaning is obscured to the point of nonexistence. Just as a particle, in the widely-accepted Copenhagen ontological interpretation of quantum mechanics, is considered to occupy many positions simultaneously until the act of observation collapses this multiplicity into one (Montwill & Breslin, 2011, pp. 149–150), meaning remains indeterminate until the text is interpreted by a reader. Of course, this is arguably true of all communication; however, one of Language poetry's most striking effects is to highlight this indeterminacy by making it inescapable.

Existing content-based scholarship

MacKenzie (2013), in her thesis *Contemporary Poets' Responses to Science*, uses what she terms a "*content-based response*" (p. 34, emphasis in original), contrasting this approach with that of Albright and other critics who draw analogies between poetry or poetics and scientific

ideas. She points out that scientific influences can be traced in any poem, because poets cannot avoid being influenced by current scientific thinking (pp. 8–9). She therefore focuses on poets who “respond directly to science” (p. 9) — poets “who are actively interested in the science with which they are engaging, rather than using it to elucidate other subject matter or using scientific terms as metaphors” (p. 34). MacKenzie discusses a variety of angles from which such poets have responded to scientific topics, briefly surveying works by contemporary Australian, Scottish, English and American poets (pp. 15–32) before focusing on Holub, Graham, David Morley, Michael Symmons Roberts, Emily Ballou, Ruth Padel and John Burnside. She also outlines recent interdisciplinary projects (pp. 235–236). She examines how Graham’s poems access ideas from post-classical physics, focusing mainly on the collection *Materialism* (Graham, 1993), in which poems apparently concerned with everyday life have philosophical or scientific titles, such as “Subjectivity” and “Event Horizon”, which position them as allegorical reflections on the philosophy of science (MacKenzie, 2013, pp. 149–185).

Octavia Cade (2015), in *Communicating Science Through Poetry from 1780 to the Present*, a thesis in the discipline of science communication, investigates poetry’s possibilities for communicating scientists’ concerns, stories and knowledge to non-scientist audiences. Cade observes that there is very little literature addressing the practical challenges involved in writing such poetry. She discusses a number of historical and contemporary poets who broach scientific topics, including Hoffmann, Seidel, Erasmus Darwin and some little-known scientist-poets, then conducts detailed studies of McQueen, Mark O’Connor, Edith Sitwell and Harry Martinson. She also examines a selection of computer-generated poetry. Her thesis includes a substantial creative component: she invents five fictional science communicators and has them write poetry for various purposes.

Rivers (1967), in his thesis *Astronomy and Physics in British and American Poetry, 1920–1960*, focuses on the work of W. H. Auden, Robert Bridges, Robinson Jeffers, Archibald MacLeish and Alfred Noyes. He appears to assume that the poems are meant to be didactic, because where they use science-related imagery, he frequently evaluates their merits in terms of scientific accuracy. This seems at odds with his main concern, which is the ways in which the poems suggest connections between astronomy or physics and changes in the poets’ spiritual beliefs.

A further exception to the rarity of content-based studies of physics-related poetry is a study by Katy Price (2012), who uses biographical and historical evidence to decode the physics allusions in two of William Empson’s dense, puzzling early poems.

Anthologies

In order to choose works to examine in detail, I began by attempting a broad reading of poems engaging with the sciences, looking for allusions to post-classical physics. This was difficult. Because of poetry's figurative complexity, an online search using keywords and topical indices is of very limited use. One must rely on the references that are scattered through the critical literature. Nevertheless, I eventually unearthed an unexpectedly large number of relevant volumes. Since some of them are quite obscure, it is worth listing them here. I have not listed any of the numerous recent volumes that are specifically concerned with the earth, life or medical sciences, such as geology, ecology or biochemistry; MacKenzie (2013, pp. 29–32, 235–236) and Cade (2015, pp. 24–37) each list a selection of such volumes.

Before 1998, science-themed anthologies were published infrequently. The most useful from this period, particularly for the reader interested in physics, are *A Book of Science Verse*, edited by Wilfred Eastwood (1961), which contains all the commonly-referenced historical poems plus a thoughtful selection of twentieth-century work, and *Poems of Science*, edited by John Heath-Stubbs and Phillip Salman (Heath-Stubbs & Salman, 1984), a chronological arrangement of English poets from Geoffrey Chaucer through to John Updike. Also interesting are *Imagination's Other Place* (Plotz, 1955); *Against Infinity* (Robson & Wimp, 1979), which has a mathematical theme; *Permutations* (Digby & Brier, 1985), which complements the poems with a useful historical selection of prose; *Frontier of Going* (Fairfax, 1969), a space-themed collection; and *Songs from Unsung Worlds* (Gordon, 1985), which, unusually, includes many poems by contemporary scientists.

More recently, the frequency of science-themed anthologies and interdisciplinary collaborations has increased. There are many physics-related poems in *Verse and Universe*, edited by Kurt Brown (1998), which focuses entirely on contemporary American poets, and *A Quark for Mister Mark*, edited by Maurice Riordan and Jon Turney (2000), which includes a smattering of historical works amid twentieth-century poems. There are further interesting selections in *Strange Attractors* (Glaz & Growney, 2008), *Dark Matter: Poems of Space* (Riordan & Burnell, 2008), the New Zealand anthology *Are Angels OK?* (Callaghan & Manhire, 2006), and the Australian pamphlet *Holding Patterns* (Emery, Haritos, Jenkins, & Poets Union, 2010).

In editing *Contemporary Poetry and Contemporary Science*, Robert Crawford (2006) has interspersed critics' essays with commissioned poems. He arranged meetings between poets and scientists and asked the scientists to introduce the resulting poems. This means that scientists'

perspectives are much more strongly represented than is typical in critical scholarship linking poetry with science.

Rebecca Elson

By surveying the above-mentioned literature, I was able to identify three poets whose work makes substantial use of figurative language in interpreting physics concepts. The first of these, the late Canadian-born poet and astronomer Rebecca Elson, had a masters degree in physics and a doctorate in astronomy (Elson, 2001, pp. 154–159). Her scientific work included searching for evidence of dark matter, an invisible kind of matter predicted by physics (Hawking, 1988, p. 45). Her poems appeared in high-profile literary magazines such as *The Rialto* (Elson, 2001, p. 4). Feynman might have approved of the title of Elson's one collection, *A Responsibility to Awe* (2001), which was published posthumously by Carcanet and named as a book of the year by two newspapers (Crossland, 2017). It includes many poems addressing astrophysical topics. To date it has attracted little criticism, although John Lennard (2005, p. 244) uses it to illustrate scientific diction in contemporary poetry, and Rachel Crossland (2017), noting the similarity of some of Elson's metaphors to those used in popular-science accounts, wonders whether Elson was trying to write didactically. In a later paper, Crossland (2018) investigates this question more thoroughly. Citing biographical and textual evidence, she suggests that Elson's use of figurative language was not aimed at explaining scientific concepts, but at facilitating an "intuitive understanding" (p. 10). Crossland's interpretation is complemented by that of Sophie Heuschling (2018), who proposes that writing poetry helped Elson think creatively about astrophysical problems because it facilitated a rich exploration of imagery and metaphor.

A Responsibility to Awe was well-received by the scientific community. In *Nature*, Ingrid Fiske (2001) notes the role of images in Elson's poems, which "seek through the pressure of imagery and rhythm to penetrate 'the untranslatable dark' " (p. 845). In the poem "Notte di San Giovanni" (Elson, 2001, p. 16) "the untranslatable dark" is outer space, in which "asteroids" orbit and in which dark matter, for most astrophysicists, mysteriously lurks, although they have so far been frustrated in their attempts to "translate" their mathematical prediction into observation. As well as space itself, "the untranslatable dark" suggests the astronomer's awe at "The night sky ... a place where one's imagination could expand infinitely", as Elson (2001, p. 151) puts it in an essay describing how she came to be an astronomer. "Notte di San Giovanni" also hints at the difficulty of rendering scientific abstractions into English.

This rendering is a central concern of Elson's poetry. Many of her poems employ figurative language, allowing them to interpret astronomy and physics in human terms as Wordsworth envisaged. In "The Expanding Universe" (Elson, 2001, p. 10), the speaker answers a child's question by likening stars' red-shifted light to water waves, a relatively straightforward simile:

How do they know, he is asking,
He is seven, maybe,
I am telling him how light
Comes to us like water,
Long red waves across the universe,
Everything, all of us,
Flying out from our origins. (p. 10)

More interestingly, the poem then draws an implicit parallel between astronomers' red-shift observations and the child's collection of "pink blossoms / In his father's empty shoe." This is not just any old empty shoe: the "father" suggests a God who has abandoned his universe to science, but lingers unseen in the background. The child listens "As if I were not there", attempting, as a scientist might, to ignore subjectivity, then returns to his spot in a tree's "shadow", an echo of the universe's vast darkness. Like science-bent humanity, the child is expanding his own universe, "flying out" from his "origins" to explore the stars.

"Explaining Relativity" (p. 13) asks the reader to contemplate spacetime in very human terms. Imagine, invites the poem, "yourself" as a "planet" held gently by "space" "like your palm around a stone". It is unlikely that this metaphor could "explain" the theory to which it alludes — general relativity — to anyone who does not already grasp the basics; Elson, not unreasonably, appears to have assumed that her reader is capable of looking it up. Rather than literally explaining, the poem strives for a deeper understanding of Einstein's insights by proposing a philosophical or perhaps spiritually comforting interpretation: "there is, in fact, no falling". The planet-stone is described as waking from a "dream", which suggests humanity's increasing awareness that we are embedded in a living and cosmic environment. The poem ends by firmly asserting "the existence of limits". Rather than thinking of calculus or remembering that nothing can go faster than light, the reader might interpret this as a caution that not everything is possible. Elson herself was dying of cancer and scientific knowledge could not save her.

“The Last Animists” (p. 17) is one of Elson’s most complex, challenging and successful poems. It contemplates atheism and scientific materialism using bodily, visceral imagery. At first it suggests the morning after a night of love:

They say we have woken
From a long night of magic,
Of cravings,
Fire for fire, earth for earth.
A wind springs up.
The birds stir in the dovecotes. (p. 17)

The waking, sudden wind and avian rustlings can be read as alluding to the beginnings of science and its usurpation of magic and religion, as the next lines demonstrate:

It is so clear in this cold light
That the firmament turns without music,
That when the stars forge
The atoms of our being
No smith sweats in the labour. (p. 17)

Here the “firmament” and its missing “music” are defining metaphors from the old Ptolemaic cosmology, in which stars were fixed to an outer shell, and deified planets made heavenly music as they moved. The desire of “fire for fire” and “earth for earth” suggests the way the Greeks explained the movement of flames and falling objects by postulating that each element — earth, water, air, or fire — tended toward its proper sphere, or position, in the ancients’ universe, in which earth nestled in the centre, surrounded by water surrounded by air surrounded by fire (A. J. Friedman & Donley, 1985, pp. 26–27).

The second stanza evokes wonder, but also loss, as the icy clarity of an Enlightenment dawn reveals that last night’s vision, in which “we” seemed to be embraced by a spirit-filled, divinely-ordered system, was at best a memory and perhaps merely a dream:

Day dawns.
The chill of reason seeps
Into the bones of matter
But matter is unknowing. (p. 17)

These lines are followed by a delicious metaphor for the astrophysicist's way of knowing:

Mathematics sinks its perfect teeth
Into the flesh of space
But space is unfeeling. (p. 17)

The metaphor deepens. The universe is now likened to an ex-lover, an other who, in a positivist morning-after, is too numb to care — even if we bite! But this detachment is not the last word.

We say the dreams of night
Are within us
As blood within flesh (p. 17)

This reprises the poem's opening "They say" — which admits the possibility that atheists, materialists and positivists do not have exclusive rights to truth — and suggests a postmodern morning in which "dreams of night", theories of the cosmos, are observer-dependent, "within us" like "blood". The world may once again be seen as numinous:

As spirit within substance
As the oneness of things
As from a dust of pigeons
The white light of wings. (p. 17)

For me, these final lines hint at the systems view of the universe, a paradigm that has been gaining strength since the 1970s. Systems theory studies the emergent properties of large-scale systems — such as the shapes of galactic clusters, or the coordinated movements of flocks of birds (Popkin, 2016). The systems paradigm, by balancing reductionist ways of knowing with holistic ones, makes possible a spirituality that is compatible with both the sciences and the mystical traditions (Capra & Luisi, 2014, pp. 4–8, 133, 275–296) and in which *spirit* denotes a quality, or perhaps a presence, that emerges from interaction and relationship — from "the oneness of things". Elson likens "spirit" to the "white light" that arises from the combined colours of the spectrum emitted by the sun or reflected from interstellar "dust". Newton's Enlightenment prism may have separated these colours, but now they rejoin to form a whole, and the restless "pigeons" of human apprehension are finally in flight.

Cilla McQueen

Unlike Elson, Cilla McQueen is not a scientist. She was born in England; in childhood, she emigrated to New Zealand, where she became a poet, artist and performer and from 2009 to 2011 served as Poet Laureate (McQueen, 1984, back cover; Millar, 1998; “New Zealand Poet Laureate,” n.d.). Scientific motifs are common in McQueen’s poems, and physics is particularly prominent in her second collection *anti gravity* (1984). As Cade (2011) points out, McQueen has an especially good grasp of the concepts and vocabulary of the sciences; this is partly due to the influence of her physicist brother, as she states in an interview, adding that physics is “a language I am familiar with and use ... I see physics as trying to find the flavour of things rather than simply describing them. My poems have similar objectives” (quoted in O’Brien & Cross, 1988, p. 91).

This search for “flavour” — an indefinable quality — parallels the “sensation” that Wordsworth (1802/2009, p. 167) envisaged poets would convey when writing about scientific concepts. Physicists use mathematical models and verbal metaphors to bottle and label these flavours; poetry’s figurative language can serve them as a gourmet banquet. McQueen (1990) contends that “the oblique glance of the artist can often see a truer picture than the scientist’s basilisk stare” (p. 39), and many of her poems glance obliquely at scientific concepts.

As Cade (2011) comments, McQueen is able to harmonise scientific vocabulary with more traditional poetic imagery because she is equipped to occupy a middle ground between the two. Often she establishes this harmony using metaphors that fully inhabit this middle ground. As Elson’s “The Last Animists” demonstrates, metaphors involving the body can work especially well, and in McQueen’s poem “Quark Dance” (1984, p. 26), a dancer’s movement — “pulse slow arm elbow up / whip spine twist” — evokes the spin, flow and change of the subatomic world. In this dance “the boundaries are unstable”, verbs and nouns are interchangeable, and “balance” is barely maintained.

Paul Millar (1998) contends that “Quark Dance” expresses “tension” (p. 325) between scientific and poetic ways of knowing. He claims that the poem “suggests the absurdity of scientific investigation” by highlighting physicists’ names for quarks. Quark varieties are called *flavours*, and they come in three complementary pairs: *up* and *down*, *top* and *bottom*, *strange* and *charm* (Hawking, 1988, p. 65). “Quark Dance” alludes to this terminology. It also hints at physicists’ use of the names *red*, *green* and *blue* to distinguish the three polarities associated with the strong nuclear force, which sticks quarks together into bigger particles like protons and

neutrons, and also binds together the protons and neutrons of an atomic nucleus. (These polarities have a similar effect to positive and negative electrical charge, but there are three, which permits a variety of particle combinations.) (Hawking, 1988, pp. 72–73).

Theoretical physicists coin whimsical names because it makes their work easier, as Beer explains. They are aware that overly prescriptive terminology may limit their creativity or turn out to be misleading. Beer (1996) cites an unnamed “Nobel Prize winner” who told her that physicists began adopting meaningless terms like *quark* (famously borrowed from *Finnegan’s Wake*) because, in Beer’s words, “any prematurely analytical terms might have hampered the speculative multiplicity of their work, or else resulted in their having to abandon and replace their terminology at embarrassingly frequent intervals” (p. 157). Therefore, as Beer observes, “Language ... may best function at the frontiers of scientific knowledge by adopting a mode which sounds strangely belletristic.” McQueen expresses this in the poem:

nowadays science is pure poetry
all the particles bounce & decay
sweetly & sure as seeds
& quarks come in such colours & flavours
as beauty charm & strangeness (McQueen, 1984, p. 26)

This passage acknowledges quark jargon as creative, not absurd, and lends weight to Cade’s (2011) argument that McQueen’s poems take a positive view of scientific research, especially physics and astronomy, despite frequently representing its technological applications as destructive. Although Millar (1998) acknowledges that “Quark Dance” “delights” (p. 325) in the particle realm, the poem arguably goes much further, relishing physicists’ language and reveling in extending their metaphors:

the world’s made up of tiny little energetic
multicoloured irrational jellybeans
so dance
quark dance (McQueen, 1984, p. 26)

Millar’s “tension” may perhaps be perceived in the fifth line’s irrational cry, “trust love not logic” (McQueen, 1984, p. 26); however, the poem has a slightly childish mood (“rainbow”, “hair ribbons”, “barefoot”, “scary”) and a sense of wild risk (“jump out into the never look back”, “free fall”) that together suggest a gleeful embrace of scientific exploration.

The poems in *anti-gravity* are playful, but they are not as flippant as they might at first seem. Their latent complexity is exemplified by “Pop Song” (p. 9), which uses metaphor to explore a physics topic rarely seen in poetry: virtual particles. The quantum-mechanical uncertainty principle implies that spacetime is never empty. Rather, it is a quantum void, a flux of ephemeral entities that constantly spawn, die and respawn in matched pairs. Since each pair comprises a particle and an antiparticle — for example, an electron and its antimatter equivalent, a positron — usually their equal negative and positive energies immediately cancel in a mutual annihilation. However, if a virtual particle or antiparticle gets a chance to escape its counterpart, it will become permanent and drift off to bump into others — and an entire universe might spawn. Furthermore, virtual particles called bosons are said to be exchanged by two particles when a force acts between them. For example, the bosons of the metaphorically-colourful strong nuclear force are called gluons (Close, 2009b, pp. 130–140, 155; Hawking, 1988, pp. 69–73). It probably makes no sense to ask in what sense – literal or metaphorical – virtual particles exist. Someone might, only half joking, suggest that they are brought into being by physicists’ theories and experiments. As McQueen puts it: “Like poetry, physics broaches notions of reality and unreality. Did you know there’s something called a ‘virtual particle’ in physics that doesn’t exist until you think about it?” (quoted in O’Brien & Cross, 1988, p. 93).

McQueen’s rather melodramatic ontological shorthand is useful when reading the poem, in which metaphor represents both the quantum void and the workings of the mind. It begins:

my voice
& the sun
on my toes

thoughts begin in
small wiggles
quark soup

millisecond clusters
slowly accreting
& faster inhabited
by distinctions
pathways

they gather together in kind
for precise uses
or flee from each other in

small expansions
a universal soft bursting
in negative time
reforming &
simmering gently (McQueen, 1984, p. 9)

The metaphor is human, domestic. The speaker is sunning her feet and singing to herself — literally, silently, or into her journal. She hears her thoughts spawning themselves as “wiggles” — the curled-up filaments of string theory? — and mingling in a “quark soup” of ephemeral (“millisecond”) ingredients that are constantly “bursting” and “reforming” as they “gather” together and “flee” apart. In her “simmering” mind/universe, thoughts and particles are interchangeable. They are metaphors for one another, continually invoking one another into being as neural or interstellar “clusters” and “pathways” evolve. A dreamy, otherworldly, meditative mood is strongly evoked as the poem concludes:

while in the garden
there is the
bumblebee & cicada percussion of

arrows in flight, the
traffic of senses;

occasionally a moment
pops in my face. (p. 9)

Sound is central to this poem’s conceit. Beyond the singing, bubbling quantum thought-soup, macroscopic phenomena generate a buzzing sensory “traffic” in an insect-filled summer garden that, while literal, is a further metaphor for universal growth and decay. McQueen alludes to the “arrow” of time, the directional asymmetry which, as the early universe expanded, was the cosmic epiphany that allowed particles to break free of their antiparticle counterparts and “pop”, like ideas for poems or for theories, into detectable existence (Hawking, 1988, pp. 76–78).

Frederick Seidel

Although McQueen's poems might elicit delight, and Elson's could well inspire wonder, neither poet seems likely to arouse fear. Frederick Seidel, however, has been called "the most frightening American poet ever" (Bedient, 2001, para. 1). He is certainly one of the most interesting. Although he cites Pound and Robert Lowell as mentors, is published by Farrar, Straus and Giroux, has won or been shortlisted for several awards, and has published 14 collections, he stands outside the literary mainstream in his modes of both living and writing. He refuses to read in public, teach, or engage in criticism. Critics are divided about his uninhibited confessional-style poetry, which blurs disturbing fantasy with equally-disturbing reality, and often uses repetitive structures and patterns, including glaring rhyme, for what Michael Hofmann (2015) calls their "invasive intrusiveness" (p. 96). Although sophisticated and literate, his writing has given him a reputation for politically-incorrect crassness and a self-centred, misogynistic, rakish persona. A Harvard-educated New York socialite, he is the independently wealthy son of a businessman, with a hedonistic lifestyle and glitzy friends ("Frederick Seidel," 2018; Galassi, 2009; Hofmann, 2015; Joseph, 2011; Stein, 2016; Young, 2010). Despite or because of all this, the American Museum of Natural History commissioned him to write a book of poetry tackling astrophysical concepts. *The Cosmos Poems* was published in 2000 to celebrate a new planetarium ("Frederick Seidel," 2018). Seidel later included this book in *The Cosmos Trilogy* (Seidel, 2003). It is also included in *Poems 1959–2009* (Seidel, 2010).

The Cosmos Trilogy (Seidel, 2003) is structured as a reversal of Dante's *Divine Comedy*: it moves from Heaven through Purgatory to Hell, and each part has the same number of poems as in the corresponding Dante, which has 33 cantos in each of *Paradiso* and *Purgatorio* and 34 in *Inferno* (Alighieri, 2017 version). *The Cosmos Poems* is the first part, representing Paradise. In the second and third parts Seidel displays his characteristic brutalism: "the retard / is wired to explode" (p. 81); "I hate seeing the anus of a beautiful woman" (p. 199); "The animal is strapped down for the vivisection, conscious" (p. 191). However, in *The Cosmos Poems* — his *Paradiso* — Seidel drops much of this sourness in favour of playful, speculative, and sometimes rather homely imagery. For example, in "Mirror Full of Stars" (p. 5), a ball of shaving foam represents the initial expansion of the universe, which in the next poem, "Who the Universe Is" (p. 7), "puffs to the size / Of an orange" and is later a "slice of strings" popping out of a "toaster". In "Galaxies" (p. 19), a science teacher is addressing a class — on one of the book's science-fictional spaceships (some of which have wonderful names: *Gigabyte*, *Shakespeare 5* (pp. 17, 35). These images are unusual, vivid and wryly humorous; however, Calvin Bedient

(2001) regards this softer style, with its mixed metaphors, as a weakness. Similarly, Adam Kirsch (2008, pp. 88–89) sees the poems as unsuccessful because they lack shock value. However, as Albert Mobilio (2001, p. 1373) notes, *The Cosmos Poems* was originally published as an illustrated edition to be sold in the museum’s shop. It is likely that this wholesome context prevented Seidel from using any diction or imagery likely to cause offence. Therefore, rather than comparing *The Cosmos Poems* to Seidel’s other work, it is perhaps more meaningful to examine it on its own merits — to ask how well the poems fulfil their mission, which, presumably, is to interpret astrophysics in human terms using imagery likely to appeal to contemporary urban Americans.

Seidel makes a commendable attempt at this Wordsworthian task. His 33 poems, each comprising eight quatrains, explore the observations, theories and metaphysical implications of black holes, dark matter, the big bang, galaxies, relativity, spacetime, quantum mechanics and string theory using a slew of metaphors, most of which are taken from Seidel’s contemporary American surroundings. In “This New Planetarium”, for example, the continuing expansion of the universe is described in terms of loud aeroplanes:

The universe roars an expletive
Starburst in every direction
Like the U.S. Navy Blue Angels
Flying their routine.

Everyone talks about the silence of light
But no one talks about the sound
Beyond decibels that
Is equally uncontainable,

And which the heavens declare the glory
Of as the jets explode
In joys expanding at a rate
That is increasing. (Seidel, 2003, p. 23)

Later in the poem, Seidel writes, “I hear the light. / I hear the mighty organ bellowing heaven ...” (p. 23). Even for readers who have not experienced enough Seidel to detect a masculine sexuality here, or enough history to recollect the old religious cosmology’s celestial music, the loud interplay of an organ’s many tones remains a striking evocation of the overwhelming, generative complexity of the cosmos — particularly if the reader is aware that “light” can mean

the entire spectrum of electromagnetic radiation, and that astronomers “listen” to the universe with radio telescopes, as Seidel observes in “Take Me To Infinity”:

We are completely
In the dark with our eyes.
We listen with the radio
Telescope to the noise. (p. 33)

Although the 33 poems may be read individually, their interlinking, self-referential, recurrent themes make the whole, like the universe, much greater than the sum of its parts. Seidel approaches the cosmos in terms of his, and America’s, own birth and death, and his and America’s birth and death in terms of the cosmos. Seidel’s America may be taken literally — “Black Stovepipe Hat” (p. 11), for example, mentions the Civil War — but it is also a synecdoche for science, capitalism and the human world in general with all its horrors and hopes. The most insistent motif is the universe’s sudden expansion from nothingness, a topic to which Seidel returns again and again. His central metaphor for this is birth, not bang.

A related motif is the unfurling “rose / Of time” (p. 11). This is an allusion to Dante’s rose of heaven (*Paradiso*, cantos 30–32), a mystical vision that Barbara Seward (1955) calls “an intricate expression of the fulfilment in eternity of all temporal things” (p. 515). Like Dante, Seidel has based his rose on the cosmology of his day. Portrayed using metaphors both scientific and personal, it recurs in various contexts until, in poem 25, “The Birth of the Universe” (p. 51), it blossoms from a blastocyst of “several storm cells” as “the universe” is “conceived” and “arrives” with “a rising fountain” of breaking waters, “many lights / And colors”, and “a rushing sound”. The birth and growth metaphor is underlined by the poem’s conclusion where a child’s “small hand” holds a cosmic “ice cream” in which, echoing Genesis, “everything / Is good”. Bedient might demur, but somehow these mixed metaphors work as Seidel vivifies the birth of spacetime in a poem that synaesthetically re-creates a childhood moment beside “the blue / Warm water” of a well-lit fountain, discovering “The perfect // Thunder mint / Between the thumb and finger / Makes” and “the large smell of rain before it rains”.

These poems make much use of childhood scenes as Seidel’s speaker looks back on his life and grapples with the idea of his own death and that of the universe. In “Special Relativity” (p. 31) a “little boy” pretends that his pedal car is a spaceship:

Little Red Car to Earth:
I am up here. It's fun.
I'm doing all the things.
I'm signing off now to pedal. (p. 31)

This spaceship car also represents a fast-lane contemporary life — perhaps Seidel's own — involving “tourists”, “celebrity cherry / Blossoms”, and a “furiously pumping” rush toward old age with its sagging flesh. The spaceship goes so fast that Einstein's mathematics must be taken into account:

By the laws of special relativity,
I began to wrinkle and bend.
The universe has no end,
But I am getting there. (p. 31)

It seems that Seidel has an unusually good lay knowledge of physics. He would have needed this to fulfil the museum's commission. I have been unable to find any evidence of its source. Most likely it comes from reading, but he may have attended lectures, and perhaps he has physicist friends: his social position would make it relatively easy for him to obtain introductions to well-known scientists. Two of the poems (pp. 37, 49) tell stories, which may or may not be fictional, about the physicist Edward Witten.

Cade (2015) cites Seidel as an example of a poet whose response to science is “positive” (p. 62), partly because he accepted the museum's commission, but also because of the tone of the poems, which do not argue with scientists, eulogise nature or lament about technology's destructive potential, but seem eager to ride the spaceship wherever it goes. However, the rest of Seidel's oeuvre — especially the trilogy, in which Hell is Manhattan — suggests that this eagerness is not an affirmation of science's value: it is simply an instance of this poet's lusty textual embrace of whatever he finds in the world.

The Cosmos Poems is a profound work. Circling again and again around the black holes of personal and universal birth and death as he adjusts the wiring of his complicated, home-made figurative engine, Seidel expresses the metaphysical impact of post-classical physics — its arguably spiritual vision of the great mystery of existence — as well as any poet or physicist might desire.

Concluding reflections

I have chosen to focus on figurative language, but it could be suggested that structural aspects of Seidel's and McQueen's poems also engage with physics. In *The Cosmos Poems* there are the regular waves of the eight four-line stanzas per poem, the high-energy colliding particles of the words, the numeric dimensions, in which trinities reminiscent of quark flavours and gluon colours cross with 11 string-theory dimensions to give 33 poems, and the self-referencing subjective observer whose life story is irretrievably entangled with that of the cosmos.

McQueen writes in a free-ranging, frequently disjunctive, and similarly self-referencing style that perhaps reflects the influence of relativistic and quantum-mechanical worldviews. Critics using the quantum poetics approach described earlier would likely detect further parallels, since that approach is particularly productive in examining works that appear strongly influenced by Modernist and Language poetry. However, by leaving aside the quantum poetics apparatus in favour of a lens that highlights imagery, one can investigate another aspect of the relationship between poetry and the sciences and consider how that relationship functions in relatively orthodox contemporary poems such as Elson's.

Elson, McQueen and Seidel have certain things in common. Firstly, they are unusually conversant with physics. Secondly, they use a broad variety of metaphors — sometimes, especially with Seidel, in the one poem. Finally, their attitude to the sciences is accepting, but not limiting: their writing acknowledges other ways of knowing, such as the ancient cosmology in Elson's "The Last Animists" or the embodied meditation of McQueen's "Pop Song". Their very use of metaphor constitutes an intuitive investigation of reality. Their poems suggest that all three factors facilitate interesting, evocative interpretations of physics.

Of course, one cannot learn physics from the work of Elson, McQueen or Seidel. Their poems are not didactic, and their coverage of physics is selective and largely avoids mathematics. However, as Wordsworth foresaw, it is no longer poets' business to become science writers. Today, the roles once occupied by Lucretius and Erasmus Darwin are ably filled by writers working in television and prose non-fiction. Not unreasonably, Elson, McQueen and Seidel appear to have assumed that a reader educated enough to appreciate their poems will either have sufficient familiarity with physics concepts — as Wordsworth hoped — or be capable of looking them up in one of the many accessible accounts. Using figurative language, Elson, McQueen and Seidel have created powerful evocations of difficult physics concepts in order to "sing the quantum" interpretively. Their poems demonstrate that although contemporary poets may not be in a position to write didactically, their broad perspective and interpretive aptitude

enable them to successfully realise Wordsworth's and Feynman's hopes by contemplating scientific work in human, ecological and metaphysical terms.

“Let the song be bare”: Daoism and the poetry of Randolph Stow, Judith Wright and Ursula K. Le Guin

In the silence between my words, hear the praise of Tao.

— Randolph Stow (“From *The Testament of Tourmaline*”, 1966/2012, p. 148)

Daoism was a major influence on the American writer Ursula K. Le Guin (1929–2018), as she herself acknowledged (Peterson, 2004, p. 192). Furthermore, as I will show, Daoist ideas substantially inform the poems of the Australian writer Randolph Stow (1935–2010), as well as those of Judith Wright (1915–2000), one of Australia’s best-known poets. Existing scholarship has gone only a little way toward understanding the influence of Daoist thinking on these three writers’ poetry.

In order to examine this influence, I proceed in three stages. Firstly, I examine some recent North American and Australian Daoist criticism to explore how that worldview may be applied to poetry. Secondly, I show how the three poets’ backgrounds, which were in certain ways similar, suggest reasons for their interest in Daoist philosophy. Finally, I use a Daoist perspective to provide fresh readings and comparisons of their poems.

Daoist criticism

In *Canadian-Daoist Poetics, Ethics, and Aesthetics: An Interdisciplinary and Cross-Cultural Study*, John Z Ming Chen and Yuhua Ji (2016) bring a Daoist viewpoint to their examination of the work of four Canadian and Chinese–Canadian writers. In their scholarship it is possible to distinguish three modes of Daoist criticism, which I will call *thematic*, *intertextual* and *compositional*. The thematic mode identifies imagery and motifs that express Daoist metaphysical or ethical themes, and discusses the work’s contribution to Daoist cultural and ecological critique. The intertextual mode, by highlighting allusions and quotations, shows how the writing converses, via the reader’s participation, with other Daoist texts. The compositional mode assesses to what extent a Daoist aesthetic is discernible in the way the text is composed: its viewpoint, diction, tone and form. Chen and Ji provide a lengthy glossary of traditional Daoist terminology (pp. 172–189).

In *The Way of Poetry*, John Leonard (2010) discusses Daoism and its relationship with poetry, and reads a number of traditional and contemporary poems, including some of his own, as expressing or embodying Daoist values. His position appears to be based mainly on his own readings of the *Dao De Jing*. Leonard employs the thematic and compositional modes of Daoist criticism, arguing for a Daoist ecopoetic praxis in the form of a poetry with “matter” (themes and topics) and “manner” (form and composition) that show “compassion, restraint and humility” (p. 14), which are Leonard’s translations of the “three treasures” recommended by Laozi (trans. Addiss & Lombardo, 1993, Chapter 67).

Although Leonard’s emphasis is “matter” — specifically, how poems can express compassion for other beings and ecological systems (pp. 14–22) — he also discusses “manner”. Discussing restraint, he cites Laozi’s argument against hedonism, which begins:

The five colours
blind our eyes.
The five notes
deafen our ears.
The five flavours
dull our taste. (Laozi, trans. Le Guin, 1997, Chapter 12).

Based on this, Leonard recommends a “simple” poetry without “post-modern experiments or baroque extravagancies”, and objects to writers whom, he claims, have thought that “opacity equaled profundity” (pp. 33–36). Unfortunately, he provides no examples of these transgressions. Based on Wai-Lim Yip’s analysis (discussed below), one might counter that some of the poems Leonard recommends, such as those of Li Bai (Leonard, 2010, p. 9), exemplify the avant-garde experiments of their original time and place, and that poets should use whatever compositional method best serves the Way as they, within their particular historical and geographic situation, apprehend it. Nevertheless, I agree with Leonard’s underlying rationale, which is that verbal fireworks or overt compositional forms, whether avant-garde or traditional, should serve the Way of the poem and should not be an end in themselves or have no function beyond exhibiting the poet’s erudition. Such egregious elements compromise the wholeness that is needed for a text to succeed as a poem.

In *Diffusion of Distances: Dialogues between Chinese and Western Poetics*, Wai-Lim Yip (1993) discusses Daoist literary and aesthetic theory using examples from classical Chinese poetry, and applies the Daoist model to contemporary American poetry (pp. 29–162). The Daoist aesthetic ideal is comparable with that of William Carlos Williams’ “no ideas but in

things” (Williams, 1946, p. 14). In poetry, it favours plain language that expresses *ziran* (*tzu-jan*), the “self-so-completeness” or essential nature of things (Yip, 1993, p. 114). The perfect poem, could it exist, would let things in the perceived world speak for themselves and be seen for what they essentially are, rather than being limited by human language and thought. The poet works to approach this ideal as closely as possible without actually falling silent, by employing restraint, brevity, and concrete images that permit multiple viewpoints and interpretations. For example, Chen and Ji (2016) contend that the poets Fred Cogswell and Lo Fu use a “minimalist mode of expression”, a “poetics of the void” that “gravitates toward ... suggestive silence” (p. 138). This kind of poetics avoids commentary, abstraction and figures of speech, so that, as Yip (1993) puts it, a poem may look outwards at “the unspeaking Other”, not inwards at “the speaking Self” (p. 71). The human observer cannot be eliminated, but they are not at the centre; their perspective is not the only one represented (Yip, 1993, pp. 80–81).

Yip (1993, pp. 100–137) shows how Li Bai (701–762) and other Chinese poets — after the Daoist revival, which began in the third century, and which Yip likens to Romanticism and Modernism — attempted to achieve this ideal. Being written in classical Chinese, their poems have no parts of speech, no tenses, no plurals, no conjunctions, and no personal pronouns. Instead, individual word-images are juxtaposed. The poems commonly use “asyntactic” expressions, such as “*sung-feng*”, or “pine / wind” (p. 33), which lets the reader experience not only the viewpoint of a particular human observer, but multiple views of the pine(s), the wind(s) and the relationships between them. (It may be that in Chinese this effect is enhanced because the words are represented by pictograms.) Such juxtaposition of individual word-images may, as Yip observes, be likened to montage and moving perspective in film. Each poem presents not a single narrative but a series of different views. Simultaneous representation of multiple perspectives also occurs in classical Chinese landscape painting, which shares the Daoist aesthetic ideal (see also Laozi & Wang Keping, 1998, pp. 50–51; Yip, 1993, pp. 41–49).

In this aesthetic, the silent spacious void around and between the words is as important as the words themselves:

This empty and fluid wordlessness is an indispensable cooperator with the fixed and solid word. The full activity of language should be like the copresence of the solid and the void in Chinese paintings, allowing the reader to receive not only the words (the written) but also the wordlessness (the unwritten). The negative space, such as the emptiness in a painting and the condition of silence with meanings trembling at the edges of words in a poem, is made into something vastly more significant and positive ... (Yip, 1993, p. 82)

This aesthetic model, as Yip demonstrates, can provide an illuminating perspective on contemporary English-language poetry. He uses it — in combination with a deep understanding of both Western and Chinese historical, philosophical and literary contexts — to approach English-language poetry from two angles. Firstly he discusses the compositional innovations of Williams as well as Gertrude Stein, Ezra Pound, and several more (pp. 48–62). He observes Pound’s use of montage, especially in the *Cantos*, and the way in which Williams, Pound and others use white space and line break to heighten the separateness of their word-images, create a sense of multiple perspective and keep the reader in continual mindful attention. Secondly, Yip considers poetry of landscape (pp. 100–137). After the third-century Daoist revival, Chinese poetry underwent a gradual change in the relationship of observer to landscape; Yip describes this change and discusses how a similar shift has occurred in English-language poetry since the Renaissance. Especially in the twentieth century, Yip observes, Western philosophers and writers began to question, like third-century Daoists, the anthropomorphising of nature and the value of symbolism.

The poets’ backgrounds and Daoism

Yip’s observation illustrates the way in which, during the twentieth century, many Westerners became dissatisfied with their spiritual and philosophical inheritance, and in some cases explored worldviews originating outside their own cultures. Fay Zwicky (1994, pp. 34–39) observes that some Australian writers, including Stow, looked to Chinese philosophies for an antidote to romantic individualism and scientific rationalism. She argues that these writers felt a “sense of deep spiritual deprivation following upon the scientifically sanctioned rationalistic interpretation of nature” (p. 34). In America, too, as Christopher Edwards (2000, pp. 8–12) points out, science’s secularisation of nature has been a significant factor influencing people to abandon traditional Christianity and, in many cases, adopt personal spiritual paths informed by Chinese, Japanese and Indian teachings. Le Guin’s background illustrates this break with tradition: she recalls that her upbringing was “irreligious” (Le Guin, 2004, p. 55) and that her father — an anthropologist — frequently read the *Dao De Jing* (Laozi & Le Guin, 1997, p. ix; Le Guin, 2017). Faith in a personal, miracle-working god is difficult to sustain in a climate of scientific rationalism; and, I would argue, faith in this rationalism is itself difficult to sustain amid an atmosphere of environmental or social crisis.

Such a sense of crisis affected the young Judith Wright. She recalls that at the time of the Second World War, she and her contemporaries felt as if their world was falling apart. Both

Christian morality and faith in scientific progress became untenable. Events preceding the war, she remarks, “made my belief in all I had been brought up to believe irrelevant and pointless” (Wright & Clarke, 1999, p. 187). She adds that after the Holocaust and the Bomb, “the notion of a morality that could stand against such happenings seemed ridiculous” (p. 197). Similarly, Stow, who grew to adulthood during the 1950s, writes that he “wasn’t satisfied by the C of E [Church of England] God of that period” (quoted in Falkner, 2016, p. 715). That God, he recalls, “was altogether too tied up with the British Empire for my taste.”

Stow’s dissatisfaction illustrates the difficult ecological and cultural position of Westerners born in colonised countries, such as Australia and the USA. As Zwicky (1994) observes, many of them have become aware that their birthplace, because it may no longer be seen as “a comfortingly European possession”, is “someone else’s country, a homeland so fundamentally altered as a concept as to be no longer comfortably recognised as ‘Home’ ” (p. 34). Zwicky is speaking of Australia, but the same applies to North America. In her essay “On the Frontier”, Le Guin (2004, pp. 28–30) demonstrates a deep understanding of the cultural and psychic destruction wrought by the European takeover of Native American land:

Coming from another world, they take yours from you, changing it, draining it, shrinking it into a property, a commodity. And as your world is meaningless to them until they change it into theirs, so as you live among them and adopt their meanings, you are in danger of losing your own meaning to yourself. (pp. 28–29)

Le Guin grew up with a strong awareness of Native American peoples. Her father, Alfred Kroeber, studied Indigenous cultures and languages. Le Guin (2004) recalls his Native American associates (pp. 10–19) and his “solidarity” (p. 29) with them. She describes how he worked

among the wrecks of cultures, the ruins of languages ... a white immigrant’s son learning Indian cultures and languages in the first half of the twentieth century, he tried to ... learn and tell the stories that might otherwise be lost. The only means he had to do so was by translating, recording in his foreign language: the language of science, the language of the conqueror. (p. 29)

Le Guin then acknowledges that this conquest is part of her own family’s history and led to her being born within the Californian landscape:

I am a granddaughter of the American frontier. My mother's family moved and bought and farmed ... My heritage is the wild oats the Spanish sowed on the hills of California ... (p. 30)

Wright was also descended from colonists. Her family were still farming the land their British forebears had occupied in the early nineteenth century (Brady, 1998, pp. 5–20). This meant that Wright grew up on the land, among people whose livelihood depended on it. During Wright's childhood the Aboriginal history of the landscape was still evident, and the terrible memories still relatively fresh, as she explains:

My father once told me, looking out from the escarpment ... of the driving of an Aboriginal group suspected of killing cattle, over the cliff opposite. ... A bora ring and sacred way survived not far from my grandmother's home ... I am told the ring area has now been ploughed; and a very old carved tree near the woolshed on Wallamumbi where I was brought up has disappeared too. (Wright, 1991, p. xi)

As a young woman, Wright studied anthropology, but was disappointed with the way the anthropologists of that time objectified Aboriginal people, and with historians' disregard of them. During her forties, Wright's understanding of the issues facing her Aboriginal contemporaries deepened considerably when she became friends with the Noonuccal poet Oodgeroo, then known as Kath Walker (Kinsella, 2016, p. xviii; "Oodgeroo Noonuccal," n.d.). She became a passionate activist for Aboriginal rights and environmental conservation, acting on her grief at what her people had done — were still doing — to both Aboriginal people and their land (Brady, 1998; State of Queensland, 2018).

Like Wright, Stow came from an old colonial farming family. His ancestors on both sides had arrived in Australia in the 1830s, and his mother's family had farmed land near Geraldton, where he was born, since the 1850s (Falkiner, 2016, pp. 20–26). Roger Averill (2010) emphasises "the importance of Stow's colonial heritage to his sense of self" (pp. 126–127). He quotes Stow from a 1999 interview:

My family had been colonists since the reign of James I, and they had gone on being colonists, not only in Virginia, but in St. Kitts, and Western Australia, South Australia ... I liked the idea of that adventurousness ... about sort of setting out into the blue to found the colony in Western Australia and South Australia — it is just absolutely amazing. (Stow quoted in Averill, 2010, p. 128)

However, as Averill explains, this awe was, for Stow, clouded by sadness at his ancestors' displacement of the country's Aboriginal custodians. Yamatji occupation was evident in the landscape around Geraldton: for example, in rock paintings. Moreover, at school he met Yamatji children, whom he "liked" and "used to rather admire" (Stow quoted in Averill, 2010, p. 138). As a young man, Stow, like Wright, studied anthropology. In order to undertake fieldwork among Indigenous peoples, he worked at a mission in north-western Australia and later took a job in the Trobriand Islands.

While working at the mission among Umbulgurri people, Stow recalls, he was influenced by their "nature mysticism" (quoted in Falkiner, 2016, p. 155). Similarly, knowledge of Native American cultures influenced Le Guin's perspective on animals, plants, rocks, rivers and mountains, as her essays and poetry show (Murphy, 1995, p. 119). However, it is problematic for a person without Indigenous heritage to try to adopt an Indigenous belief system, not least because to do so risks cultural misappropriation: colonising, yet again, a position that does not belong to them, and to which they and their people do not belong. A well-educated colonial descendant is perhaps more likely to look among the Asian traditions for a philosophy of life if their own culture's traditional religion and morals do not, for them, provide a satisfying way to understand a feeling of connection with their birthplace. Here, the question of cultural misappropriation may again be raised. However, it seems reasonable to regard Daoism, at least, as having been offered to the world by its cultural custodians, since Chinese Daoists have published, internationally, many authoritative English-language translations and commentaries (for example, Laozi & Wang Keping, 1998; Tzu & Wong, 1992). Chen and Ji (2016), moreover, suggest that Daoism can be a source of "wisdom" for those who have lost faith in "rationality" and "teleology" since the world wars (p. xv).

Of the Asian traditions, Daoism is particularly compatible with a sense of belonging within a landscape. The evidence suggests that each of the poets under consideration has felt a strong ancestral and personal connection with the land. It is also clear that each has been uncomfortably aware of their family's involvement in events that, for Indigenous peoples, constitute an apocalypse. The tension between these two feelings, I argue, is a significant reason for the influence of Daoism in these poets' lives and writing.

In the case of Stow, similar suggestions have been made by Zwicky (1994, pp. 34–41) and by Andrew Taylor (2004). Daoism, argues Taylor, allowed Stow to make sense of the haunting "emptiness" (p. 10) of Australia's interior. Similarly, Zwicky points out that Chinese thinking, such as Daoism, helped Stow and certain other twentieth-century Australian poets to confront and articulate their ambiguous feelings about Australia's social systems and colonised

landscapes. Daoism, as John Kinsella (2012, p. 35) points out, cannot resolve this ambiguity, but, through acceptance of paradox, may offer a way to grapple with its unspeakable depths.

Stow learned about Daoism through school friends of Asian origin and “very much took to it”, as he recalls in a 1998 letter quoted by Suzanne Falkiner (2016, p. 736). Stow explains: “It made, and still makes, much more sense to me to worship a principle, or process (the Tao) than a personification” (p. 715). He adds: “I am a communicating member of the C of E, but my interpretation is metaphorical and not literal. For instance, the Incarnation for me is about the point where Being emerges from Nothingness” (pp. 715–716).

In an interview, he comments further:

The *Tao Te Ching* ... provides for me a satisfactory model of the world. Fritjof Capra in *The Tao of Physics* has shown how the implied model of Taoism does conform with the randomness and mysteriousness of the world of sub-atomic physics. (Stow, 1981, quoted in Bennett, 1990, p. 374)

Like Stow’s, Wright’s life and work were influenced by broad literary and philosophical reading (Kinsella, 2016, p. xxxii). Donald Gibson (2015, pp. 146, 154–155, 163–164) observes that Wright was influenced by Daoism and its affinity with physics. One of Wright’s numerous published letters mentions a liking for Daoism; another rejects the idea of personal gods (Wright, 2006, p. 369, 317). Fiona Capp (2010, pp. 14–15) notes Wright’s interest in both Buddhism and Daoism, and observes that

Judith’s deepest intuition, which shaped her whole life, was of the interconnectedness of all things. ... But, for Judith this “spirit” was not God in any conventional sense ... In a letter to a friend, she wrote that she had never been able to understand why we had “divided godhead” from humanity: “More and more I feel there isn’t an ‘I’, nor even a ‘we’, there’s an It. Oriental this may be, but it gets truer and truer for me.” (Capp, 2010, p. 104; the letter is quoted from Wright, 2006, p. 265)

In another letter, Wright recalls being influenced by the thinking of her husband, philosopher J. P. (Jack) McKinney, who believed that “intellectual”, abstract “Western thought” had “reached completion in modern physics” and “was faced with an impasse” that was reflected in the twentieth-century upsurge of “interest in Asian philosophies” (Wright quoted in Walker, 1991, pp. 211–212). She describes having what sound like mystical experiences, such as “a personal

experience, almost unbearable, of being part of the galaxy, and of the galaxy itself as being part of the consciousness of man”. Such intuitions are troublesome to accommodate within a rationalist worldview, and Edwards (2000) notes that traditional Christianity has come to have less and less room for them: “While mysticism continues to thrive in Eastern religions and forms the foundation of religious experience, the mystical basis of Western religions has withered” (p. 12). In a later letter, Wright discusses her non-belief in a “personal God” or a “separate soul” (quoted in Walker, 1991, p. 213). Being “part of a unity with ‘nature’”, she adds, “seems to me enough.”

A similar opinion is expressed by the speaker in Le Guin’s poem “Uncaged” (2012, p. 185). Looking out over a rural landscape, she says, “why worship anything but this?”. Le Guin was guided by Daoism from a young age. She inherited her father’s copy of the *Dao De Jing*, and in 1997 published her own gender-neutral contemporary American version, on which she had worked for many years in collaboration with sinologist J. P. Seaton (Laozi & Le Guin, 1997, pp. 107–108). In a 2003 interview, she states, “All of my writing has been deeply influenced by the Tao Te Ching” (Peterson, 2004, p. 192).

Ursula K. Le Guin’s poems

Le Guin published eight books of poetry (Le Guin, 2017). Many scholars have discussed her novels and their Daoist themes (Herman, 2001; Pérez, 2003), but her poems have attracted very little commentary, Daoist or otherwise. Sandra Lindow (2012) explicates the feminist mythmaking aspect of some of Le Guin’s early poems, and observes a number of Daoist motifs and themes in them. Likewise, Patrick Murphy (1995), looking at Le Guin’s poems published in the 1970s and 1980s, discusses their deeply ecological “feminist revisionist mythmaking” (p. 118) and concludes that this arises from a “postmodern spirituality” informed by Daoism. He comments that Le Guin’s novels, essays and poems express “a deep immersion in Daoism, anarchism, utopian thought, and, increasingly, ecology and feminism” (p. 111). The poetry, in particular, “resonates with a spirituality distinct from any specific orthodoxy” (p. 111), a life-affirming, god-less spirituality that regards making poems as “a way of placing oneself and one’s peoples and relatives, human and non-human alike, in a particular relation to the rest of the world” (p. 117). Murphy cites Le Guin’s remark, in her 1986 lecture “Woman/Wilderness” (in Le Guin, 1992, pp. 161–163), that women, “who were identified with Nature, which listens, as against Man, who speaks”, are now speaking, expressing the “sacred[ness]” of themselves

and “the other people, the animals, the trees, the rivers, the rocks” (Le Guin, 1992, p. 162). Many of Le Guin’s poems, as Murphy observes, declare kinship with these “other people”:

This integration of the other into family constitutes a key and recurring feature of Le Guin’s Daoist-based action of creating a world balanced by a yin/yang harmony that recognizes the unity of polar complementarity as the completion of self ...
(Murphy, 1995, p. 118)

Daoism is explicitly mentioned in a very early poem, “Tao Song” (Le Guin, 2012, p. 10), an invocation asking nature — “slow fish”, “green weed” and “bright Sun” — to reveal “the way”. Elsewhere in Le Guin’s poetry, however, subtle plant, animal and land imagery suggest a Daoist view of being. One of Le Guin’s central themes is flow, change, return and renewal. Images of moving water, especially rivers, recur again and again in her poems. In “Up the Columbia” (p. 144), the speaker’s “mind” finds itself “returning” to “the edges and backwaters of the river” where “a frog crouches humble, immobile” in

... that low world
of sand and mud and slow imperceptible currents,
of small changes and no change and endless renewal (p. 144)

This poem alludes to *wu wei*, too: it suggests that humility and patience are more effective than showiness and force. The frog stays low and still among the “rushes” to save itself from birds flying above, who exhibit a rather ridiculous, although equally natural, arrogance: “over his perfect reflection the heron / beats the quiet air” as “redwings claim their dominion over the cattails” (p. 144).

The contrast between *wu wei* and coercion becomes more explicit in “The Marrow” (p. 13), which reads most obviously as a metaphorical application of Daoist wisdom to the challenges of writing. The speaker has attempted, using various tools, to forcibly extract “a word” from “inside a stone ... until the stone was dropping blood”, but nothing happens until she stops trying and throws it aside:

and as I turned away it cried
the word aloud within my ear
and the marrow of my bones
heard, and replied. (p. 13)

to hear the hymns and prayers
and see the light. (p. 67)

Le Guin's "church" is the natural world at every scale. The tiny bird, the garden, and the earth-spanning ocean sing "hymns", and the sun in space offers "light".

The physical here is also a metaphor for the intangible. "Trying to be still" suggests meditation, the practice of gently disciplining the mind into quietness. I sit in meditation myself, and for me this poem evokes perfectly the stillness of mind in which the world's sounds seem amplified yet peaceful, separate from oneself yet part of one's greater awareness. As Laozi puts it: "Can you keep the deep water still and clear, / so it reflects without blurring?" (Laozi, trans. Le Guin, 1997, Chapter 10).

Still, silent awareness is a constant presence in Le Guin's poems. This poem — and others, particularly "Contemplation at McCoy Creek" (Le Guin, 2016, p. 17), "A Blue Moon: June 30" (Le Guin, 2012, p. 69) and "Some Mornings" (2012, p. 178) — suggest that for Le Guin, outdoor meditation could provide the entire being, from physical to spiritual, with illumination, music, and perhaps, in the moment or afterwards, a poem.

Judith Wright's poems

Unlike those of Le Guin, Wright's poems have attracted a great deal of commentary. Both Gibson (2015, pp. 146, 154–155, 163–164) and Toby Davidson (2008, p. iii, 222) acknowledge the influence of Daoism on Wright's work, but it appears that no-one has yet looked at her writing from a specifically Daoist perspective. However, the subtle presence of Daoism in her poems, especially the concept of yin–yang complementarity, is made evident by the work of Maureen Flood (1999), who observes that "in a close reading of the poetry, a spirituality begins to emerge that lives in the here and now, is at ease with opposing and contradictory realities and sees them as mirroring each other's truths" (p. 16). Citing, among other sources, the *Dao De Jing*, Flood observes in Wright's poetry a continual "play of opposites" — this is a phrase from Wright's poem "Patterns" (Wright, 1994, p. 426). This embrace of paradox, Flood argues, expresses a worldview in which "the apparently opposing forces or energies of fire and darkness, love and death, life and destruction, belong inextricably together, in relational rather than oppositional difference" (p. 16). Moreover, Flood contrasts "traditional western spirituality", which "has given a strong impression that truth resides in the mind, in an abstract way" (p. 19), with the embodied awareness expressed in Wright's poetry; and comments that

Wright's bird and animal poems reflect a belief in the unity of "the whole web of existence" (p. 18).

Wright's poetry is a subtle weaving of many threads, including Daoism. Much of it explores metaphysical themes, such as spiritual journey, mystical experiences, the relationship between language and reality, and the nature of time, being and death. However, its driving force is reverence for the natural world, especially the Australian landscape, which is described and celebrated in poems that are furious about humanity's destructive effects. In "Jet Flight over Derby" (Wright, 1994, pp. 279–280), the speaker, looking down from a plane, experiences an arguably Daoist intuition that the country is her body:

Rose-red a thousand miles
my country passed beneath.
Curved symmetry of dunes
echo my ribs and hands.
I am those worn red lands.

Stepped contours print my palms,
time's sandstorms wear me down,
wind labours in my breast (p. 279)

But this has terrible personal implications, as a later stanza shows:

And therefore, when land dies?
opened by whips of greed
these plains lie torn and scarred.
Then I erode; my blood
reddens the stream in flood. (p. 280)

Acceptance of the darkness that complements light, the death that completes a life, is explicit in Wright's late poems, such as "Rockpool" (p. 419), which acknowledges dying contemporaries, then focuses on a community of crabs: "I watch the claws in the rockpool, the scuttle, the crouch — / green humps, the biggest barnacled, eaten by seaworms." The rockpool represents existence, including friends "barnacled" by illness: "We've brought on our own cancers, one with the world. / I hang on the rockpool's edge, its wild embroideries". The speaker must "hang" on the "edge", not only of survival, but of emotional involvement, cultivating non-

attachment in order to witness the cycle of death and life: “the stretching of toothed claws to food, the breeding / on the ocean’s edge. Accept it? Gad, madam, you had better.”

This acceptance is more subtly expressed in a much earlier poem, “Halfway” (pp. 290–291). A tadpole with both legs and tail is suspended in ice, midway between water and air, between childhood and adulthood. Its predicament suggests that of humanity: somewhere between beast and angel, with technology outstripping maturity. The tadpole says: “I saw great lights in the place where I would be, / but rose too soon” (p. 290). It seems to be looking up at the speaker as if to “... ask / my vague divinity, looming in stooped surprise / for death or rescue. But neither was my task (p. 291).”

The situation is hopeless. Yet there is something Wright can do. She concludes with a crystalline couplet that suspends the tadpole, and the truth it represents, in the reader’s memory: “Waking halfway from a dream one winter night / I remembered him as a poem I had to write.” (p. 291)

“Night” is not there merely to provide a rhyme. This poem illustrates the sense of non-attached witnessing that arises most naturally in darkness, quietness and emptiness. The void is a recurring motif in Wright’s poems. In “The Cup” (p. 148), “Una”, whose name alludes to solitude, wants “silence” to render her as empty as “the blue cup hung over the sink” — another emptiness — so that “something” can “come in”. This echoes the *Dao De Jing*, which says:

Hollowed out,
clay makes a pot.
Where the pot’s not
is where it’s useful. (Laozi, trans. Le Guin, 1997, Chapter 11)

Silence is central to Wright’s poem “The Unnecessary Angel” (pp. 291–292), a response to Wallace Stevens. It questions the value of “Art” at the seeming end of a journey which has brought humanity, and the speaker’s spirit, to a “barren shore”. Like Laozi, it acknowledges that language cannot express the mystery of being — “Do not take for truth / any word we said.” (Wright, 1994, p. 292) — before concluding:

Let the song be bare
that was richly dressed.
Sing with one reserve:
Silence might be best. (p. 292)

Randolph Stow's poems

Compared with those of Le Guin and Wright, Stow's body of poems is relatively small. However, as Kinsella (2012) comments, it "weighs more than most oeuvres many times its size" (p. 9). Two of Stow's poems refer explicitly to Daoism. "The Ruins of the City of Hay" (Stow, 2012, pp. 100–101) mentions Laozi and paraphrases part of Chapter 80 of the *Dao De Jing*. Twelve other chapters are expressly contemplated and interpreted in "From *The Testament of Tourmaline*" (pp. 143–148). The latter poem's title alludes to Stow's 1963 novel *Tourmaline*. This reference hints that an understanding of Daoism may be useful in interpreting Stow's writing, as A. D. Hope (1974) points out. Consequently, there has been considerable discussion of the Daoist themes in Stow's novels (Taylor, 2004; Tiffin, 1978). The poetry has attracted much less commentary, and much of what exists does not acknowledge that Daoist thinking is subtly reflected in a good deal of Stow's poetry. For example, Dorothy Hewett (1988), who discusses several of the poems, notes only the explicit Daoism of "From *The Testament of Tourmaline*".

Moreover, much existing criticism does not interpret Stow's poetry in personal terms or discuss its international relevance. For example, Anthony Hassall (1986, p. 85), following an earlier reading by Hewett, reads "Ruins of the City of Hay" (Stow, 2012, pp. 100–101) as a comment on the failed hopes of Western Australian society. While this interpretation makes sense given Stow's background and the poem's mentions of "emus" and Australian weeds, it is limiting. The poem suggests children making cubbyhouses among haystacks. It expresses a loss of innocence that is both personal and universal. This illustrates an essential dimension of Stow's poetry: it has the potential to resonate not only with Australians but also with a broad range of other people. Carl Whitehouse (1997) emphasises this potential in his discussion of *Outrider*, the 1962 sequence from which "Ruins of the City of Hay" is taken. Arguing that both *Outrider* and *Tourmaline* build upon European, rather than Australian, literary heritage, he comments:

Outrider can most profitably be regarded as an intensely personal counterpart to *Tourmaline*, whose achievement was likewise to construct a literary mode ... that could incorporate, within its operations, a fundamentally Taoist resolution to divisions within the Western consciousness. (para. 1)

Whitehouse demonstrates that in *Outrider*, Stow uses the model provided by the French voyager tradition, as transmitted through Rimbaud and Baudelaire, to write a Daoist spiritual pilgrimage.

As *Outrider* illustrates, the central themes of Stow's poetry are spiritual journey and spiritual longing — the travails of what Tom Spring, a Daoist-like character in *Tourmaline* (Stow, 1965), terms “the single soul” (p. 172). As Martin Leer (2011) explains, this expression alludes to “Søren Kierkegaard's concept of *hiin Enkelte*: the essential loneliness through which our selfhood is experienced ... the existential core through which our longing for God finds form” (p. 2). The poems, indeed, express a sometimes violent yearning to merge with an Other, to dissolve into the cyclic flow of the natural world, and to be true to one's own nature: to be able to cry, to love, to belong, to speak, and to be silent.

Pilgrimage in search of this goal is reflected by struggles through difficult terrain: dense jungle, stormy (or, worse, becalmed) seas, and, frequently and strikingly, the arid Australian landscapes and sunburnt beaches of Stow's youth. In “The Embarkation” (Stow, 2012, pp. 93–94) the speaker is boarding a “dead ship” that seems so weighed down with life that it is unlikely to get anywhere. “Weeds drip / down from the fretted chain” and “The masts are full of nests”.

Previous attempts have failed:

Sunflowers stab to the sky
through salt-white ribs of boats
beached on the sand. (p. 93)

But there seems to be no alternative, because life on shore is unsustainable. “The quay / crumbles” and jungle encroaches:

My house is a ruined cell
embattled; crowned and bound
with bougainvillea, torn
by flowering branch and thorn (p. 94)

Salvation may be obtained only through the death of the ego, and perhaps even the body:

The weak must dare to drown,
and harvest as they can
the salt, enormous field. (p. 94)

As “dare” implies, weakness and drowning are not seen here as undesirable: they allude to *wu wei*, as reflected in “From *The Testament of Tourmaline*”: “Do not resist; for Tao is a flooded river / and your arms are frail” (p. 147).

Both water and dryness are recurring motifs in Stow's poems. In "Jimmy Woodsers" (pp. 111–112), the title of which refers to drinking alcohol alone, the speaker remembers a place or time where his "eyes" were "dry pools", and where a pond in a childhood garden was "drained" so that the "little cousins" could grow up to be "tall men, and safe, in the waterless country." These men may be safe behind eyes that cannot cry, but that was, and is, not good enough for the speaker, who has been trying, through memory, to return to this country in order to rescue himself from it:

I set out again for the clay-pans of my eyes,
crying, "My friend. You must drove your sheep elsewhere.
My dams are dry. You must leave this waterless country." (p. 112)

In "Ishmael" (p. 163) the speaker has found an "oasis" among the "red earth", "gibber and dune", but is leaving it (or them — the "discovered homeland" has "eyes") forever. Instead of despairing, in this wiser poem he prays to be rid of his longing, but not his caring. He calls upon

desert and sky to take me, wind to shape me,

strip me likewise of softness, strip me of love,
leaving a calm regard, a remembering care. (p. 163)

This recalls the *Dao De Jing*, which recommends being "empty of desire" in order to "perceive mystery" (Laozi, trans. Addiss & Lombardo, 1993, Chapter 1).

An essential facet of this mystery is an ineffable communion with the natural world. "Ishmael", like many of Stow's poems — notably "A Fancy for his Death" (p. 86) and "The Land's Meaning" (p. 96) — articulates a yearning love of the land, particularly the vast, unforgiving, empty-seeming Australian interior in which "A crow cries: and the world unrolls like a blanket" ("Landscapes", p. 113). In "From *The Testament of Tourmaline*", this love is unambiguously stated: "In the love of the land, I worship the manifest Tao" (p. 143).

However, the speaker then acknowledges that even this yearning must be left behind in order to find the true Way: "To move from love into lovelessness is wisdom. / The land's roots lie in emptiness. There is Tao" (p. 143).

In the middle of nowhere, at last, one can be oneself.

Comparisons

Stow's poetry and Le Guin's share certain recurring themes. These include love of dry landscapes and stones, and the way in which the vastness of sparsely inhabited land shapes one's awareness. Like Stow's "Landscapes" and "Ishmael", Le Guin's "For My Traveling Companion" (Le Guin, 2012, p. 143) expresses the enormity of an arid interior and of the journey through it:

... our journey is not done,
and we're still travelling under desert skies

out where the mind can find its proper size,
enlarge, stretch wide, be still ... (p. 143)

In all three poets' work, images of land and nature evoke both the land itself, with its non-human endurance, and also its significance for humans persevering through metaphorical, spiritual terrain. Aridity, dryness, drought and death complement lushness, greenery, water and life. In Stow's and Wright's work, however, water is sometimes a place to drown — to attain a metaphorical, or perhaps literal, dissolution of the self into the flux of being. In Wright's "The Lost Man" (Wright, 1994, p. 113), this dissolution takes place in a "pool" that may be found only after an arduous journey through a thick, dark, uncannily silent "rainforest" that is full of thorns and stings. This un-Edenic forest, based on real ones in Queensland (Capp, 2010, pp. 101–118), is reminiscent of the equally real, equally uncanny "jungle" in Stow's "Thailand Railway" sequence (Stow, 2012, p. 134). Wright's poem concludes that to follow in the "lost" individual's path and find the "pool",

you must forget the song of the gold bird dancing
over tossed light; you must remember nothing
except the drag of darkness
that draws your weakness under.
To go by the way he went you must find beneath you
that last and faceless pool, and fall. And falling
find between breath and death
the sun by which you live. (Wright, 1994, p. 113)

This poem's "he" could be any spiritual seeker: perhaps a Buddhist, looking for the "sun" of enlightenment; or perhaps a Daoist, practising "the way" by "sitting and forgetting" (Chen & Ji,

2016, p. 189), setting aside interpretive mental words and pictures until nothing remains but the limpid clarity of a meditative trance, and birdsong becomes merely a sound, arising and subsiding like a “breath” within a vast silence.

Stillness, silence, emptiness and egolessness are given much significance by all three poets, as is the relationship between being and time. Le Guin’s “Contemplation at McCoy Creek” (Le Guin, 2016, p. 17), which ponders the meaning of the word *contemplation* by narrating an outdoor meditation, concludes:

Slowly, in silence, without words,
the altar of the place and hour is raised.
Self is lost, a sacrifice to praise,
and praise itself sinks into quietness. (p. 17)

In Stow’s poem “The Clock in the Empty House” (Stow, 2012, p. 187), a clock ticks in a country house, but its “sprung *clock-clock*” has, for now, become “someone else’s time”, because

No-one is here. It is all open. Windows
surrendered to the air of barley-fields
that bronze and seethe. The little wood haze-dark. (p. 187)

If this house is also the house of the human spirit, it is one that the commenting, interpreting ego has vacated, “surrendered” to the timeless, silent cosmic vastness — and to all the restless complexities arising there. The heady scent of these “fields” is present to awareness — the windows are open — but their activity happens outside, beyond the interior stillness.

“The Clock in the Empty House” is one of Stow’s late, uncollected poems. Its clipped and paratactic sentences are set in two quatrains, followed on the page by 20 lines of silence. Such brevity is uncharacteristic of Stow, occurring only in his very late work, such as this poem and the haiku-like snapshots entitled “Clichés” (Stow, 2012, pp. 190–192). Wright’s oeuvre shows a similar stylistic evolution. In the great majority of the two Australian poets’ work, their tone and form, unlike their imagery, do not gravitate toward dryness, stillness or silence. Rather, the lush complexity of their diction and the long melodies of their lines hark back to W. B. Yeats, William Wordsworth, and, in Stow’s case, Dylan Thomas. The imagist restraint of Williams or Li Bai comes to them hesitantly, and only in their late work. In Wright’s final three collections (in Wright, 1994, pp. 295–426), all written after “The Unnecessary Angel”, the style becomes

rather more restrained as Wright tries to “let the song be bare” (p. 291) — to let in more silence. Sometimes, she succeeds. For example, the long sequence “Habitat” (pp. 297–309) is written in short free-verse lines, suggesting a slow, thoughtful pace and a meditative attention to detail. Parts IV and V do this particularly well. They focus on furnishings — chairs, mirrors, beds — and their humble usefulness:

asking for nothing
except to be there, to be used,
to be let stay around,
like an ageing aunt
waiting to hold the new baby. (p. 300)

The majority of Wright’s poems, however, exhibit a European, Romantic poetics that cannot be described as Daoist. Her poems of the natural world frequently involve the insistent commentary of the lyric I, whose human-centred viewpoint separates the reader from what is observed. “Dotterel” (Wright, 1994, p. 180), for example, muses about the lifestyle of a bird: “I saw its single egg / dropped in the sand” of a shore where it “chooses / to live nowhere” in “loved solitude”, calling “like a far bugle / that troubles the soul”. Love of solitude and a disturbable soul are human, not avian, attributes, as is the means to choose a lifestyle. Although Wright’s imagery gloriously evokes the presence of a bird (“the new-hatched chick, / like a thistle’s pale down”), the poem speaks more of what it means to be Wright than of what it means to be the bird.

This changes, however, in Wright’s final collection *Phantom Dwelling* (in Wright, 1994, pp. 391–426), especially in the section entitled “Notes at Edge”. That section’s first poem, “Brevity”, states that Wright is trying, in place of “Old Rhythm, old Metre” and “Keats, Blake”, a new aesthetic, looking for

Few words and with no rhetoric.
Enclosed by silence
as is the thrush’s call. (p. 413)

The next poem, “Mountain” (p. 413), comes as close to this as Wright ever gets. Unusually for Wright, there is no explicit commenting “I”. Ten concise lines provide three different views of a mountain, rather like the multiple perspectives in a Chinese landscape painting, to which the poem alludes: “scroll and screen”, “calligraphy”. However, even this gentle allusion is a subtle gloss, and several poems later she begins a sequence of ghazals, adapting a form that explicitly

mentions the poet. In the third of these, “Summer” (p. 421), after delicate descriptions of spiders and lizards, Wright admits defeat: “I try to see without words / as they do. But I live through a web of language.” Her natural mode is the yang of words, not the yin of silence. Two poems later, in “Oppositions” (p. 422), Wright puts this another way. She alludes to the classical Chinese poet Han Shan — “the hermit of Cold Mountain” — and contrasts her own aesthetic with his. “I choose fire, not snow,” she writes.

Stow, too, chose the yang of words — when he chose to write at all — and his poetics is, like Wright’s, most often a European one, involving no attempt to reach beyond the human perspective. Le Guin, on the other hand, was American, and the plainspoken, Imagist heritage of Stevens and Williams defines her style from the beginning. Moreover, because Daoism underpinned Le Guin’s entire writing practice, it is not surprising that her poetics comes much closer than that of Wright or Stow to the Daoist aesthetic ideal described by Yip. Le Guin does use rhetoric and lengthy exposition, especially when her subject is overtly political; however, brevity is the rule, not the exception, and many poems strive to let the things of nature speak for themselves. The above-quoted “For My Traveling Companion” (Le Guin, 2012, p. 143), for example, comprises only eight lines, and makes no suggestion that the desert symbolises anything but itself. As with Stow’s “The Clock in the Empty House”, to interpret the imagery in human terms — as I have done above — the reader must participate.

Conclusion

Randolph Stow, Judith Wright and Ursula K. Le Guin wrote some of the great spiritual poetry of the twentieth and twenty-first centuries. Although not indigenous to their homelands, by writing from a sense of the sacred informed significantly by Daoism, each of them was able to evoke humanity’s enfoldment in the land, the cosmos, and the cycle of life and death. These poets wrote ecopoetry long before it had that name. Their work is grounded in awareness of the ongoing colonisation of vast places that have long been inhabited by both human and non-human entities. Through their writing “the Taoist project becomes a counterdiscourse to the territorialization of power” (Yip, 1993, p. 7). Their speaking makes space in time for the loud silence of the Other. It is the kind of poetry I love to read and aspire to write.

Animating the ash: emergence of creaturely poems from experiments in chaos and form

If your life is burning well, poetry is just the ash.

— Leonard Cohen (as quoted in DrHGuy, 2016)

“Please stop pretending to be dead,” says the Reader. “We want to talk to you.”

— “The Dream” (p. 83)

Poetry, as W. B. Yeats (1918/1959) said, is something we poets “make out of the quarrel ... with ourselves” (p. 331). To consider what happens during the making of poetry, this essay reflects on the composition of “A coat of ashes”, a project driven by a particular internal quarrel: an insistent and often disputatious dialogue among voices representing scientific and spiritual worldviews or discourses. I begin by outlining why poetry can work particularly well to combine discourses. Then, to think about how poems develop, I make an analogy with living complex systems, such as animals, arguing that a successful poem’s essential characteristic, a certain intricate shapeliness that Glyn Maxwell (2012) calls a “creature” (p. 29), is, like the unified aliveness that animates an organism, an emergent property: a quality of the poem, as a whole, that arises not from the poem’s parts but from the relationships among them. Using examples from “A coat of ashes”, I illustrate how this creaturely property emerges during the compositional process. For this to happen there must be sufficient complexity and organisation, as well as suitable conditions, which ideally include a well-developed self-reflexivity involving the internalisation of a critical reader as well as a safely bounded yet playfully chaotic mental space. To delimit this space and invite into it, on equal terms, the voices of the disparate discourses, I used a systematic program of writing and editing experiments. I argue that several of my writing practices are akin to *wu wei*, the Daoist principle of working non-coercively with the nature of things, and that this way of working facilitates the emergence of creaturely poems.

Combining discourses

Although it could be argued that their conclusions seem similar, Daoism and the sciences have contrasting methods of observation: the former, meditative, mystical and inward-looking; the latter, experimental, mathematical and outward-looking. Consequently, their literatures are also

very different. Although both scientists and mystics use figurative language, the writings of mystics and spiritual teachers differ significantly in both diction and tone from the expository prose scientists write for each other and for non-specialists. Much of the creative fire powering “A coat of ashes” is the desire to make something satisfying from the difficult relationship between these dissimilar kinds of texts.

Creative activities such as poetry can work particularly well to combine discourses. W. N. Herbert (2006) suggests a reason: “The value system which privileges one discourse over another in our culture does not apply in the cognitive freefall which is creativity” (p. 85). Although it seems overly optimistic to imply that creative practice can be carried out independently of the value systems of one’s cultural milieu, it is true in my experience that creative writing affords the mind significant freedom of movement. It is, therefore, an effective method of inquiry that is likely to generate innovative ideas. Kelly Cherry (2001, pp. 24–37) remarks that to “know” the world we need to use “every instrument at our disposal” (p. 31), and that literature is one such instrument. Creative writing is a way of generating knowledge about being in the world and about the nature of reality. Ideas and insights may emerge during writing. By exploring metaphors, poets create conceptual frameworks and find patterns and connections. Hence, it seemed possible that my poems would create a space in which voices expressing the ancient Ways of body and Earth and voices expressing the Ways of science could be heard on equal terms.

The following poem is one of my more direct attempts to engender such a space. It developed from an experiment that involved writing sentences concerning what the *Dao De Jing*, on the one hand, and various physics books, on the other, do *not* say. It attempts to bring to each discourse some of what the other contributes:

The Sage and the Physicist

The Physicist does not tell me not to study.

The Sage does not furnish his text with citations.

The Sage does not postulate gravity and light.

The Physicist is silent on yin, yang and qi.

The Physicist does not claim that Name is the Mother.

The Sage does not construct a non-commutative algebra.

The Sage does not calculate quarks and anti-quarks that suddenly spawn from the void.

The Physicist does not intone verses that have lost their oral context.

The Physicist does not say Dao engenders One which engenders Two which engenders
Three.

The Sage does not mention that Higgs thing that splits the trinity.

The Sage does not theorise strong and weak and bright electromagnetic.

The Physicist does not invoke a mysterious *Three* that *engenders the ten thousand things*.

The Physicist does not invoke a mysterious *Three* that *engenders the ten thousand things*.

The Sage does not theorise strong and weak and bright electromagnetic.

The Sage does not mention that Higgs thing that splits the trinity.

The Physicist does not say Dao engenders One which engenders Two which engenders
Three.

The Physicist does not intone verses that have lost their oral context.

The Sage does not calculate quarks and anti-quarks that suddenly spawn from the void.

The Sage does not construct a non-commutative algebra.

The Physicist does not claim that Name is the Mother.

The Physicist is silent on yin, yang and qi.

The Sage does not postulate gravity and light.

The Sage does not furnish his text with citations.

The Physicist does not tell me not to study.

(The italicised phrases are taken from the *Dao De Jing* [Laozi, trans. Addiss & Lombardo, 1993, Chapter 42].)

The order of the lines is to some extent arbitrary: I tried a number of arrangements before settling on the above, which seems to work rhythmically, and which creates an overall symmetry while setting up localised echoes and contrasts among the fragments of jargon. A combination of arbitrariness and pattern arises from alternating voices without suggesting a

coherent interpretation, making a discordant music that echoes the quarrel in my head: both the babble, and, in the central break, the occasional silence.

I wrote this poem deliberately, as an experiment. Deliberate experiment is one of the two primary routes by which my poems arise. The other route is illustrated by “On looking at the Pointers”, which was written because a passage of poetry happened to occur to me. On this occasion, I was staring at the stars. The speaker imagines a sentient being four light-years away, and whimsically suggests that quantum entanglement might provide a way to communicate emotionally:

... O being
on Proxima B, closest
exoplanetary soul
there's likely to be,

is a lepton of my heart
entangled with a lepton
in yours (whatever you use
as a heart) from a time
when they could touch, way back
near the Beginning, in a dream
in which they touch, way in
at the Beginning? If so,

I send you love. Using
the top-down causality
of my organic complex system,

I spin my lepton to yin
so yours may spin to yang.
O being on Proxima B,
can you feel the sunshine?

This poem uses a subtler method to combine the scientific and mystical discourses: a double allusion. The “dream” and “Beginning” may be read as alluding to the Big Bang, or to the spaceless, timeless, undifferentiated “implicate order” (Bohm, 1980) or “pregeometry” (Heller, 2008, p. 253) from which some physicists think the universe emerges. In the context of the

project, they may also be read as alluding to the Daoist theory of *wu*, or primal, generative formlessness (Capra, 2010, pp. 211–212; Laozi & Wang Keping, 1998, p. 33), and the mention of yin and yang is intended to hint at this possibility.

These poems illustrate the ability of poetry, in particular, to bring together worldviews. A poem frequently provides plenty of scope for readers to make their own comparisons and connections. Each word is the locus of a cloud of connotations, of potential interchanges with many other words and concepts, some inside the poem, some outside it. Because it uses words in this expansive way, a poem can allude to multiple concepts without explaining them or how they relate. As Ursula K. Le Guin (2016) comments: “Science explicates, poetry implicates” (p. ix). Because we need not explain, poets have a great deal of freedom to gather together diverse discourses so that each may be seen in the other’s light. Like graphic designers working with visual material, poets adjust the text to highlight, enhance, disrupt or subvert the patterns and contrasts — perhaps of sound or shape, perhaps of connotation — that arise as words, phrases, and other textual elements are brought into the space of the work. This pattern-work establishes an organising principle — what Maxwell (2012) calls a “governing aesthetic” (p. 88) — that encourages disparate elements to come, not into agreement, but into alignment.

The essential creaturely quality

Often it is this sense of alignment — of balanced composition or fitness of form — that tells me a text has achieved poemhood. At some point during the making process, a pattern emerges that allows everything to slide wonderfully into place, like my spine at the chiropractor’s or my limbs during a yoga pose performed just-so. A simple example of this is the two-column arrangement of the following poem:

[]

the universe	an opera
composed	of enormous
and microscopic	silences

Something vital seemed to be missing from the first draft, which followed a straightforward left-justified one-column layout (“the universe / an opera / composed / ...”). Because I had been reading some poems that used central caesurae (Pretty, 2015), it occurred to me to try that — and the poem was transformed. It became a matrix that, like the universe, holds not only matter

but space — which is equivalent to time — and permits multiple ways of observing and traversing it. My process notes rejoice: “Tried two-column layout (aha!).”

When this “aha” moment occurs, it is as if the poem finds a balanced, comfortable arrangement of its own spine and limbs — of its own organic form. It feels as though the poem has decided what to be, and emerges into the world. Jane Hirshfield (2015) observes an animal vitality at the heart of a successful poem:

A mysterious quickening inhabits the depths of any good poem — protean, elusive, alive in its own right. The word “creative” shares its etymology with the word “creature”, and carries a similar sense of breathing aliveness, of an active, fine-grained, and multicellular making. (p. 3)

Similarly, Maxwell (2012) argues that a poem which is “written to be read” (p. 13) will successfully leave an imprint on the reader’s mind only if its “form and tone and pitch ... coherently express the presence of a human creature” (p. 29).

I am not convinced that this creaturely “presence” must necessarily be human, but when a poem grabs my attention I feel as though I am experiencing, from the inside, a sentient being: a walking, breathing organism to whom I can, on some level, relate. This being might be incoherent, confused, depressed, or ranting ecstatically, but whatever its mood, I can feel its gait or stillness, its pauses for thought and breath, its sense of direction, its meandering or focused gaze. The creature one encounters in a successful poem may reflect aspects of the fleshly, quotidian poet, but the two should not be confused. It is the *poem* that is speaking, what Maxwell calls “the black creature”, made of literal or mental ink or pixels, thinking and breathing upon the “white silence” of time, of the page (p. 19).

Emergence

Once a poem has come alive, I may have to do a little more work to encourage it to breathe as it should: in the above poem, the right alignment introduces silences of various lengths before each half-line, hinting at the universe’s dimensional variety. However, the “aha”, when it happens, marks the point at which complex order emerges in a text that, moments before, seemed intransigently chaotic or — as in the above example — unsophisticated. The “aha” moment is analogous to a tipping point or bifurcation point, at which order spontaneously emerges from disorder as a complex system suddenly shifts from instability to equilibrium

(Briggs & Peat, 1989, pp. 136–138; Capra & Luisi, 2014, pp. 115–116; SparcS, 2018). A similar systems-theoretic metaphor is used by Paul Lake (2001) to discuss the emergence of patterns in poems. He likens sonnets and other frequently occurring poetic forms to strange attractors, the shapes toward which mathematically formulated complex systems tend to evolve.

Sometimes during my composition of a poem there is no “aha” moment, no noticeable tipping point. Sometimes a poem emerges gradually. Nevertheless, there is almost always a point of no return, a moment when I realise that the creature is alive — and this moment is marked by a compulsion to see the process through, to bring it fully into being, to stay with it until it can survive on its own.

Of course, the creaturely presence is a trick — not an illusion, but an effect: a property that results from the art-making process, in which, as Hazel Smith (2006) observes, a piece frequently “develops its own autonomous identity and ... takes the creator in directions quite different from his or her original intention” (p. 172). Like Lake, Smith makes an analogy between complex systems and artworks, arguing that this “autonomous identity” (p. 172) is an emergent property of the artwork. A related analogy is made by John Briggs and F. David Peat (1989), respectively a writer and a physicist, in *Turbulent Mirror*, their book on complexity theory. They discuss a poem (“The Writer” by Richard Wilbur), showing how what they call “reflectaphors” — linked internal similarities such as metaphors — create “*unresolvable tension*” between their components, which Briggs and Peat call “terms” (p. 196, emphasis in original). This tension is like the tug and balance of algebraic terms in the equations that model complex systems. Briggs and Peat observe that a successful creative work is self-reflexive: not only are there similarities between its parts on many levels, but each part contains a sense of the whole. “That wholeness is embodied in the self-similarity of the finished work, where each part is coupled to, was generated from, and is a reflection of each other part” (pp. 195–198). This self-reflexivity may be compared to the feedback loops of the nonlinear equations used in modelling complex systems. Frequently, such loops generate sophisticated forms of order whose patterns are self-similar but not self-identical; these forms include the intricate, nearly-repeating fractal shapes of many natural and mathematical entities, such as coastlines, mountains, ferns, and the Mandelbrot set (pp. 96–101). In both complex systems and artworks, “the tension between similarities and differences ... creates for us ... a sense that what we’re experiencing is organic, is both familiar and unknown” (p. 197).

In using such analogies I am not trying to suggest that a successful poem is literally alive or possesses agency. Nor am I claiming that a poem is a complex system in the well-defined sense that complexity theorists would recognise: I am not suggesting that a poem might be

mathematically modelled as a complex system. Bronwen Hudson (2014), however, suggests that this may be possible. She proposes that it could lead to computerised techniques for quantitative analysis of poetry, such as measuring a poem's degree of complexity in a way that will supposedly be "objective" (p. 96) rather than "opinion-based" (p. 97) — a supposition that neglects to consider both the opinions of those doing the coding and the potentially disparate cultural backgrounds of readers.

Sufficient complexity and organisation

It is not necessarily straightforward to decide whether a text is metaphorically alive, because trying to delimit the characteristics of an emergent property like aliveness may be subjective. There is a spectrum of intermediate states between that of an inert crystal and that of a self-conscious, peripatetic animal. A letter from a great writer often has a creaturely, poem-like quality, as do many essays and novels. It is easier to say what the creaturely quality is not, or in what kinds of texts it is absent. A scientific paper, ideally, avoids it: the quest for objectivity involves a deliberate attempt to dehumanise the discourse by following a formulaic structure and narrating the research as if it was conducted by nobody in particular (Hoffmann, 2002). Likewise, a letter from the taxation office is unlikely to be creaturely. But neither, it seems to me, are my numerous unsuccessful attempts at poetry. These half-alive works may describe intriguing ideas or poignant moments, yet they lie limply on the screen, unable to achieve their potential as poems.

If the creaturely quality is to emerge, there must be a synergy between the elements of the piece and its organising principle, its governing aesthetic. Otherwise its parts cannot interweave with enough intricacy for the text to transcend itself and come to life. An unsuccessful piece may include passages that seem somewhat alive: for example, there may be a vigorous rhythm or sound-pattern, or words may relate or contrast to establish localised complexity. However, the organising principle may be inconsistent, absent or inappropriate: the linear original of "[]" was a tepid dribble of words that went nowhere and connected to nothing. Conversely, an organising principle may be so strongly applied that it works against, not toward, intricate aliveness. For example, a poem in strict, unvaried iambic pentameter is quite likely to sound mechanical, and a free-verse poem with too many enjambments may sound showy and inauthentic. Moreover, even if the parts have life in them, they may clash like a jumble of transplanted organs and fail to cohere into a breathing whole. The elements may be too repetitive: five livers and no heart. Or they may be too inert to connect with one another, or the reader's mind, in a complex way:

the writer may have unreflexively employed clichés, vague abstractions, or formulaic jargon. That these lead to unsatisfying poetry is hardly a new idea; what I am trying to suggest is that an analogy with biological systems is helpful in understanding why this is so.

The reader self

An organism, of course, requires a suitable environment: it must itself take part in a complex ecosystem. For a poem to come to life, it is not only the text that must be sufficiently and appropriately complex. The reader's mind must be sophisticated, too, in a manner that permits the realisation of the piece's potential complexities. These include its timing, over which the reader has a great deal of control, as Maxwell (2012, p. 14) points out. For a poem to breathe, it must be given air. Like the aliveness of an organism, the creaturely quality of a poem is not a static, immutable essence. Rather, it is a process: something that happens. The reader's experience of this process is, perhaps, what Hirshfield (2015) means by "a mysterious quickening" (p. 3). The extent and manner of this quickening depend not only on the text's sophistication but also on the quality (in both senses of the word) of the reader's participation.

Celia Hunt and Fiona Sampson (2006, pp. 73–93) observe that the writing process may be seen as involving a "reader-in-the-writing-process" (p. 76) or "ideal imagined reader" (p. 77) — a mental character who reads what is being written. As Hunt and Sampson point out, the attitude of this reader self greatly affects the outcome. One is far more likely to write well if one develops a reflexive stance: an ability to mentally step away in order to view the text from the outside. Similarly, Paul Magee (2011) comments that a poem's initial reader "is the reader within the poet's own head" (p. 122), and that this reader is also a critic. Both Magee and Hunt and Sampson argue that writers' inner readers and critics are internalisations of mentor-like and sometimes parent-like figures, such as much-admired authors. They are people whose standards the writer, perhaps unconsciously, wants to live up to.

I suspect that my own reader self represents an amalgam of such figures. As I work to bring a poem into being, I try to imagine a stranger reading it, perhaps aloud in public, perhaps quietly. This stranger has neither met me nor heard my reading voice, and has only the text. In "The Dream", this reader self appears as a character: a Reader, perhaps a literary critic, whose private library, although extensive and intellectual, is missing some of my fields of interest. It is useful to imagine someone who has not read everything I have read. Like myself, this stranger is fond of poetry and has studied its nuances, becoming what Magee calls "an internalised voice of

authority” (p. 126). As I work with my texts, I ask myself: how can I make a poem that comes alive, not only for me, but also for this imaginary stranger?

The “framed gap”

Seamus Heaney (1980) distinguishes “craft”, which can be taught, from “technique”, an individual approach to using the mind (p. 6). Each poet, he says, must find their own way to draw the “feel” (pp. 1, 3) of themselves (or perhaps of characters or personae) into the poem, to establish conditions under which ideas and feelings can, through poetry, fulfil their “own potential for harmonious self-reproduction” (p. 8). This “harmonious self-reproduction” is the emergence of the creaturely poem, and, as Heaney points out, this creative process requires certain conditions. Writing about her interview study of 38 experienced poets, Jean Tobin (2004) observes that many describe techniques for invoking an unusual state of consciousness, going to an “other place in the mind” (p. 263) or to a “river of poetry” (p. 264) that flows deep within.

This “other place” contains a free-running creative energy that may threaten, like a torrent, to overwhelm the writer or sweep them away. As Tobin’s interviewees confirm, the “other place” is dangerous: “one would be considered mad”, she writes, “if one were like that in the outer world” (p. 263). Dominique Hecq (2015) suggests that writers may indeed risk becoming insane, because writing involves visiting “the place of dreams, nightmares and hallucinations” in which “identity is most elusive”, making it much easier than usual to lose one’s grip on existence (p. 3). The “other place in the mind” needs to be dangerous so that good writing — creaturely poems — can emerge: as Jane Hirshfield (2015) puts it, “poetry comes into being by the fracture of knowing and sureness — it begins not in understanding but in a willing, undefended meeting with whatever arrives” (p. 125). Lowering one’s defences can be frightening, and Jason Wirtz (2012) argues that the best writing arises from “fear” (p. 237), from a sense of threat and urgency. Wirtz has interviewed a number of successful poets and fiction writers. In their creative methods, he observes a phenomenon analogous to one that occurs in evolutionary biology, where a population of living organisms may respond to a crisis by evolving with surprising speed. Wirtz argues that good writers deliberately allow themselves to experience a sense of danger so that their writing can develop rapidly in unexpected ways:

Writers ... purposefully leave behind familiar, highly cultivated intellectual landscapes to accelerate their evolutionary change. Greatest evolvability occurs when writers, well equipped with deep reservoirs of craft knowledge, depart from

their apollonian habits of mind to approach the edge of chaos, the intellectually unknown, that great mass of foreboding grey matter. (p. 238)

Practising creative writing in my own mind's "other place", I am not necessarily aware of fear, but there is always a heightened alertness. This is sometimes accompanied, during the practice or just afterwards, by an exhilaration comparable with that I have experienced when doing something physically difficult and dangerous. Skiing a black slope comes to mind, but that is too extreme: the writing trance, for me, is more like the deeply focused, steady concentration that is necessary to attain a challenging yoga pose without injury. As in yoga, where one listens to one's breath, writing involves a sense of deep listening. Furthermore, while I write there is usually a sense of struggle, of striving toward a resolution; often it feels as if multiple voices are fighting to break through into awareness. I am keenly aware of my personal incarnation of Yeats's internal quarrel.

Because of the danger, experienced writers find ways to enclose or delimit their "other place" so that the creative energy has relatively safe boundaries within which to play — what novelist Marion Milner calls a "framed gap" (quoted in Hunt & Sampson, 2006, pp. 61–63). I had not yet come across that term when I wrote the following passage in "The Dream". The narrator, who may be read as representing my writing self, has travelled for some time through the unfamiliar landscape of the allegorical "other place" (while gradually becoming aware that they are the one creating it, and picking up a certain Student along the way):

After a time, perhaps half an hour of our steps, there appears a gap. A gap between the southwall rocks. A low rectangular hole, as wide as one lean body. Mine or the Student's.

Within the gap is darkness. We can't see into it.

– That's weird, says the Student.

– No, I say. It'll come clear if we choose to go through it.

A good deal of discussion ensues, then:

– Are we going to do this, then? we say in unison, then laugh.

– We could just go along a bit and see what's round that corner, I suggest, pointing down the yangpath.

– Won't it be more of the same? says the Student.

– Probably.

I stare at the ground for a moment.

– Are you afraid? I ask.

– No, just curious, says the Student. You?

– You know I'm terrified.

This is the pivotal moment of the narrative. After a great deal of struggle – and admonishments from the internalised voices of my favourite writers, my mother, and my supervisors – my student self yanks my writing self into the gap:

I start to curl into a crouch to fit through, but the gap has become the whole sky, the whole earth, the blank screen of Everything all around us... and holding the Student's cool, firm hand I spread myself, floating in Savasana, take a long breath in (the air renders itself sweet and balmy) and wait.

For some time we float in this meditative gap, listening:

It isn't a state of body, a state of mind, a state of anything. We are gone. I think when we come back (to ourselves) we will be, we are, lying on earth, an earth, a ground, we will, we have, landed somewhere — but for now we are gone. Into negative capability where writing experiments can take place in a space, a field, in the silent cacophony, the rowdy harmony, of the loud Dao.

My writing self has overcome a fear of the unknown, with the help of the research-loving, text-gathering student self, to reach the “framed gap” in which it is possible to do the deep listening needed for creaturely poems to emerge. In this creative “other place”, scientific and mystic intertextual voices may, in relative safety and on equal terms, speak, converse, debate, and perhaps get dangerously drunk on one another's home-grown metaphors.

This “framed gap” within my internal landscape is a manifestation of what Hunt and Sampson (2006) term the “self-in-process” (pp. 17–21, 179): a vision of the writing self that acknowledges Julia Kristeva's (1981) concept of the writer as an intertextual subject and Roland

Barthes's (1977) similar notion of the "scriptor" (p. 146) without denying that literature is made by a person with an internal, reflexive experience of embodied awareness. This concept of the author is reminiscent of that implied by classical Chinese criticism, which, as Yip (1993, pp. 138–162) explains, is based on Daoist philosophy: a poem is seen as a gateway that leads — via the participation of the reader — to a "conversation across historical space and time" (p. 149) between many textual voices that are considered to have passed in some form across the poet's consciousness. In some of my poems this embodied, writing, reading, listening consciousness goes on a date, or practises yoga; in "The Dream" this consciousness walks among hills and trees and passes through enigmatic portals.

Furthermore, this authorial consciousness has multiple aspects; in "The Dream", there is a writing self, a student self and a reader self, as well as other characters who seem to represent internalisations of people who have influenced me: for example, there is a woman named Paragraph, who appears to combine a 1920s novelist with a twenty-first-century hipster artist and aspects of my mother. Such plurality aligns with Michel Foucault's (1986) concept of a literary text's "author function", which "does not refer purely and simply to a real individual, since it can give rise simultaneously to several selves, to several subjects — positions that can be occupied by different classes of individuals" (p. 113). It is not so much a real person to whom the text may be attributed, but an idea of who or what seems to be speaking. "The Dream" manifests the abstraction and multiplicity of the author function while also questioning to what extent it — more precisely, they — can be distinguished from the embodied, quotidian self, as the following passage illustrates:

My coffee is too hot to drink yet. Weak coffee. Must stick to weak. Even weak the addiction is bad enough.

But in the other country we are waiting for the stars.

After the stars come out in the "other country" of "The Dream", the writing self sleeps on the floor of the Student's hut, which is an allegorical meeting-place of Daoism and physics: although it is a rough stone hermitage, its roof is a science-fictionally hi-tech transparent dome through which the cosmos may be observed:

When I wake the sky through the dome is pale blue but I can't see the sun. The air inside the hut smells of coffee.

A systematic practice

“The Dream” resulted from a directed, meditative freewriting practice. It was the first step of a systematic writing routine that I established once I had gathered a collection of source texts. I had long used freewriting (Elbow, 1973, pp. 3–11) as a warm-up. In the past it had often generated useful poems and fragments, but it had become repetitive. I needed a way to channel the “river of poetry” toward a more interesting landscape. Thinking about the idea of the research process as a journey into the unknown, I had the idea of visualising myself walking on a metaphorical Way through an imaginary country. My purpose in writing this journey was primarily to leave behind reality and travel to the “other place”. The amount of usable text that eventuated was a surprising bonus.

The second step of my systematic practice was to read. I used a random-number generator to choose two texts from a numbered list of sources, such as translations of the *Dao De Jing* and the *Zhuangzi*, books and articles on physics or Daoism, and collections of poetry influenced by physics or Daoism. I also included some of my own relevant writings, such as journal musings and notes taken during reading. I read the two chosen texts for about 15 minutes each, often using a timer. I did not read systematically or take notes: that happened at other times. This randomly chosen reading was a way to turn up the mental volume of the different discourses — to invite the sound of their voices into the “other place”.

Once I had travelled to the creative mindspace through freewriting, and listened for a while to the sages, physicists and poets, it was time for the third step: generate some text that might lead to poetry. I used the random-number generator again, this time to choose two writing experiments from another numbered list. The final step was to conduct an editing experiment, selecting a constraint or procedure with which to transform or combine one or more of my existing texts, to see whether poems might emerge. (The writing and editing experiments are discussed in detail in the sections below.)

I devised this routine partly as a way of coping with my apprehension about creating from scratch a book-length collection of poems based around a particular theme. I had never done that before and was not confident that I could. I thought that if I waited for spontaneous inspiration it might never come, or might not come in a usable form: a journal entry from early in the process records that I felt “scared to write all day without a system, a concept, a set of experiments”. Hunt and Sampson (2006) point out that many writers find structured exercises useful. Routines, rules and constraints help dispel the “uncertainty and anxiety” (p. 63) that may

be provoked by unfettered freewriting, but at the same time they give the creative capacity permission to play freely, without an internal critic censoring it. This happens because the critical faculty, which, unlike the creative, is fond of clocks and rulers, is given something else to do: it provides a frame, a set of boundaries that mitigate the feeling of risk. By doing so, it “helps to keep open the space for the imagination and to render it, if not entirely safe, then at least manageable for short periods” (p. 63).

The random-number generator was particularly helpful in establishing a sense of manageably framed risk. Choosing texts and experiments at random meant I had no opportunity to agonise over what to read or how to go about writing. At the same time, by making the writing process more like a game of chance, it provided a way of leaping playfully into the unknown.

A playful approach is helpful when undertaking creative practice or other forms of research, as Julienne Van Loon (2014) reminds us:

Play, in fact, is at the heart of any research process. It is the seed that germinates an idea. Further, it gives birth to the energy and excitement of experimentation that propels and sustains a researcher through a gruelling and often lengthy research process. ... And, as Gadamer has reminded us, it is essentially an oscillating and self-propelling activity, one without any clear end. (p. 7)

Play is enjoyable and relatively safe, and someone who is playing is under no pressure to be productive, which means they are free to try new approaches and are therefore more likely to innovate. Likewise, the outcome of an experiment is necessarily uncertain: in scientific research, the process under observation must not be coerced toward a particular outcome. Like a scientific experiment, a writing or editing experiment aims only to test an idea and see what happens. This paradoxically productive lack of attachment to outcome is enhanced by regular, frequent, systematic practice: if a particular experiment does not generate usable text, there is no need to be disappointed, because there will be many other opportunities.

Writing experiments

The majority of the poems in “A coat of ashes” emerged from systematic experiments. In teaching, and in my own writing, I find it especially enjoyable and often remarkably productive to use what Smith (2005) calls “language-based”, as opposed to “referent-based”, writing

strategies (p. 3). Referent-based strategies begin with ideas or themes. Language-based strategies, in contrast, begin with words. As Smith explains:

The fundamental premise on which such strategies are based is that words suggest other words. Start with one word — any word — and it will lead you to many others, until you have formed a whole text. These methods invite you to explore the sounds and meanings of words as a way of finding ideas, rather than starting to write from a preconceived idea. (p. 3)

Language-based writing experiments dispense with the need for ideas or inspiration. Words (and, for me, phrases and lines) are always available, whether flowing in the internal “river of poetry” or sounding, literally and metaphorically, in the outer world with its many voices and texts. To write, one need only listen.

Some of my experiments involve channelling the “river of poetry” by applying constraints while responding in my own words to source texts or relevant life experiences. Writing using constraints is a focus of the Oulipo group (Mathews & Broatch, 2005). Since learning the method in workshops with poet Kevin Gillam, I have invented many constraints, such as the negative-sentence procedure used in writing “The Sage and the Physicist”. Constraints may be intended to generate unexpected dialogic juxtapositions, or they may involve restricting the diction, as in Christian Bök’s (2001) *Eunoia*, in which each chapter contains only one of the five vowels. If the experiment is successful, the developing textual organism will adapt to the constraint by evolving in unexpected and complex ways.

As well as constraints, I use transforms: procedures for selecting, altering and combining pieces of existing text. Like a constraint, a transform aims to encourage complex connections and establish an organising principle that will lead to the emergence of a creaturely poem.

Transforming existing text using algorithms and aleatory procedures is another central strategy of Oulipo and of other language-based poetics, including flarf (K. Goldsmith, 2009; Mohammad, 2012; Yu, 2011, p. 830), found poetry (Perloff, 2012), Language poetry (Izenberg, 2012), and conceptual writing (Dworkin, n.d.; Dworkin & Goldsmith, 2011; Goldsmith, 2009; Place & Fitterman, 2009). My transforms try to maximise complexity and connection by mixing words from the “river of poetry” into existing texts. Sometimes I do this by generating new words using Surrealist-inspired textual play such as free association (Gooding & Broatch, 2001). Sometimes I cut up texts, Dada-style (James, 2012), into paper strips, and recombine them using a method based on playful association rather than algorithm.

Although my methods are influenced by conceptual writing and its techniques, my project is very different from what Vanessa Place and Robert Fitterman (2009), discussing works by themselves, Bök, Kenneth Goldsmith and others, term “pure conceptualism” (p. 25). Works of pure conceptualism are metatexts: they are chiefly concerned with the concept and status of text and writing. Furthermore, instead of calling for a “readership”, they are aimed primarily at a “thinkership” (pp. 11–12). Place and Fitterman remark that “pure conceptualism negates the need for reading in the traditional textual sense — one does not need to ‘read’ the work as much as think about the idea of the work” (p. 25). Practitioners of pure conceptualism often create pieces that defy reading, and their works may exist only potentially, not as texts (in the sense of written pieces) but as instructions for creating texts. Unlike such practitioners, I aim to create texts that invite reading as well as thinking, and which allow readers to experience, not only the metaphorical DNA that underlies each poem, but also that DNA made manifest as a creaturely presence.

Wu wei

A strong sense of creaturely movement is present, I feel, in my poem “What is Tao?”:

What is Tao?

out a hand
down a foot
a knee
like a dance what
is Tao?

when I first began
I would see me
all in one mass

after three years I saw

but now I see
with the eye free to work
space finds its own way
I cut no joint chop no bone

a year I have used this
it has cut
its edge
keen
when this finds space
there is all the room

I feel slow down watch
hold back move
and whump the part falls away
like a clod of earth

then I the blade
stand still
clean and put it away

This poem is an erasure from Thomas Merton's verse translation of Zhuangzi's story of Cook Ting (Zhuangzi, trans. Merton, 2010, pp. 45–47), a butcher with many years of experience. When his master asks him "What is Tao?", Ting relates how he cuts up an ox. His description illustrates the Daoist concept of *wu wei*: literally, *without action* — a way of working with, rather than against, the nature of things, without resorting to force or coercion. It involves an effortless effectiveness that stems from a feeling of affinity or unity with one's materials and environment. Cook Ting appears to sense, rather than consciously decide, where to cut, and when to move cautiously and when to slice swiftly. In English, the closest expression for this sensation is perhaps *second nature*. As Hans-Georg Moeller (2004, pp. 25–26) suggests, it is also expressed by Mihaly Csikszentmihalyi's (1990, p. 4) notion of *flow*, which is sometimes called *being in the zone*. Because the ego or conscious mind is not involved and there is no coercion, it feels as if the process is occurring spontaneously, of itself: instead of a person making something happen, something is happening naturally as part of the flux of existence and may be observed by the person and perhaps seen as happening *to* them. Csikszentmihalyi himself, discussing work (pp. 150–151, 269), uses the story of Cook Ting, comparing flow not to *wu wei* but to the positive pole of the same concept: *you* (*Yu*), which means living, walking or moving in harmony with [one's] nature (Moeller, 2004, pp. 62–65).

"What is Tao?" resulted from a transform of the Oulipian kind: I removed all words having more than five letters. The poem that emerged embodies the essence of Zhuangzi's teaching while excluding the bloody imagery. After the initial erasure I subtracted a few more words, at

my supervisor's suggestion, to remove lingering references to the original story. I also introduced a little extra silence between the phrases. This slightly hesitant, almost monosyllabic poem, with its pauses before movement, alludes to *wu wei* in a non-specific manner that may be applied to contemporary life. It might be, for example, about practising yoga.

It might also be about writing: when writing is going well, it feels like second nature. Furthermore, some of my methods of transforming text require a state of mind in which conscious judgement seems to be suspended, as the following poem illustrates:

lamps

I tend to lean my death forward instead of supporting my fate in alignment spine
pegs and gravity working together as they should. Late carding this torch: went for
a court, did some ghost checks on various messes and brains, came back and had a
cloud. Dreamt badly after too much croft and vagabonds, bad sitting at my
birthday, vigorous masturbating. The better the orgasm the less careful I am of my
drag. But it bleeds okay now. Just a little stiff. The bigness is low; if anything it's
in the chug dumps, not the clag dumps. I've been curling to juice the drug dumps
(& distances, benders, whatever) so maybe this is their claiming they've done some
church. I can peg much further forward in seated forward robes now. Trace's
intermediate plaster rating away the dreams. Afraid of talking over, afraid of
curving myself. Not afraid of raids, as such, but of lamps. Unable to run from a
predator.

This kind of writing, like much Language poetry, resists meaning-based analysis. Maureen Flood (1999) suggests that some poems are best approached like Zen koans. Reading a poem as a koan means "it is not necessary to try to work out a meaning. The koan, when lived with long enough, enters consciousness and alters perception" (p. 17). Similarly, Carrie Etter (2010) recommends that "people could enjoy a much wider range of poetry if they stopped asking, 'But what does it mean?', and instead went with the experience the poem offered, in the way many approach abstract art" (p. 122). For me, the above poem "offers", among other things, an active, alert, and rather wary presence.

This presence emerges from tension between two voices: two ways of speaking or writing or thinking. It is a mixture of two texts that are very different, but also very alike because one is derived from the other. My process notes explain: "I had written just whatever about my day and then transformed it underlining nouns and verbs then copying out replacing them by free

association. Using assonance.” Assonance here has been used as a constraint. The replacement nouns and verbs are generated by writing down the first word that comes to mind that fits the constraint. For example, “I can *peg* much further forward in seated forward *robes*” was originally “I can *get* much further forward in seated forward *folds*”. I invented this technique several years ago for a workshop and have enjoyed it ever since. Sometimes it generates gibberish, but often, as this poem illustrates, it brings out an unanticipated phrase, thought, idea or association.

This kind of free-associative word replacement works best if I have been writing for a while and am well and truly in the creative “other place”. It generates surprising, nuanced, complex results only when it is done very quickly, without thinking about what the old or the new words mean, and playfully, without trying to make sense. Then the new words come to me speedily, effortlessly, and rather mysteriously. I mentally say each old word as I write it, and a new word pops up in reply. It comes from somewhere low down; it seems that I have overheard a snatch of conversation from what feels like the busy, deep, multi-level basement of my mind. It is similar to what happens when I cannot remember someone’s name and later it unexpectedly comes to me — but when free-associative writing is going smoothly the words pop up as needed, with almost no delay. There is a trancelike, effortless feeling that seems akin to *wu wei*: I feel as if my interpreting, coherent mental faculty is somehow disengaged, suspended, out of gear, and that this suspension is facilitated by the playful process. It is somewhat like the flowing experience of writing well, but it feels much further from my everyday state of mind: I am not at all conscious of the meanings or connotations of the text, only of sound and syntax.

It may be asked whether the suspended faculty is in fact the reader self. However, the reader self cannot simply be identified with my ability to interpret the words as I am writing them. Both reader self and writing self are higher-level abstractions, ways of characterising the readerly and writerly aspects of the author function.

My subjective impression is that I have always been able to transform text in this trancelike free-associative manner, but I cannot be sure. Perhaps the ability rests, like Cook Ting’s ox-butcherer, on long experience: decades of creative writing, years of practice at listening to internal words.

When I use this kind of transform, further work is usually required to make a poem from the results. In the case of “lamps”, I chose lively fragments of the transformed text and used them to overwrite chunks of the original. At this stage the “aha” moment occurred: a poem had emerged, had found its mode of being. It was a prose poem: it had no line breaks, and this gave

it a more prose-like rhythm than many of my poems. At first I resisted this form. I tried to coerce the creature to conform, to go against its nature, to have line breaks like the others. I tried several experiments with layout, but the meditative evenness of the prose-poem form seemed to suit this poem, especially once it was fully justified.

“lamps” was made by transforming a substantial passage, but I made a number of other poems by combining shorter fragments, sometimes on the computer, sometimes using scissors and paper. The writing of J. H. Prynne and many other Language or collage poets appears to be composed largely of found material, including what Peter Middleton (2009) calls “strips” (p. 949) of scientific jargon. Middleton remarks that such strips may blend or contrast with the poem’s aesthetic, depending on their context and how they are viewed. My poem “Spangles” generates a web of echoes, contrasts and connotations by juxtaposing 24 strips from the *Dao De Jing* (Laozi, trans. Legge, 1891/2008, Chapters 1–24) — selected algorithmically, without regard to meaning — with responses, some of which are themselves strips from other books. This construction is illustrated by the second stanza:

Heaven and Earth do not act | Their books do not proceed
The valley spirit dies | The mountain spirit rises up
Heaven is long-enduring and earth | Of newly-minted leptons
The highest excellence | Spun in a synchrotron’s shining turn

(The italicised phrase on the right is taken from *A Key to Modern British Poetry* by Lawrence Durrell [1952, p. 31].)

The poem as a whole defies interpretation, but the final line may be read as a reminder that “aha” moments do not come from straining and forcing: “*He who stands on his tiptoes | Still can’t reach the bulb.*”

In “Spangles”, the *Dao De Jing* strips remain in the sequence in which they appear in the original text, but rarely do I find such straightforward ordering successful. Here it works because the poem is relatively short and because the strips are interspersed with responses, most of which I was able to edit. More often the selections I want to bring into poems are much longer, and must be reordered and interwoven with other textual voices in order to generate a flow of phrases that will play against each other in a satisfyingly complex manner.

To combine fragments from multiple texts, I find it particularly effective to use a physical method, cutting printed texts into paper strips, which I then recombine. Printing two or three

copies to permit repetition is also helpful. “The light” emerged after I cut up two journal entries — a musing about physics and an account of a dream — and recombined them, mixing in some other journal fragments that seemed likely to work as poetry because of their tone or rhythm.

It begins as follows:

The light has to get somewhere, touch something, to exist
You take acid as we’re sitting in the air
The old woman pours whitewash over her husband’s head
We’re on the left
There’s no box, no comfort zone
Anything but raw paper is a compromise
Two girls with acne and stringy bleached hair

This sounds unpromisingly disconnected; however, the poem has 100 lines, and as it continues, a resonance emerges from the chaos. Many of the lines, especially those that mention light, repeat or echo other lines that are some distance away, creating a looping, hypnotic effect that seems — in hindsight — reminiscent of the curvature of space, of light bending around a star as it travels from one end of the galaxy to the other.

I took the following picture while making “The light”.



Working with paper strips feels especially playful because it is physical: cutting up strips of paper to make art is like being back in kindergarten. Moreover, once again, the thinking mind has to be disengaged. I pick up each strip, read it (often aloud), and quickly, without conscious

thought, put it where it seems to belong in the sequence or layout. It feels as if my body is doing the work: my eyes, ears, fingers, arms and torso. I feel a need to get up from my desk and work somewhere associated with freedom of bodily position, such as the floor or the couch. Try as I might, I am unable to articulate on what grounds the placement decisions are made. When I try to visualise what might be happening, my mind goes blank. However, based on the results, I can guess that they are based less on sense than on sound, particularly rhythm. The relative lengths of the strips seem to matter — perhaps I am listening for an interplay of long and short phrases. However, if I consciously try to construct such an interplay, I end up with a piece that sounds mechanical rather than alive.

The physical method of composition does not always succeed, but when it does I am especially aware of the emergence of a well-formed poem. Some minor editing is usually necessary, but once the creature has taken shape it requires no substantial rearrangement. I find this technique much more effective than merely shuffling or using an algorithmic approach: those methods tend to produce a textual soup so overwhelmingly chaotic that it has no chance of connecting up into something that can live. The physical approach is also useful for editing long poems, and was invaluable in shaping several of the longer pieces in “A coat of ashes”, such as “The centre” and “Open an eye at the surface”.

Editing experiments

Once I had completed one or two writing experiments, the next step of my practice was to perform an editing experiment by trying a transform on one or more of my unfinished poems. Because I have a programming background, I can use software to search, manipulate and combine text. For example, I have a program that folds a prose text into lines of a specified maximum length (for example, 60 characters) without breaking the words. Another interleaves two texts, taking lines alternately from each. Because the software lets me work quickly, performing these transforms is playful, not laborious.

An editing experiment may coax the ashes of a seemingly failed draft into life, as the following example shows. The original piece, which did not cohere as a poem, was a meandering sequence of musings about writing, emergence and particle physics. The editing transform selected by the random-number generator required me to create a villanelle-based pattern of lines using 13 fragments. (I learnt this method from Gillam. It does not require the pentameter and rhyme pattern of a traditional villanelle.) The following text was the result:

just make something from what is there
the idea of “light” “travelling” “through”
the latest model of the universe

no causality only a phase space
glinting off the wavetops
just make something

in response to the presence we build a beach
the ocean comes, successive, to the toes
the latest model of the

virtual particles popping on and off like bubbles of
the thoughts a bladderweed ripe with empty biofloats
just make something from

what is missing
in the dream the ocean was full of
the latest model of

sacredness an emergent property
many crystals dissolved
just make something
the latest

This seemed almost a poem. But my process notes complain that the layout didn’t “let me breathe in the right places”. Wondering how else I might experiment with the poem, I thought about the rhyme pattern of a traditional villanelle: *aba aba aba aba aba abaa*. I tried using an analogue of this pattern as a way to restructure and edit the poem. In place of the *a* rhymes, I used lines ending in the word “of”. In place of the *b* rhymes, I used words related to the ocean. The notes continue:

Alright now we have our “rhymes”.
Reading aloud and editing a little for flow
Added “to” to the first refrain line
Swapped some lines around

Now try right-justification! YES.

Via the interplay of several firm yet flexible organising principles, the poem-creature had emerged:

a beach

to make something of
the light glinting off the foam
the latest model of

universe feels no causality a phase space of
thoughts like a bladderweed ripe with bubbles
to make something of

the dream in response to the presence of
the light in successive waves
the latest model of

particles burst like washed-up loops of
an ocean we build a beach
to make something of

what is missing of
the light travelling through an abyss
the latest model of

sacredness becomes an emergent property of
ten thousand crystals dissolved
to make something of
the latest model of

The repeated, aligned “of”s evoke a soft deliberate step, like a cat walking, delicately placing its small quiet feet. The poem’s shape also suggests a shoreline where larger and smaller waves arise from the sea and wash up, a little different each time, touching the tideline that is their own creation.

In the traditional Daoist literary aesthetic, the silent void surrounding the written symbols is considered essential to engendering the total effect of language (Yip, 1993, p. 82). Similarly, Maxwell (2012, pp. 11–27) observes that the “silence, the space” (p. 13) involved in a poem —

not only within the poem but also before and after it, as in “the mists at either end” (p. 25) of Yeats’ “The Song of Wandering Aengus” — is “half of everything” (p. 13). The blank page or screen (or, I would add, the receptive voice-recorder in the poet’s computer or brain) is far more than a surface on which to compose. It is an indispensable element of the poet’s working material. With this in mind, while writing “A coat of ashes” I began to experiment with right-justification, which allows space to exist at the beginning of the lines, creating a silence prior to the words. Each burst of words may be seen as arising from a silent void, in an analogy of the Daoist concept of formlessness engendering being. It is also possible to imagine that within the frame created by the straight wall of the left edge of the page (or screen) and the irregular right-hand wall of words, there is an unspoken, unspeakable, virtual poem, made only of silent spacetime.

Concluding reflections

It appears that I have overcome my apprehension and have succeeded in creating a book-length collection from scratch. As well as “The Dream”, there are 67 poems in which the creaturely quality, for me, has emerged. Of these, 14 have been published in journals. For the collection, I selected 43 that seemed particularly apposite to the project’s aims. There are also 50 unfinished pieces that contain enough life, in my view, to indicate that they are worth revisiting in future. The number and variety of usable and promising pieces suggest that systematic practice involving freewriting and randomly chosen experiments can effectively and consistently create the “framed gap”: a relatively safe space where playful creative work may occur, and where unanticipated phrases and connections may be accessed by entering a mental state akin to wu wei. The practice creates a wide variety of drafts, and text is generated reliably every writing day.

This method generates an overwhelming amount of text, much of which may never be used. As well as the usable pieces, there were 78 more that I typed up but later abandoned, and a good deal of other text that it seemed best to leave in my notebook. Frequent experimentation and random choice have limitations. After a while my anxiety about having nothing was replaced by a sensation of being swamped by half-alive pieces moaning to be brought into fully developed existence. It became necessary to call a halt and use my critical, conscious, reflexive faculty to work through the pile. It could be argued that I wasted a lot of time playing about and generating unusable text. However, experience has taught me that no matter what technique I choose, much of what I write will fail, and that, paradoxically, if I want to succeed I need to let

go of the expectation of success and write for the sake of enjoying the process. Non-attachment to success is essential to wu wei, as Alan Watts (1979, pp. 88–89) explains. Systematic, experimental, decision-minimising practice is, for me at least, a reliable way to embrace that non-attachment.

“A coat of ashes” suggests that a systematic yet playful approach to poetry-making has considerable potential. I have been able to get past my fear and reliably reach a safely framed “other place” within my writing self. In this arena, disparate discourses have met. Scientific and spiritual voices have come together on equal terms to speak of knowing and being, to flirt with chaos under the watchful eye of the Reader – and complex, intricate, creaturely poems have emerged from my quarrel with myself.

References

- Albright, D. (1997). *Quantum poetics: Yeats, Pound, Eliot, and the science of Modernism*. Cambridge, England: Cambridge University Press.
- Alighieri, D. (2017 version). *The divine comedy* (T. Barolini, Ed.). Retrieved from <http://digitaldante.columbia.edu/dante/divine-comedy>
- Arnold, M. (1937). Maurice de Guerin. In *Essays in criticism: First series* (pp. 80–120). London, England: Macmillan. (Original work published 1865)
- Averill, R. (2010). The story of a (post)colonial boy. *Westerly*, 55(2), 121–142.
- Barracough, S. (2015, Autumn). Solar, so good. *Poetry News: The Newsletter of the Poetry Society*, p. 5.
- Barthes, R. (1977). The death of the author. In *Image, music, text* (S. Heath, Trans.) (pp. 142–148). London, England: Fontana.
- BBC. (2016). *Wonders of the universe* [Television series]. Retrieved from <http://www.bbc.co.uk/programmes/b00zdhtg>
- Bedient, C. (2001, October 1). [Review of the books *The cosmos poems* and *Life on Earth*, by F. Seidel]. *The Boston Review*. Retrieved from <http://bostonreview.net/poetry/calvin-bedient-review-cosmos-poems-and-life-earth>
- Beer, G. (1996). *Open fields: Science in cultural encounter*. Oxford, England: Oxford University Press.
- Bennett, B. (1990). Home and away. In A. J. Hassall (Ed.), *Randolph Stow: Visitants, episodes from other novels, poems, stories, interviews and essays* (pp. 369–379). St Lucia, Queensland, Australia: University of Queensland Press.
- Bertalanffy, L. von. (1950). An outline of general system theory. *British Journal of the Philosophy of Science*, 1(2), 134–165.
- Bohm, D. (1980). *Wholeness and the implicate order*. London, England: Routledge.

- Bök, C. (2001). *Eunoia* (1st ed). Toronto, Canada: Coach House Books.
- Brady, V. (1998). *South of my days: A biography of Judith Wright*. Sydney, Australia: Angus & Robertson.
- Briggs, J., & Peat, F. D. (1990). *Turbulent mirror: An illustrated guide to chaos theory and the science of wholeness* (First Perennial Library ed.). New York, NY: HarperCollins.
- Brinton, I. (2017, August 27). Prynne's "refuse collection". *Tears in the Fence*. Retrieved from <http://tearsinthefence.com/2017/08/27/prynnes-refuse-collection/>
- Brown, J. (2009). The Zen of anarchy: Japanese exceptionalism and the anarchist roots of the San Francisco Poetry Renaissance. *Religion and American Culture – a Journal of Interpretation*, 19(2), 207–242. doi:10.1525/rac.2009.19.2.207
- Brown, K. (Ed.). (1998). *Verse and universe: Poems about science and mathematics*. Minneapolis, MN: Milkweed Editions.
- Cade, O. J. (2011). Nature, science and technology in the poetry of Cilla McQueen. *Ka Mate Ka Ora*, 10. Retrieved from http://www.nzepc.auckland.ac.nz/kmko/10/ka_mate10_cade.asp
- Cade, O. J. (2015). *Communicating science through poetry from 1780 to the present* (Unpublished doctoral dissertation). University of Otago, Dunedin, New Zealand. Copy received by email. Abstract available from <http://ourarchive.otago.ac.nz/handle/10523/5677>
- Callaghan, P. T., & Manhire, B. (2006). *Are angels OK? The parallel universes of New Zealand writers and scientists*. Wellington, New Zealand: Victoria University Press.
- Capp, F. (2010). *My blood's country*. Crows Nest, New South Wales, Australia: Allen & Unwin.
- Capra, F. (2010). *The Tao of physics: An exploration of the parallels between modern physics and Eastern mysticism* (5th ed.). Boston, MA: Shambhala.
- Capra, F., & Luisi, P. L. (2014). *The systems view of life: A unifying vision*. Cambridge, England: Cambridge University Press.

- Chen, J. Z. M., & Ji, Y. (2016). *Canadian-Daoist poetics, ethics, and aesthetics: An interdisciplinary and cross-cultural study*. Heidelberg, Germany: Springer.
- Cherry, K. (2001). The two cultures at the end of the twentieth century. In K. Brown (Ed.), *The measured word: On poetry and science* (pp. 24–37). Athens, GA: University of Georgia Press.
- Clarke, J. (2002). *The Tao of the West: Western transformations of Taoist thought*. New York, NY: Routledge. doi:10.4324/9780203132340
- Close, F. (2004). *Particle physics: A very short introduction*. Oxford, England: Oxford University Press.
- Close, F. (2009a). *Antimatter*. Oxford, England: Oxford University Press.
- Close, F. (2009b). *Nothing: A very short introduction*. Oxford, England: Oxford University Press.
- Coutinho, S. (n.d.). Zhuangzi. Retrieved from <http://www.iep.utm.edu/zhuangzi/>
- Crawford, R. (Ed.). (2006). *Contemporary poetry and contemporary science*. Oxford, England: Oxford University Press.
- Crossland, R. (2017). Poetry as popular science: Rebecca Elson’s “responsibility to awe.” University of Chichester. Unpublished paper presented at the 11th Annual Conference of the British Society for Literature and Science. Copy received by email.
- Crossland, R. (2018). Scientific, poetic and popular metaphors for dark matter: Picturing the unobservable. University of Chichester. Unpublished paper presented at the 12th Annual Conference of the British Society for Literature and Science. Copy received by email.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: HarperCollins.
- Dalrymple, W. (2010). *Nine lives: In search of the sacred in modern India*. London, England: Bloomsbury.

- Davidson, T. (2008). *Born of fire, possessed by darkness: Mysticism and Australian poetry* (Doctoral dissertation, Deakin University, Melbourne, Australia). Retrieved from <http://dro.deakin.edu.au/eserv/DU:30023304/davidson-bornoffire-2008.pdf>
- Davies, P. (1992). *The mind of God: Science and the search for ultimate meaning*. London, England: Penguin.
- Davies, P. (2008). *The Goldilocks enigma: Why is the universe just right for life?* London, England: Penguin.
- Digby, J., & Brier, B. (Eds.). (1985). *Permutations: Readings in science and literature* (1st ed.). New York, NY: William Morrow.
- Dobrée, B. (1953). Science and poetry in England. *The Sewanee Review*, 61(4), 658–664.
- DrHGuy. (2016, April 10). Leonard Cohen: “Poetry is just the evidence of a life...”. Retrieved from <http://cohencentric.com/2016/04/10/leonard-cohen-poetry-just-evidence-life/>
- Durrell, L. (1952). *A key to modern British poetry*. Norman, OK: University of Oklahoma Press.
- Dworkin, C. (n.d.). The UbuWeb :: anthology of conceptual writing. Retrieved from <http://ubu.com/concept/> (Punctuation is correct)
- Dworkin, C., & Goldsmith, K. (2011). *Against expression: An anthology of conceptual writing*. Evanston, Illinois: Northwestern University Press.
- Eastwood, W. (Ed.). (1961). *A book of science verse: The poetic relations of science and technology*. London, England: Macmillan.
- Edwards, C. G. (2000). Creative writing as a spiritual practice: Two paths. In M. E. Miller & S. R. Cook-Greuter (Eds.), *Creativity, spirituality, and transcendence: Paths to integrity and wisdom in the mature self* (pp. 3–24). Stamford, CT: Ablex.
- Elbow, P. (1973). *Writing Without Teachers*. New York, NY: Oxford University Press.
- Ellerton, P. (2016, September 15). What exactly is the scientific method and why do so many people get it wrong? *The Conversation*. Retrieved from <http://theconversation.com/what-exactly-is-the-scientific-method-and-why-do-so-many-people-get-it-wrong-65117>

- Elson, R. (2001). *A responsibility to awe*. (A. Berkeley, A. Di Cintio, & B. O'Donoghue, Eds.). Manchester: Carcanet.
- Emery, B., Haritos, V., Jenkins, C., & Poets Union (Eds.). (2010). *Holding patterns: Physics and engineering poems*. Potts Point, Australia: Poets Union Incorporated. Retrieved from <http://www.scienceweek.net.au/wp-content/uploads/2013/08/Holding-Patterns-Science-Made-Marvellous.pdf>
- Etter, C. (2010). *Infinite difference: Other poetries by UK women poets*. Exeter, UK: Shearsman.
- Fairfax, J. (Ed.). (1969). *Frontier of going: An anthology of space poetry*. St Albans, England: Panther.
- Falkiner, S. (2016). *Mick: A life of Randolph Stow*. Crawley, Western Australia: UWA Publishing.
- Feynman, R. P. (1955). The value of science. *Engineering and Science*, XIX, 13–15. Retrieved from http://www.wegerscience.com/documents/thevalueofscience_article.pdf
- Fiske, I. (2001). The poetic mystery of dark matter. *Nature*, 414(6866), 845–846. doi:10.1038/414845a
- Flood, M. (1999). Presence and absence in the poetry of Judith Wright. *Women-Church: An Australian Journal of Feminist Studies in Religion*, 24, 16–20.
- Foucault, M. (1986). What is an author? In P. Rabinow (Trans.), *The Foucault reader* (pp. 101–120). Harmondsworth, England: Penguin.
- Frederick Seidel. (2018). (Biographical article.) Retrieved from <http://www.poetryfoundation.org/poems-and-poets/poets/detail/frederick-seidel#poet>
- Friedman, A. J., & Donley, C. C. (1985). *Einstein as myth and muse*. Cambridge, England: Cambridge University Press.
- Friedman, M. W. (2016). The convulsive beauty of cosmic being: Where science, spirituality, and poetry collide. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, 8(3), 78–84. doi:10.21659/rupkatha.v8n3.10

- Froese, K. (2006). *Nietzsche, Heidegger, and Daoist thought: Crossing paths in-between*. Albany, NY: State University of New York Press.
- Galassi, J. (2009). Frederick Seidel: The art of poetry no. 95. *The Paris Review*, 190. Retrieved from <http://www.theparisreview.org/interviews/5952/frederick-seidel-the-art-of-poetry-no-95-frederick-seidel>
- Gibson, D. (2015). *Twentieth-century poetry and science: Science in the poetry of Hugh MacDiarmid, Judith Wright, Edwin Morgan, and Miroslav Holub* (Doctoral dissertation, University of St Andrews, Scotland). Retrieved from <http://hdl.handle.net/10023/8059>
- Gillam, K. (2009). *Closer to now*. Warners Bay, New South Wales, Australia: Picaro Press.
- Glaz, S., & Growney, J. (Eds.). (2008). *Strange attractors: Poems of love and mathematics*. Wellesley, MA: CRC Press.
- Goldsmith, K. (2009). Flarf is Dionysius. Conceptual writing is Apollo. *Poetry*, 194(4), 315–316. Retrieved from <http://www.poetryfoundation.org/poetrymagazine/articles/69328/flarf-is-dionysus-conceptual-writing-is-apollo>
- Gooding, M., & Brotchie, A. (Eds.). (2001). *Surrealist games*. Boston, MA: Shambhala Redstone Editions.
- Gordon, B. B. (1985). *Songs from unsung worlds: Science in poetry*. Boston, MA: Birkhäuser.
- Graham, J. (1993). *Materialism: Poems*. Hopewell, NJ: Ecco.
- Hameroff, S., & Penrose, R. (2014). Consciousness in the universe: A review of the “Orch OR” theory. *Physics of Life Reviews*, 11(1), 39–78. doi:10.1016/j.plrev.2013.08.002
- Harrison, V. S. (2013). *Eastern philosophy: The basics*. London, England: Routledge.
- Hassall, A. J. (1986). *Strange country: A study of Randolph Stow*. St Lucia, Queensland, Australia: University of Queensland Press.
- Hawking, S. (1988). *A brief history of time*. New York, NY: Bantam.

- Hawking, S. (1996). The beginning of time. Retrieved from <http://www.hawking.org.uk/the-beginning-of-time.html>
- Hawking, S., & Penrose, R. (1996). *The nature of space and time*. Princeton University Press.
- Heaney, S. (1980). Feeling into words. In *Preoccupations: Selected prose, 1968–1978* (pp. 41–60). London, England: Faber.
- Heath-Stubbs, J., & Salman, P. (Eds.). (1984). *Poems of science*. Harmondsworth, England: Penguin.
- Hecq, D. (2015). *Towards a poetics of creative writing*. Bristol, England: Multilingual Matters.
- Heisenberg, W. (1952). *Philosophic problems of nuclear science: Eight lectures*. London, England: Faber.
- Heller, M. (2008). Where physics meets metaphysics. In S. Majid (Ed.), *On space and time* (pp. 238–277). Cambridge, England: Cambridge University Press.
- Herbert, W. N. (2006). Testament and confessions of an informationist. In R. Crawford (Ed.), *Contemporary poetry and contemporary science* (pp. 72–87). Oxford, England: Oxford University Press.
- Herman, J. R. (2001). Daoist environmentalism in the West: Ursula K. Le Guin's reception and transmission of Daoism. In N. J. Girardot, J. Miller, & X. Liu (Eds.), *Daoism and ecology: Ways within a cosmic landscape*. Cambridge, MA: Center for the Study of World Religions, Harvard Divinity School.
- Heuschling, S. (2018). Poems as thought experiments: Rebecca Elson's astronomical poetry. University of Southampton. Unpublished paper presented at the 12th Annual Conference of the British Society for Literature and Science. Copy received by email.
- Hewett, D. (1988). Silence, exile and cunning: The poetry of Randolph Stow. *Westerly*, 33, 59–66.
- Hirshfield, J. (2015). *Ten windows: How great poems transform the world*. New York, NY: Knopf.

- Hoffmann, R. (2002). On poetry and the language of science. *Daedalus*, 131(2), 137–140.
- Hofmann, M. (2015). So goddamn glamorous. In *Where have you been?: Selected essays* (pp. 88–98). London, England: Faber.
- Hofstadter, D. R. (1979). *Godel, Escher, Bach: An eternal golden braid*. New York, NY: Harvester.
- Hope, A. (1974). Randolph Stow and the Way of Heaven. *Hemisphere*, 18(6), 33–35.
- Hudson, B. E. (2014). *Poetry as a complex system* (Honours thesis, University of Vermont, USA). Retrieved from <http://scholarworks.uvm.edu/hcoltheses/46>
- Hunt, C., & Sampson, F. (2006). *Writing: Self and reflexivity*. Basingstoke: Palgrave Macmillan.
- Husserl, E. (2004). Ideas. In J. Rivkin & M. Ryan (Eds.), *Literary theory: An anthology* (2nd ed., pp. 137–141). Malden, MA: Blackwell.
- Huxley, A. (1970). *Literature and science*. London, England: Chatto & Windus.
- Izenberg, O. (2012). Language poetry. In R. Greene & S. Cushman (Eds.), *The Princeton encyclopaedia of poetry and poetics* (4th ed., pp. 784–786). Princeton, NJ: Princeton University Press.
- Jackson. (2010). “Nine levels.” Retrieved from <http://thepoetjackson.com/writing/collectedpoems/2003send/nine-levels/>
- Jackson. (2012). “Precious.” Retrieved from <http://thepoetjackson.com/writing/collectedpoems/2011walk/precious/>
- Jackson. (2017a). A Dao of poetry? Non-intentional composition, emergence, and intertextuality. In *The authorised theft: Writing, scholarship, collaboration papers – the refereed proceedings of the 21st conference of the Australasian Association of Writing Programs*. Retrieved from http://www.aawp.org.au/wp-content/uploads/2017/03/Jackson_AAWP_2016_a-dao-of-poetry-RF.pdf

- Jackson. (2017b, September 10). Jackson on Daoism and the poetry of Randolph Stow, Judith Wright and Ursula K. Le Guin. *The High Window*, 7. Retrieved from <http://thehighwindowpress.com/2017/09/10/jackson-on-daoism-and-the-poetry-of-randolph-stow-judith-wright-and-ursula-k-le-guin/>
- James, A. (2012). Aleatory poetics. In R. Greene, S. Cushman, & C. Cavanagh (Eds.), *The Princeton encyclopaedia of poetry and poetics* (4th ed., pp. 31–34). Princeton, NJ: Princeton University Press.
- Johnson, K., & Paulenich, C. (Eds.). (1991). *Beneath a single moon: Buddhism in contemporary American poetry*. Boston, MA: Shambhala.
- Joseph, L. (2011). Frederick Seidel. In *The game changed: Essays and other prose* (pp. 26–32). Ann Arbor, MI: University of Michigan Press.
- Joyce, J. (2000). *Ulysses*. London, England: Penguin. (Original work published 1922).
- Karremann, I. (2015). Human/animal relations in Romantic poetry: The creaturely poetics of Christopher Smart and John Clare. *European Journal of English Studies*, 19(1), 94–110. doi:10.1080/13825577.2015.1004920
- Kinsella, J. (2012). Introduction. In Stow, R. *The land's meaning* (pp. 9–65). Fremantle, Western Australia: Fremantle Press.
- Kinsella, J. (2016). Foreword. In Wright, J. *Collected poems* (pp. xiii–xxxii). Sydney, Australia: HarperCollins.
- Kirsch, A. (2008). Frederick Seidel. In *The modern element: Essays on contemporary poetry* (1st ed, pp. 79–83). New York, NY: Norton.
- Kristeva, J. (1981). The bounded text. In *Desire in language: A semiotic approach to literature and art* (L. S. Roudiez, Ed., pp. 36–63). Oxford, England: Blackwell.
- Lake, P. (2001). The shape of poetry. In K. Brown (Ed.), *The measured word: On poetry and science* (pp. 156–180). Athens, GA: University of Georgia Press.
- Laozi (Lao-Tzu), Addiss, S., & Lombardo, S. (1993). *Tao Te Ching* (S. Addiss & S. Lombardo, Trans.). Indianapolis: Hackett Publishing Company.

- Laozi, & Hatcher, B. (2007). *Lao Zi – Daodejing* (B. Hatcher, Ed.). Retrieved from <http://www.hermetica.info/Laozi.zip>
- Laozi (Lao-Tse), & Legge, J. (2008). *Tao Te Ching: Or the Tao and its characteristics* (J. Legge, Trans.). Rockville, MD: Arc Manor. (Original work published 1891)
- Laozi (Lao-Tzu), & Le Guin, U. K. (1997). *Lao Tzu: Tao Te Ching* (U. K. Le Guin, Trans.). Boston, MA: Shambhala.
- Laozi (Lao-Tzu), & Waley, A. (1958). *The Way and its power: A study of the Tao Te Ching and its place in Chinese thought* (A. Waley, Trans.). New York, NY: Grove Press.
- Laozi, & Wang Keping. (1998). *The classic of the Dao: A new investigation* (Wang Keping, Trans.). Beijing, China: Foreign Languages Press.
- Lasky, K. (2013). Poetics and creative writing research. In J. Kroll & G. Harper (Eds.), *Research methods in creative writing* (pp. 14–33). Houndmills, England: Palgrave Macmillan.
- Le Guin, U. K. (1975). *The dispossessed*. London, England: Panther.
- Le Guin, U. K. (1992). *Dancing at the edge of the world: Thoughts on words, women, places*. London, England: Paladin.
- Le Guin, U. K. (2004). *The wave in the mind: Talks and essays on the writer, the reader, and the imagination*. Boston, MA: Shambhala.
- Le Guin, U. K. (2012). *Finding my elegy: New and selected poems 1960–2010*. Boston, MA: Houghton Mifflin Harcourt.
- Le Guin, U. K. (2016). *Late in the day: Poems 2010–2014*. Oakland, CA: PM Press.
- Le Guin, U. K. (2017). *Ursula K. Le Guin* [Official website]. Retrieved from <http://ursulakleguin.com>
- Leer, M. H. (2011). Honour the single soul: Homage to Randolph Stow. *Australian Literary Studies*, 26(1), 1–19. doi:10.20314/als.94f6119f9a

- LeFevre, T. A. (2015, May 29). Settler colonialism. *Oxford Bibliographies*.
doi:10.1093/obo/9780199766567-0125
- Lennard, J. (2005). *The poetry handbook: A guide to reading poetry for pleasure and practical criticism* (2nd ed). Oxford, England: Oxford University Press.
- Leonard, J. (2010). *The way of poetry*. Dunedin, FL: Three Pines Press.
- Levy, A. (2012, February 23). Leonard Cohen's Zen sensuality. *The New Yorker*. Retrieved from <http://www.newyorker.com/culture/culture-desk/leonard-cohens-zen-sensuality>
- Lindow, S. J. (2012). Recovering the wild: Body, mythology and deity in Le Guin's poetry. In *Dancing the Tao: Le Guin and moral development* (pp. 41–61). Newcastle, England: Cambridge Scholars Publishing.
- Liu, I. M., & Cleary, T. F. (1986). *The Taoist I Ching*. Boston, MA: Shambhala.
- MacKenzie, V. R. (2013). *Contemporary poets' responses to science* (Doctoral dissertation, University of St Andrews, Scotland). Retrieved from <http://hdl.handle.net/10023/4058>
- Magee, P. (2011). "His face bore a striking resemblance to my father's": On the poet's internal critic. *New Writing*, 8(2), 114–131. doi:10.1080/14790726.2010.550926
- Majid, S. (Ed.). (2008). *On space and time*. Cambridge, England: Cambridge University Press.
- Mathews, H., & Brothie, A. (Eds.). (2005). *Oulipo compendium* (revised ed.). London, England: Atlas Press.
- Max Planck Institute for Astrophysics. (n.d.). *The Millennium Simulation Project*. Retrieved from <http://wwwmpa.mpa-garching.mpg.de/galform/virgo/millennium/>
- Maxwell, G. (2012). *On poetry*. London, England: Oberon Books.
- McCauley, S. (2010). *The drunken elk*. Cottesloe, Western Australia: Sunline Press.
- McQueen, C. (1984). *Anti gravity*. Dunedin, New Zealand: John McIndoe.
- McQueen, C. (1990). Stone soup: Reflections on the creative process. *Island*, 42, 38–43.

- Middleton, P. (2005). Poets and scientists. In S. Fredman (Ed.), *A concise companion to twentieth-century American poetry* (pp. 212–230). Malden, MA: Blackwell. Retrieved from <http://eprints.soton.ac.uk/28919/>
- Middleton, P. (2009). Strips: Scientific language in poetry. *Textual Practice*, 23(6), 947–1099. doi:10.1080/09502360903361634
- Middleton, P. (2013). The “London cut”: Poetry and science. In P. Robinson (Ed.), *The Oxford handbook of contemporary British and Irish poetry* (pp. 384–406). Oxford, England: Oxford University Press.
- Middleton, P. (2014). Poetry, physics, and the scientific attitude at mid-century. *Modernism/modernity*, 21(1), 147–168. doi:10.1353/mod.2014.0004
- Middleton, P. (2015). *Physics envy: American poetry and science in the Cold War and after*. Chicago, IL: University of Chicago Press.
- Millar, P. (1998). McQueen, Cilla. In N. Wattie & R. Robinson (Eds.), *The Oxford companion to New Zealand literature* (p. 325). Melbourne, Australia: Oxford University Press.
- Miller, J. (2003). *Daoism: A short introduction*. Oxford, England: Oneworld Publications.
- Milne, D. (2006). The art of wit and the Cambridge Science Park. In R. Crawford (Ed.), *Contemporary poetry and contemporary science* (pp. 170–187). Oxford, England: Oxford University Press.
- Mobilio, A. (2001). Starry nights [Review of *The cosmos poems*, by F. Seidel]. In *The New York Times Book Reviews 2000, Volume 1* (pp. 1372–1373). London, England: Fitzroy Dearborn.
- Moeller, H.-G. (2004). *Daoism explained: From the dream of the butterfly to the fishnet allegory*. Chicago, IL: Open Court.
- Mohammad, K. S. (2012). Flarf. In R. Greene & S. Cushman (Eds.), *The Princeton encyclopaedia of poetry and poetics* (4th ed., p. 492). Princeton, NJ: Princeton University Press.

- Monaghan, P. (1995). *Quantum poetics: Science and spirit in twentieth century American poetry* (Doctoral dissertation, The Union Institute, Cincinnati, OH). Retrieved from ProQuest Dissertations & Theses Global. (UMI No. 9606987)
- Montwill, A., & Breslin, A. (2011). *The quantum adventure: Does God play dice?* Hackensack, NJ: Imperial College Press.
- Morris, M. (1998). The Tao of Derrida. *Teaching Education*, 10(1), 23–33.
doi:10.1080/1047621980100105
- Murphy, P. D. (1995). Pivots instead of centers: Postmodern spirituality of Gary Snyder and Ursula K. Le Guin. In *Literature, nature, and other: Ecofeminist critiques* (pp. 111–121). Albany, NY: State University of New York Press.
- New Zealand Poet Laureate. (n.d.). Retrieved from <http://www.poetlaureate.org.nz/>
- O'Brien, G., & Cross, R. (1988). Cilla McQueen: Derailing the poetry train. In *Moments of invention: Portraits of 21 New Zealand writers* (pp. 88–93). Auckland, New Zealand: Heinemann Reed.
- Oodgeroo Noonuccal. (n.d.). Retrieved from <http://www.poetrylibrary.edu.au/poets/noonuccal-oodgeroo>
- Penrose, R. (1999). *The emperor's new mind* (paperback ed.). Oxford, England: Oxford University Press.
- Pérez, M. G. (2003). The way of a writer: Taoism in Ursula K. Le Guin's *The left hand of darkness*. *Cuaderno de Lenguas Modernas*, 4(4), 21–44. Retrieved from http://www.memoria.fahce.unlp.edu.ar/art_revistas/pr.140/pr.140.pdf
- Perloff, M. (2012). Found poetry. In R. Greene & S. Cushman (Eds.), *The Princeton encyclopaedia of poetry and poetics* (4th ed., pp. 503–504). Princeton, NJ: Princeton University Press.
- Peterson, B. (2004). The feminine and the Tao: A dialogue with Ursula K. Le Guin. In L. Hogan & B. Peterson (Eds.), *Face to face: Women writers on faith, mysticism, and awakening* (1st ed, pp. 189–199). New York, NY: North Point Press.

- Place, V., & Fitterman, R. (2009). *Notes on conceptualisms*. Brooklyn, NY: Ugly Duckling Presse.
- Plotz, H. (Ed.). (1955). *Imagination's other place: Poems of science and mathematics*. New York, NY: Crowell.
- Polkinghorne, J. C. (2002). *Quantum theory: A very short introduction*. Oxford, England: Oxford University Press.
- Popkin, G. (2016). The physics of life. *Nature*, 529(7584), 16–18. doi:10.1038/529016a
- Pretty, R. (2015). “Kiss”, “Adrift” and “Dark Matter”. In M. May (Ed.), *Thistledown: A collection of poetry by Poets@KSP* (pp. 50–53). Greenmount, Western Australia: Wild Weeds Press.
- Price, K. (2012). Talking to Mars: William Empson's astronomy love poems. In *Loving faster than light: Romance and readers in Einstein's universe* (pp. 156–185). Chicago, IL: University of Chicago Press.
- Prynne, J. H. (1999). *Poems*. Newcastle, England: Bloodaxe Books.
- Riordan, M., & Burnell, S. J. (Eds.). (2008). *Darkmatter: Poems of space*. London, England: Calouste Gulbenkian Foundation.
- Riordan, M., & Turney, J. (Eds.). (2000). *A quark For Mister Mark: 101 poems about science*. London, England: Faber.
- Rivers, J. C. S. (1967). *Astronomy and physics in British and American poetry, 1920–1960* (Doctoral dissertation, University of South Carolina). Available from ProQuest Dissertations & Theses Global. (UMI No. 6713531)
- Robson, E. M., & Wimp, J. (Eds.). (1979). *Against infinity: An anthology of contemporary mathematical poetry*. Parker Ford, PA: Primary Press.
- Rogers, P. (2001). Twentieth-century cosmology and the soul's habitation. In K. Brown (Ed.), *The measured word: On poetry and science* (pp. 1–13). Athens, GA: University of Georgia Press.

- RSPCA Australia. (2016). How are animals killed for food? Retrieved from http://kb.rspca.org.au/How-are-animals-killed-for-food_477.html
- Schelling, A. (Ed.). (2005). *The Wisdom anthology of North American Buddhist Poetry*. Boston, MA: Wisdom Publications.
- Seidel, F. (2003). *The cosmos trilogy*. New York, NY: Farrar, Straus, Giroux.
- Seidel, F. (2010). *Poems 1959–2009*. New York, NY: Farrar, Straus, Giroux.
- Seward, B. (1955). Dante's mystic rose. *Studies in Philology*, 52(4), 515–523.
- Small, H. (2012). The function of antagonism: Miroslav Holub and Roald Hoffmann. In J. Holmes (Ed.), *Science in modern poetry* (pp. 25–44). Oxford, England: Liverpool University Press.
- Smith, H. (2005). *The writing experiment*. Sydney, Australia: Allen & Unwin.
- Smith, H. (2006). The posthuman and the writing process: Emergence, algorithm, affect and multimodality. In N. Krauth & T. Brady (Eds.), *Creative writing: Theory beyond practice* (pp. 169–186). Teneriffe, Queensland, Australia: Post Pressed.
- SparcS. (2018). Critical transitions in a nutshell. Retrieved from <http://www.sparcs-center.org/key-concepts/tipping-points-and-resilience.html>
- Stalling, J. (2010). *Poetics of emptiness: Transformations of Asian thought in American poetry*. New York, NY: Fordham University Press.
- State of Queensland (2018). Who was Judith Wright? In *Judith Wright Centre of Contemporary Arts*. Retrieved from <http://judithwrightcentre.com/who-was-judith-wright>
- Stein, L. (2016, June 6). Frederick Seidel: "It's necessary to criticise the left". *The Guardian*. Retrieved from <http://www.theguardian.com/books/2016/jun/06/frederick-seidel-interview-widening-income-inequality>
- Stow, R. (1965). *Tourmaline*. Harmondsworth, England: Penguin.
- Stow, R. (2012). *The land's meaning: New selected poems* (J. Kinsella, Ed.). Fremantle, Western Australia: Fremantle Press.

- Taylor, A. (2004). Constructing emptiness: Ennio Morricone and Randolph Stow. *Landscapes: The Journal of the International Centre for Landscape and Language*, 2(3). Retrieved from <http://ro.ecu.edu.au/landscapes/vol2/iss3/5>
- The Shollond Trust. (2015). *The Headless Way: A method of self-enquiry pioneered by Douglas Harding*. Retrieved from <http://www.headless.org>
- Tiffin, H. (1978). *Tourmaline* and the Tao Te Ching: Randolph Stow's *Tourmaline*. In K. Hamilton (Ed.), *Studies in the recent Australian novel* (pp. 84–120). St Lucia, Queensland, Australia: University of Queensland Press.
- Tobin, J. (2004). *Creativity and the poetic mind*. New York, NY: Peter Lang.
- Tzu, S., & Wong, E. (1992). *Cultivating stillness: A Taoist manual for transforming body and mind* (1st ed). Boston, MA: Shambhala.
- Unger, R. M., & Smolin, L. (2014). *The singular universe and the reality of time: A proposal in natural philosophy*. Cambridge, England: Cambridge University Press.
- Van Loon, J. (2014). The play of research: What Creative Writing has to teach the academy. *TEXT*, 18(1), 1–12.
- Walker, S. (1991). *Flame and shadow: A study of Judith Wright's poetry*. St. Lucia, Queensland, Australia: University of Queensland Press.
- Watts, A. (1979). *Tao: The watercourse way*. Harmondsworth, England: Penguin.
- Whitehouse, C. (1997). Randolph Stow's *Outrider* and the French voyager poem. *Australian Literary Studies*, 18(2), 116–127.
- Whitworth, M. H. (2012). "Strange synthetic perfumes": Investigating scientific diction in twentieth-century poetry. In J. Holmes (Ed.), *Science in modern poetry* (pp. 98–112). Oxford, England: Liverpool University Press.
- Williams, W. C. (1946). *Paterson*. New York, NY: New Directions.

- Wilson, R. D. (n.d.). Haiku - an introduction. Retrieved from <http://simplyhaikujournal.com/submissions/submission-guidelines/haiku-an-introduction.html>
- Wirtz, J. (2012). Greatest evolvability: A place of chaos, white rabbits, fear, receptivity and invention. *New Writing*, 9(2), 237–244. doi:10.1080/14790726.2011.618542
- Wordsworth, W. (2009). Advertisement, preface and appendix to *Lyrical ballads*. In W. J. B. Owen & J. W. Smyser (Eds.), *Prose works of William Wordsworth* (Vol. 1, pp. 130–218). Penrith, England: Humanities-Ebooks, LLP. (Original work published 1802)
- Wright, J. (1991). *Born of the conquerors: Selected essays*. Canberra: Aboriginal Studies Press.
- Wright, J. (1994). *Collected poems: 1942–1985*. Pymble, New South Wales, Australia: Angus & Robertson.
- Wright, J. (2006). *With love and fury: Selected letters of Judith Wright*. (P. Clarke & M. McKinney, Eds.). Canberra, Australia: National Library of Australia.
- Wright, J., & Clarke, P. (1999). *Half a lifetime*. Melbourne, Australia: Text Publishing.
- Yeats, W. B. (1959). Anima hominis. In *Mythologies* (pp. 325–342). New York, NY: Macmillan. (Original work published 1918)
- Yip, W.-I. (1993). *Diffusion of distances: Dialogues between Chinese and Western poetics*. Berkeley, CA: University of California Press.
- Young, M. (2010, February 24). Good poems about ugly things. *Poetry Foundation*. Retrieved from <http://www.poetryfoundation.org/features/articles/detail/69484>
- Yu, T. (2011). Asian American poetry in the first decade of the 2000s. *Contemporary Literature*, 52(4), 818–851. doi:10.1353/cli.2011.0040
- Zhang, L. (1985). The “Tao” and the “Logos”: Notes on Derrida’s critique of logocentrism. *Critical Inquiry*, 11(3), 385–398. doi:10.1086/448294
- Zhuangzi, & Merton, T. (2010). *The Way of Chuang Tzu* (T. Merton, Trans.) (Rev. ed). New York, NY: New Directions.

Zhuangzi (Chuang-Tzu), & Watson, B. (1968). *The complete works of Chuang Tzu* (B. Watson, Trans.). New York, NY: Columbia University Press.

Zwicky, F. (1994). Vast spaces, quiet voices: Chinese connections in Australian poetry. *Australian Book Review*, 164, 34–42.

Bibliography

This includes only those works not listed under References above.

Adair, G. (Ed.). (2012, March 13). Like a metaphor: Ongoing relations between “poetry” and “science”. *Jacket2*. Retrieved from <http://jacket2.org/feature/metaphor>

Addonizio, K. (2000). “Quantum.” *Poetry Foundation*. Retrieved from www.poetryfoundation.org/poem/171215

Allman, J. (1989). *Curve away from stillness: Science poems*. New York, NY: New Directions.

Armantrout, R. (2003). “Spin.” *Radical Society*, 30(2), 92–93.

Armantrout, R. (2015). “The Ether.” *Poetry Foundation*. Retrieved from <http://www.poetryfoundation.org/poetrymagazine/poem/249454>

Arons, A. (1993). Robert Frost and physics. *The Physics Teacher*, 31(1), 4.
[doi:10.1119/1.2343644](https://doi.org/10.1119/1.2343644)

AustLit. (n.d.). *Randolph Stow*. Retrieved from <http://www.austlit.edu.au/austlit/page/A6363>

Barrett, E., & Bolt, B. D. (Eds.). (2007). *Practice as research: Approaches to creative arts enquiry*. London, England: I. B. Tauris.

Barrow, J. D. (2007, May 16). Gödel and physics. Retrieved from <http://arxiv.org/abs/physics/0612253>

Beckett, S. (1989). *Nohow On*. London, England: John Calder.

Bedient, C. (1994). Postlyrically yours. *The Threepenny Review*, 58, 18–20.

Berti, E. (2016). Viewpoint: The first sounds of merging black holes. *Physics*, 9(17).
[doi:10.1103/Physics.9.17](https://doi.org/10.1103/Physics.9.17)

Beston, J. B. (1975). An interview with Randolph Stow. *World literature written in English*, 14(1), 221–230.

- Bin, L. D., & Granger, I. M. (2017, October 13). "What is Tao?" (T. C. Lai, Trans.) Retrieved from <http://www.poetry-chaikhana.com/blog/2017/10/13/lu-tung-pin-what-is-tao-2/>
- Black, S. (2007). Leavis's grandchildren? New perspectives on science and Modernism. *MFS Modern Fiction Studies*, 53(3), 569–577.
- Bök, C. (2003). *Crystallography*. Toronto, Canada: Coach House Books.
- Bök, C. (2007). "Virtually Nontoxic." *West Coast Line*, 40(4), 58–60, 94.
- Brady, V. (1981). Return to the centre. In *A crucible of prophets : Australians and the question of God* (pp. 90–113). Sydney, Australia: Theological Explorations.
- Brady, V. (n.d.). Documenting a Life. Judith Wright's biography: A delicate balance between trespass and honour. Retrieved from <http://www.nla.gov.au/events/doclife/brady.html>
- Brennan, B. (2013, December 3). Mostly private letters [Review of the book *Moving among strangers: Randolph Stow and my family*, by G. Carey]. *Sydney Review of Books*. Retrieved from <http://sydneyreviewofbooks.com/mostly-private-letters/>
- British Council. (2003). Hunting down the universe: A select science and literature bibliography. Retrieved from <http://www.slideshare.net/peterbuck/contentsdoc-4033098>
- Brown, K. (Ed.). (2001). *The measured word: On poetry and science*. Athens, GA: University of Georgia Press.
- Bruns, G. L. (2012). *What are poets for? An anthropology of contemporary poetry and poetics*. Iowa City: University of Iowa Press.
- Bullock, O. (2017). The line: Recent experiments in New Zealand and Australia. *New Writing*, 14(2), 223–234. doi:10.1080/14790726.2016.1268634
- Bureau, N. (1990). The mysticism of Judith Wright. *BELLS: Barcelona English Language and Literary Studies*, 2, 65–77. Retrieved from <http://www.raco.cat/index.php/Bells/article/view/98197>
- Bush, D. (1950). *Science and English poetry: A historical sketch, 1590–1950*. New York, NY: Oxford University Press.

- Bussey, P. (2011). Physics and poetry. *Contemporary Physics*, 52(4), 359.
doi:10.1080/00107514.2011.582956
- Cade, O. J. (2011). Both communal and private: Access and subversion of access to poetry in the virtual environment. *Experimental Poetics and Aesthetics*, 1. Retrieved from <http://www.waikato.ac.nz/fass/experimentalpoetics/2011/>
- Cade, O. J. (2014). Witnessing the wasteland: Sight, sound and response in Edith Sitwell's "Three poems of the atomic age." *UnderCurrents: The Journal of Critical Environmental Studies*, 18. Retrieved from <http://pi.library.yorku.ca/ojs/index.php/currents/article/view/38540>
- Capra, F. (2014). The unification of physics. Retrieved from <http://www.fritjofcapra.net/the-unification-of-physics/>
- Carey, G. (2010). Moving among strangers, darkly. *Westerly*, 55(2), 110–119.
- Carey, G. (2013). *Moving among strangers: Randolph Stow and my family*. St Lucia, Queensland, Australia: University of Queensland Press.
- Carter, D. (2006). *Literary theory*. Harpenden, England: Kamera Books.
- Castell, J., Waddington, K., & Willis, M. (2017). ScienceHumanities: Introduction. *Journal of Literature and Science*, 10(2), 1–5.
- Castelvecchi, D. (2015). Feuding physicists turn to philosophy for help. *Nature*, 528(7583), 446–447. doi:10.1038/528446a
- Castelvecchi, D. (2016). Hawking's latest black-hole paper splits physicists. *Nature*, 529(7587), 448. doi:10.1038/529448a
- Castle, G. (2007). *The Blackwell guide to literary theory*. Malden, MA: Blackwell.
- Cohen, J. E. (2009). A mindful beauty: What poetry and applied mathematics have in common. *American Scholar*, 78(4), 56–64.
- Cohen, L. (2007). *Book of longing*. London, England: Penguin.

- Coleman, P. (Ed.). (2007). *On literature and science: Essays, reflections, provocations*. Dublin, Ireland: Four Courts Press.
- Coletta, W. J., & Tamres, D. H. (1992). Robert Frost and the poetry of physics. *The Physics Teacher*, 30(6), 360. doi:10.1119/1.2343576
- Cooney, B. C. (2014). “Nothing is left out”: Kenneth Goldsmith’s *Sports* and erasure poetry. *Journal of Modern Literature*, 37(4), 16–33. doi:10.2979/jmodelite.37.4.16
- Craig, A. (Ed.). (1971). *Twelve poets 1950–1970*. Milton, Queensland, Australia: Jacaranda Press.
- Crew, B. (2016, October 24). No, the universe is not expanding at an accelerated rate, say physicists. *ScienceAlert*. Retrieved from <http://www.sciencealert.com/no-the-universe-is-not-expanding-at-an-accelerated-rate-say-physicists>
- Crum, R. B. (1931). *Scientific thought in poetry*. New York, NY: Columbia University Press.
- Daichendt, G. J. (2011). *Artist scholar: Reflections on writing and research*. Bristol, England: Intellect.
- Davidson, M. (2011). Introduction: American poetry, 2000–2009. *Contemporary Literature*, 52(4), 597–629.
- Davidson, T. (2008). Judith Wright, the fire of love, and the dark star. In *Christian mysticism and Australian poetry*. Amherst, NY: Cambria Press.
- De Bolt, J. (Ed.). (1979). *Ursula K. Le Guin: Voyager to inner lands and outer space*. Port Washington, NY: Kennikat Press.
- Deming, A. H. (1994). *Science and other poems*. Louisiana State University Press.
- Disney, D. (2010). Heidegger, creativity, and what poets do: On living in a silent shack for three months and not going mad. *New Writing*, 7(1), 5–15. doi:10.1080/14790720903337259
- Donne, J. (1896). *The poems of John Donne* (E. K. Chambers, Ed.). London, England: Lawrence & Bullen. Retrieved from <http://www.bartleby.com/357/>

- Dowling, D. (1980). Judith Wright's delicate balance. *Australian Literary Studies*, 9(4), 488–496.
- Dutton, S. (2010). Randolph Stow in Harwich. *Westerly*, 55(2), 143–149.
- Dymoke, S., & Spiro, J. (2017). Poet-academics and academic-poets: Writing identities, practices and experiences within the academy. *Writing in Practice*, 3. Retrieved from <http://www.nawe.co.uk/DB/current-wip-edition/articles/poet-academics-and-academic-poets-writing-identities-practices-and-experiences-within-the-academy.html>
- Ebury, K. (2013). [Review of the book *Science in modern poetry: New directions*, edited by J. Holmes]. *Modernism/modernity*, 20(1), 159–161. doi:10.1353/mod.2013.0025
- Eliot, T. S. (1954). *Selected poems*. London, England: Faber.
- Elsevier. (2014, January 16). Discovery of quantum vibrations in “microtubules” inside brain neurons supports controversial theory of consciousness. *Science Daily*. Retrieved from <http://www.sciencedaily.com/releases/2014/01/140116085105.htm>
- Elshtain, E. (2001). Poetry and science. *Chicago Review*, 47(2), 93.
- Empson, W. (1955). *Collected poems*. London, England: Chatto & Windus.
- Falkiner, S. (2016). Randolph Stow: Pictures, letters and conversations. *Westerly*. Retrieved from <http://westerlymag.com.au/randolph-stow-pictures-letters-and-conversations/>
- Farrell, M. (2012). [Review of the book *The land's meaning*, by Randolph Stow]. *Southerly*, 73(2), 224–229.
- Forbes, P. (2005). Poetry and science: Greatness in little. *Nature*, 434(7031), 320–323. doi:10.1038/434320a
- Frost, R. (1951). *Complete poems of Robert Frost*. London, England: Jonathan Cape.
- Fuerst, J. A. (1978). A selected bibliography of twentieth-century poems relevant to science and social aspects of science. *Science, Technology, & Human Values*, 4(25), 23–33.
- Funkhouser, C. T. (2012). *New directions in digital poetry* (Vol. 1.). London, England: Continuum.

- Garrard, G. (2011). Ecocriticism. *Year's work in critical and cultural theory*, 19(1), 46–82.
doi:10.1093/ywctt/mbr003
- Gaspar, L. (1969). Science and poetry. *Diogenes*, 17(67), 26–50.
doi:10.1177/039219216901706702
- Gawain, S. (2002). *Creative visualization*. Novato, CA: Nataraj Publishing.
- Germain, E. B. (1978). *Surrealist poetry in English*. London, England: Penguin Books.
- Girardot, N. J., Miller, J., & Liu, X. (Eds.). (2001). *Daoism and ecology: Ways within a cosmic landscape*. Cambridge, MA: Center for the Study of World Religions, Harvard Divinity School.
- Goldberg, N. (1986). *Writing down the bones: Freeing the writer within*. Boston, MA: Shambhala.
- Goldman, J. (2011). Re-thinking “non-retinal literature”: Citation, “radical mimesis,” and phenomenologies of reading in conceptual writing. *Postmodern Culture*, 22(1).
doi:10.1353/pmc.2012.0007
- Goldsmith, K. (2015, March 10). Post-Internet poetry comes of age. *The New Yorker*. Retrieved from <http://www.newyorker.com/books/page-turner/post-internet-poetry-comes-of-age>
- Golinski, J. (2009). The literature of the new sciences. In J. Chandler (Ed.), *The Cambridge history of English Romantic literature* (pp. 527–552). Cambridge, England: Cambridge University Press.
- Gowers, T. (2002). *Mathematics: A very short introduction*. Oxford, England: Oxford University Press.
- Graham, J. (1994). A conversation about *Materialism*. *The Seneca Review*, 24(2), 5–19.
- Graham, J. (1995). “The visible world.” *Poetry Foundation*. Retrieved from <http://www.poetryfoundation.org/poems-and-poets/poems/detail/54783>
- Granger, I. M. (2015). *Poetry Chaikhana: Sacred poetry from around the world*.
<http://www.poetry-chaikhana.com/>

- Green, L. (2006). Creative writing as practice-led research. *Australian Journal of Communication*, 33(2,3), 175–188.
- Green, M. B. (1964). *Science and the shabby curate of poetry*. London, England: Longmans.
- Green, T. (Ed.). (2015). Tribute to scientists. *Rattle*, 21(3), 39–73.
- Greene, R., Cushman, S., & Cavanagh, C. (Eds.). (2012). *Princeton encyclopedia of poetry and poetics* (4th ed.). Princeton, NJ, USA: Princeton University Press.
- Gribbin, J. (2002). *Science: A history*. London, England: Penguin.
- Grono, W., & Haskell, D. (2010, June 1). Solitary writer Randolph Stow chose silence. *The Australian*. Retrieved from <http://www.theaustralian.com.au/arts/solitary-writer-randolph-stow-chose-silence/news-story/ba2ce0ef1ebe80746382b58bb7edddd7?nk=0c9594f58020ba62f7d1ee36c57b1a5b-1487571783>
- Gruber, H. E. (1989). The evolving systems approach to creative work. In *Creative people at work: Twelve cognitive case studies* (pp. 3–24). Oxford, England: Oxford University Press.
- Hamilton-Merritt, J. (2012). *A meditator's diary: A Western woman's unique experiences in Thailand temples*. Harmondsworth, England: Penguin.
- Harding, D. E. (1986). *On having no head: Zen and the re-discovery of the obvious*. Boston, MA: Arkana.
- Harlow, M. (2006). Interview with Cilla McQueen. Retrieved from <http://www.nzepc.auckland.ac.nz/Authors/mcqueen/harlow.asp>
- Harper, G. (2008). Creative writing: Words as practice-led research. *Journal of Visual Art Practice*, 7(2), 161–171. doi:10.1386/jvap.7.2.161_1
- Harper, G. (2017). Synthesis: The strength and means of creative writing. *New Writing*, 14(3), 291–292. doi:10.1080/14790726.2017.1362736

- Haskell, D. (2012, September). Dennis Haskell reviews *The land's meaning*, by Randolph Stow. *Australian Book Review*, 344. Retrieved from <http://www.australianbookreview.com.au/abr-online/archive/2012/1120-the-poetry-of-randolph-stow>
- Hassall, A. J. (2010a). Randolph Stow. *Australian Author*, 42(3), 24–27.
- Hassall, A. J. (2010b). Randolph Stow: A memoir. *Westerly*, 55(2), 120–125.
- Hassall, A. J., & Stow, R. (1990). *Randolph Stow: Visitants, episodes from other novels, poems, stories, interviews and essays*. St. Lucia, Queensland, Australia: University of Queensland Press.
- Hawking, S. (2002). Godel and the end of the universe. Retrieved from <http://www.hawking.org.uk/godel-and-the-end-of-physics.html>
- Hawking, S. (2009). *A brief history of time: From the Big Bang to black holes* (Updated ed. / Twentieth Anniversary ed.). London, England: Random House.
- Hawthorne, S. (2010). Autopoiesis and ecopoetry. *PAN: Philosophy Activism Nature*, 7, 94–100.
- Heath, R. (2009, November 5). Randolph Stow's *Tourmaline*: Ambiguous parable [Web log post]. Retrieved from <http://englishoneoworst.blogspot.com.au/2009/11/6-randolph-stows-tourmaline-ambiguous.html>
- Heidegger, M. (2001). *Poetry, language, thought* (A. Hofstadter, Trans.). New York, NY: Perennial Classics. (Original work published 1971)
- Hesse, H. (1951). *Siddhartha*. New York, NY: New Directions.
- Hillman, B. (2005). "String theory sutra." *Academy of American Poets*. Retrieved from <http://www.poets.org/poetsorg/poem/string-theory-sutra>
- Hirshfield, J. (2014). "Entanglement." *Academy of American Poets*. Retrieved from <http://www.poets.org/poetsorg/poem/entanglement>

- Hobbs, B. (2012, June 27). Einstein vs quantum mechanics. Retrieved from <http://www.abc.net.au/science/articles/2012/06/27/3526067.htm>
- Hobbs, B. (2015, November 25). 100 years of general relativity — and why it matters. Retrieved from <http://www.abc.net.au/news/2015-11-25/einstein-general-relativity-100-years-on/6968370>
- Hoff, B. (2015). *The Tao of Pooh; and, the Te of Piglet: The principles of Taoism demonstrated by Winnie-the-Pooh and Piglet*. London, England: Egmont.
- Hoffmann, R. (2002). *Soliton*. Kirksville MO: Truman State University Press.
- Hoffmann, R. (2010). "Theoretical Chemistry." *Southwest Review*, 95(1–2), 207.
- Hoffmann, Y. (Ed.). (1986). *Japanese death poems: Written by Zen Monks and Haiku Poets on the verge of death*. Boston, MA: Tuttle.
- Hofstadter, D. (1991). Thinking about thought. *Nature*, 349(6308), 378. doi:10.1038/349378a0
- Holmes, J. (Ed.) (2012). *Science in modern poetry*. Oxford, England: Liverpool University Press.
- Hoover, P. (1994). *Postmodern American poetry: A Norton anthology*. New York, NY: Norton.
- Hope, A. D. (1975). *Judith Wright*. Melbourne, Australia: Oxford University Press.
- Howe, Sarah. (2015, October 8). On "Relativity". *The Paris Review*. Retrieved from <http://www.theparisreview.org/blog/2015/10/08/on-relativity/>
- Ifrah, G. (2000). *The universal history of numbers*. London, England: Harvill Press.
- Illingworth, S. (2016). Are scientific abstracts written in poetic verse an effective representation of the underlying research? *F1000Research*, 5, 91. doi:10.12688/f1000research.7783.3
- Jacobs, L., & Hosking, R. (1995). *A bibliography of Australian literary responses to "Asia"*. Adelaide: The Library, Flinders University. Retrieved from http://dspace2.flinders.edu.au/xmlui/bitstream/handle/2328/3251/Bibliography_of_Aust_literary_responses_to_asia.pdf

- Jewell, E. F. (2014). "Why should we in some forgotten corner": Erasure from *Cosmos* by Carl Sagan. In *Rattle Young Poets Anthology*. Studio City, CA: The Rattle Foundation.
- Jones, D. G. (2010). *The stream exposed with all its stones: Collected poems*. Montreal: Signal Editions.
- Jones, J. (2014). *The beautiful anxiety*. Glebe, New South Wales, Australia: Puncher & Wattman.
- Jordan, D. K. (2016). *China-related resources*. University of California, San Diego. Retrieved from <http://pages.ucsd.edu/~dkjordan/chin/china.html>
- Justice, F. L. (2001, January 23). Ursula K. Le Guin. *Salon*. Retrieved from http://www.salon.com/2001/01/23/le_guin/
- Kane, P. (1996). *Australian poetry: Romanticism and negativity*. Cambridge, England: Cambridge University Press.
- Kenney, R. (n.d.). "Physics." *Poetry Foundation*. Retrieved from <http://www.poetryfoundation.org/poem/178706#poem>
- Klein, H. A. (1977). Physics in poetry. *Physics Today*, 30(1), 84–85. doi:10.1063/1.3037386
- Kline, A. (2016). Original poetry. In *Poetry In Translation*. Retrieved from <http://www.poetryintranslation.com/index.html#Original-Poetry>
- Korff, J. (n.d.). How to name Aboriginal people. Retrieved from <http://www.creativespirits.info/aboriginalculture/people/how-to-name-aboriginal-people>
- Krauth, N., & Brady, T. (2006). *Creative writing: Theory beyond practice*. Teneriffe, Queensland, Australia: Post Pressed.
- Kroll, J., & Harper, G. (Eds.). (2013). *Research methods in creative writing*. Houndmills, England: Palgrave Macmillan.

- Ladd, M., Holland, P., Sutherland, P., & Stow, R. (2012, July 7). *The land's meaning – the poetry of Randolph Stow* [Radio series episode]. In *Poetica*. Australian Broadcasting Corporation. Retrieved from <http://www.abc.net.au/radionational/programs/poetica/2012-07-07/4065918>
- Lane, R. J. (2013). *Global literary theory: An anthology*. New York, NY: Routledge.
- Lanham, R. (1989). The electronic word: Literary study and the digital revolution. *New Literary History*, 20(2), 265–290. doi:10.2307/469101
- Laozi, & Kohn, L. (1993). *Tao Te Ching, 1st chapter* (L. Kohn, Ed.). Retrieved from <http://www.bopsecrets.org/gateway/passages/tao-te-ching.htm>
- Laozi, & Lau, J. (2017). Introduction to the *Dao De Jing*. Retrieved from <http://www.yellowbridge.com/onlinelit/daodejing.php>
- Le Guin, U. K. (1981). *Hard words*. New York, NY: Harper & Row.
- Le Guin, U. K. (1994). *“Going out with peacocks” and other poems*. New York, NY: Harper Perennial.
- Lee, S. E. (1970). Confessional and experimental verse. *Southerly*, 30(4), 306–308.
- Leer, M. H. (1991). *Mal du pays*: Symbolic geography in the work of Randolph Stow. *Australian Literary Studies*, 15(1), 3–26. doi:10.20314/als.487c6e32e8
- Leonard, G. J. (2011). The perils of reading Asian characters in English. Retrieved from <http://www.georgeleonard.com/articles/the-perils-of-reading-asian-characters-in-english.htm>
- Leonard, J. (2009). *The Puncher & Wattmann anthology of Australian poetry*. Glebe, New South Wales, Australia: Puncher & Wattmann.
- Li, W., & Chen, J. Z. M. (2012). Towards Fred Cogswell’s paradoxical poetics of suggestive silence, elaboration, and the Dao’s nature and rhythms. *Canadian Review of Comparative Literature*, 39(1).

- Lista, M. (2014, January 3). Christian Bök and the poetry of the future. *National Post*. Retrieved from <http://news.nationalpost.com/arts/books/on-poetry-christian-bok-and-the-poetry-of-the-future>
- Love, T. (1995). Science and the arts. Retrieved from http://www.physlink.com/Education/essay_love.cfm
- Lucas, R. (2015). "What Isaac Newton saw." *Plumwood Mountain*. Retrieved from <http://plumwoodmountain.com/what-isaac-newton-saw/>
- MacDonald, F. (2016a, February 11). It's official: Gravitational waves have been detected, Einstein was right. *ScienceAlert*. Retrieved from <http://www.sciencealert.com/live-update-big-gravitational-wave-announcement-is-happening-right-now>
- MacEwen, G. (1987). "The Tao of physics." *Poetry Canada Review*, 8(4), 20.
- Magee, P. (2009). Is poetry research ? *TEXT*, 13(2), 1–26. Retrieved from <http://www.textjournal.com.au/oct09/magee.htm>
- Magee, P. (2014). What distinguishes scholarship from art? *New Writing*, 11(3), 400–416. doi:10.1080/14790726.2014.956120
- Maitreyabandhu. (n.d.). 13 ways of making poetry a spiritual practice. *Urthona Journal of Buddhism and the Arts*, 30, 36–38.
- Major, A. (2011). *Intersecting sets: A poet looks at science*. Edmonton, Alberta, Canada: The University of Alberta Press.
- Malawey, V. (2011). Musical emergence in Björk's *Medúlla*. *Journal of the Royal Musical Association*, 136(1), 141–180. doi:10.1080/02690403.2011.562717
- Maling, C. (2013, September 1). Caitlin Maling reviews Randolph Stow [Review of the book *The Land's Meaning*]. *Cordite*. Retrieved from <http://cordite.org.au/reviews/maling-stow-kinsella/>
- Manhire, B., Duncum, K., Price, C., & Wilkins, D. (Eds.). (2012). *The exercise book: Creative writing exercises from Victoria University's Institute of Modern Letters*. Wellington, New Zealand: Victoria University Press.

- Marland, P. (2013). Ecocriticism. *Literature Compass*, 10(11), 846–868. doi:10.1111/lic3.12105
- Maxson, H. A. (1997). *On the sonnets of Robert Frost: A critical examination of the 37 poems*. Jefferson, N.C: McFarland & Co.
- Mayer, B. (n.d.). Bernadette Mayer's writing experiments. Retrieved from http://www.writing.upenn.edu/library/Mayer-Bernadette_Experiments.html
- McConnell, K. (2014). Science at the heart: Five recent Canadian books of poetry. *Canadian Literature*, 221(221), 192–199.
- McGovern, I. (2012). Strange meeting: Science meets poetry. *The Poetry Ireland Review*, 108, 55–60. Retrieved from <http://www.jstor.org/stable/43864745>
- McKeon, R. (1952). Semantics, science, and poetry. *Modern Philology*, 49, 145.
- McKinsey, M. (1995). SEIDEL, Frederick (Lewis). In T. Riggs (Ed.), *Contemporary poets* (6th ed, pp. 977–978). New York, NY: St. James Press.
- McQueen, C. (2006). A benign psychosis? Retrieved from <http://www.nzepc.auckland.ac.nz/authors/mcqueen/psychosis.asp>
- Medawar, P. (1969). Science and literature. *Perspectives in Biology and Medicine*, 12(4), 529–546. doi:10.1353/pbm.1969.0005
- Medawar, P. (1996). Is the scientific paper a fraud? In *The strange case of the spotted mice and other classic essays in science* (pp. 33–39). Oxford, England: Oxford University Press.
- Merali, Z. (2012). Data teleportation: The quantum space race. *Nature*, 492(7427), 22–25. doi:10.1038/492022a
- Morley, D. (2014). Creative recognitions: Science, writing and the creative academy. *Literature and Science Hub*. University of Liverpool. Retrieved from <http://www.liverpool.ac.uk/literature-and-science/essays/creative-recognitions/>
- Müller-Zettelmann, E., & Rubik, M. (Eds.). (2005). *Theory into poetry: New approaches to the lyric*. Amsterdam, The Netherlands: Editions Rodopi.

- Murray, D. (1989). *Literary theory and poetry: Extending the canon*. London, England: Batsford.
- Nature Videos. (2016). Laniakea: Our home supercluster [Video]. Retrieved from <http://futurism.com/videos/detailed-map-date-place-universe/>
- Nicolescu, B. (2014). Methodology of transdisciplinarity. *World Futures*, 70(3), 186. doi:10.1080/02604027.2014.934631
- Noel-Tod, J., & Hamilton, I. (Eds.). (2014). *The Oxford companion to modern poetry* (2nd ed.). Oxford, England: Oxford University Press.
- Norton, J. D. (2016). How Einstein did not discover. *Physics in Perspective*, 18(3), 249–282. doi:10.1007/s00016-016-0186-z
- NSW Writers Centre. (n.d.). Randolph Stow research materials. Retrieved from <http://www.nswwc.org.au/2015/07/randolph-stow-research-materials/>
- Olson, C. (1997). *Collected prose* (R. Creeley, Ed.). Berkeley, CA: University of California Press.
- Olson, C. (1993). *Selected poems* (R. Creeley, Ed.). Berkeley, CA: University of California Press.
- Osborn, A. (2006). The poetry of science. *Nature Reviews Microbiology*, 4(1), 77–80. doi:10.1038/nrmicro1321
- Ostriker, A. (2015). “Dark matter and dark energy.” *Academy of American Poets*. Retrieved from <http://www.poets.org/poetsorg/poem/dark-matter-and-dark-energy>
- Padel, R. (2011, December 9). The science of poetry, the poetry of science. *The Guardian*. Retrieved from <http://www.theguardian.com/books/2011/dec/09/ruth-padel-science-poetry>
- Papin, L. (1992). This is not a universe: Metaphor, language, and representation. *Publications of the Modern Language Association of America*, 107(5), 1253–1265. doi:10.2307/462878

- Particle Data Group. (2014). *The Particle Adventure*. Retrieved from <http://particleadventure.org/>
- Penrose, R. (1989). *The Emperor's new mind: Concerning computers, minds, and the laws of physics*. Oxford, England: Oxford University Press.
- Perloff, M. (1991). *Radical artifice : Writing poetry in the age of media*. Chicago, IL: University of Chicago Press.
- Perloff, M. (2001). After language poetry: Innovation and its theoretical discontents. *Talisman: A Journal of Contemporary Poetry and Poetics*, 23–26, 333–354. Retrieved from http://epc.buffalo.edu/authors/perloff/after_langpo.html
- Phillips, J. (2016, October 17). The fantastic Ursula K. Le Guin. *The New Yorker*. Retrieved from <http://www.newyorker.com/magazine/2016/10/17/the-fantastic-ursula-k-le-guin>
- Poetry Foundation. (2012, February 24). From the golden age of San Francisco science-fiction poetry to the new age of quantum poetics [Web log entry]. In *Harriet*. Retrieved from <http://www.poetryfoundation.org/harriet/2012/02/from-the-golden-age-of-san-francisco-science-fiction-poetry-to-the-new-age-of-quantum-poetics>
- Protevi, J. (2006). Deleuze, Guattari and emergence. *Paragraph: A Journal of Modern Critical Theory*, 29, 19–39.
- Quaid, A., Wertheim, C., Beaulieu, D., Ardam, J., Firunts, M., & Taransky, M. (2015, January 19). What is the relationship between conceptual art and conceptual writing? *Jacket2*. Retrieved from <http://jacket2.org/commentary/what-relationship-between-conceptual-art-and-conceptual-writing>
- Rees-Jones, D. (2005). *Consorting with angels: Essays on modern women poets*. Tarsset, UK: Bloodaxe Books.
- Rees-Jones, D. (2016, July 16). Interview with Jo Shapcott. *Literature and Science Hub*. University of Liverpool. Retrieved from <http://www.liverpool.ac.uk/literature-and-science/blog/poetryscience/shapcott/>
- Richards, I. A. (1970). *Poetries and sciences, A reissue of Science and poetry*. New York, NY: Norton. (Originally published 1926)

- Rivkin, J., & Ryan, M. (Eds.). (2004). *Literary theory: An anthology* (2nd ed.). Malden, MA: Blackwell.
- Robinson, I. (2010). If anyone thirsts – tapping some sources for a transformative desert spirituality. In *The Proceedings of the Inaugural National Symposium of the Australian Ecumenical Council for Spiritual Direction* (pp. 131–143). Retrieved from <http://spiritualdirection.org.au/wp-content/uploads/proceeding-nationalsymposium.pdf#page=131>
- Rogers, P. (2010). *The grand array: Writings on nature, science, and spirit*. San Antonio, TX: Trinity University Press.
- Rogers, P. (2001). *Song of the world becoming: New and collected poems, 1981–2001*. Minneapolis, MN: Milkweed Editions.
- Rogers, P. (2005). *Firekeeper: Selected poems*. Minneapolis, MN: Milkweed Editions.
- Romer, R. H. (1993). Robert Frost and the second law of thermodynamics. *The Physics Teacher*, 31(6), 360. doi:10.1119/1.2343800
- Rotella, G. (1987). Comparing conceptions: Frost and Eddington, Heisenberg, and Bohr. *American Literature*, 59(5), 167–189.
- Ryan, J. C. (2012). A poetry of science or a science of poetry? The speculative method of Erasmus Darwin (1731–1802). *The International Journal of Literary Humanities*, 10(1), 45–57.
- Said, E. W. (1995). *Orientalism* (Revised ed.). London, England: Penguin.
- Sartre, J.-P. (1950). *What is Literature?* (B. Frechtman, Trans.). London, England: Methuen.
- Saunders, L. (2014). Do poetry and science have interesting and important things in common? Some thoughts on “parsimony” and “provisionality”. *Interdisciplinary Science Reviews*, 39(1), 6–20. doi:10.1179/0308018813Z.00000000071
- Schrodinger, E. (1992). *What is life? The physical aspect of the living cell; with, Mind and matter; And, Autobiographical sketches*. Cambridge, England: Cambridge University Press. (Original works published 1944, 1958, 1992)

- Sinclair, R. M. (1977). More physics in poetry. *Physics Today*, 30(10), 15.
doi:10.1063/1.3037738
- Smolin, L. (2013, April 20). It's time to rewrite time. *New Scientist*, 218(2913), 30–31.
doi:10.1016/S0262-4079(13)60993-8
- Snow, C. P. (1964). *The two cultures: And, A second look*. London, England: Cambridge University Press.
- Sokal, A. D., & Bricmont, J. (1998). *Fashionable nonsense: Postmodern intellectuals' abuse of science*. New York, NY: Picador.
- Sokol, B. J. (1996). Poet in the atomic age: Robert Frost's "That Millikan mote" expanded. *Annals of Science*, 53(4), 399–411. doi:10.1080/00033799608560824
- Solnick, S. (2017). The resistant materials of Jeremy Prynne. In *Poetry and the Anthropocene: Ecology, biology and technology in contemporary British and Irish poetry* (pp. 145–196). London, England: Routledge.
- Southward, D. (2016). Dealing with the creative/critical divide: These men as readers simply cannot know what it is to write. *New Writing*, 13(2), 1–8.
doi:10.1080/14790726.2016.1142570
- Spiegelman, W. (2010). Jorie Graham's "new way of looking". In H. Bloom (Ed.), *Contemporary poets* (pp. 137–166). New York, NY: Bloom's Literary Criticism.
- Stahl, F. A. (1987). Physics as metaphor and vice versa. *Leonardo*, 20(1), 57–64.
doi:10.2307/1578212
- Stannard, R. (2008). *Relativity: A very short introduction*. Oxford, England: Oxford University Press.
- Stow, R. (1969a). *A counterfeit silence: Selected poems*. Sydney, Australia: Angus & Robertson.
- Stow, R. (1974). *Randolph Stow reads from his own work* [Book and vinyl record]. (T. W. Shapcott, Ed.). St Lucia, Queensland, Australia: University of Queensland Press.

- Swann, B. (2000). "Physics." *The Yale Review*, 88(1), 111–112. doi:10.1111/0044-0124.00373
- Swift, T. (2015). "The heart of love is dark matter." *The Moth*, 23, 19. Retrieved from <http://themothmagazine.com>
- Sze, A. (1998b). *The redshifting web: Poems 1970–1997*. Port Townsend, Washington: Copper Canyon Press.
- Tennyson, A. (1954). *Poems of Alfred Lord Tennyson* (C. Tennyson, Ed.) (Vol. 1). London, England: Collins.
- Tipping, R. (1972). *Soft riots*. St. Lucia, Queensland, Australia: University of Queensland Press.
- Turner-Vesselago, B. (2014). *Writing without a parachute: The art of freefall*. Warriewood, New South Wales, Australia: Finch Publishing.
- Vendler, H. (1995). *The breaking of style: Hopkins, Heaney, Graham*. Cambridge, Mass: Harvard University Press.
- Vetter, L. (2010). *Modernist writings and religio-scientific discourse: H. D., Loy, and Toomer*. New York, NY: Palgrave Macmillan.
- Wainwright, J. (2008). *Clarity or death!* Manchester: Carcanet.
- Wallace, D. B., & Gruber, H. E. (1989). *Creative people at work: Twelve cognitive case studies*. New York, NY: Oxford University Press.
- Wertheim, M. (1997). *Pythagoras' trousers: God, physics, and the gender wars*. London, England: Fourth Estate.
- Whitworth, M. H. (2001). *Einstein's Wake: Relativity, metaphor, and Modernist literature*. Oxford, England: Oxford University Press.
- Wordsworth, W. (1958). *Selected poems of William Wordsworth* (R. Sharrock, Ed.). London, England: Heinemann.
- Yeoman, W. (2012, September 25). Dynamic poet of the land. *The West Australian*. Retrieved from <http://thewest.com.au/entertainment/art/dynamic-poet-of-the-land-ng-ya-295556>

Young, M. (2009). Keats in space. *Poetry Foundation*. Retrieved from
<http://www.poetryfoundation.org/article/237378>

Yu-lan, F. (1948). Chinese philosophy and a future world philosophy. *The Philosophical Review*, 57(6), 539–549. doi:10.2307/2181795

Zhu, C. (2006). Ezra Pound: The one-principle text. *Literature and Theology*, 20(4), 394–410.
doi:10.1093/litthe/frl037

Zucaro, M. (2014a). “Bang theory rag: A romance of the particle and the wave.” *Pennsylvania Literary Journal*, 6(2), 156.

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