Chapter 5: Reflection Symmetry

My granddaughter was making Christmas angels. She folded a piece of card in two, drew half an angel shape on one side, cut it out and opened the fold. Lo! – a perfect, complete angel!

My granddaughter's angel is a neat example of reflection symmetry; one half of an object is a mirror image of the other. This is a characteristic of many naturally occurring phenomena: a bird on the wing, the reflection of snow-dusted mountains in the still water of a loch, the hexagonal form of a snowflake. Our own bodies have approximate reflection symmetry.

Symmetry has featured in poetry since early times. The tradition of pattern poetry (also known as shaped or concrete poetry), in which the structure and layout of a poem generate a specific visual effect, extends back at least to ancient Greece. Simmias of Rhodes, who flourished around 300 BCE, is the earliest known poet to have composed pattern poems. We considered his elliptical poem The Egg in Chapter 3. Other surviving examples of his work take as their form and subject an axe, and a pair of wings, both of which also display reflection symmetry.

In 1589 the English writer George Puttenham published *The Arte of English Poesie*, which included suggestions and examples of how geometric shapes may be used by poets. Perhaps taking inspiration from both Simmias and Puttenham, George Herbert (1593 – 1633) composed his celebrated pattern poem 'Easter Wings'. The poem was originally published sideways, on facing pages to give the appearance of a pair of wings. (The stanza on the left should be read first.)

Easter Wings

My tender age in sorrow did beginne
And still with sicknesses and shame.
Thou didst so punish sinne,
That I became
Most thinne.
With thee
Let me combine,
And feel thy victorie:
For, if I imp my wing on thine,
Affliction shall advance the flight in me.

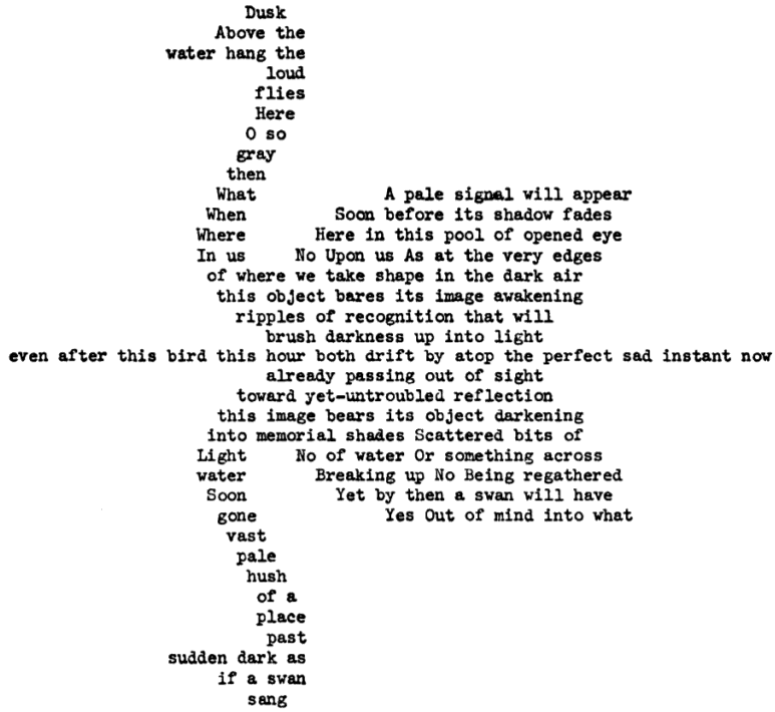
Lord, who createdst man in wealth and store,
Though foolishly he lost the same,
Decaying more and more,
Till he became
Most poore:
With thee
O let me rise
As larks, harmoniously,
And sing this day thy victories:
Then shall the fall further the flight in me.

Intrigued by the creative possibilities of pattern poetry, the American poet and literary critic John Hollander (1929 - 2013) produced a collection, *Types of Shape*, devoted to the form. In his introduction to the revised version in 1991, he remarked on 'the purely visual pleasure taken in the composition and, it is hoped, retrieved in the reading of poems like these.'

The poems engage in dialogue with the images they represent, and many are symmetrical in shape: the collection includes 'Bell curve' (based on the normal distribution curve), 'Idea' (shaped like a light bulb) and the exquisitely graceful 'Swan and Shadow', a study in calm reflection in both its content and its form. Hollander wrote of this poem:

'In silhouette, all visible form translates into a common mode of shade, so that the palpable white bird and its watery reflection are here made up of identical visual material. The bottom half can thus be thought of as supporting, or depending on, the top one, and the relation of object and image seen as mutually contingent.'

Swan and Shadow



Reflection symmetry is not confined to pattern poetry. William Blake's 'The Tyger', for example, consists of six four-line stanzas with a rhyme scheme of AABB. Structurally, the first three stanzas are a mirror image of the remaining three, and the idea of symmetry was certainly present in Blake's mind:

Tyger Tyger, burning bright
In the forests of the night;
What immortal hand or eye,
Could frame thy fearful symmetry?

These four opening lines are repeated almost verbatim in the concluding stanza, leaving us to ponder the nature of creation and the intent of the Creator.

As we noted in Chapter 2, Square Poems, the SATOR square exhibits reflection symmetry along its diagonals. It is also a palindrome: letter by letter, it reads the same forwards and backwards (it also reads the same left to right and right to left). It therefore has reflection symmetry by letter, with the central point around which it reflects being the N in TENET.

Another remarkable example of a palindrome poem is the 'Star Gauge', written in the 4th century by the Chinese woman poet Su Hui, which we referred to briefly in Chapter 2. According to legend, Su Hui was happily married to a high-ranking government official until he took a concubine and, shortly thereafter, was transferred to a district in the desert. Grief-stricken, Su Hui refused to accompany him and the 'other woman'. Instead, she wrote him a poem, embroidered in silk, expressing her love and calling for him to return. The poem consists of a grid of 29 x 29 characters and is a magnificent example of what is known in Chinese poetry as a 'reversible poem', which can be read from top to bottom (starting at the top right) or in reverse order from bottom to top. Such poems are made possible by the fact that Chinese characters can be read in any direction and can function as any part of speech.

The structure of the 'Star Gauge' is, however, considerably more complex than mere reversibility. Five colours of silk used in the embroidery serve as keys to different routes through the poem. The outer border consists of a single circular poem and there are around 3 000 shorter poems within the grid of characters. Apparently, the poem succeeded in its objective: upon reading it, Su Hui's husband left his concubine and returned to his first love.

English language syntax and structure mean that palindrome poems by letter are challenging to write. 'Volcano', by Anthony Etherin, is a fine example of this highly constrained form:

Volcano

A vale, sirenic.
Its alps a red net’s atlas.
A bared, nude summit, pure.

Pools loop, erupt.

I’m mused –

Under a basalt
as tender as plasticine,
rise lava.

Letter by letter, this poem reads the same forwards and backwards. The turning point is the *s* in the fourth line.

British poet Julia Copus has devised a poetic form in which the second half of a poem is, line by line, a mirror image of the first. She calls it a specular poem (from *speculum*, the Latin word for mirror). Adroit variations in the punctuation allow for smooth transitions from line to line and subtle shifts of meaning, as in Copus’s poignant ‘The Back Seat of My Mother’s Car’, where a car window acts as an agent of reflection.

The Back Seat of My Mother's Car

We left before I had time
to comfort you, to tell you that we nearly touched
hands in that vacuous half-dark. I wanted
to stem the burning waters running over me like tiny
rivers down my face and legs, but at the same time I was reaching out
for the slit in the window where the sky streamed in,
cold as ether, and I could see your fat mole-fingers grasping
the dusty August air. I pressed my face to the glass;
I was calling to you – *Daddy!* – as we screeched away into
the distance, my own hand tingling like an amputation.
You were mouthing something I still remember, the noiseless words
piercing me like that catgut shriek that flew up, furious as a sunset
pouring itself out against the sky. The ensuing silence
was the one clear thing I could decipher –
the roar of the engine drowning your voice,
with the cool slick glass between us.

With the cool slick glass between us,
the roar of the engine drowning, your voice
was the one clear thing I could decipher –
pouring itself out against the sky, the ensuing silence
piercing me like that catgut shriek that flew up, furious as a sunset.
You were mouthing something: I still remember the noiseless words,
the distance, my own hand tingling like an amputation.
I was calling to you, Daddy, as we screeched away into
the dusty August air. I pressed my face to the glass,
cold as ether, and I could see your fat mole-fingers grasping
for the slit in the window where the sky streamed in
rivers down my face and legs, but at the same time I was reaching out
to stem the burning waters running over me like tiny
hands in that vacuous half-dark. I wanted
to comfort you, to tell you that we nearly touched.
We left before I had time.

In a 2014 interview with Colette Bryce, Copus has described her approach to writing the two 'mirror image' stanzas that constitute a specular poem:

‘They happen in parallel. I think it’s got to be simultaneous, so it’s like writing both stanzas at the same time: every single line has to work forwards and backwards. You’ve got to check all the time that that is happening, and for both ways to sound as natural as possible, because like any form, even sonnets, you know it’s a construct. I find it useful for emotionally charged subjects: it’s a way of giving your chattering left brain something to do, which in a strange way frees up the right, the creative side of your brain, and allows you to produce something that is less sentimental than it might otherwise have been.’

Symmetry plays a fundamental role in our understanding of the natural world. Antimatter, for example, is a mirrored reflection of the constituent particles of atoms: when matter and antimatter collide, both cease to exist. Pedro Poitevin’s ‘Antimatter’ takes as its theme annihilation processes between sub-atomic particles and their corresponding antiparticles. Note how, on either side of the central caesura, Poitevin uses words that are mirror images of each other, to connote the particle-antiparticle pairing.

Antimatter

Particles of evil
night of the wolf,
fragment as their sleep
flakes of time,
like a quantum leper,
with waves of mood,
live in the dispersive
flow in its nothingness,
peels off in slender
emit shreds of flesh
repel our light
doom everything that
matters.

Sarah Glaz – who, like Poitevin, is both a mathematician and a poet – also plays on the concept of mirror symmetry around a central caesura in 'Reflection About the *t*-Axis'. This deceptively simple poem consists of two haiku, identical apart from one key word.

Reflection About the *t*-Axis

A bag full of words.
Tomorrow – my favourite.
May I have it, please?

A bag full of words.
Yesterday – my favourite.
May I have it, please?

Elegantly and succinctly, the poem expresses our ambivalent relationship with time – past, present and future.

Further Reading

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