

Symmetry: Art and Science
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SYMMETRY IN FICTION: LEAPING AWAY FROM THE LITERAL

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Abstract: Symmetry in the arts is usually discussed in a very literal manner. Repetitive visual shapes are emphasised, or the notational aspects of the piece (such as written music) are assessed using the principles of mathematical balance alone. While these studies are useful, from my perspective as a writer, they are only half the story. When constructing a text, my most important guide is the internal logic of the work. This logic operates according to principles of symmetry – a type usually overlooked. This paper will examine the nature of that symmetry and show how it can inform the construction of a novel-in-progress.

1 INTERNAL LOGIC

Braque used to always say that the only thing which really mattered in painting was the intention. - Pablo Picasso

In an artwork, there is a difference between what is seen – the notation – and the internal logic that drives it – the intention. Although these two aspects are related, symmetry studies almost always focus on one alone. Visible marks (colour, line and shape) or audio markers (pitch, tempo and instrument) are easy to identify so it is not surprising

that these are often the focus of analysis. I aim to illustrate that patterns also appear in the guts of an artwork, in order to expand usual notions of symmetry.

'Internal Logic' is probably overlooked because it is invisible. This doesn't make it less important. In chess, the pieces themselves are easy to see, but the organising principles of the game give it most of its meaning. Even though the forms and trajectories of the chessmen are not identical, a common set of rules keeps all elements of the system operating in accord. When the markers follow a guiding parameter, they operate in a type of symmetry, whether their silhouettes match or not.

Similarly, the unseen logic inside an artwork determines the relationship between visible elements. When those elements work towards a common idea, it is a form of symmetry. I know this because my understanding of how to reinforce the guiding parameter – or divert away from it – is necessary when writing a story. Each description or plot-point can operate in sync with a core image *or not*. Repetition of the core image reinforces symmetry. Divergence from it creates tension with dissymmetry. A skillfull relationship between both convey my intention.

When I use the term image, I am referring to the relationship between the elements being described rather than the overall quality of a single object (metaphor) or an intellectual position (idea). Elements such as kiss, rival, uncertainty, pleasure can form many different constellations. The way a writer places these elements in relationship to each other creates a pattern. It is this pattern that can be matched across fields.

2 INTERNAL LOGIC: Science and Art

Art and science are similar in many ways. Both look for trends and find ways to record them. Both encounter contradictory elements during their investigations. While science can entertain contradictory ideas during the discovery process, however, its conclusions cannot. These two fields differ in the way they structure their findings. Science must merge potentials into congruous statements, whereas art can encourage contrasting elements to co-exist. One versus many.

This difference causes art and science to misunderstand each other at a basic level. Science makes laws. It emphasises a sole, 'objective' perspective, insisting on a mode of expression that is internally symmetrical. It is not useful to say that $E=MC^2$ *sometimes*. Laws, by definition, don't have exceptions. Science creates a coalition out of its findings in order to establish 'truth'.

This is the opposite of the way an artwork builds a feeling of 'truth'. When a fictional story contains only one idea, with no contradictions, it reads like an essay standing on a soapbox, an advertisement for a particular line of thought. In fact, advertising is one of

the few places where the tools of the arts combine to create perfect symmetry of intention (propaganda is another). An advertisement is effective precisely because it is wholehearted in purpose and has no inner tension.

Although lack of ambiguity helps to reinforce an idea, a fictional world without tension is difficult to trust (and dull to read). When there's only one inner image, I feel I'm not seeing the full picture. A range of conflicting angles is needed to emulate a sense of 'reality'. Without dissymmetry, the fictional world lacks substance. I will explain this in more detail in the presentation.

I'm writing a novel that merges scientific and romantic imagery, so the difference between the inner structures of these two fields is my daily challenge. I've found that the key is to compare the relationship between the elements in their respective images. An example of this conceptual tool follows.

3 COMMON LOGIC: Matching Images

When constructing a text with both romantic and scientific references, I start with the fictional action. It took me a while to realise that this was the best way to do it. Over time I learned that when images from two disciplines are combined, the notation of one form rides on the framework of the other. There are advantages to using the framework of erotica to carry a story, rather than the framework of physics (apart from the obvious).

For me, erotica is easier to read than a physics textbook. Subject matter aside, its narrative is designed to create tensions that are not resolved until the end of the tale. A physics textbook, on the other hand, is an uncontested list of answers and laws, which is a tensionless form. If I wanted readers to stay with the story until the end, it was better that the underlying structure contained the dissymmetries of romantic prose.

I'll demonstrate how imagery from one field can be laid over another using the following fictional passage. In this scene, a woman relaxes in a bar with her fiancé and friends. A few months earlier the fiancé had been unfaithful with a colleague, but now the wobbly relationship seems to be on track again. On this night, the colleague has been accidentally invited to the bar. The following happens just after she enters the room:

Van touches Joanna's arm when he offers to buy her a drink, and she flutters from the contact but says no. You dive into a serious conversation with the person sitting next to you, trying to vanish. No-one else acknowledges her. Finally I step forward to indicate welcome, a signal to our group that I don't mind if it stretches to accommodate this dangerous guest. I even add a diplomat's gesture, leaning forward to kiss Joanna's cheek, and she is so grateful that she races to kiss mine in return. In her haste there is an accident of

speed, distance and timing. Instead of a chaste peck on the side of the mouth we meet too early. Our lips connect. The kiss is full and warm.

I taste her softness and we hover there, as though it was just as acceptable for a salutation to be slow instead of swift. Neither of us seems surprised. I taste an edge of wetness, a ghostly hint of the inside of her, and she responds with slight pressure or am I imagining it? Van announces that he's found a chair for Joanna to sit on and although I know she will turn to face him soon for another few seconds she still doesn't pull away. The intimacy of it stops me. It replaces all the other thoughts I was having.

This picture – an accidental kiss that causes the protagonist to consider a previously unimaginable future – contains contrasting threads of discomfort and pleasure. A pattern from science can now be laid over this dissymmetry, in order to elaborate on the consequences that arise. I chose the wave-particle duality, the way that sometimes atomic matter behaves like a solid object and at other times acts like an unseen pulse:

...all matter behaves in two complementary, contradictory ways: it appears to be particulate and well-localized in space, and it appears to be undulatory or wavelike and not well-localized in space. How matter appears depend on our minds' choices... (Wolf, p. 129)

A reference to Heisenberg's principle of Indeterminism was also used:

Both of the particle's attributes, momentum and position, are potentially present in nature but not actually present, until an attempt is made to measure those attributes. (Wolf, p. 140)

Here, two ideas are useful: the power of observation and the ambiguous state that exists before it. Working as a symmetrist, I then created two more paragraphs that explored the disruptive potential of the above accidental kiss in terms of scientific imagery. These paragraphs, with explanation, will be presented at the lecture.

References

- Heisenberg, W. (1971) *Physics and Beyond: Encounters and Conversations*, New York: Harper and Row.
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