

Pattern and Meaning

Guest Editor, Simeon Nelson,
Professor of sculpture, University of Hertfordshire

World is the pattern of meaningful relations in which a person exists and in the design of which he or she participates. It has objective reality, to be sure, but it is not simply that. World is interrelated with the person at every moment. A continual dialectical process goes on between world and self and self and world; one implies the other, and neither can be understood if we omit the other. This is why one can never localize creativity as a subjective phenomenon; one can never study it simply in terms of what goes on within the person. The pole of world is an inseparable part of the creativity of an individual. What occurs is always a process, a doing — specifically a process interrelating the person and his or her world.
Rollo May¹

But human beings fall easily into despair, and from the very beginning we invented stories that enabled us to place our lives in a larger setting, that revealed an underlying pattern, and gave us a sense that, against all the depressing and chaotic evidence to the contrary, life had meaning and value.
Karen Armstrong²

People want to see patterns in the world. It is how we evolved. We descended from those primates who were best at spotting the telltale pattern of a predator in the forest, or of food in the savannah. So important is this skill that we apply it everywhere, warranted or not.
Benoît Mandelbrot³

Art is the imposing of a pattern on experience, and our aesthetic enjoyment is recognition of the pattern.
Alfred North Whitehead⁴

Pattern can be discerned at all scales that exist between the infinitesimal and the infinite. We humans oddly seem to occupy nearly the mid point in this scale, which has been commented on as a new type of anthropocentrism. Humans (and to varying extents other living creatures) have an inborn and intense predisposition to perceive, represent and create pattern to make sense of a perilous and confusing world around us. We have primordial awareness of pattern to make sense of our place in the scheme of things and to make meaning and purpose out of our finite and limited existence. Pattern is both a function of our perception and an attribute of the world. The entire cosmos could be said to be an eternally unfolding sequence of patterns. Pattern seems to emerge spontaneously as the legible aspect of natural processes of growth, of decay and of a constant 'outfolding' of novel forms that characterizes the evolution of many parts of the cosmos. This cosmic imperative or tendency toward increased complexity, which is captured so eloquently by Henri Bergson's organic metaphor - *elan vital*,⁵ creates islands of intensified information by borrowing available energy, for example the incomprehensibly complex web of life we are embedded in on Earth, a culmination of billions of years of evolution, borrows and

¹ May, Rollo, *The Courage to Create* (1975) Norton

² Armstrong, Karen, *A Short History of Myth* (2006) Canongate

³ Mandelbrot, Benoît *The Misbehavior of Markets* (2004), Basic Books

⁴ Whitehead, A. N. *The Dialogues of Alfred North Whitehead* (1954) Little Brown, Boston

⁵ from his 1907 book *Creative Evolution*, in which he addresses the question of the increasingly complex levels of self-organisation and spontaneous morphogenesis of things.

transmutes the sun's radiant energy on its long inevitable decline. Pattern is a reconciliation of order and chaos.

The debate about pattern as an objective phenomenon to be discerned in the world against the idea that humans subjectively impose pattern on experience in order to make sense of it is not needed if pattern is seen as epiphenomenal arising out of the interaction between subject and object; for pattern to have meaning it needs to be seen, it needs to be brought to light, to be interpreted or experienced.

The predisposition to create pattern and meaning from a dynamic and chaotic world is not infallible. We should perhaps be vigilant against *apophenia*, the fallacious creation of significance from randomness, the construction of a signal from noise. History is littered with miraculous appearances of god in the grain of a wooden plank or the clouds churning overhead. Therefore a critical and reflective mind is essential to the task of pattern recognition. In my view to be valid, insightful and rigorous in the perception and representation of pattern, one can do no better than to exercise Radical Empiricism, William James' reflective method of enquiry that encompasses the arts and sciences and situates the dialectic of object and subject within a frame of experience that does not divide the world into an absolute split between knower and known, observer and observed.

*Just so, I maintain, does a given undivided portion of experience, taken in one context of associates, play the part of a knower, of a state of mind, of 'consciousness'; while in a different context the same undivided bit of experience plays the part of a thing known, of an objective 'content.' In a word, in one group it figures as a thought, in another group as a thing. And, since it can figure in but both groups simultaneously we have every right to speak of it as subjective and objective, both at once.*⁶

Seeing pattern is really important for survival and for full engagement with the world; it is a way of understanding complex and confounding phenomena. To perceive an underlying pattern is a type of critical observation or evaluation that is liberating because it allows access to a deeper understanding or layer of explanation than what might appear on the surface. This is topological comprehension; topology is the study of the properties of form and structure that remain invariant under distortion, therefore the London tube map is a topological diagram of the connections within the system, not a geographical rendering of actual distances. A geologist walking across the landscape marvels at the rocky outcrops not just as picturesque, but also as terminations or eruptions of bands of rock strata that plunge deep underground only to emerge miles away. To see these chthonic relationships makes the clutter and complexity of the phenomenal world legible. We can then perceive deeper relationships between what may at first glance appear to be unrelated phenomena. Pattern and its perception is scale, time and context dependent, the humblest weed has a pattern to the unfurling of its leaves. The seeming chaos of a rainforest has a hierarchy of light and

⁶ James, William *Essays in Radical Empiricism* (1912). Dover Publications 2003, ISBN 0-486-43094-4

shade, of canopy and understory, so much pattern can seem to be a monotony of diversity.

Etymologically pattern is cognate with pater and father. Our worldview in the West is deeply imprinted with the unconscious presuppositions of Aristotelian *hylomorphic* thinking. Pattern (pater, father) is seen as intellect imprinting passive and inert matter (mater, mother). This gendered dualism misses what many non-Western cultures and esoteric traditions understand much more fully: a monistic imperative in nature to produce emergent pattern as an aspect of matter, or coming at it the other way, matter as an emergent aspect of pattern, in a constant process of transformation, growth and decay where observer and observed are complementary aspects of an experiential whole. Matter may indeed be seen as mother but is anything but inert. Pattern is the perceptible generative principle of matter; it is matter mattering. Matter is the physical aspect of pattern; both are intrinsic to *thingness*. Pattern is fundamentally relational and processual, it is matter organising itself from within in response to its without.

The arts and sciences expose and amplify pattern in the world. This issue looks at pattern as a primary aspect of our encounter with the world, as a container of meaning and how these meanings resonate in different cultures around the world. I mention only a few of this issue's rich list of contributors who have had a particular impact on me as an artist. Cecil Balmond, a poet of structure and form creates architecture and sculpture that uncovers a non-linear order in the most informal and stochastic arrangements. His structural systems can be discerned underpinning the tectonics of iconic buildings across the globe. Artist Tod Hanson reimagines the machined patterns of anachronistic technological artifacts to create micro-utopias of intensely ornamented sculpture, wall painting and installation that have been shown across the UK and Europe. David Wade, an expert on the ethnography of Middle Eastern and Oriental art and design uncovers crystalline and fluid patterns that align to systems and processes of an organic and vital cosmos firmly embedding human culture as coterminous with nature. The phenomenological and existential perspective of psychologist Monia Brizzi has been enormously helpful to me in understanding the interaction of things, the extrinsic and extended perspective of relational being, seeing a pattern as part of a circuit, as constituted in self and other. The other contributors who I am less familiar with have prodigious creative practices that reimagine and question pattern in compelling ways.

From the crystalline tessellations of non-representational Islamic ornament to the swirling fluidity of Pacific Island tattooing, Owen Jones in his encyclopaedic *The Grammar of Ornament* of 1868⁷ set out to compare ornamental systems from across the globe and the resulting volume of sumptuous visual ethnography indicates strong visual affinities between, for example, Celtic and Pacific Islander ornament, Islamic and Pre-Columbian American ornament. From a structuralist viewpoint there appear to be underlying tropes and archetypes of pattern and organisation that recur across cultures and history. But this is unsurprising if one considers how indebted we are to the spontaneously emergent patterns in nature. In *On Growth and Form*, the mathematical biologist, zoologist and classicist D'Arcy Wentworth Thompson (1860–1948) situated the form, organisation and patterns of

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organisms from single celled plankton to whales in a context of the environmental forces acting on them, the Brownian motion buffeting a protozoan to the force of gravity determining the upper limit of a large land mammals size and proportion.

The representational aspects of life, the relational function of pattern in the environment, the semiotics of biological pattern as an agent of communication, go a great way to illuminating aspects of animal and plant behaviour and interaction. One has to only gaze in awe upon the dance of the bird of paradise or the octopus's dazzling display of changing colour to appreciate this. But as James Hillman notes in his essay, *The Practice of Beauty*,⁸ there are deep-sea creatures documented by Swiss zoologist Adolf Portmann for their intense colourful patterning in the pitch black of the abyss where there is neither light nor creatures with eyes to see it. Why does this pattern spontaneously emerge? This is perhaps an impossible question to answer fully as it would require a perspective impossible to obtain from our situated finitude; one could only say that emergent pattern is matter metamorphosing in relation to local and also first and final causes.

Leopard spots and zebra stripes can be generated algorithmically with very simple mathematics. The L-system⁹ devised in the 1970's is a basic algebraic sequence that can generate any type of tree form. The Belousov-Zhabotinsky reaction in a petri dish self-organises into compelling concentric geometries. Hexagonal wasps nests, spider webs, the intricate carbonate skeletons of diatoms, the molecular geometries of proteins and minerals revealed by x-ray crystallography and the ephemeral geometries of bubbles are all minimum energy nets, valleys of the least energy required to form a stable structure in a given environment and entropic in that sense. Oceanic and atmospheric currents interact with the lithosphere, biosphere and technosphere to redistribute and rebalance heat around the globe. The planets of the solar system hold each other in semi-stable orbital trajectories that can be perturbed by the gravitational influence of another star coming too close. The patterns of galactic clusters form feathered tendrils millions of light years in size that furl and unfurl over billions of years. All these phenomena at different scales of time and space are highly complex adaptive organic and inorganic systems borrowing energy locally to defy the dissipative tendencies of the cosmos as a whole.

There are places and things that initially seem to bear no pattern or meaning, a weed infested waste yard behind hoardings, which is in fact been colonised by plants in a highly efficient and purposeful way. Complexity theorists such as Simon DeDeo, a contributor to this issue, expose and make explicit the hidden patterns underlying diverse phenomena, economic, cultural and political that may seem quite random on the surface. The formation of spots, stripes, waves, branches, meanders, spirals, crystals, flows, foams, bubbles, tessellations can be explicit or implicit; pattern agglomerates, disperses or freezes as the

⁸ Hillman, James, in: Beckley, B. and Shapiro, D. Eds *Uncontrollable Beauty, toward a New Aesthetics*. (1999) Allworth Press, New York, 261-274.

⁹ The L-System algebra was invented by Aristid Lindemayer, a Hungarian biologist who adapted one of Noam Chomsky's formal languages into a rule-based grammar for the mathematical generation of artificial plants in 1968. This algorithmic system along with many others have formed a major new discipline of computational biology that mimics nature "in silico" in an attempt to understand and replicate its generative processes.

phenomenal operation of the forces of nature. The iconic Lorenz attractor¹⁰ owes its dynamic swirling equilibrium to an extrapolation of stochastic data that in the raw state appear random and meaningless. There is underlying order to be found in the chaos and blooming buzz of the world if one has the cognitive and perceptual tools.

the major part of the soul is outside of the body
Sendivogius¹¹

The archetypal psychology of James Hillman celebrates an ancient apprehension of beauty as the flaring out, the beckoning of things, as a foundational fact of existence and of encounter. For him Aphrodite, the goddess of beauty gathers the threads of the world into a comprehensible whole that enfolds both the perceiver and the perceived. This is the raw data of things, the outpouring aesthesis, the radiant face of the soul of the world revealing its depths in its process of becoming - the anima mundi.

Simeon Nelson is a sculptor and installation artist. He is currently professor of sculpture at the University of Hertfordshire www.simeon-nelson.com

¹⁰ Named after Edward N. Lorenz (1917–2008), American meteorologist.

¹¹ Cited from *The Thought of the Heart and the Soul of the World* by James Hillman