

IS NATURE BEAUTIFUL?

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Nature presents itself to us in various guises. In the first place, in everyday language, it is the set of terrestrial scenery which we are able to see (oceans, mountains, clouds...), or to explore (minerals, living objects etc.). We use to say that, according to the situation, it is beautiful, grandiose, savage, noble, cruel, arid, welcoming, severe, etc., and we agree, as a minimum, on the need to accord it respect.

But it is also the set of objects and phenomena to which our age-old questions relate and which our science strives to understand through the gradual discovery of what we rightly call the 'laws of nature'.

Lastly, if we go by its etymology (*nasci* + its future participle in *urus*), it is 'that which is destined to be born', being characterised by tendencies which are more dynamic than static, the same which we hear in *future*, *adventure*, *culture*...: nature is not that tree, there, in front of me, but the tree which is constantly evolving, which shoots up from the seed and from the obscure depths of the ground towards the light of the sky above. Contrary to the impression we might have from the delusive oxymoron 'dead nature', it is that which is preparing to come into the world, a world in permanent evolution, that of the universe, that of life and that of ideas.

Which of these different forms of nature are we speaking about when we say that it is beautiful? But, first, what do we mean by that?

Beauty

Beauty is that fundamentally subjective characteristic which we attribute to objects, to people and also to works of art and ideas (and which is hence often attached to human activity) when we obtain from them an intense satisfaction of a sensual, or intellectual, order:¹ a form of happiness or of exquisite delight, filling our understanding with joy.

While this feeling of satisfaction, happiness and delight is often shared as the common consensus of many people, it appears as fundamentally subjective: one of us may find a landscape magnificent while another is insensitive to it; or the latter finds beauty in a particular symphony which

¹ Among our senses, beauty only involves sight and hearing, but reveals itself also in the world of thought (beauty of an idea, of reasoning, etc.).

leaves the former as cold as marble. Likewise, the perception of beauty may vary with time as is shown by the reversal in our appreciation of high mountains (from ugliness² to sublimity) in but a few centuries.

Is this sense of beauty immediate, or the result of thought?

...immediate,...

Recently, while looking from the metro window passing over an East-side bridge, to the beauty of Paris extending to the West in the mild light of sunset, and being close to a young teenager whom I had just heard speaking with his friend the language of a 'deep' illiterate, I could hear him whispering, as for himself: "*Putain, qu'c'est beau !*",³ expressing a completely genuine and unexpected expression of admiration. In spite of the subjectivity just mentioned, there is a perception of beauty, born instantaneously, which establishes itself as indisputable and compelling fact, and leaves no room for any internal objection. It constitutes an immediate reaction of the whole being, independently of all forms of culture. Thus, before a sunset over the ocean, we exclaim "How beautiful it is!" giving expression to an irrepressible feeling which everyone would have shared in this same situation, and thereby attesting in a moving way that we belong fully and wholly to the community of mankind. This same, quasi-unanimous belonging, regardless of cultural level, will doubtless emanate also from the breathtaking spectacle of Bryce Canyon, that of the blue tints of the infinite succession of the landscapes of the Cévennes, stretching as far as the sea, that viewed from Mount Huangshan of the flaxen Sun emerging from the China Sea, or that of the Aegean Islands, floating between the sea and the sky on a carpet of mist... whose undeniable beauty will be celebrated in all languages, in the same way as everyone will also celebrate,

² In Chamonix, Saint François de Sales, in front of the *Mont Blanc*, wrote (1606) about 'terrible mountains', while in 1673, Marie Mancini, the niece of Cardinal Mazarin, spoke of 'such dreadful precipices', and while, at the same period, the theologian Thomas Burnet saw these mountains as 'remembrances' of the Fall after Original Sin, and the Earth 'not as a beautiful, organised assembly, but as a confused mass of parts piled together in disorder, without regard for beauty or symmetry'. In: Philippe Joutard, *L'invention du Mont Blanc*, Gallimard, 1986.

³ Sorry for the crudeness of the word. But, in a way, I was more deeply impressed, on the spot, to hear this 0th order expression of admiration in the mouth of this boy, obviously deprived of any culture – his friend and himself might have had 2 or 300 words in their vocabulary – than by a more distinguished or elaborate sentence celebrating the beauty of the scenery.

albeit differently, the *Pietà* in Rome or the *Eroica* Symphony practically everywhere. In the same way, also, conversely, a forest decimated by fire, or a region abandoned after exploitation, will be experienced as ugly and dull.

... enhanced by knowledge,...

There is another perception of beauty, whose immediate and unanimous appreciation is less guaranteed, since it relies on an underlying level of education or culture which not everyone has had the chance to benefit from. This latter beauty arises out of our knowledge of nature, however tenuous. Thus, in the case of the Grand Canyon, some knowledge, even tenuous, of geology provides us with a minimal understanding of the stratigraphy, of the virulence of the erosion, of the immense timescales which we read there like in a book, of the evolution of the world and of life which we learn from the fossils packed into the sedimentary layers..., where all this does not enhance the immediate beauty of the spectacle, but gives it a much richer flavour, thereby giving beauty a truly personal *timbre* for each individual: the *a* remains an *a*, but the *timbre* of the *a* of the clarinet is not that of the *a* of the violin. Beauty is thus enriched and essentially made to resonate by this accumulated knowledge, in the same way that the immediate beauty of the *Pietà* is then magnified if one knows even something about the story it tells us and the historical circumstances under which Michelangelo sculpted it.

Thus, *one has passed from a naked beauty to a beauty which is (sometimes sumptuously) clothed*; thus, here, beauty has essentially acquired a *timbre*.

... chiselled by poetry,...

The wonder about nature was for a long time absent in our literature and our poetry. After Virgil's *Bucolics*, it scarcely reappears before the 17th century with the emergence of 'poetry about the countryside, about gardens, about woodland, about fountains', owing much to the 'literary tradition of Greco-Roman and Italian inspiration',⁴ where the sea holds a special place in this rediscovery: "I have for a long time admired the sea", writes for example Father Bouhours, in 1671. "I still admire it today as though I had never seen it before".⁵

From then on, with a Keats, a Rousseau, a Chateaubriand, a Lermontov...,

⁴ Jean-Pierre Chauveau, *Poètes et poésie au XVIII^e siècle*, Classiques Garnier, 2012, p. 132.

⁵ Dominique Bouhours, cited in: Jean-Pierre Chauveau, *Op. cit.* p. 134.

nature becomes so abundantly present among the poets that the idea we form of it cannot but be influenced by this. In its own right, this simple '*dans le courant d'une onde pure*'⁶ immediately creates, as a counterpoint to the drama being played out, a feeling of serenity and harmony, that serves to form the image of a nature which, like La Fontaine, we see as lucid and beautiful, and at the same time fluid (the 'current') and therefore changing. Equally beautiful, but with a mysterious and disturbing beauty, are the woods of Schiller or Heine, admirably haunted by the Lieder of a Schumann or a Brahms. In addition to this contribution of the poets to our internalisation of a beautiful and often bewitching nature, there is of course that of the artists and architects. In infinite variations – from the enigmatic landscape backgrounds of da Vinci's portraits to the tranquil meadows and ponds of Corot;⁷ from Bonington's charming English countryside to the anguished visions of Giorgione and the mineral outcrops of Cézanne; from the Moss Gardens of Kyoto to the groves of Versailles – they furnish us with images of a nature which we are invited to admire, which is beautiful at times for its harmony (the park of Vaux-le-Vicomte) for the peace which issues from it (the English countryside), and at times for its violence (the falls of Iguazu) or for its excesses (an eruption of Etna).

... and magnified by science

Yet, in nature we can also discover a beauty other than that of a site, a glade, a spider's web, a constellation, a quartz-lined geode, a sunset over the ocean, an acanthus leaf, a rainbow, or a colony of diatoms..., however much we know about the hidden complexity of these objects. This is a more abstract form of beauty, which is to the previous forms what a Har-tung 'ink blot' is to a Fragonard drawing.

To discern this, it is necessary to delve a little further into a definition of beauty than the satisfaction and sensual delight discussed earlier. The sense of beauty can stem from a more intellectual contemplation, for example that of the formal harmony inherent in an idea, a concept or an argument. A mathematician will say that a particular proof of a theorem is 'more beautiful' than another. A physicist divided between two theories

⁶ *Le Loup et l'agneau*, La Fontaine.

⁷ In the Musée Condé in the Château de Chantilly, one can admire the light-streaked glade which forms the setting for 'Le Concert Champêtre' and gives striking expression to the consubstantiality between the beauty of a landscape and that of a piece of music. Cf. Yves Quéré, *Doubles croches*, Le Pommier, 2010, p. 240.

will sometimes, with no other criterion, give preference to the one which he/she considers 'more beautiful', knowing that this is also most often the one to which nature conforms.

Thus, nature has a more deeply embedded and less subjective beauty than that of a sprig of lily of the valley or a quarter moon, namely a beauty incorporated in the laws which science gradually uncovers. This manifests itself in the fine structure of an argument, the simplicity of a fundamental equation of theoretical physics, the symmetries revealed by the latter or the elegance of a proof. This internal beauty may be explicitly revealed in natural objects themselves. This is the case for a snowflake, whose hexagonal construction, so admired by Kepler, is the macroscopic manifestation of certain electron 'wave functions', mathematical objects of a microscopic scale, which are, of course, invisible. This is the case for the geometrical organisation of pinecones or the glistening of a gemstone, both of which are explained by science. However, this form of beauty may also remain invisible to the eye, implicitly only revealing itself to the human mind, most often in the underlying equations of the laws of nature, where, according to Galileo, 'the latter is a great book, written in the language of geometry', and geometry (that is to say 'mathematics') most often conceals harmony and sobriety with which one can associate beauty. This is the case for the '2' in the exponent -2 of the law of universal gravitation, which is astonishingly simple in comparison with an arbitrary 2.79 or 1.917, this 2 which controls and gives order to the immense machinery of our Universe. Anyone, more moved by the concision of a Doric column than the exuberance of a Corinthian one, would probably find beauty in this 2. Would not one say the same about the basic equations of quantum mechanics or those of relativity which, while they arise out of a more advanced mathematics, also have a comparable lucidity? And the same about the double-helix structure of DNA which is so admirably appropriate to its duplication, or about the shape of a particular protein which is so perfectly adapted to its function in the organism.

Evolution and subjectivity

It remains to wonder about the potential beauty of nature insofar as it is a projection into the future of that, within it, which is being born, and to place this in its broadest context, that of the Universe. Beyond the immediate beauty of a starry sky, the Milky Way and the galaxies which even a modest telescope reveals to us, we are seized by even greater amazement at the idea of the events which take place there, collisions of galaxies, birth

of black holes, collapse of stars, expansion of the whole... It is difficult to remain indifferent to all this evolution. Should one talk about beauty here? There is no doubt about this, although others will talk about chaos or ugliness. Subjectivity comes fully into play here once more. Depending on the individual, the amazement will become marvel or terror, contemplation or indifference, admiration or repulsion, although many will find there the evidence of a beauty surpassing all others, well beyond a simple sensual or intellectual, beauty nourished by our eternal questioning in the face of the majestic and enigmatic machinery of nature, its past and its future; and by our new perception of an advance in knowledge which, far from moving towards writing the word 'End' as an outdated scientism would have it, leads us every day along increasingly open paths ever more heralding of beauty.

Return to immediacy

While, therefore, scientific training helps one to appreciate these intimate and ultimate forms of beauty, is it legitimate to claim, as at the beginning of this text, that *immediate forms* of beauty can be appreciated, with practically no education and without culture? There is nothing less certain. Indeed, from birth onwards, we are inserted, without our knowing it, into a network of thoughts and references, which have been acquired over the millennia. Anyone who escapes this completely would perhaps not experience any emotion on seeing Paris bathed by the setting Sun. He/she might even find that somewhat ugly, insofar as beauty and ugliness are meaningful to him/her. On the other hand, however little education he may have received, my neighbour in the *métro* belonged to this invisible network. Through posters, postcards and magazine photographs of sunsets, he had unknowingly stored the stereotypes of his social group, extended to the limits of our society. With his own sensitivity added to this, he communed naturally with the vast harmony of this spectacle which everyone, or almost everyone, would have admired in the same way.

Beauty inevitably involves this communion. Man is not alone facing the splendours of nature, no more than he is with those he creates through his art. The sense of beauty could only be born with the emergence of awareness, that of the first prayers and that of what we call culture, beginning with the first stutterings of our language and our social nature. The latter, involving communication, the meeting of eyes, hand-in-hand contemplation of one another, questions and answers, shared silences, joint exclamations, etc., is played out among groups of two or more people. Indeed, it is

likely that the notion of beauty emerged from among such groups, in the same way that that of ugliness was born.

So, is nature beautiful? The question remains, being asked of everyone with no answer, other than the personal answer from each individual with his/her own sense of beauty, where these answers are changeable and diverse, being marked also by the social group to which the individual belongs. In some people, from its birth onwards, the notion of beauty acquires consensual points of reference which, in principle, create and refine that common understanding of beauty which we call taste. In others, the instrument which resonates to the spectacles of nature within our most secret depths, develops its personal timbre.

Nor should one forget the contributions of other more universal elements, hidden in the innermost reaches of things and in the arcana of thought, which imprint upon the mind a more intimate view of nature, linked to the origin of the World and to the laws which determine its structure and evolution. They invite us to discover a more abstract beauty there, which transcends customs and local characteristics and adds to the most venerable questions of Highest Antiquity posed to us by the great mysteries which set alight our poetry, our philosophies and – still more – our religions.