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FORM AS CONCEPT. GOETHE'S MORPHOLOGICAL THOUGHT

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Abstract: After a brief historical reconstruction, the article shows how Buffon's *Natural History* was crucial both for Kant's understanding of nature and for Goethe's works on the natural sciences. It conceptually compares Kant's teleological conception with Goethe's anti-finalist vision of Nature, and concludes with some remarks on the philosophical topicality of Goethe's morphology.

Keywords: Buffon; Goethe; Kant; Newton; neoclassicism.

"Es gibt in Goethes Werke eine reine *Philosophie der Form* – es gibt tiefe und reiche, rein *theoretische* Entwicklungen über ihren Sinn und Bedeutung."[2]

The aim of this contribution is to re-examine the philosophical relevance of Goethe's morphology by retracing the history of its emergence. Despite his philosophical expertise, Goethe did not consider himself a philosopher and was highly suspicious of philosophical abstraction. However, his morphology is almost unavoidable for those interested in philosophy, mainly because it offers a clear alternative to the traditional philosophical approach, which maintains the duality between intuition and thought. This duality remains present, for instance, in Kant's division between the intuitive forms of space and time and the pure categories of the understanding. To briefly outline the history of the emergence of Goethe's concept of form is to understand how close and yet how distant his morphological thought is from Kant's philosophy.

The affinities and points of divergence between these two major figures of German thought stem largely from their reading of the *Natural History* by George-Louis Leclerc, the Count de Buffon. In its unique synthesis, combining *Newtonian physics* and *neoclassical aesthetics*, Buffon's *Natural History* shows, among many other insights, that *physical causes* can explain why in certain parts of the world human bodies develop with greater proportionality than in others; and that despite this superiority, *there is no absolutely beautiful body in Nature*. Why is there no perfect beauty on Earth? One can easily find the answer if one considers that it is

[1] This text was revised by André Brunetti Suzuki and João Candido Cartocci Maia.

[2] Ernst Cassirer, „Goethes Idee der inneren Form". In: *Kleinere Schriften zu Goethe und zur Geistesgeschichte.* (1925-1944), *Nachgelassene Manuskripte und Texte*, X (Hamburg: Felix Meiner), 16.

infinitely more difficult for Nature to produce a perfect geometric figure than to produce the millions or billions of molecules that sustain the necessities of the infinite organic beings inhabiting the Earth. And why is this so? Astronomy and physics show that the Earth is not a perfect sphere, but a spheroid flattened at the poles. This irregularity or disproportion is also evident, for instance, in the uneven distribution of land and water on the globe: why are there more oceans in the southern hemisphere and more continental regions in the northern hemisphere?

The Newtonian physics adopted by Buffon and updated by new scientific knowledge demonstrates that there are no perfectly proportioned animals on the face of the Earth. To give a very simple example: there is no perfect symmetry between the two sides of the same organic body.[3] Kant learnt the lesson: all human beings, with a few exceptions, are right-handed; human hair grows "on the crown of the head in a spiral from the left to the right", etc.[4] This line of thought links Kant directly to Buffon and French materialism, a connection that he will later endeavour to avoid. François Duchesneau's book *La physiologie des Lumières. Empirisme, modèles et théories*[5] is essential here for understanding how the Newtonian physical model functioned as a heuristic principle in the life sciences during the eighteenth century. And although Kant attempted to distance himself from this model in his "biological" thinking, the Newtonian paradigm entered the German intellectual scene and was adopted by Herder, Schelling, and Goethe.

In spite of his rejection of Newton's theory of colours, Goethe remained closely aligned to the English physicist in his broader conception of science. This explains the distance he takes from the teleology of the *Critique of Judgment*, while simultaneously feeling close to the Kant of the *Metaphysical Foundations of Natural Science*:

> It hadn't escaped me, from the Kantian science of nature, *that forces of attraction and repulsion are part of the essence of the material* and that neither can be separated from the other in the concept of matter; from this came for me the original polarity of all beings, which permeates and enlivens the infinite diversity of all beings.[6]

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[3] "*On n'a rien observé de parfaitement exact dans le détail des proportions du corps humain; non seulement les mêmes parties du corps n'ont pas les mêmes dimensions proportionnelles dans deux personnes différentes, mais souvent dans la même personne une partie n'est pas exactement semblable à la partie correspondante; par exemple, souvent le bras ou la jambe du côté droit n'a pas exactement les mêmes dimensions que le bras ou la jambe du côté gauche, &c.*", Buffon (George-Louis Leclerc), *Histoire naturelle, générale et particulière, avec la description du Cabinet du Roi* (Paris: Imprimerie Royale, 1749), II, 545-546 (hereafter: HN, volume and page).

[4] "All hops wind around their poles from left to right, whereas beans wind in the opposite direction. Almost all snails, with the exception of perhaps only three species, have shells which, when viewed from above, that is to say, when their curvature is traced from the apex to the embouchure, coil from left to right.", Immanuel Kant, *Concerning the Ultimate Ground of the Differentiation of Directions in Space*. AA 02: 380. In: I. Kant, *Theoretical Philosophy 1755–1770*, translated by David Walford in collaboration with Ralf Meerbote (Cambridge: Cambridge University Press, 1992), 368.

[5] The Hague, Martinus Nijhoff, 1982.

[6] Johann W. Goethe, *Campagne in Frankreich*, Hamburger Ausgabe, X, p. 313-314 (italics added). On the close relationship between the *Metaphysical Foundations of Natural Science* and Newtonian sciences, see the "classical" book by Jules Vuillemin, *Physique et métaphysique kantiennes* (Paris: PUF, 1987).

Buffon, Maupertuis, Diderot, Herder, Goethe, and Schelling sought mechanical, electrical, and chemical principles (gravitation, attraction, repulsion, etc.) to explain the concept of matter without resorting to *teleological hypotheses*. In Buffon's case, organic molecules are aggregated through the interplay of forces, i.e., each organism is mechanically built in line with a *moule intérieur* inherited from its parents. More precisely, each organism tends–without a trace of finalism–towards reaching its model, the ideal "type", contained in the matrix of its organisation. However, due to resistance from external forces, no individual organism will ever fully realize the dimensions, conformation, and perfect proportionality of its *type*, which it strives in vain to fulfil.

In this way, Buffon succeeds in creating an unexpected marriage between Newtonian science and neoclassical aesthetics. Neoclassicism, as is well known, states that no beautiful human being is capable of exhibiting the *ideal beauty*, which is always superior to *natural beauty*. According to the French naturalist, every living being–not only humans–has thus a model, albeit one that remains an unattainable ideal. The innovative approach proposed by the director of the Jardin du Roi is to affirm that Nature acts like an *artist*, sketching out models (internal moulds) that shape the organic individuals while their development takes place. As Buffon writes about the *unau* (sloth): "The interior in living beings is the background of Nature's design, its constitutive form, its true figure."[7] Anatomy and physiology should not focus on the external form but on the design that Nature has drafted within organic bodies.

This conception of Nature as an artist, as a designer, echoes in many passages of the Kantian *corpus*, such as the one in which he explains the normal idea in the *Critique of Judgment*:

> This *normal idea* is not derived from proportions taken from experience, *as determined rules*; rather it is according to this idea that rules for judging first become possible. It is something intermediate between all singular intuitions of individuals, with their manifold variations – a floating image for the whole genus, *which [N]ature has set as an archetype underlying those of her products that belong to the same species, but which in no single case she seems to have completely attained*.[8]

The spontaneous, non-reproductive imagination produces an image that oscillates between all the possible intuitions of the individuals of a given species, and it does so because it is able to grasp the archetype that Nature has created to produce the

[7] "L'intérieur dans les êtres vivants est le fond du dessein de la Nature, c'est sa forme constituante, c'est la vraie figure". "L'Unau et l'Aï" (HN, XIII, p. 37).

[8] "*welches die Natur zum Urbilde ihrer Erzeugungen in derselben Species unterlegt, aber in keinem Einzelnen völlig erreicht zu haben scheint*". I. Kant, *Critique of Judgment*, AA 05: 234, translated by James Creed Meredith (Oxford: Oxford University Press, 2007), 65. Final italics added.

individuals of that species.[9] The Buffonian resonance can also be heard in this sentence from a reflection on anthropology: "The Ideal of beauty always presupposes a *dessin* delineated by Nature [*ein von der Natur vorgezeichnetes dessin*], for example, human bodies."[10] The term *dessin* (design, drawing) is in French in the text.

We must leave aside here the very important philosophical-philological discussion of design in the sense of *dessin* (drawing) and design in the sense of *dessein* (purposiveness), as well as many related topics, such as the theory of schematism in the *Critique of Pure Reason*. Nevertheless, it is important to quote one more text in which the Buffonian legacy is evident. Commenting on a passage in which Hogart speaks of the "greatest beauty" that can exist in a human body, Kant makes the following remark to his anthropology students:

> Eine solche Proportion haben die Alten in der Statüe des Bacchus, Apollos beobachtet, die heut zu Tage kein Mahler und Künstler nachahmen kann. So hat ein rechter *Pferde Kenner eine Idee von einen vollkommen schönen Pferde*, ob ein solches gleich niemals anzutreffen ist, und er selbst wenn er auch mahlen könnte, ein solches aufs Papier zu bringen nicht im Stande ist. *Es dient ihm dieses Ideal dennoch zur Beurtheilung der Pferde*. Ein jeder Mensch von Genie hat ein solches Ideal […].[11]

Although unable to paint, the connoisseur of horses must have the same ability as the genius to produce an Ideal, which Nature has expressly drawn for this species of animal. In the same vein, the Section on the Ideal of Reason in the *Critique of Pure Reason* speaks of the "floating drawing" (*schwebende Zeichung*), the "unattainable model of empirical intuitions" that *painters and physiognomists*

[9] See the famous passage in which Buffon explains that the ruler and compass were not enough to find the average balance (*milieu*) between the different dimensions of the human body, without which the proportions of what is called *la belle Nature* cannot be found. Artists do not *mechanically* arrive at this average proportion, which is a necessary but not a sufficient condition for achieving ideal beauty. Instead, they dispense with both empirical comparison and geometric measurement, because these cannot replace *l'art du dessein*: "c'est à l'art du dessein qu'on doit tout ce que l'on peut savoir en ce genre, le sentiment & le goût ont fait ce que la mécanique ne pouvait faire: on a quitté la règle & le compas pour s'en tenir au coup d'œil, on a réalisé sur le marbre toutes les formes, tous les contours de toutes les parties du corps humain, & on a mieux connu la Nature par la représentation que par la Nature même; dès qu'il y a eu des statues, on a mieux jugé de leur perfection en les voyant, qu'en les mesurant. C'est par un grand exercice de l'art du dessein & par un sentiment exquis, que les grands Statuaires sont parvenus à faire sentir aux autres hommes les justes proportions des ouvrages de la Nature, les Anciens ont fait de si belles statues, que d'un commun accord on les a regardées comme la représentation exacte du corps humain le plus parfait." (HN, II, p. 546.) These lines are the clearest expression of Buffon's neoclassical *credo*. The German translation of Buffon's *Natural History* renders *l'art du dessein* as *Kunst zu zeichnen*. Buffon, *Allgemeine Historie der Natur nach allen ihren besonderen Theilen abgehandelt; nebst einer Beschreibung der Naturalienkammer Sr. Majestät des Königes von Frankreich* (Hamburg: Grund-Holle, 1750), II, 256.

[10] Immanuel Kant, AA 15: 330-331.

[11] Immanuel Kant, *Anthropologie Parow* (1772-1773), AA 25: 271-272 (my emphasis). Once again, Kant seems to draw inspiration from *Natural History*. Here, he may be referring to the text in which Daubenton discusses the beauty of oxen and horses. See HN, IV, 279-280; German trans., II, 2, 135.

claim to have in mind as a criterion of their judgement.[12] From all this we can conclude that Buffon's explanations of Nature as an artist, a designer, are an essential source for understanding Kant's conception of the *technique of nature* (*Technik der Natur*).[13]

For Buffon, besides the internal type that outlines the form of each species, there is also a primitive and general design (*dessein primitif & général*), which is a general archetype for all species. This first design (*premier dessein*) is described by Buffon as containing some characteristics similar to those of the designs belonging to each species, yet differing from them by containing a prototype that transcends all species and, as such, cannot be perfectly expressed by any of them. Just as no single individual fully embodies the ideal of its species, no single species can fully attain the archetype of all species. Notwithstanding, each one of them, even in its imperfection and lack of fulfilment, shows something of the primitive and general design. Thus, there is an inner mould that operates as a pattern, as a type, for each species; but there is also a more general archetype that encompasses all these specific patterns or types. This archetype is expressed in Goethean terminology by the neologisms, such as *Urphänomen*, *Urthier, Urpflanze*. Similarly, though not exactly coincidentally, Kant speaks of a *gewisses gemeinsames Schema aller Tiergattungen*, a *gemeinschaftliches Urbild* or *gemeinschatliche Urmutter*, which allows the hypothesis of an affinity among the most diverse animal species[14].

The primitive design gives insight into the deepest correspondence between the anatomical-physiological structure of animals and plants. Regardless of how different the outward figure of an animal or plant species may be from another, an examination of their internal moulds would reveal them to be quite similar. As Buffon writes in his famous comparison between a man and a horse in his description of the donkey:

> […] take the skeleton of a man, bend downwards the bones of the pelvis, shorten those of the thighs, legs, and arms, lengthen those of the feet and hands, join the phalanges, lengthen the jaws, by shortening the frontal bone, and extend the spine of the back, this skeleton would cease to represent the remains of a human figure, and would be the skeleton of a horse […]
>
> […] prenez le squelette de l'homme, inclinez les os du bassin, accourcissez les os des cuisses, des jambés & des bras, alongez ceux des pieds & des mains, soudez ensemble des phalanges, alongez les mâchoires en raccourcissant l'os frontal, & enfin alongez aussi l'épine du dos, ce squelette cessera de représenter la dépouille d'un homme, & sera le squelette d'un cheval […].[15]

[12] Immanuel Kant, *Kritik der reinen Vernunft*, AA 03: 384-385.

[13] Immanuel Kant, *Kritik der Urteilskraft*, AA 05: 233.

[14] Immanuel Kant, *Kritik der Urteilskraft*, §80, AA 05: 418-419. So far, this article has primarily focused on Kant's indebtedness to Buffon, a topic that has yet to receive adequate attention from scholars. Goethe's debt to Buffon is more evident and will be discussed further below. On this subject, see, for example, the study by Jacques Roger, "Die Auffassung des Typos bei Buffon und Goethe", *Die Naturwissenschaften*. 52, no. 12 (1965), 313-319.

[15] HN, IV, 379-380. English translation by James Smith Barr: *Buffon's Natural History* (London: Symonds, 1797), 182.

This anatomical-physiological explanation[16] remains valid to this day.[17] It is the background to Goethe's studies in osteology, but not only.

THE DIFFERENCES BETWEEN GOETHE AND KANT

The purpose of the first part of this text was to show, very briefly, that Buffon's synthesis of Newtonian science and neoclassical aesthetics provides the framework within which Kant's technique of nature and Goethe's conception of form emerge. Revisiting Buffon, therefore, allows us to identify the points of affinity between the *Urpflanze*, *Urtier*, and *Urphänomenon* and Kant's *Normal-Idee*, *gemeinsames Urbild*, and *Urmutter*.

But it is also possible to discern between Kant and Goethe, and from there to argue that Goethe's version has some conceptual advantages over Kant's, while remaining more faithful to its Buffonian origins. From his critical point of view, and particularly to avoid materialism, Kant is compelled to state that the normal idea is "the image that, as it were, forms an intentional basis underlying the technique of nature (*das Bild, das gleichsam absichtlich der Technik der Natur zum Grunde gelegen hat*)". The design that underlines each species is not based on a truly scientific, determining reasoning, because it is a merely *reflective judgement*. However, it is essential, because the image produced by the spontaneous imagination functions as a standard of "universal measure for aesthetic judgement" for each animal of a given species. In other words, Nature follows "the greatest purposiveness in the construction of the figure", but only as "an idea of the judging subject".[18] And the same can be said about the reflective judgement on the *objective finality*.

For Goethe, the ideal of each species is given by the global distribution of all the forces of nature. For him, as for the Newtonian Buffon, the growth of a seed or a foetus cannot be explained by either preformation or epigenesis. Each individual specimen follows the design that Nature has artistically sketched out for its species; and the metamorphose undergone by a plant or an animal is previewed and foreseen in the non-finalistic, mechanical, *a-teleological telos* set by Nature. For, as the Goethean

[16] There is an image from the time that illustrates this description. It is a drawing by François-Alexandre de Garsault in his book *Le nouveau parfait du maréchal, ou la connaissance générale et universelle du cheval* (The Hague: Jean Neaulme, 1741), 6-7 (https://gallica.bnf.fr/ark:/12148/bpt6k 108877x/f41.item). The book was published before *Natural History* and achieved a great success. This means that, at this point, Buffon is simply echoing the knowledge of the time. Daubenton references it (HN, IV, 261 and 280). It is worth noting that the anatomical comparison between a horse's leg and a human's leg had already been made by Leonardo da Vinci.

[17] For a clear presentation of current knowledge about the physiological-anatomical relationship between humans and horses, accompanied by insightful images, see the following video on YouTube: https://www.youtube.com/ watch?v=h0U3y7qPjcU&list=PLFoETF-ZT2ru7S8hNBO7ZaYX-Pm2NiCr6 &index=1.

[18] Immanuel Kant, *Kritik der Urteilskraft*, AA 05: 233; Engl. trans., 64.

axiom says, *Der Zweck des Lebens ist das Leben selbst.*[19] There is no other purpose for life than life itself.

The difficulty intrinsic to the Kantian aesthetic-teleological elucidation of Nature is that the design as a drawing, as an image, remains tied to design as a finalistic, purposive concept. In other words, even in the case of the reflective judgement, Kant still maintains the duality between the conceptual and the visible, the discursive and the intuitive. The conceptual is never entirely absorbed into the figurative, as is the case with the true symbolism conceived by Goethe "as the vital-instantaneous revelation of the unfathomable".[20]

The Buffonian model followed by Goethe is much more economical because it rejects the ideas of *Naturzweck*, *Endursache*, etc. There is no initial simple being from which a series of complex beings derive, nor is there an ultimate *telos* to which all must converge–even if only to unify the disparities in a system, as in the case of the *Critique of teleological judgement*. The primitive design proposes that the various interior moulds were produced independently of one another but in an interplay according to aesthetic-mechanical principles. The mould of a human being is different from the mould of a horse, but both cannot fail to follow the physical-mathematical-aesthetic rules, the primitive and general design that is common to both and to the other mammals.

Wittgenstein understood this very well when he contrasted Goethe's morphological thinking with theoretical explanations such as Darwin's evolutionism. Goethe's concept of metamorphosis is much more economical than Darwinism because it does not need to explain how one living being transforms into another or how one species turns into another; it does not need to resort to *Zwischenglieder*, to hypotheses about development and evolution. The *Urphänomen* is not only a description, it provides evidence, an immediate synoptic view that makes it possible to visualize the relationships between different language games. Just as the Goethean *Übersichtlichkeit* allows us to see all plant species together (the existing or the merely possible), so does the figurability of the various *Sprachspiele* provide evidence of their interconnectedness:

> Wir stellen eine Sprachform mit ihrer Umgebung zusammen, wir sehen die Grammatik unserer Sprache auf dem Hintergrund ähnlicher und verwandter Spiele, und das bannt die Beunruhigung.[21]

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[19] Letter to J. A. Meyer, February 8, 1796. Apud: Maria Filomena Molder, *O Pensamento Morfológico de Goethe*. Lisboa, Imprensa Nacional - Casa da Moeda, 1995, 241. The Portuguese scholar's work is an excellent presentation of Goethe's morphological conception in general.

[20] "Das ist die wahre Symbolik, wo das Besondere das Allgemeinere repräsentiert, nicht als Traum und Schatten, sondern als lebendig-augenblickliche Offenbarung des Unerforschlichen". Johann Wolfgang von Goethe, *Maximen und Reflexionen*, *Berliner Ausgabe*. XVIII: *Kunsttheoretische Schriften und Übersetzungen*, 522.

[21] Ludwig Wittgenstein, Friedrich Waismann, *The Voices of Wittgenstein*, edited by Gordon Baker (London: Routledge, 2003), 310. As is well known, the problem of the *Übersichtlichkeit* related to Goethean morphology is addressed by Wittgenstein in the "*Bemerkungen über Frazers* Golden Bough". In: *Vortrag über Ethik und andere Kleine Schriften*, edited by Joachim Schulte (Frankfurt am Main: Suhrkamp, 1989), 29-46.

Wittgenstein's reading of Goethe is interesting, but perhaps too "static", because it does not take into account the *internal movement* of the form. For Goethe, the synoptic vision is inconceivable if it does not render visible the form in its change, if it does not recapitulate all the moments undergone by the form, in short, if it does not grasp the metamorphosis.

It is important to give some examples of Goethe's morphology and comparative anatomy in order to see–in action–the aesthetic and mechanical principles he inherited from the Newtonian and neoclassical tradition as synthesised by Buffon. But given our space constraints, I will limit myself to commenting on two plants and on a few verses of the poet.

At the beginning of the nineteenth century, Prince Maximilian Wied zu Neuwied, who was also a naturalist, embarked on a scientific expedition to Brazil to study the flora, fauna, and indigenous tribes of this "noch unbekanntes Land". He brought back two species of Malva (*Malvaceae*). Nees von Esenbeck, who studied and described them, honoured Goethe by naming the two species *Goethea cauliflora* and *Goethea semperflorens*.

A good commentary on this topic could perhaps be Schelling's radically antiteleological note on the *symbolic meaning of a plant*, a note entirely in the spirit of Goethe and one that might as well have been written by the poet:

> Selbst an den Naturwesen, z. B. der Pflanze, ist die Allegorie nicht zu verkennen, sie ist gleichsam die anticipirte sittliche Schönheit, sie würde aber keinen Reiz für die Phantasie, keine Befriedigung für die Anschauung enthalten, wenn sie um dieser Bedeutung willen und nicht zuerst um ihrer selbst willen wäre. Eben in diesem unabsichtlichen, unbefangenen, nach außen unzweckmäßigten Seyn doch zugleich das Bedeutende, Sinnvolle zu erkennen, entzückt uns. Es als Absicht darin zu erblicken, hebt den Gegenstand selbst für uns auf, der, da er seiner Natur nach absolut seyn soll, um keines Zwecks willen, der außer ihn liegt, daseyn darf.[22]

And now some verses of Goethe.

Liebeslied eines Wilden (1825)

Brasilianisch

Schlange, halte stille!
Halte stille, Schlange!
Meine Schwester will von dir ab
Sich ein Muster nehmen;
Sie will eine Schnur mir flechten,

[22] Friedrich W. J. Schelling, *Philosophie der Kunst*, edited by Manfred Schröter (Munich: Beck, 1992), V, 432.

Reich und bunt, wie du bist;
Daß ich sie der Liebsten schenke,
Trägt sie die, so wirst du
Überall vor allen Schlangen
Herrlich schön gepriesen.

The three final verses in the first version (1782) read like this:

Deine Schönheit, deine Bildung
Wird vor allen andern Schlangen
Herrlich dann gepriesen werden.

The verses of this *Gelegenheitsgedicht* are based on an indigenous Brazilian song, transcribed by Montaigne in his essay on the Cannibals.[23] While it is almost a literal translation, there are distinctly Goethean elements.

The lyrical I asks the snake to stop its movement, but in order to preserve it in a model (*Muster*). In this way, all the other snakes in the world will praise the beauty of this idealized snake, this artistic snake, which surpasses all natural beauty. The model surpasses all animals, just as the *Urpflanze* surpasses all existing plants. As Goethe writes to Herder in the *Italian Journey*, with the primordial plant, it will be possible to "invent an infinity of plants" because it will be "the most extraordinary creation in this world, for which Nature itself will envy me."[24]

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[23] Michel de Montaigne, *Essays*, I, 31.

[24] Johann Wolfgang Goethe, *Italian Journey*, Letter to Herder, May 17, 1787 (*Hamburger Ausgabe*, XI), 322.

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