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Analogy, technical reason, and living beings: the role of analogy in representing Kant's concept of naturzweck

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Chapter 4: Two Analogies—or Disanalogies—Invoked by Kant for Understanding the Concept of *Naturzweck*: Their Contributions and Limits

In §65 of the *Kritik der Urteilskraft*, Kant not only defines and describes what is an organized being judged as natural end, but he also uses a series of analogies in order to clarify this concept. Although they are not clearly introduced—let alone further analyzed—by Kant, they still represent a quite useful tool for distinguishing and describing the concept of *Naturzweck*. In fact, and as I have argued in the previous chapter, one of the very procedures of the reflective power of judgment is analogy, and the Teleological Judgment is full of analogical expressions typical of reflection—i.e., as a combination of an inference of the reflective judgment and symbolism. As I shall argue in the last chapter of this dissertation, we can only gain intelligibility of the concept of *Naturzweck* by an analogy with our own technical-practical reason. Therefore, an analysis of the main analogies invoked by Kant in the second part of the KU is a good strategy for gaining a better comprehension of what the crucial concept of *Naturzweck* means in this context.

The main analogies invoked by Kant in the second part of the KU are three: i) the analogy between organisms and artifacts—or rational design; ii) the analogy between organisms and life; and, finally, iii) the analogy with our own rational causality—i.e., with our own reason in its technical use. Nevertheless, not all of these analogies have the same value for Kant. To be more accurate, some of them can be considered, ultimately, as examples of disanalogy[117] rather than analogy, properly speaking. This is the case with the analogy with artifacts and—to a lesser extent—the analogy with life. The analogy with our rational causality, however, seems to have a major value for Kant's argument, even though he is not so explicit in this regard and sometimes he seems to diminish the relevance of this analogy. In any case, before thematizing and analyzing this latter analogy—that is, the one that seems to play an indispensable role within the Teleological Judgment—, I must analyze, first, the other two analogies used by Kant. The relevance

[117] By "disanalogy", I mean a sort of negative-ambivalent concept of analogy. It is not entirely negative—i.e., there is not a complete dissimilarity between the terms that compound the "analogy"—, since there is a degree of identity between the elements of the disanalogy, but they are related in an ambiguous and certainly inconsistent way. Therefore, a disanalogy—in this context at least—stresses the relation of dissimilarity between the elements of the comparison more than the relation of identity (but it still exhibits a certain relation of similarity).

of this examination is, on the one hand, to emphasize the role of analogical reflection within the Analytic of the Teleological Judgment, and, on the other hand, to clarify the very concept of *Naturzweck* by means of these (dis)analogies.

In order to do so, this chapter will be divided into two parts. The first one (4.1) consists in analyzing the first analogy that Kant uses, namely: the analogy between artifacts—or machines—and organized beings. As I will claim throughout this section, this analogy will turn—in the end—into a disanalogy, since the elements that compose the analogy highlight the differences between organisms and artifacts more than their similarities. For the analysis of this (dis)analogy, this section will be divided into two sub-sections: the first one (4.1.1) is a brief account of the argument from design—especially as presented in Modern Philosophy—since the very analogy with artifacts is derived from the analogy with intelligent design. The second one (4.1.2) is exclusively devoted to analyzing the analogy with artifacts and to emphasizing the shortcomings and limitations of this analogy. The second section of this chapter (4.2), on the other hand, thematizes the analogy between life and organized beings. This section is also divided into two parts: the first one (4.2.1) consists in an overview of Kant's conception of life, since different uses and meanings of the concept of "life" can be found throughout Kant's critical writings. For that reason, it is necessary to frame the analysis of the analogy with life by giving a determinate concept of it. Once this account of Kant's concept of life is introduced, it is possible to discuss, in the second part (4.2.2), the analogy with life, which—unlike the disanalogy with artifacts—can be considered an analogy, properly speaking. At the same time, Kant is cautious to stress the risks this analogy carries with it.

4.1. – Analytic of Teleological Judgment, organism, and the analogy with artifacts

As mentioned before, Kant defines and describes the reflective concept of natural end (*Naturzweck*) in the Analytic of the Teleological Judgment. In order to do so, Kant invokes some analogies for illuminating the properties and main features that natural ends seem to possess. Some of these analogies, however, can finally be considered as disanalogies instead of analogies properly speaking, since they highlight more dissimilarities than similarities between the elements that compound the analogy. The

first analogy invoked by Kant in the Analytic of the Teleological Judgment is between human art (such as an artifact or a machine, like a watch) and organized beings judged as natural ends. That is to say, the analogy is between a technical end (the product of human art) and a *natural* end (a product of nature that is judged as if it possesses internal purposiveness). In this section of the chapter, therefore, I shall introduce and analyze this first analogy used by Kant. As will be seen in what follows, I claim that this first analogy is more properly a disanalogy, since it underlines a sort of insurmountable dissimilarity between natural ends and a mere end (such as a watch), which is the relation of internal and external purposiveness, respectively.

However, in order to analyze this first analogy invoked by Kant in the Analytic of the Teleological Judgment and then justify why this analogy can be regarded, in the end, as a disanalogy, this section will be divided into two parts: in (4.1.1), I shall briefly introduce the analogy with intelligent design, at least with respect to the Modern philosophical interpretation of this analogy. The analogy with intelligent design can be identified with the argument from design (or the so-called "teleological" proof for the existence of God). A rough overview of the analogy with intelligent design in Modern Philosophy is necessary in order to understand the first analogy invoked by Kant when describing the features of a *Naturzweck*. In (4.1.2), I shall describe and analyze the analogy between the human art and natural ends carried out by Kant, in order to emphasize the shortcomings and limitations of this particular analogy.

4.1.1. - Analogy with intelligent design: a brief account

It can be argued that final causes, natural teleology and the argument from design were practically eliminated from modern natural sciences and from a considerable part of Modern Philosophy[118]. The scientific revolution of the seventeenth century left

[118] See, for instance, this historical account of McFarland: "It is one of the commonplaces of histories of science that in the seventeenth century final causes were eliminated from natural science. Scientists focused their attention on how nature works, on discovering the laws which govern natural phenomena; they ignored altogether any possible purpose which God or nature might have, the reason why nature behaves as it does. Such purposes might indeed exist, but they were considered to have no scientific value, and it was felt that the scientist should not attempt to discover them. Francis Bacon, for example, emphatically asserts that the introduction of final causes 'rather corrupts than advances the sciences, except such as have to do with human action'. Descartes is equally definite: '… the species of cause termed final, finds no useful employment in physical [or natural] things; for it does not appear to me that I can without temerity seek to investigate the [inscrutable] ends of God'. And Galileo, in the *Dialogue Concerning the Two Chief World*

practically no room for the question of final causes in the investigation of nature, since the mathematic-mechanical laws of matter ruled the whole natural world, including living organisms. Nevertheless, discussions of the argument from design and the analogy between organisms and artifacts were still a commonplace amongst some Modern philosophers—be it in rejection of or support for such arguments. Even though final causes were in the process of being exiled from philosophy and natural science, when observing the functioning and arrangements of living organisms, philosophers still viewed the latter beings as analogous to artifacts or machines (i.e., products of intelligent design). That is to say, some philosophers consider that the mere mechanical explanation of nature was insufficient for accounting for the way nature and its products organize themselves[119].

It can be claimed that the analogy of nature—or organized natural products—with intelligent design has two levels of interpretation: according to the strong interpretation, the analogy with intelligent design corresponds to the so-called "argument from design". The argument from design is one of the three arguments for the existence of God, and it consists in considering nature as if it were designed by a rational-omnipotent designer, just as a watch or any artifact is designed by a human-rational designer. On the weak interpretation, the analogy with intelligent design entails a merely metaphorical use of the design-analogy in order to make sense and describe the "purposive" organization of nature and its products. Anyway, both of these levels of interpretations of the analogy with intelligent design are useful in order to understand the analogy—or disanalogy—invoked by Kant between organisms and artifacts. That is to say, we can find these two

System, says that '… it is brash for our feebleness to attempt to judge the reason for God's actions…' The scientific world-picture, after the elimination of final causes, was of a universe of particles of matter moving in accordance with precise mathematical laws." (McFarland 1970, 43-44). Or as Mayr states: "For the Cartesians any invoking of teleological processes was utterly unthinkable. Coming from mathematics and physics, they had nothing in their conceptual repertory that would permit them to distinguish between seemingly end-directed processes in inorganic nature, and seemingly goal-directed processes in living nature. They feared, as shown particularly clearly by Nagel, that making such a distinction would open the door to metaphysical, nonempirical considerations" (Mayr 1992, 120). Or as McLaughlin summarizes it in his *What Functions Explain. Functional Explanation and Self-reproducing Systems*: "Final causes in the stricter sense were banished from science in the seventeenth century by the philosophers of the Scientific Revolution rather by the scientists themselves" (2003, 20). See also: Ayala (2007, 8567-68); Underhill (1904); and Zammito (1992), Nagel (1961).

[119] As Ina Goy and Eric Watkins maintain: "Whereas early modern advocates of experimental philosophy, Cartesian mechanism, and Newtonian mathematical physics avoided positing final causes and teleological explanations, many philosophers and natural researchers in the seventeenth and eighteenth centuries believed that efficient causes and non-teleological explanation were insufficient to explain the processes that regularly occurred in nerve and muscles, and in plant and animal generation, and thus tried to reinstate final causes and teleological explanations" (2014, 1).

senses of intelligent design in the analogy invoked by Kant in §65 of the KU. Accordingly, this sub-section will provide a rough overview of the analogy of intelligent design especially in Modern Philosophy, in order to place the artifact-organism analogy used by Kant in the Analytic of the Teleological Judgment in its historical and philosophical context (before analyzing it in further detail).

The analogy with intelligent design can be largely identified with the argument from design (also known as the physicotheological proof of the existence of God), which has "a long tradition in the history of ideas" (Goy 2014, 203)[120]. Together with the ontological and cosmological arguments, the argument from design is one of the main arguments (or proofs) for the existence of God. Put in very rough terms, its proceeds from an analogy between the following elements: an artifact (the dominant example is a watch) and its producer or designer (in this particular example, a watchmaker), and an organic being (such as a plant or animal) and its creator or designer (God, for instance). The crucial point here is that organic beings (their own organization) are seen as designed, just like any sophisticated artifact is designed by an artisan or designer. That is to say, such natural products (organic beings) seem to exhibit common features to any designed objects, such as works of art or artifacts. The main common characteristic these products (artifacts and organic beings) seem to share is end-directedness, that is, the idea that these products were produced for the sake of accomplishing some determined purpose. To put it in other words, in the analogy from design, nature and some natural products seem to exhibit indications of design, therefore, these natural products are analogically considered as designed by a divine designer.

This is, roughly speaking, the argument from design. However, in Modern Philosophy (especially during the eighteenth century), this analogy with design varied according to its scope and strength: one the one hand, it was seen as an argument for proving the existence of God, and on the other, as a weaker, merely metaphorical comparison, useful for making sense of nature and its products. McFarland clearly explains the changes that the argument from design suffered in the eighteenth century:

[120] In fact, Ina Goy (2014) carries out an accurate overview of the argument from design taking into account from the old traditions of theistic religions (such as the *Old Testament* and the *Koran*) to Ancient Greek Philosophy (such as Plato and Aristotle), Medieval Philosophy (such as Thomas Aquinas in his *Summa Theologiae*), and Modern Philosophy (with Hume's Cleanthes character in the celebrated *Dialogues Concerning Natural Religion*, and Paley's "watchmaker analogy" in his *Natural Theology*). In all of these works, we can find traces of the argument from design.

> It is important to emphasize that the argument from design, as it existed in the eighteenth century, was not a version of an Aristotelian type of teleological argument. It did not, in other words, assert or imply that nature is directed toward some end or purpose having value; rather it depended upon an alleged analogy between certain apparently purposive things and arrangements to be found in nature and things produced by human technique (McFarland 1970, 47-48).

What McFarland is illustrating in this quote is the appearance of a novel and modern form of the argument from design. As mentioned in the Introduction of this dissertation, during the seventeenth century, final causes and natural teleology were practically eradicated from natural science. Spurred by the discovery and formulation of the mathematical-mechanical laws on the part of Copernicus, Galileo, and Newton, appeals to teleology quickly lost clout in the new scientific worldview[121]. Nevertheless, during the seventeenth and eighteenth century the argument from design appeared in its strong form again, but this time what is highlighted is not only the alleged proof of the existence of God, but also the very analogy between works of art (that is, any artifact designed by human beings) and organized natural beings. The "watchmaker analogy"[122] of Durham and Paley

[121] As Ayala clearly summarizes: "[t]he discoveries by Copernicus, Kepler, Galileo, Newton, and others, in the 16th and 17th centuries, had gradually ushered in a conception of the universe as matter in motion governed by natural laws. It was shown that Earth is not the center of the universe but a small planet rotating around an average star; that the universe is immense in space and in time; and that the motions of the planets around the sun can be explained by the same simple laws that account for the motion of physical objects on our planet […]. These and other discoveries greatly expanded human knowledge. The conceptual revolution they brought about was more fundamental yet: a commitment to the postulate that the universe obeys immanent laws that account for natural phenomena. The workings of the universe were brought into the realm of science: explanation through natural laws. All physical phenomena could be accounted for as long as the causes were adequately known" (2007, 8567-68). For another accurate account of the overly-mechanical worldview of the sixteenth and seventeenth centuries and its influence in Kant, see Zammito (1992).

[122] William Durham published a series of works (from 1696 to 1730) devoted to the teleological argument (or argument from design) in combination with insightful scientific observations and research. His most significant conclusion in all of his books was that nothing proves better the existence of God than the perfect design that we can see throughout nature and its products. Nearly a century after the publication of these books, William Paley published his *Natural Theology* (1802), which contains the celebrated "watchmaker analogy": "In crossing a heath, suppose I pitched my foot against a stone, and were asked how the stone came to be there: I might possibly answer, that […] it had lain there for ever […]. But suppose I had found a watch upon the ground, and it should be inquired how the watch happened to be in that place; I should hardly think of the answer which I had before given […]. There must have existed, at some time, and at some place or other, an artificer or artificers who formed [it]. […] Every indication of contrivance, every manifestation of design, which existed in the watch, exists in the works of nature; with the difference, on the side of nature, of being greater and more, and that in a degree which exceeds all computation" (Paley 1819, 1-16). Or as McFarland states: "It seems almost inevitable that thinkers who believed that the laws of nature were mechanical throughout, when confronted with what they took to be obvious elements of design and purpose in nature, vegetable and animal organisms, and other natural arrangements, should view the latter as analogous to machines like the watch or clock. For, while principles of such machines are entirely mechanical, the machines themselves are nonetheless designed for a particular purpose" (1970, 48).

is, perhaps, the most paradigmatic example of this variation of the argument from design during the eighteenth century (and which will last until the beginning of the nineteenth century). For this "new" version of the argument from design, there is an undeniable resemblance between organisms and mechanical artifacts, a resemblance that lies in the character of apparent design and purposiveness that organisms seem to possess[123]. This analogy has also been extended to a larger scale, whereby nature is understood as analogous to a great machine[124], such as a sophisticated and complex clock.

However, the validity of analogy with intelligent design (or the analogy between artifacts and organisms) will be put into question in the second half of the eighteenth century especially by Hume and Kant, since they both deem that this analogy falls short in providing an account of the self-organization organisms seem to possess, which cannot be reduced to the external rational purposiveness that artifacts or works of art have as the cause of their design. Nevertheless, both Hume and Kant do not fully reject this analogy (rather they weaken the value of it), and they both have, in fact, a sort of ambivalent view thereof.

Let us see why. In his celebrated *Dialogues Concerning Natural Religion* (1779), Hume created four characters who discuss different philosophical arguments for the existence of God. The ontological, cosmological and teleological arguments are discussed in these dialogues. Nevertheless, there are two characters, Cleanthes and Philo, who discuss the teleological argument (or argument from design) and each of which represent an opposed view about the aforementioned argument. On the one hand, Cleanthes is a fervent proponent of the argument from design, a theist who sees traces of design in nature as the most irrefutable proof of the existence of God[125]. Philo, on the other hand, asserts exactly otherwise: the argument from design does not prove the existence of God, but

[123] For instance, Tim Lewens calls this comparison between artifacts and nature the "artifact model". The artifact model is, simply put, "the approach to the organic world that treats it as though it were designed" (Lewens 2004, 39).

[124] "Early modern scientists and philosophers often spoke of the world as the *machine mundi*, and scarcely anyone who was anyone between Descartes and Kant neglected to compare the system of the world with a clock" (McLaughlin 2003, 21).

[125] "Look around the World: Contemplate the whole and every part of it: You will find it to be nothing but one great machine, subdivided into an infinite number of lesser machines, which again admit of subdivision, to a degree beyond what human senses and faculties can trace and explain. […] The curious adapting of means to ends, throughout the whole nature, resembles exactly, tho it much exceeds, the productions […] of human design. […] Since therefore the effects resemble each other, we are lead to infer, by all the rule of analogy, that the causes also resemble; and that the Author of nature is somewhat similar to the mind of man […] By this argument a posteriori […] do we prove at once the existence of the Deity, and his similarity to human mind and intelligence" (Hume 1976, 161-62).

rather it only confirms our strong anthropomorphism when observing nature and its organized products. Our human-limited reason, Philo would assert, is in the highest degree inadequate for proving any assumption about God, except from a "remote analogy to human intelligence" (Hume, D 227). At least in what concerns the argument from design, it is somewhat clear that Philo represents Hume's view[126]. That is to say, Hume does think that there is a "remote" analogy between the whole order of nature and human intelligence in the way it produces its artifacts, but this neither proves the existence of God (in fact, for Hume-Philo this argument proves nothing whatsoever) nor exhausts the purposive character that nature and its organized products seem to exhibit. As McFarland suggests, it is likely that Hume prefers the analogy between the human mind and organisms over that between artifacts and organisms because the former highlights the internal purposiveness and self-organized character of both elements, whereas the latter underscores dependence on an "external source or organization" (1970, 53)[127] as the cause of their design and purpose. Kant, in turn, would assert something very similar when invoking the analogy—or disanalogy—between organisms and artifacts in the Analytic of Teleological Judgment. In what follows, I shall introduce and analyze this particular analogy used by Kant.

4.1.2.-The analogy with Artifact in Kant's Teleological Judgment

The Analytic of Teleological Judgment contains not only a definition and a description of our teleological judgments on nature, but also an analysis of the reflective concept of natural ends (*Naturzwecke*). This latter analysis is mainly concentrated in §§64-66; nevertheless, it is in §65 ("Things, as natural ends, are organized beings") where Kant develops a further elucidation of natural ends by means of three analogies—as mentioned before, I will claim that some of them can be deemed to be disanalogies more than analogies—namely, with human art (i.e., artifacts or works of art), with life, and with our own causality in accordance with ends in general. In what follows, I shall focus my analysis on the first analogy invoked by Kant (i.e., with human art). This analogy—or

[126] See McFarland (1970), Crouch (2007), and Noonan (2007).
[127] McFarland continues his description of how Hume distinguishes external from external purposiveness: "Thus experience itself gives us every reason for drawing a clear distinction between what might be called 'external' and 'internal' purposiveness. The purposiveness found in a watch or house is of the first sort, since their organization and design are imposed from without; but the purposiveness found in an animal or vegetable is internal, since it springs from an inner, although unknown, source" (1970, 53).

disanalogy—seems to concentrate, in fact, more attention on the analysis carried out by Kant, and it serves to stress the peculiar character of organized beings seen as natural ends.

Kant begins his analysis of §65 by distinguishing two kinds of causalities: namely, efficient-natural causality (*nexus effectivus*) and final causality (*nexus finalis*). The former is the type of causation conceived by the understanding, in which we have a descendent (irreversible) concatenation of causes and effects. The latter, on the other hand, is the type of causality conceived by reason, in which the series can be descendant as well as ascendant, that is to say, "in which the thing which is on the one hand designated as an effect nevertheless deserves, in ascent, the name of a cause of the same thing of which it is the effect" (KU, AA V, 372). Kant states that this latter causation is typical of art (or art's products), such as a house ("the house is certainly the cause of the sums that are taken in as rent, while conversely the representation of this possible income was the cause of the construction of the house" [V, 272]). This distinction between efficient and final causes is made in order to introduce the idea of an end in general (that is, a thing that possesses final causation), which is the first requirement, so to speak, to start thinking of something that is judged as a *Naturzweck*. This first requirement is that the parts of a natural end "are possible only through their relation to the whole" (373). Here we must conceive the whole as comprised of an idea (or concept) which determines *a priori* what is contained inside of it (in this case, the parts of this whole). Nevertheless, Kant warns us that something so conceived is just an end, i.e., a work of art (such as an artifact). That is to say, a mere end is something that is determined by a rational idea which lies outside the product itself (or, in Kant's words, "the product of a rational cause distinct from the matter [the parts]" [V, 373]). For that reason, something else is required in order to conceive a natural thing not just as an end (*Zweck*), but as a natural end (*Naturzweck*).

As mentioned in the second chapter of this dissertation, Kant defines the reflective notion of natural ends (*Naturzwecke*) by saying that such a natural product "is cause and effect of itself" (V, 370-71), and then he describes how a natural being can be cause and effect of itself through the three main organic processes that a tree carries out: reproduction, growth and regeneration of its parts. These three organic processes are quite crucial not only for understanding the peculiarities that natural ends seem to possess, but also for highlighting the distance between a natural end and a mere end (such as an

artifact). In turn, these peculiarities turn the analogy with human art into a disanalogy. Let us see why.

In the first place, a mere end has external purposiveness, that is to say, the end lies in a rational agent which is outside the product itself (or, in other words, the cause of its purposiveness lies in a rational agent different from the product). A natural end, on the contrary, seems to possess internal rather than external purposiveness; that is to say, the purposiveness of a natural end does not lie in a rational cause outside the natural product, since a natural end contains "in itself and its internal possibility a relation to ends" (373). And, in the second place, a natural end, unlike a mere end such as a machine, requires that "its parts be combined into a whole by being reciprocally the cause and effect of their form" (373). In other words, what is secondly required in order for something to be considered a natural end is that its parts must be regarded as the product as well as the *producer* of the other, in a mutual-causal relation. That is to say, each part not only exists through (*durch*) or thanks to the other parts as well as for the sake of them and "on account of the whole", but also (and most importantly) each part is mutually *producer* of the other parts and of the whole, "which cannot be the case in any instrument of art" (374). Accordingly, in such a natural product, we have not only the feature of being an "organized" thing (in which case any product of art would meet the requirement), but also a "self-organizing" character, in which each part is *caused* by the others and, at the same time, it is the *cause* of the others. This last feature is not shared with any artifact or machine (or any product of human art), and hence it is what distinguishes any organized natural being from a mere machine.

In order to illustrate this main difference between natural ends and artifacts, Kant introduces a sort of comparison between a watch and an organized being. The choice of a watch (or clock) in Kant's argument is not incidental. The analogy between a watch and an organism was widely invoked throughout Early Modern Philosophy and Early Modern Science. The analogies between a great machine and nature as well as the analogy between watches and organisms were practically a commonplace in Modern Philosophy. It is clear, therefore, that Kant is calling into question here the very value of this early modern analogy. In a watch, a part can be conceived as the cause of the movement of the others, but it cannot be "the efficient cause for the production of the other" (374). That is to say, the productive cause of the watch is not contained in itself, but rather in the idea of a rational agent who designed and then produced the aforementioned watch.

Furthermore, a watch cannot replace its damaged parts by itself and it cannot produce (or reproduce) another watch[128] ("all of which, by contrast, we can expect from organized nature" [374]). Kant then adds that an organized being (insofar as it is judged as a natural end) not only has motive power (*bewegende Kraft*), just like any artifact, but also formative power (*bildende Kraft*), that is, a kind of power that allows it to organize the matter inside and outside itself, a kind of power that "cannot be explained through the capacity for movement alone (that is, mechanism)" (374). This formative power[129] entails, precisely, that a natural end (unlike a mere machine or artifact) has an internal purposiveness and a self-organizing character that cannot be found in the power of motion alone[130]. For that very reason, Kant concludes:

> One says far too little about nature and its capacity in organized products if one calls this an analogue of art: for in that case one conceives of the artist (a rational being) outside of it. Rather, it organizes itself, and in every species of its organized products, of course in accordance with some example in the whole, but also with appropriate deviations, which are required in the circumstances for self-preservation (V, 374).

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[128] "Thus one wheel in the watch does not produce the other, and even less does one watch produce another, using for that purpose other matter (organizing it); hence it also cannot by itself replace parts that have been taken from it, or make good defects in its original construction by the addition of other parts, or somehow repair itself when it has fallen into disorder" (V, 374).

[129] Kant uses the concept of "formative power" in the passage quoted above, yet he does not develop it in the course of the KU or in other published works. In fact, this term appears only two times in the KU (one of them being passage from §65 quoted above). As Ina Goy accurately states in "Kant on Formative Power": "The term 'formative power' (bildende[n] Kraft) appears in fourteen passages within the whole Kantian oeuvre. Only two of those passages belong to Kant's published writings, though only passage CPJ 5:374. 21-6 in §65 refers to Kant's own account, whereas the passage CPJ 5:423.12-424.6 in §81 refers to contemporary positions of Kant's own time, especially Blumenbach's" (2012, 27). It could be inferred that this formative power is responsible for both the end-directedness and self-organization of organisms—especially of the latter. However, this would be rather speculative, given the virtual absence of any development of such a concept in Kant's published works.

[130] In the *Opus Postumum*, however, Kant constantly compares (and equates) organisms with machines. Nevertheless, in the OP Kant changes the conception of motive force of a machine, insofar as its movement is not only mechanical, but also "organic", "productive". In the OP, Kant speaks of "internally moving force", instead of "external" moving force. That is to say, in the OP the very concept of moving force is broader than the concept of moving force of matter traced in the *Metaphysical Foundations of Natural Science*, since the former includes the self-movement of organisms as a type of moving force. Accordingly, it is not absurd that Kant uses the analogy between organisms and machines in the OP, because in this context an organic machine not only has a motive power, but also a formative (internal, self-organizing) power. See, for instance: OP XXI, 211; 212; 190; 197. In this regard, Eckart Förster claims: "What seems important to me in this context [OP] is that is Kant reflections on the ponderability of matter, and on the various mechanical powers, that leads to the inclusion of organic forces into the Elementary System of the Transition. His text, especially in 'A elem. Syst. 1-6', speaks for itself: 'the internally moving forces of matter as machine, that is, as a body that has internally moving force according to the law of mechanics, yields the a priori concept of an organic body whose parts, connected in one system, move each other in accordance with specific laws' (21: 197. 11-15)" (Förster 2000, 21).

According to this last quote, it is pretty clear that Kant finally rejects the analogy with artifacts (or human art), insofar as this analogy does not account for two indispensable features of organized beings judged as natural ends, namely: internal purposiveness and self-organizing character. There is, of course, something that a mere end (such as a watch) and a natural end share: purposiveness. However, a mere purposive character is not enough to narrow the analysis of what a natural end is, because there are other things in the world that have an end, but they are not judged to be natural ends. For that reason, Kant insists on stating that the analogy with human art (which is responsible for the production of machines and artifacts) is, ultimately, a disanalogy inasmuch as it "says far too little about" the organization of some natural products.

The scholarly literature, however, is quite divided about the value of this (dis)analogy. This is certainly understandable due to the ambiguity with which Kant manages the whole argument: at times, he seems to embrace the analogy, but he finally seems to diminish its value. Nevertheless, the literature about this analogy can be grouped, *grosso modo*, into three main interpretations. First (i), there are those who insist on attributing an essential role to this analogy, claiming that Kant is invoking a "strong" artifact model in these passages. This is the dominant and typical interpretation in Kantian studies[131]. Second (ii), there are those who have an ambivalent reading of this analogy, stating that throughout the Teleological Judgment Kant's position regarding the artifact analogy constantly varies[132] according to the argument's progression. This interpretation

[131] For this line of interpretation, see Aquila (1991), Fricke (1990), Guyer (2001, 2006), McFarland (1970), McLaughlin (1990), Zumbach (1984), Zuckert (2007), Lenoir (1982), Van den Berg (2014, 2017), amongst others. These scholars identify—wrongly, as I see it—the analogy from design with the analogy with our own causality in accordance with ends (the analogy finally embraced by Kant, as I shall maintain in Chapter 5). McFarland, for instance, clearly maintains: "It is evident that Kant saw clearly that natural organisms are quite different from machines in so far as they produce themselves, repair their own deficiencies, and so forth. But, at the same time, he was unable to free himself from the watchmaker-watch analogy completely enough to be able to ask whether organisms can be understood in any other way than as if they had been designed" (1970, 139). That is to say, these scholars do not disclaim the shortcomings of this analogy, but they state that Kant does not reject it at all, because, according to their view, it is highly improbable that Kant rule completely out the design analogy, since there was a long philosophical tradition of the argument from design impregnated in Modern Philosophy as well as in Kant himself. For an interesting account of this point, see van den Berg (2017).

[132] See, for instance, the interesting works of Ina Goy (2014) and Suma Rajiva (2009). They both claim that the analogy with the argument from design (and particularly the artifact analogy) varies from practically inexistent in the Analytic to necessary in both the Dialectic and Methodology. "In the Analytic Kant offers an account of biology that makes no use of the argument from design but that would not be inconsistent with it. […] In contrast to the Analytic, in the Dialectic Kant states a version of the argument from design […] without any major criticism. This will change in the Methodology. In this part of the text, Kant gives a version of the argument from design; however, he criticizes it and describes its limitations and shortcomings" (Goy 2014, 207-213). On the other hand, we can place here the analysis of Hannah Ginsborg

is, perhaps, more complex, since it encompasses not only what Kant says in the Analytic with respect to natural ends, but also what he seems to suggest in the Dialectic and the Methodology with respect to our teleological judgments in general. And finally (iii), there are those who underscore the shortcomings of this (dis)analogy, viewing it more so as a tool for differentiating organisms from artifacts than for highlighting their similarities[133].

Either way, I claim that it is clear enough that Kant invokes this analogy in order to further highlight the differences between organized beings and artifacts rather than their similarities. That is to say, and despite the ambiguity of Kant's analysis regarding this specific analogy, what Kant is stressing here in the comparison between organisms and artifacts is the undeniably original character of self-organization and internal purposiveness that living beings seem to possess. For that reason, the analogy turns out to be a disanalogy, that is to say, Kant finally rules out the artifact-organism analogy. There is something in the organization of organized beings that has nothing to do with the type of extrinsic organization we encounter in artifacts or machines, and for that reason this analogy falls short in illuminating the concept of natural ends (in fact, the analogy with artifacts only serves to highlight how they—e.g., a watch and an organism—differ from each other[134]). Thus, the first analogy invoked by Kant is finally ruled out. In fact, there is a stronger analogy that Kant does hold, namely, with our own rational

(2001), who emphasizes the similarities and differences between organisms and artifacts, so there could be, according to her, a sort of analogy-disanalogy operating in the comparison.

[133] Clearly, my position falls on this side of the debate, but we can also find this interpretation in Csssirer (1981), Breitenbach (2009, 2011, 2014), Kreines (2005), Lotfi (2010), Nuzzo (2005), amongst others. For instance, Breitenbach argues: "Many commentators have associated this analogy [with our causality in accordance with ends] with its theological version well rehearsed long before Kant. This is the analogy between nature and design, and between the creator of nature and an intelligent designer […] According to this reading, we only regard living beings as if they were the products of design. In the Critique of Judgment Kant makes it explicit, however, that the analogy with artifacts is ultimately insufficient for an understanding of organic nature" (2014, 22). Or as Kreines explains: "Kant's first requirement is not enough by itself for an analysis of the concept of a *Naturzweck*. For one way this first requirement can be met is the way it is met in the case of artifacts, which are non-natural in that they are the products of our own design. So Kant needs a second requirement in order to rule out artifacts and narrow the analysis. He needs to narrow his analysis of organized beings generally (including those organized by the action of an external designer) to an analysis of naturally 'self-organizing' beings. Or, he needs to narrow this analysis of *Zweck* in general to come up with an analysis of *Naturzwecke* in particular" (2005, 279).

[134] Cassirer also states that Kant finally dismisses the analogy between artifacts and organisms. In doing so, Kant is also dismissing the teleological proof of God: "The world no longer is a clockwork mechanism finding its ultimate explanation in the hidden, divine "watchmaker," for the metaphysical form of the cosmological proof of God's existence is seen to be as fallacious as that of the teleological proof. From now on if the finality of nature is to be discussed, this cannot mean a signpost pointing to an external transcendent ground on which nature depends, but only a reference to its own immanent structure. This structure is purposive-so long as the relative finality for mankind or any other created being is kept clearly separate from inner finality, which possesses no point of comparison other than the appearance itself and the structure of its parts" (1981, 339).

causality. In short, this analogy does not maintain that natural ends are judged as if they were created by the idea or the design of a rational agent, but rather that natural ends are judged by analogy with the technical reason of such rational agents. I shall return to this point in Chapter 5 of this dissertation. Before we turn to that, Kant will offer another—partial—analogy, namely, with life.

4.2.-Teleological Judgment, natural end, and the analogy with life

The second analogy Kant introduces to clarify the concept of natural ends (or of organized beings judged by means of the reflective concept of *Naturzweck*) is the analogy between organisms and life. As just seen in the previous section, Kant finally rejects the analogy with artifacts or rational design, because it "says far too little" about the capacity of self-organization that organisms seem to possess. And it is for that reason that I have argued that this analogy is, indeed, a disanalogy, since its main function is to emphasize the great distance there is between a mere machine and an organism. Nevertheless, Kant introduces a second analogy just after suggesting (and rejecting) the analogy between artifacts and organisms. This analogy, as I said before, is with life. Unlike the case of the (dis)analogy with artifacts, the analogy between life and organisms seems to have more value for Kant, although he has a sort of ambivalent consideration of it. That is to say, this analogy is useful for illuminating the concept of *Naturzweck*, but it has its shortcomings that make Kant use the aforementioned analogy carefully. Thus, in what follows I shall describe and explain this analogy between organisms and life. In order to do so, it is important to introduce, in the first place (4.2.1), Kant's conception about life and to clarify what "life" means in this context—since Kant has different uses and meanings about life. Then, I will be able to analyze, in the second place (4.2.2), the analogy with life in detail.

4.2.1. - Kant's concept of life

The concept of life appears persistently in Kant's works; in fact, it appears throughout his philosophy (in both the pre-critical and critical period) with different meanings and under

different contexts[135]. However, one could dare to say that Kant does not consistently further develop this concept. At most, we can find mentions and some reflections about this concept, but these leave us far from any detailed and thorough analysis of the conception of life in Kantian philosophy, let alone a systematic treatment concerning this concept. In spite of this lack of a systematic thematization of life in Kant's critical philosophy, it is somewhat clear that Kant manages a canonical-narrow conception of life, at least in regard to his critical philosophy. This strong definition of life is directly related to practical philosophy and to the (human) faculty of desire, and it possesses strong metaphysical and practical implications. Nevertheless, a sort of broad sense of life in Kantian philosophy can be sketched out[136], which perhaps does not entail strong metaphysical considerations (at least, not in regard to practical interests). This can then be related to organized beings (or living organisms from the simplest-primary ones to the more complex ones). That is to say, this broader conception of life finds its place at a biological-theoretical level, in order to separate the organic beings from inorganic—lifeless—matter. Although this latter conception of life is more inclusive, it is still too weak in terms of Kantian philosophy and it must be handled with care in order to not transgress the limits of critical philosophy. In what follows, therefore, I shall introduce and explain both senses of life in Kant's philosophy, in order to understand, then, why there may be an analogy (or disanalogy) between life and organisms.

In the first place, there is a narrow-practical conception of life in Kant's critical philosophy, which is directly related to the faculty of desire. This strong definition of life is found for the very first time (at least in Kant's critical period) in a footnote of the Preface of the *Critique of Practical Reason*, and it goes as follows:

> Life is the faculty of a being to act in accordance with laws of the faculty of desire. The faculty of desire is a being's faculty to be by means of its representations the cause of the reality [*Wirklichkeit*] of the objects of these representations. Pleasure is the representation

[135] As Ingensiep clearly points out: "Kant used the term 'life' in different contexts with different meanings. Transcendental, metaphysical, physical, physiological, psychological, anthropological, medical and practical dimensions use of this term can be distinguished" (2006, 75).

[136] Perhaps more acceptations of "life" could be found in Kant's writings, but I believe that these two just mentioned cover a wide enough range. Nevertheless, an interesting account of the different uses of "life" in Kant's critical philosophy can be found in Molina's paper (2011) "Kant and the Concept of Life". Molina identifies, besides the aforementioned two senses, a third broad use of the concept of life, namely, "an aesthetic use, in which Kant deals with the feeling of animation experienced when facing beautiful objects" (2011, 21-22). As fascinating as this latter use of the concept of life is, sadly I cannot develop it further in this work.

> of the agreement of an object or of an action with the subjective conditions of life, i.e. with the faculty of the causality of a representation with respect to the reality of its object (or with respect to the determination of the powers of the subject to action in order to produce the object) (KpV, AA V, 9 [footnote]).

This definition of life is essentially bound to practical philosophy, especially to the faculty of desire as the faculty for being the cause of the reality of the objects of its representations. As Kant states, life is the faculty of a being that, on the one hand, has the faculty of desire and acts according to its laws. In other words, life is the faculty to act in accordance with some peculiar "laws", namely, those of the faculty of desire[137]. And, on the other hand, life is the faculty of a being for representing objects in general and for causing the reality of such objects.

Accordingly, this definition of life—strongly bound to practical philosophy—is directly related to the human faculty of desire, that is, to free choice (that is to say, to the human capacity to act freely or voluntarily).[138] In fact, in a celebrated passage of the *Groundwork for the Metaphysics of Morals*, Kant explicitly identifies the type of causality of (rational) living beings with human will: "Will is a kind of causality that living beings exert if they are rational, and when the will can be effective independent of outside causes acting on it, that would involve this causality's property of freedom"[139] (GMS, AA IV, 446). Furthermore, we can find in his pre-critical *Dreams of a Spirit-Seer* a quote that appears in practically the same terms: "all life consists in the inner capacity of *self-determination* according to *free choice* [*Willkür*]" (TG, AA II, 327, footnote, my

[137] As Ingensiep says: "In this narrow sense of an interpretation of 'life' only an animal rationale would be able to have insights into these 'laws of the ability to desire' but, in general, never an animal" (2006, 75).

[138] In the Introduction of *The Metaphysics of Morals*, however, Kant defines the faculty of desire and life in a slightly broader fashion: "The faculty of desire is the faculty of being, by means of its representations, the cause of the objects of these representations. The faculty of a being to act in accordance to its representations is called life" (MS, AA VI, 211). This "broader" definition of the faculty of desire and life would suggest that animals meet the requirements of this definition of desire and life, inasmuch as animals have the faculty of acting in accordance to representations. In a broad sense, it is clear that animals have a sort of faculty of desire (at least at a low level), which refers to instinct or to some primal feeling such as fear or pain. The question is, therefore, whether instincts and primal feelings qualify to be considered a "desire" in the proper-strong sense of the term or not. Nevertheless, it is quite certain that Kant does not include animals within this narrow definition of life as the capacity to act according to the "laws of the faculty of desire". As Molina states: "At most, this notion of life could be applied to animals were one to grant them the capacity of desire; yet it is evident that Kant is not thinking about this possibility" (2010, 23).

[139] And the quote continues as follows: "just as natural necessity is the property of the causality of all non-rational beings, through which they are caused to act in specific ways by the influence of outside causes" (GMS, AA IV, 446).

emphasis). Again, it is quite clear that Kant is using here a narrow conception of life and life's causality, inasmuch as they only referred to the will of a rational being that can act freely, that is to say, independently of external causes. This rational being that can act freely and with independence of external causes is the human being. For that reason, it can be claimed that, for Kant, the human being is the only natural being capable of having "life"[140], at least in regard to this narrow sense of life that Kant is highlighting here, namely, life as the rational faculty of desire (or life as free will, if we take the argument one step further). This narrow-practical conception of life poses some difficulties for conceiving a more inclusive definition of life (one that may encompass animals and plants, for instance). However, it is evident that Kant uses another conception of life or, at least, it may seem that he is reflecting upon a different understanding of life, which in fact would encompass living beings in general. This conception of life, therefore, has little to do with practical philosophy and the narrow sphere of human will, and it is more related to biological considerations mixed with some "reflective" concepts, such as the *Zweckmäßigkeit der Natur* and natural teleology.

As just mentioned, there is another conception of "life" that can be drawn from Kant's critical writings, namely, a biological one. This sense of life is directly linked with theoretical interests and it is much broader than the strict-practical conception of life we found in Kant's philosophy, and it can be identified with the Kantian theory of organic beings. This broad conception of "life" is thematized mainly in the Teleological Judgment of the third *Critique* in the context of the analysis of the reflective concept of *Naturzweck*, but it can also be found (although in a more dispersed way) in his writings about physics, in order to distinguish organic bodies from inorganic—lifeless—matter. At any rate, both

[140] In some of his writings, however, it seems that Kant is using a broader concept of life as the faculty to act according to the laws of the faculty of desire. For instance, Kant says in his *Reflections*: "Life is nothing but the faculty of desire in its minimal exertion [*in der geringsten Ausübung*]" (Reflexionen 1034, AA XV, 465). Or as he writes in the *Opus Postumum*: "Life in the strictest meaning of the term is the faculty of spontaneity of a corporeal entity [*körperlichen Wesens*] to act in accordance with certain of its own representations" (OP, AA XXI, 566). These quotes suggest that desire can be thought in a broader sense and not just as rational free choice. That is to say, these quotes suggest that desire can be regarded as a lower faculty (like fear, pain, instinct, pleasure, and so forth). As Zammito states: "Kant seemed to be willing to extend at least some measure of desire –action in accordance with representations- to animals, though it is desire driven by pleasure/pain, and not by rational choice" (2006, 763). These inconsistencies throughout Kantian writings demonstrate that Kant actually does not have a systematic treatment concerning the concept of "life"—or, at least, he does have a problematic and unresolved philosophical view on "life". See, for instance, Zammito (2006), and Ingensiep (2004). This can be seen especially in his conception of living beings judged as *Naturzweck*, where his efforts for clarifying *Naturzweck*'s concept by means of analogies and disanalogies seem to be, in the end, ambiguous and problematic—and, at times, almost running into a dead end.

thematizations of organic beings introduce a broad conception of life, certainly more inclusive than the practical one, insofar as they encompass organic beings in general and not just human-rational beings. Let us analyze this broad concept of life by introducing both thematizations of organic beings: as natural ends and as organic bodies in the context of the metaphysical exposition of the objects of outer sense.

In Chapter 2 of this dissertation, I analyzed the conception of organized beings judged as natural ends (*Naturzwecke*). Briefly, organic beings must be judged, according to Kant, by means of a special type of causality, namely, final causality. The features and internal arrangements that organic beings possess lead us to judge them as if they have a sort of causality through ends, and thus they are judged as natural ends. For Kant, the notion of a natural end is a peculiar concept of the reflective power of judgment, which does not determine the object (in this particular case, the organic being) at all, but rather it serves as a guideline in order to reflect and make sense of these natural objects. In this sense, the concept of *Naturzweck* is regulative instead of constitutive. Furthermore, the use of the concept of natural end is, for Kant, absolutely necessary (even though it is regulative), insofar as the mechanical explanation of organic beings seems to be insufficient for accounting for such natural products.

Therefore, life, in this broad sense, refers to the capacity of an organic being (which is judged, in turn, as a natural end) for self-organizing in a manner that is absolutely novel[141], at least in regard to inorganic matter and artifacts or machines (which only have external and not internal purposiveness). Even though the description of organized beings is carried out by Kant in the context of his analysis of the reflective power of judgment and, particularly, of the Teleological Judgment, it is evident that Kant is also discussing here a biological conception[142] of organic beings and hence of life (at least in a broad consideration of life). But this biological conception of life that can be inferred from the KU is not the canonical-narrow conception of life in Kant's critical writings. In fact, he does not even use the term "life" or "living" for referring to organic

[141] And it is this novel manner of self-organization (which entails internal purposiveness, reciprocally causal relations of parts to whole, and so forth) that is judged by us by means of the reflective concept of natural ends. For further analysis of this topic, see Chapter 2 of this dissertation.

[142] In Chapter 5 of this dissertation I will carry out a description and analysis of Kant's reception of the life sciences and the biological theories of his time, and how his thought can be still considered relevant in the context of current biology.

beings judged as *Naturzwecke*, since "life" for him is exclusively allocated to the narrow conception of life as rational free choice.

There is another broad conception of life in Kant's writings. This conception of life is to some extent bound up with the theory of living beings from the third *Critique*, but it appears in a different context, namely, regarding the question of the possibility of natural sciences (such as physics). Unlike the theory of organic beings judged as natural ends, this conception of "life" can be found dispersed throughout the Kantian corpus and hence it is quite difficult to systematize this notion of life into a single and straightforward concept. Anyway, this notion of life—although more obscure than life in both the narrow-practical sense and as organisms seen as natural ends—can be found in the context of Kant's reflections about natural science (especially physics) and the metaphysical laws of matter. In this perspective, life is opposed to lifeless matter, insofar as matter as such is essentially deprived of life since its motion has an external cause (and not an internal cause, as seems be the case in organic beings). In his *Metaphysical Foundations of Natural Science* (1786), Kant offers a definition of what life entails as an activity opposed to matter as such, that is to say, as a substance different from mere matter:

> To say that matter 'has inertia' is just to say that matter in itself is lifeless. For a substance to have life is for it to be able to get itself, through its own inner resources, to act—i.e. to change in some way (for any finite substance) or start or stop moving (for any material substance). Now, the only inner resource we know of through which a substance might change its state is desire, along with its dependents—feelings of pleasure and displeasure, appetite, and will—and the only inner activity that we know of is thought. But none of these causes and activities has anything to do with the representations of outer sense, and so they don't belong to matter as matter (MAN, AA IV, 544).

In this quote, it can be inferred that "lifeless" matter must be understood as a substance that cannot change (i.e., by means of an inner activity) its state by itself, like motion or rest. For Kant, all motion in matter has an external cause that provokes the aforementioned motion (or change of state) in matter. Matter as such is nothing more than the "movable" in space (IV, 480); nevertheless, the source of this motion or change does not lie in matter itself, but outside of it. In other words, matter is what is moved by an external cause, that is, matter lacks an internal principle that determines itself for motion—its motion only depends on external relations or causes. Life, on the other hand and in light of the Kantian analysis of the metaphysical laws of matter, is what has an

inner activity or principle that allows self-determination (such as the movement or change of state of a substance by means of itself). The faculty of a substance for self-determination is what constitutes, according to this passage, the vital principle. Matter as such does not have self-determination, because it is only moved by external causes; and that is why matter is contrasted with life, insofar as life is the capacity for self-determination (that is, self-movement of any kind). For that reason, life must be considered a substance different from mere matter. However, Kant specifies that the only inner principle known to us that allows a substance to change its state is desire "along with its dependents", such as a human will, the feeling of pleasure and displeasure and, more generally, appetite.

It is clear, therefore, that some organic beings can be considered to be a substance with life in this broad sense, at least those that have "desire" (even in a lower level, such as mere "appetite"). For Kant, an "animated" matter is something contradictory, insofar as matter is precisely what is lifeless, inanimate. As he writes in his *Opus Postumum*: "Living matter is a *contradictio in adjecto*: The guiding principle is immaterial"[143] (OP, AA XXII, 481). The conception of life that can be derived from the Kantian analysis of the metaphysical laws or principles of natural science is essential for stressing a concept of matter that can be solely explained by the physical-mechanical laws of motion. That is to say, a complete distinction between matter (i.e., what is merely explained by the metaphysical natural laws of physics) and "living" organic bodies[144] (i.e., what cannot be fully explained by the mechanical laws of matter, because they are substances different from lifeless matter) is crucial for Kant.

These two Kantian conceptions of life I have introduced (i.e., life in its narrow-practical sense as rational desire; life in a broad sense linked to a biological perspective, expressed in both organic beings judged as natural ends and organic beings as a substance different from mere matter) are not reducible to mechanical-natural causality and causal

[143] Or as he states in another fragment of the *Opus Postumum*: "Life, however, stems from a distinct substance, from an *archeus* (animated matter is contradictory)" (XXII, 421). In other passages, Kant states that there is no life in matter, but rather there is life in a *body* (XXI, 65). Unfortunately, I cannot carry out a further analysis of this later conception of "life" in the OP.

[144] Ingensiep argues something very similar: "Kant's intention in this context [*Metaphysical Foundations of Natural Science*] was to specify and clarify the Newtonian approach to an inanimate, lifeless matter. For Kant there is no space for any kind of 'life' in a Newtonian world in traditional sense of anima as a moving principle within or separated from the matter. […] Even the Newtonian notion of inertia, *Trägheit*, is for Kant a concept that is only clear for living beings, not for lifeless matter. Kant is looking for a strong boundary between the anorganic matter and organic 'life'" (2006, 75).

research. According to Kant, life in all of these cases (human will, desire, organic beings, and natural ends) is bound to another kind of causality, namely, final causality. Accordingly, life (in any of its forms) cannot be reduced to natural causality and, therefore, cannot be explained in merely mechanistic-causal terms[145]. Life, according to Kant, seems to have an internal causality, that is, certain power of self-determination (either in the strongest, proper sense of a free will or in the broadest sense of the lower faculty of desire), which cannot be fully explained or understood by mechanism—by merely external causes. For that reason, the only way we can make sense of "life" in the Kantian view is either in narrow sense of the practical sphere, scrutinizing our rational faculty of desire and our voluntary actions; or by means of a peculiar principle of the reflective power of judgment when judging nature and its organized products, namely, by means of the concept of *Naturzweck*; or, finally, by a substance with desire of any kind (such as appetite or even the faculty of desire in its minimum expression, like the primal feelings of pain or fear)[146].

We can summarize Kant's conception of life by stating that there is a narrow concept of life in his critical philosophy, which is bound to practical philosophy and which refers to human-rational faculty of desire, expressed more clearly in our free will (*Wille*). Nevertheless, there is a broad conception of life that refers to Kantian reflections upon living beings. This latter conception can be grouped from two perspectives: i) from a teleological point of view (that is, in Kant's analysis of the reflective concept of natural ends of the second part of the third *Critique*); and ii) from a biological-physical perspective, which is mainly focus on his analysis of natural science and the metaphysical laws of matter. With these two conceptions of life (i.e., a narrow and a broad one)

[145] And this last point is something Kant was aware of even before his critical period. For instance, Kant writes in his *Dreams of a Spirit-Seer*: "But the case is entirely different with the philosophical conception of spiritual beings. It may be complete, but in the negative sense, by fixing with assurance the limits of our knowledge, and convincing us that all that is granted to us is to know the diverse manifestations of life in nature and its laws; but that the principle of this life, i.e., the unknown and only assumed spiritual nature, can never be thought of in a positive way, because for this purpose no data can be found in the whole of our sensations" (*Träume*, AA II, 351-52). Despite the lack of the technical-critical language in this passage, it is clear that Kant thinks that life cannot be explained in our objective knowledge, because the very "principle of life" is something that cannot be found in "sensation" (or given in experience, for using a critical language). For an interesting interpretation of how Kant's conception of life discloses precisely the incapability of biology for explaining and obtaining knowledge of "life", see: Garrido, "A Kantian Account of the Knowledge of life and the life sciences" (2015).

[146] However, this third option can only be inferred in some of Kant's writings, but it is not fully thematized. In the OP, Kant offers a more inclusive conception of life (see notes 138 and 140), unfortunately I cannot further analyze this conception in this dissertation.

distinguished, it is possible to move forward into the analysis of the analogy between life and organized beings judged as natural ends.

4.2.2.-Organized beings and the analogy with life

Right after rejecting the analogy between natural ends and artifacts (because it "says far too little about nature" and its natural products), Kant suggests another analogy. This analogy is with life. Yet, immediately after raising this idea, Kant formulates the limitations it entails. He introduces this analogy as follows:

> Perhaps one comes closer to this inscrutable property [i.e., of organisms judged as an organized and self-organizing being] if one calls it an analogue of life [*Analogon des Lebens*]: but then one must either endow matter as mere matter with a property (hylozoism) that contradicts its essence, or else associate with it an alien principle standing in communion with it (a soul [*Seele*]), in which case, however, if such a product is to be a product of nature [*Naturprodukt*], organized matter as an instrument of that soul is already presupposed, and thus makes that product not the least more comprehensible [*begreiflicher*], or else the soul is made into an artificer of this structure, and the product must be withdrawn from (corporeal) nature (KU, AA V, 374-75).

Something that may seem quite puzzling in this passage is the Kantian assertion that organized beings are, in the end, not completely analogous with "life" (*das Leben*). As Zammito wittily asks: "This [Kant's assertion] seems to a modern reader bizarre: life is what we think organism is already about, so what analogy could be there?" (2006, 762). And the question of "what analogy could be there" is not the only question that the reader may pose, but more importantly: Why does Kant think this is a disanalogy, rather than an analogy properly speaking? Why does he separate life from organized beings in this passage? In order to answer these questions, let us analyze the quoted passage.

In the first place, Kant actually establishes an analogy between life and organized beings (judged as *Naturzwecke*). This analogy is invoked after the rejection of the analogy between organisms and artifacts, and Kant explicitly says that life is at some point analogous with "this inscrutable property [*unerforschlichen Eigenschaft*]" of natural ends: "Perhaps one comes closer to this inscrutable property [i.e., of organisms judged as an organized and self-organizing being] if one calls it an analogue of life [*Analogon des Lebens*]." However, and as mentioned before, Kant has different conceptions of life

throughout his writings, so the first task the reader must carry out is to determine which of these senses of life Kant is using here. It is somewhat clear that here Kant is using the term "life" in its practical-narrow sense, since there would be no analogy—or disanalogy—between two terms that mean almost the same, namely, organism and Kant's broad conception of life (that is, his notion of the living being in its biological dimension)[147]. Accordingly, I propose that Kant is invoking a strong definition of life as the capacity for acting in accordance with the rational faculty of desire (free will), so that the analogy is between rational desire (i.e., human free will) and organic beings seen as natural ends.

As mentioned in Chapter 2 of this work, Kant recognizes in *Naturzwecke* an internal principle that operates *as if* organisms have internal purposiveness, which is displayed in the self-organizing processes organisms conduct, such as reproduction, growth and regeneration. That is to say, organisms must be judged as if they have an inner principle that operates purposively[148]. Likewise, life—in its narrow-practical conception—also has an internal principle; in fact, it is mainly conceived through the internal principle of the self-determination of the will. Therefore, what Kant is stressing here is the inner principle that life and organisms seems to share.

Thus far, it seems that Kant accepts without restraint the analogy between life and organisms. Nevertheless, Kant expresses very soon his reservations regarding this analogy: "but then one must either endow matter as mere matter with a property (hylozoism) that contradicts its essence, or else associate with it an alien principle standing in communion with it (a soul [Seele])". His main reservations about the analogy between life in its practical-strong sense and organisms are, on the one hand, the risk of hylozoism, which consists in endowing matter with a property that does not belong to it (for instance, conceiving an animated, living matter), and on the other hand, conceiving matter in communion with a soul (which is a principle external to the matter itself that operates as an artificer or producer of this matter). For Kant, conceiving matter in communion with a soul poses the same problems that the analogy between artifacts and

[147] For that reason, my suggestion is that Kant is establishing an analogy (or disanalogy) between *Naturzweck* and life in the strongest possible sense, namely, as free will (*Wille)*. But, as I have stated throughout this dissertation, Kant is not clear at all on this point.

[148] However, the purposiveness of a natural end is merely regulative; that is to say, we judge organisms as if they had purposiveness, but such purposiveness is without a determined intention or end (as is the case in the self-determination of the will, which acts with intentions [*Absicht*]).

organisms had faced; namely, in such a case, we judge the organism to be the product of a rational agent which lies outside the product itself, and whose purposiveness is merely external.

In the case of hylozoism, Kant is very emphatic in rejecting it throughout his writings (in both pre-critical and critical period). For instance, in his *Dreams of a Spirit-Seer* (*Träume eines Geistersehers)* he writes: "Hylozoism imputes life to everything; materialism, carefully considered, kills everything" (*Träume*, AA II, 330); or in his *Lectures on Metaphysics*: "hylozoism is the opinion that matter has life—this is the death of all physics" (*Met. Dohna*, AA, XXVIII, 687); or as he states in his *Metaphysical Foundations of Natural Science* (*Metaphysische Anfangsgründe der Naturwissenschaft)*: "Hylozoism is the opposite of this law [inertia], and is therefore the death of all natural philosophy" (*MAN*, AA IV, 544). As it can be seen, Kant is trying to avoid at all costs the belief that matter can be infused with life—that is, the conception that matter is alive—since he strongly believes that matter is lifeless, absolutely devoid of life in its practical sense as rational-free desire. For Kant, physics or natural science must rest in the metaphysical laws of matter as such (or the laws of motion), like inertia, motive power (attraction and repulsion) or external causality. To attribute an inner movable principle to matter is to lose any hope of settling natural science as a proper science[149], according to Kant. In other words, hylozoism is the death of physics or natural science because it escapes the limits of theoretical knowledge—since the very idea of an inner principle of matter cannot be explained within physics—and it would eliminate any pretention for establishing a natural proper science. For that reason, Kant needs to separate life—at least in its practical-narrow dimension—from matter, and organized beings are ultimately *material* natural products (at least, they are to some extent material products subjected to the laws of matter, but they are also organic instead of inorganic matter). Or, put it in simpler words, Kant is trying to differentiate organic life from practical-life, since the simple suggestion that there could be in nature a certain degree of practical freedom (as rational-free desire, as practical life) would imply a major transgression to Critical philosophy.

However, it can be claimed that Kant is ambiguous in his exposition, since at times he argues that organized beings must be *judged* by means of an internal-purposive

[149] I shall offer a definition and analysis of Kant's conception of proper science in 5.4.1.

principle (a principle that can be thought of by analogy with rational practical desire, at least to some extent), but then he claims that the only way we can explain these natural products is through mechanical-physical principles—although this kind of explanation is absolutely insufficient for accounting for organized beings.

Accordingly, the analogy between life (in its practical-narrow sense) and organisms is, at the very least, ambivalent for Kant[150]: on the one hand, he seems to embrace it, at least one "comes closer to this inscrutable property [i.e., inner principle for self-organization]" of natural ends than the analogy with rational design; but, on the other hand, he highlights the risks of the analogy (like hylozoism) for natural science. Unlike the disanalogy with artifacts, the analogy with life stands as an analogy properly speaking, at least in its ambivalent dimension. Nevertheless, and right after suggesting both analogies, Kant writes: "Strictly speaking, the organization of nature is therefore not analogous with any causality that we know"[151] (V, 375). Although both analogies display shortcomings that are difficult to overlook, they are relevant insofar as they reveal the very procedure of the reflective judgment, namely, analogical reflection. Even though the analogy with artifacts is finally dismissed and the analogy with life is accepted with reservations, they both highlight the procedure of the reflective power of judgment when facing nature and some of its—sometimes inscrutable—products. The reflective power of judgment eminently operates by means of analogy, since it is the means by which it can search for systematic unity of the empirical laws of nature.

Nevertheless, and despite the fact that Kant states that the organization of nature "is not analogous with any causality" known to us, there is in fact an analogy that seems to fit better for the understanding of organized beings judged as *Naturzweck* and for the very understanding of the analogical procedure of reflection, namely, the analogy between natural ends and our own causality in accordance with ends (or our own technical reason). In what follows, therefore, I shall introduce and analyze this analogy, which has

[150] It is not surprising to find ambivalent and problematic assertions in Kant's writings. As I have stated in the Introduction of this dissertation (p.6), Kant's "Critique of the Teleological Power of Judgment" is utterly ambiguous and problematic, mainly his elucidation of *Naturzweck* by means of these analogies/disanalogies. At times, he seems to contradict himself when invoking certain analogies for elucidating the concept of *Naturzweck*, but, at the same time, stating that "strictly speaking, the organization of nature is therefore not analogous with any causality that we know." (V, 374-75); and then embracing the analogy with technical reason (with certain restraints that he does not bother to clarify at all), and so forth. As Vaihinger provocatively states regarding Kantian philosophy in general: "Kant, as we know, frequently contradicted himself" (1968, 287).

[151] „Genau zu reden, hat also die Organisation der Natur nichts Analogisches mit irgend einer Causalität, die wir kennen."

fewer shortcomings than the analogies with artifacts and life. This analogy, in fact, will be crucial not only for understanding the concept of *Naturzweck*, but also for enabling us to represent this very concept—as I shall claim throughout the next chapter. Moreover, this analogy will display the original procedure of reflection as such when one judges organized beings.