

THE PRECRITICAL USE OF THE METAPHOR OF EPIGENESIS

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La seule génération des corps vivants et organisés est l'abîme de
l'esprit humain. Rousseau, *Emile*.

In the last few decades, a lot of attention has been directed towards the interpretation of the metaphor of *epigenesis* in §27 of the *Critique of Pure Reason*. In the *Kant-Studien* alone, there are three articles especially devoted to the analysis of the analogical use of this term stemming from natural history.¹ This exegetical work is not only required because Kant does not explicitly state in which sense this analogy must be taken, but also because of its strategic importance. In fact, in the second edition §27 represents the last section of the Transcendental Deduction and it aims at reiterating the "results" of the whole deduction of the concepts of the understanding. The commentators have also convincingly shown that the metaphor of epigenesis, as opposed to the two other biological metaphors introduced by Kant on this occasion, viz. *generatio aequivoca* and preformation, is perfectly suited to express the Copernican Revolution that takes place within the Deduction. In other words, epigenesis captures the central issue of the *Critique* in that it illustrates the productive role of the understanding in the constitution of experience.

To be sure, Kant did not wait until 1787 to make use of intellectual epigenesis in his philosophy. For instance, there are many occurrences of this metaphor in the *Reflexionen* on metaphysics of the seventies. I shall argue in what follows that the recourse made to epigenesis during that period does not correspond exactly to the one that we find in §27. If by "critical" philosophy one understands the solution to the problem of the validity of the pure concepts of the understanding, or in other words if critical philosophy starts with the elaboration of an answer to the question raised in the 1772 letter to Markus Herz

¹ See J. Wubnig, "The Epigenesis of Pure Reason. A Note on the *Critique of Pure Reason*, B, sec. 27, 165-168," *Kant-Studien* 60 (1969): 147-152. A. C. Genova, "Kant's Epigenesis of Pure Reason," *Kant-Studien* 65 (1974): 259-273. Hans Werner Ingensiep, "Die biologischen Analogien und die erkenntnistheoretischen Alternativen in Kants Kritik der reinen Vernunft B § 27," *Kant-Studien* 85 (1994): 381-393. See also Timothy Lenoir, "Kant, Blumenbach, and Vital Materialism in German Biology," *Isis* 71 (1980): 77-108; Wayne Waxman, *Kant's Model of the Mind. A New Interpretation of Transcendental Idealism*, New York/Oxford: Oxford University Press, 1991.

concerning the relation between the representation and the object, then one might claim that the occurrences of epigenesis in the *Reflexionen* of the seventies are precritical in their intent.² In fact, they belong to the problematic of the *Dissertation*, in the context of which the first epistemological use of this biological concept is to be found. These occurrences concern not so much the validity of the concepts of the understanding as the explanation of their origin. As we know, one of the main goals of the *Dissertation* was to establish that the human faculty of knowledge has a set of pure representations: the a priori intuitions of space and time, and the concepts belonging to the understanding itself. Even though the word "epigenesis" does not occur as such in the *Dissertation*, the purpose of the metaphor found in Kant's private papers of this period stems precisely from the need to provide an answer to the question of the origin, or better, of the genesis of these pure representations. In this text of 1770, the pure intuitions of space and time and the concepts of the understanding are said to be "acquired" representations rather than merely "innate" ones.

We shall first examine the metaphor of epigenesis as it operates in §27 of the Transcendental Deduction in order to clarify its meaning by opposing it to the other biological theories also introduced by Kant. Second, it will be established that in the early sixties Kant already takes sides with the biological theory of epigenesis as opposed to the theory of the preformation of the embryo. This preference is dictated by a broad refusal of any version of pre-established harmony, a stand which is clearly present in the *Dissertation*. Third, we will discover that the *Reflexionen* of the seventies dealing with epigenesis are meant to answer the question of the origin raised by the *Dissertation*. Last, we will be in a position to return to the *Critique of Pure Reason* in order to see how the "precritical" question of the origin of the concepts of the understanding has been carefully integrated into the critical project.

1-The Copernican Revolution interpreted in terms of epigenesis.

Since §27 of the first *Critique* has been the object of careful interpretation in secondary literature, there is no reason here to renew this task. Suffice it to indicate the main purpose of Kant's use of the three analogies drawn between biology and the philosophical problem of the possibility of knowledge a priori. In order to show that he has

² See H. J. de Vleeschauwer, *La déduction transcendantale dans l'oeuvre de Kant*, I (Antwerpen: de Sikkel, 1934), 153-154, 255. L. W. Beck, "Two Ways of Reading Kant's Letter to Herz," in *Kant's Transcendental Deductions*, ed. Eckart Förster (Stanford, Stanford University Press, 1989), 21-26.

discussed the issue at stake in the Transcendental Deduction, he repeats in §27 the question by which he introduced the entire discussion earlier on, namely the question of the necessary relation that prevails between a representation and its object.³ The alternative was whether the object makes the representation possible, or whether the representation makes possible its own object. These are the two only possible options. In fact, the first alternative must be excluded from the start because, in the case under consideration, the pure concepts of the understanding which are needed in order for the experience to include necessity and universality, cannot be gained from the empirical manifold. This is the empiricist way of explaining the necessary relationship between the representation and the object, and Kant depicts the contradiction involved in this way of attaining pure concepts in terms of *generatio aequivoca*. The expression simply refers to the antique theory, discarded in the *Critique of Judgment*, according to which a living organism could emerge from raw inorganic matter along mechanical laws.⁴ It is as awkward to think that empirical data could produce a pure concept as it is to think that inorganic matter could of itself give birth to an organism.

As we know, Kant chooses the second part of the alternative raised in the inaugural question of the Deduction which is that "the categories contain, on the side of the understanding, the grounds of the possibility of all experience in general".⁵ This is what in his eyes can be best illustrated (metaphorically) "as a system, as it were, of the *epigenesis* of pure reason". What is of particular interest in this passage is that immediately after Kant introduces a third option which he considers to be a "middle course". This is the theory according to which the principles of the understanding are innate or "implanted", and correspond to the objects in the outside world on the basis of a divine predetermination. In the letter to Markus Herz of February 21, 1772, Kant rightly characterises this system as *harmonia praestabilita intellectualis* in the sense that God has provided, in advance, the human mind with principles that correspond exactly to the laws ruling the processes in the world.⁶ In his letter, Kant attributes this theory to Crusius, but for the reader of the *Critique* who had no access to this letter, the allusion to Crusius in the Transcendental Deduction is

³ Kant, *Kritik der reinen Vernunft*, A 92/B 124-125.

⁴ Kant, *Kritik der Urteilskraft*, § 80, AK V, 419. See J. D. McFarland, *Kant's Concept of Teleology* (Edinburgh, University of Edinburgh Press, 1970), 39.

⁵ Kant, *Kritik der reinen Vernunft*, B 167, quoted in N. Kemp Smith's translation.

⁶ Kant, Letter to Markus Herz, 21 February 1772, *Briefwechsel*, AK. X, 31.

clear if he paid attention to the note of §36 of the *Prolegomena* published four years before the second edition of the *Critique*.⁷

The implicit reference to Crusius and to his theory of the pre-established harmony between the mind and the world is interesting insofar as it gives Kant the occasion to confront two rival biological categories: epigenesis and preformation. For the 18th Century reader, the issues related to both theories are well known, and Kant indicates here a preference for epigenesis, which is consistent with his ideas on the generation of life, as we shall see later. For the moment, let us briefly sketch the claims of each theory. In fact, the theory of epigenesis can be best defined in opposition to preformation. The latter is the theory of generation according to which the living embryo is present in the seeds of one of the two parents. Accordingly, copulation amounts to no more than bringing about the gradual development of a living organism that is already constituted, if only on a microscopic scale. Copulation is not then a real act of engendering but only the beginning of the unfolding of an already fully constituted organism. This means that all future life is included in the seeds of the first parents of every species, from which is derived the expression "encasement" (in French *emboîtement*) referring to the inclusion in the parent of all future generations, such that every individual pops out in the course of history like a Russian doll. Conversely, epigenesis stipulates that new characters are being developed in an initially undifferentiated embryo. This means that a new individual is actually produced by mating and that the development of the individual will bring about parts or characters that were not present as such in the embryo. Kant, who had been long acquainted with these diverging theories, defines epigenesis in §81 of the *Critique of Judgment* as the *System der Zeugungen als Produkte*. Hence, if "eduction" is the term that he uses to characterise preformationism, "production" is the word that best describes the intention behind the metaphor of epigenesis.

Since the concepts and principles of the understanding, according to Crusius, are

⁷ Kant, *Prolegomena*, §36, AK IV, 319: "Crusius alone thought of a compromise: that a spirit, who can neither err nor deceive, implanted these laws in us originally." See also Refl. §§ 4893 and 4894 (1776-1778), AK XVIII, 21-22, and *Vorlesungen über Metaphysik* (L₁), AK XXVIII.1, 233. Concerning the question of how things really stand for Crusius himself, the picture that we find in *Wege zur Gewissheit...* is not as sharp as Kant presents it, when he seems to use Crusius' theory simply as a model to be discarded. In fact, Crusius in his text is merely conjecturing. See C. A. Crusius, *Wege zur Gewissheit und Zuverlässigkeit der menschlichen Erkenntnis* (1747; rpt. Hildesheim: Olms, 1965), 154; the same, *Entwurf der nothwendigen Vernunft-Wahrheiten* (1745; rpt. Hildesheim, 1964), 113; Martin Krieger, *Geist, Welt und Gott bei Christian August Crusius* (Würzburg: Königshausen & Neumann, 1993), 160.

implanted in the mind so as to regulate the course of its representations, the necessity between the representation of a cause and of an effect, for example, can only be "felt" by consciousness; that is, it remains a subjective necessity, whose truth, as a picture of what is going on in the world, finds its justification in the Creator of both the knowing subject and the world. On the other hand, the advantage of transcendental philosophy, as it is expressed by the analogy with epigenesis, is that the necessity of the relation between cause and effect is introduced by the knowing subject into the object itself, making this necessity objective, that is true of the object of experience.⁸ In the same way in which in the epigenesis metaphor parents contribute to the production of a new individual, the Copernican turn introduced by Kant in his Deduction explains how an object is constituted by the knowing subject on the basis of the manifold provided by the senses. Accordingly, it is the a priori concept that makes possible the object. This is the classical way of reading the analogy of epigenesis in §27, and it is, in my eyes, a perfectly legitimate one: the productive process concerns not so much the genesis of the pure concepts as the constitution of experience. We must now turn to the *tertium comparationis* itself, epigenesis, whose adoption in Kant's philosophical development takes place before the discovery of critical philosophy.

2-Kant's adoption of the biological theory of epigenesis

In his *Beweisgrund* of 1762, Kant comes to consider the various ways of interpreting the relation between the world and its Creator. In the "Fourth Consideration" dealing with the use that can be made of his newly established *Beweisgrund* with regard to the perfection of the world, Kant faces the problem of the generation of plants and animals. In fact, he has the choice between the two main biological theories of his century: preformation and epigenesis. They are so well known that he does not even bother to

⁸ See Kant, *Metaphysische Anfangsgründe der Naturwissenschaft*, AK IV, 476, note. In this long note, Kant reacts to the criticism of the anonymous reviewer of J. A. H. Ulrich's book *Institutiones Logicae et Metaphysicae* who took aim at the transcendental Deduction by raising anew the argument of a pre-established harmony between representations and their object in experience. To be sure, the fact that Kant returns to the problem of preformation in §27 of the *Critique of Pure Reason* is certainly motivated, at least in part, by the will to give a final answer to the objection made in this review. See Hans-Ulrich Baumgarten, "Kant und das Problem einer *prästablierten Harmonie*. Überlegungen zur *Transzendentalen Deduktion* der Verstandeskategorien," *Zeitschrift für philosophische Forschung* 51 (1997): 411-426. [Note of 2019 : see also my « Feder et Kant en 1787. Le §27 de la Déduction transcendantale » (2002) on *Papyrus* in a near future.]

mention them by name.⁹ He simply asks if the broad principle of the unity of nature (i.e. simplicity of the means), that has become pervasive in physics, can also be applied to the world of organic products. The question amounts to this: is it possible to maintain the intervention of the supernatural at a minimum, especially in the field of the generation of living beings?

Kant begins by attacking a biological version of occasionalism according to which God has to intervene at the occasion of each and every copulation in order to introduce life in the embryo. This is a most obvious abuse of the supernatural in biology. But, all things considered, Kant concludes that the theory of preformation is not in a better position, because the recourse to God is as important here as in the case of the occasional causes, the difference being in preformationism that the divine intervention is concentrated at the time of the creation of the world, when all virtual living organisms are engendered. There is no economy of supernatural causes in the theory of preformation because no substantial role is conferred upon nature in the course of things. This theory does not conform to the "rule of the fruitfulness of nature", which is among the criteria retained by Kant in his adoption of epigenesis, that is, the theory in virtue of which individual products do not "immediately" proceed from the hands of God.

It seems inevitable either to attribute the formation of the fruit on the occasion of every copulation immediately to a divine operation, or to distinguish within the first divine ordering of plants and animals a capacity not only to develop their offsprings but to produce them in the first place.¹⁰

The main theoretical advantage of epigenesis is clearly stated: the "productive" aspect relies on a capacity (*Tauglichkeit*) of the natural organism. The fruitfulness of nature however is not an arbitrary process of creation, since the generation of a new individual is guided by "natural laws", which are, one must admit, much harder to trace in biology than in physics.

Kant's choice, therefore, is not based on experimental observation. He is fully aware that biologists like Buffon and Maupertius whom he mentions in passing are working with mere hypotheses. In consequence of the enormous difficulties (*Schwierigkeiten*) met in the

⁹ See Erich Adickes, *Kant als Naturforscher*, Band II (Berlin: de Gruyter, 1925), 427-428; François Jacob, *La logique du vivant. Une histoire de l'hérédité* (Paris: Gallimard, 1970), 63-78; Peter McLaughlin, *Kant's Critique of Teleology in Biological Explanation. Antinomy and Teleology* (Lewiston/Queenston/Lampeter: The Edwin Mellen Press, 1990), 7-24.

¹⁰ Kant, *Der Einzig mögliche Beweisgrund zur einer Demonstration des Daseins Gottes* (hereafter *Beweisgrund*), AK II, 115.

field of experience, Kant claims that he bases his preference for epigenesis not on empirical evidence, but rather on "metaphysical" considerations.¹¹ He does not expose these considerations in the text of the *Beweisgrund*, but they have to do with the principle of the unity of nature, that is, of a nature resting on universal laws. In fact, these metaphysical options are taken quite early in Kant's philosophical journey. For instance, in the *Nova Dilucidatio* of 1755, we find an explicit criticism of Malebranche's theory of the occasional causes as well as of Leibniz' conception of pre-established harmony, a criticism made from the standpoint of a revised version of the theory of physical influence between substances in the world.¹² The advantage of the renewed theory of real influence is that the relation between the substances are regulated by nature itself according to fixed laws, whereas occasionalism and pre-established harmony leave the mere *consensus* between the substances to God's will. Still in §22 of the *Dissertation*, Kant levels the same attack against Malebranche and Leibniz in the name of the *regulas communes* that orchestrate the dynamic relations between the substances.¹³ The consequences of this early metaphysical option concerning substances in the world are such that he will return to it in the critical system. Hence, it will come as no surprise that the theoretical structure of §81 of the *Critique of Judgment* entitled *Von der Beigesellung des Mechanismus zu teleologischen Prinzipien in der Erklärung eines Naturzweckes als Naturproduktes* finds its clear anticipation in the quoted passages of the *Beweisgrund* and of the *Dissertation*, although they are reinterpreted in terms of a regulative teleological judgment.

3-Epigenesis as an epistemological Model in the seventies

In a *Reflexion* written in the immediate aftermath of the *Dissertation*, the epistemological metaphor of epigenesis is expressed in a way that will remain paradigmatic for all the other occurrences in Kant's personal notes of the seventies. As in these other cases, he first refers to various theories associated with the names of their main proponents (most of the time, Plato, Malebranche, Locke and Crusius) before proposing his own theory.

Crusius explains the real principles of reason according to the system of preformation (on the basis of subjective principles), Locke according to physical

¹¹ *Beweisgrund*, AK II, 114.

¹² Kant, *Nova Dilucidatio*, AK I, 415-416.

¹³ Kant, *Dissertation*, §22, AK II, 409.

influx like Aristotle, Plato and Malebranche according to intellectual intuition, we for our part according to epigenesis on the basis of the use of the natural laws of reason.¹⁴

The metaphorical use of epigenesis does not come as a surprise here. In fact, in the year before the defence of his *Dissertation*, Kant did not hesitate in another *Reflexion* to use the term as a possible candidate to answer the metaphysical question of the origin of the human soul. All things considered, the reference to an *epigenesis intellectualis* of the principles of reason is no more strange than the allusion to an *epigenesis psychologica*. The latter is just an hypothetical explanation that Kant will later reject, on the ground that it is impossible to conceive how the soul of the two parents could create a new soul without invoking a *creatio ex nihilo*.¹⁵

The first question that requires an answer concerning the *Reflexion* quoted above is the following: does the allusion to an intellectual epigenesis in the early seventies refer back to the discussion of the *Dissertation*, or does it anticipate the thesis of §27 of the *Critique of Pure Reason*? In other words, is the metaphor employed in *Reflexion* § 4275 appropriate to depict the precritical position of Kant in the *Dissertation* concerning the origin of pure concepts, or does it announce the Copernican Revolution that starts with the crucial question raised in the letter to Herz of February 21, 1772? If we examine the *Reflexionen* written in the decade following the publication of the *Dissertation*, we notice a tendency that is best expressed by a note dating from 1776-1778. Kant proceeds to the enumeration, in Latin, of the four theories explaining the origin of our concepts: "1. *per intuitionem mysticam*. 2. (*influxum*) *sensitivum*. 3. *per praeformationem*. 4. *per epigenesin intellectualem*..."¹⁶ These four theories can easily be related respectively to Plato, Locke, Crusius and Kant. But what is most interesting is that the four possible explanations are placed under the heading: "origin of transcendental concepts". Kant seems to be preoccupied first of all with the sources of the concepts of the understanding, and not with their application, as will be the case in the first *Critique*. If in another notation he aligns (as is typical of the *Reflexionen*) the two pairs of opposition "*educta* or *producta*",

¹⁴ Refl. § 4275 (1770-1771), AK XVII, 492; for a contemporary variation of the same, see Refl. § 4446 (1769-1772?), AK XVII, 554.

¹⁵ Refl. § 4104 (1769-1770), AK XVIII, 416; see also Refl. § 4446 (1769-1772?), and *Vorlesungen über Metaphysik* (K₂), AK XXVIII-2.1, 760-762; Reinhard Löw, *Philosophie des Lebendigen. Der Begriff des Organischen bei Kant, sein Grund und seine Aktualität* (Frankfurt: Suhrkamp, 1980), 179.

¹⁶ Refl. § 4859 (1776-1778), AK XVIII, 12.

"*praeformation* and *epigenesis*", it is to associate them, a few lines later to the opposition "*ideae connatae... acquisitae*".¹⁷ From this, we can conclude that the intent of the contradistinction of the two biological metaphors, preformation and epigenesis, pertains to the means by which the understanding comes into possession of its pure concepts. Now, Kant claims that the pure concepts of the understanding are not innate, but acquired.

That Kant is concerned by the problem of the sources of the concepts of metaphysics can be drawn from the criticism that he addresses to Crusius in the *Reflexionen* of the seventies. Instead of stressing the fact that the theory of preformation makes it impossible to explain the objective necessity taking place in experience, he insists on what in §27 of the *Critique* appears as a subsidiary remark: if the principles and concepts of the understanding were implanted in us by the Creator, we could not establish with certainty how many such innate concepts are to be found in the mind. In fact, the philosopher could never know if a concept discovered within consciousness is innate, and therefore warranted by God, or if it comes from somewhere else and therefore might possibly be deceptive.¹⁸

This means that Kant has recourse to epigenesis only to draw attention to the fact that the concepts of the understanding are acquired and not innate, meaning by this metaphor that all those pure concepts must be produced in the first place. There is a cue in the *Reflexion* § 4275 quoted earlier and which relates epigenesis to the problematic of the *Dissertation*: it is to be found in the final words: *epigenesis aus dem Gebrauch der natürlichen Gesetze der Vernunft*. By this remark, Kant recognises that the only things in the mind that are innate are the laws of reason, not its concepts. This means that the knowing subject does not initially have a representation of the concepts related to these laws. These laws remain hidden in the mind as long as they are not put into use, and it is only when they come into play that consciousness through a process of abstraction can gain a representation of them. This was the explicit theory of the *Dissertation* concerning the origin of what will later be called the categories.

...the concepts occurring in it [metaphysics] must not be sought in the senses, but rather in the nature itself of pure understanding, not as *innate* concepts, but as concepts which are abstracted from the laws implanted in the faculty of knowledge (when we pay attention to its operations on the occasion of experience) and which

¹⁷ Refl. § 4851 (1776-1778), AK XVIII, 8; see also Refl. § 5637 (1780-1783?; 1790?), AK XVIII, 275.

¹⁸ Refl. § 4893 (1776-1778?), Bd. XVIII, 21.

are therefore *acquired*. Of this sort are "possibility", "actuality", "necessity", "substance", "cause" etc.¹⁹

Kant has been careful enough to explain in §6 that the process of abstracting which takes place "at the occasion of the experience" does not here lead to an empirical concept. He insists that the mind can abstract *from* everything empirical in a representation and focus exclusively on the intellectual elements of it. This is precisely the process described in the passage just quoted.²⁰ In the *Dissertation*, Kant is busy preventing the "contamination" of metaphysical knowledge by empirical elements. He wants to reserve an autonomous sphere for metaphysics, independently of any sensible knowledge. To put it bluntly, he wants to make use of a set of pure concepts allowing for a knowledge of the things as they are "in themselves" (*objecta ipsa*, §24). And it is precisely in this precritical context, so it is my claim, that the early recourse to epigenesis takes place. This can be confirmed by the way Kant treats the symmetrical case of sensible knowledge in the *Dissertation*. In fact, the same process of abstraction applies for the pure intuitions of space and time, although they make -- contrary to intellectual knowledge -- a first step toward the Copernican Revolution.²¹ Kant says explicitly that time and space *make possible* the representation of a sensible object, that they are constitutive of the very possibility of something like an empirical object for the human mind. However, when Kant comes back to the acquisition of these intuitions at the end of the chapter on the sensible world, he does not feel the need to establish a link between the process of epigenesis taking place in the «acquisition" of these pure representations, and the fact that they are constitutive a priori of every sensible object. Here also the question of the origin of the representation of space and time remains independent of the question of objective validity.

Before returning to the *Critique of Pure Reason*, there is a question which inevitably comes to mind, and which deserves an answer. The enumeration of the names Plato, Malebranche, Locke and Crusius that are recurrent in the *Reflexionen* of the seventies, reminds us of the famous letter to Markus Herz of February 21, 1772. The question is the following: if Kant is already in possession of his metaphor when he writes his letter, why does he not communicate it to Herz in order to state his own opinion? Do we have to

¹⁹ *Dissertation*, § 8, AK II, 395.

²⁰ *Dissertation*, § 6, AK II, 394.

²¹ See Gordon Treash, "Kant and Crusius. Epigenesis and Preformation," in *Proceedings of the Sixth International Kant Congress* [1985], vol. II, part 1, ed. G. Funke & T. Seebohm (Washington: The University Press of America, 1989), 102.

conclude that there is a mistake on the part of Adickes in his dating of the *Reflexionen* on epigenesis attributed to the period before 1772? Or rather, does the answer lay in the specific question that is raised in his letter to Herz? I think that the solution is to be found in the second alternative. In his letter, Kant glances over what has been done so far, and what still lays ahead. The following sentence has become very famous:

I was satisfied in the *Dissertation* to express the nature of the intellect in purely negative terms: namely that they [concepts of the understanding] were not modifications of the soul produced by the object. The problem, however, which I passed over in silence, is how, then, a representation which is related to an object can otherwise possibly exist, without being affected by it in some way.²²

Kant wants to entertain his correspondent about the work ahead, that is, about this last question. He does not need to remind his reader, who had served as his "respondent" during the defence of his *Dissertation*, of his theory of the active acquisition of pure representations. Herz does not require the help of a metaphor because he is already entirely familiar with the previous work done by Kant. And Kant for his part cannot introduce the epigenesis after the theories of Plato, Malebranche and Crusius, because epigenesis is no solution at all with respect to the issue raised in the passage in question. In 1772, Kant does not have an answer to the problem on which he draws the attention of Herz, namely the problem of the objective validity of pure representations, of the necessary relation between an intellectual representation and its object. Immediately after the mention of Crusius' *harmonia praestablitia intellectualis*, Kant continues: "However, in the determination of the origin and of the validity of our knowledge, the *Deus ex machina* is the most foolish explanation that one can choose..." Of the two issues raised here, "origin" and "validity", Kant has already solved the first to his satisfaction -- which can be expressed in terms of epigenesis -- but he is far from having accomplished with the pure concepts of the understanding the revolution that will allow him to discover that the categories are constitutive of the very possibility of experience. Even after the crucial steps taken toward a theory of synthetic judgments in the *Duisburgsche Nachlass* of the mid-seventies, the specific role of the imagination in knowledge is still to be discovered. So it becomes conceivable that the use of epigenesis even in the second half of the seventies still refers to his theory of acquisition reached in the *Dissertation*.

4-The two strands of the argument of epigenesis in §27

²² Kant, Letter to Markus Herz of February 21, 1772, AK X, 130-131 (trans. Kerferd & Walford).

So far, the metaphor of epigenesis has been examined in two different contexts. First, as an expression of the Copernican Revolution taking place in the *Critique* (§27), and second, as an illustration of the manner in which the *intellectus*, as it was conceived at the time of the *Dissertation*, comes to the representation of its pure concepts. In the first case, epigenesis depicts the production of the experience through pure concepts, and in the second, the metaphor expresses the process of acquisition through which the concepts of the understanding are arrived at. To be sure, these are certainly two different lines of argumentation, corresponding to two different periods in Kant's development, but I would now like to argue that the precritical use of the metaphor of epigenesis in the *Reflexionen* of the seventies leaves traces in §27 itself. This does not mean to say that the standard interpretation of the paragraph according to which the categories are productive in that they first make experience possible is not accurate. However, the commentators have tended to neglect the other line of argumentation that is still present in the text and, what is more, is part of Kant's intention in this closing section of the Transcendental Deduction.

We must remember that, shortly before Kant introduces the metaphors of *generatio aequivoca* and of *epigenesis* in §27, he was stressing the fact that the pure concepts of the understanding are not "derived from experience"; rather, that they are "found in us a priori". The pure origin of the categories is certainly part of his argument in the Deduction and he is interested in pointing out this fact once more. Hence, the rejected empirical explanation illustrated by the *generatio aequivoca* and according to which it is experience that makes a priori concepts possible, is a tentative solution that deals explicitly with the problem of the "origin". So it might be suspected that the other explanation also has something to do with finding the true source of the pure concepts. In fact, both metaphors, *epigenesis* and *generatio aequivoca*, deal explicitly, or better, etymologically, with the problem of the origin. And in the case of epigenesis, my claim is that the "production" implied by this metaphor does not pertain primarily to the production of experience, but to the a priori concepts as such.

Let us read the lines in which Kant exposes the three possible explanations for the origin of the categories in §27.

A middle course may be proposed between the above mentioned, namely, that the categories are neither *self-thought* first principles a priori of our knowledge nor derived from experience, but subjective dispositions of thought, implanted in us from the first moment of our existence, and so ordered by the Creator that their employment is in complete harmony with the laws of nature in accordance with

which experience proceeds -- a kind of *preformation-system* of pure reason.²³ What is remarkable about this passage is that the two first modes of explanation mentioned by Kant refer explicitly to an activity made use of by the knowing subject. For the empiricist, the concept must be "derived" from experience in that it must literally be drawn (*geschöpft*) from the manifold offered by the senses. Yet if the empirical theory of the origin of concepts implies a process, the same is true for Kant's theory of epigenesis, and this is confirmed by the fact that the word "self-thought" appears in italics in the passage quoted above. This means to say that for Kant no completely formed concept can be found as such in the mind. Even the concepts that he considers to be "given", be they a posteriori or a priori, must be the result of a certain process of acquisition. That is, they must be acquired either out of the materials provided by the senses, or out of the laws of the mind itself -- and be therefore self-thought.²⁴ Compared to those two first explanations, the innateness of the categories as proposed by Crusius is deprived of this active dimension. According to this theory, the concepts are "implanted" in the mind by a foreign hand, and Kant has always considered that such a theory of innateness leads the philosopher to laziness, when it does not lead him directly to mystic speculation and *Schwärmerei*.

If we want to convince ourselves that Kant's theory of acquisition of the pure concepts is still valid for critical philosophy, we may turn to a text written three years after the second edition of the *Critique of Pure Reason*. In his reply to an objection of Eberhard who continues to regard space and time as innate, Kant reiterates his theory of acquisition. For him, time and space as well as the pure concepts of the understanding can only become representations after having been properly acquired by the knowing subject. Kant calls such a process *acquisitio originaria* as opposed to *acquisitio derivativa*, which characterises empiricist theories of a Lockean type.²⁵ The theory of originary acquisition corresponds to

²³ *Kritik der reinen Vernunft*, B 167.

²⁴ Even though Kant in the wake of the *Dissertation* (1771) clearly makes the distinction between the concepts of reason that are "given" a priori and those, like the Idea of God and of the wise man according to the Stoics, "invented" (*facti, sive ficti*) a priori, he nevertheless concedes that the *given* concepts of "pure reason" are produced (*hervorgebracht*). This corresponds to the word "self-thought" (*selbstgedacht*) met in the passage cited from § 27 of the first *Critique*. See Kant, *Vorlesungen über Logik* (Blomberg). AK XXIV.1, 252-253, 262. For a study of the "fictions" that are at the basis of the Ideas of pure reason, see my *Das Ideal: ein Problem der Kantischen Ideenlehre* (Bonn: Bouvier, 1984).

²⁵ Kant, *Über eine Entdeckung, nach der alle neue Kritik der reinen Vernunft durch eine ältere entbehrlich gemacht werden soll*, AK VIII, 222-223. See also Kant's letter to J. W. A.

a procedure already present in the *Dissertation*, as we have witnessed above. The difference between the two recourses to this theory is evidently related to their respective contexts. This can best be expressed by the diverging acceptance of the expression "on the occasion of experience". In 1770, empirical experience just provides the occasion (*occasio*) to look closely at the actions and the laws of the faculty of knowledge. But the concepts that are attained in this way do not depict the properties of the empirical objects, but rather the metaphysical properties of the objects considered in themselves. In the critical period, on the other hand, the expression "on the occasion of the experience" has, as we might suspect, a much stronger sense: the categories of the understanding do not merely emerge on the occasion of the experience. They are constitutive of the object of experience itself, and it is by scrutinizing the operations of the understanding, or, as Kant says in his reply to Eberhard, by observing the "subjective conditions of the spontaneity of thought (conformity with the unity of apperception)" that we produce the representation of these pure concepts.²⁶ In both contexts, the process of acquisition is similar, while the use of these concepts of the understanding differs drastically: in the first case, the use is dogmatic, in the second, it is critical.

In the *Dissertation*, Kant could claim that his theory of ordinary acquisition was a novelty in that it provided an alternative to the empiricist theory of derivative acquisition, without having recourse to the innateness of our a priori concepts. However different both ways of conceiving acquisition may be, Kant praises Locke for having raised seriously the philosophical question about the origin of concepts in general. In *Reflexion* § 4894, we can read: "Because he did not consider the *intellectualia* to be innate, Locke distinguished himself by the fact that he searched for their origin".²⁷ And in this, Locke shows his superiority over a rationalist like Wolff, for example, who leaves the matter completely unsettled. Now, the same preoccupation for the origin of the pure concepts of the understanding can be found in the *Critique*, and, more precisely, in the chapter entitled "Amphiboly of the pure concepts of reflection". After all, in order to establish the possibility of knowledge a priori, the *Critique* must secure the purity of origin of such knowledge. This is a preliminary task that was undertaken in the *Dissertation*, but which is

Kosmann, September 1789, AK XI, 82.

²⁶ *Dissertation*, § 8, AK II, 395; in 1770, experience is there only to provoke (*excitare*) the search for pure concepts, cf. *ibid.*, §15, AK II, 406. *Refl.* § 3930 (1769), AK XVII, 352. *Kritik der reinen Vernunft*, A 66/B 91. *Über eine Entdeckung...*, AK VIII, 223.

²⁷ See also *Refl.* § 4866 (1776-1778), AK XVIII, 14.

still essential for the transcendental foundation of knowledge. Here it involves an operation called reflection. Therefore, the Amphiboly chapter begins with the following sentence:

Reflection (*reflexio*) does not concern itself with objects themselves with a view to deriving concepts from them directly, but it is a state of mind in which we first set ourselves to discover the subjective conditions under which [alone] we are able to arrive at concepts.²⁸

It is no wonder then that this chapter of the *Critique* is turned against Leibniz, who, like most rationalist philosophers, are not at first preoccupied with the origin of the representations they are dealing with. In fact, it is because of Locke's provocation that Leibniz was forced in his *New Essays on Human Understanding* to begin his discussion by addressing the problem of innate ideas.

Before ending our examination of the use of the metaphor of epigenesis in §27 of the *Critique*, it might be interesting to question the ultimate significance of Kant's recourse to a vocabulary stemming from natural history. After all, epigenesis is not here associated with a mere detail in the *Critique*. On the contrary, Kant speaks emphatically of an "epigenesis-system of pure reason". Consequently, the metaphor touches pure reason in its essence. This means that pure reason, as a "faculty", can be considered in terms of its development and of its own finality. To be sure, the issue of the teleology of pure reason (*teleologia rationis humanae*) is explicitly raised in the *Critique*, but it has a twofold meaning.²⁹ On the one hand, the finality of reason can refer to the goals that reason might set itself consciously and deliberately. This is the case for instance of the subtitle that we find in the section devoted to the Canon of pure reason: "The Ideal of the Highest Good, as a Determining Ground of the Ultimate *End* of pure Reason". On the other hand, there is in the *Critique* an extensive reference to teleology that merely concerns reason as a product of nature. In this sense, the finality of reason as a faculty is one that was imprinted on it by "nature", if we understand this term in the widest possible meaning. In other words, the teleology of reason in this case can be attributed to a nature interpreted in the same sense as in the text on the *Idea of a Universal History from a Cosmopolitan Point of View*, that is, as Providence.³⁰ This comes out clearly in other passages of the *Critique* such as, for example,

²⁸ *Kritik der reinen Vernunft*, A 260/B 316, emphasis mine.

²⁹ *Kritik der reinen Vernunft*, A 839/B 867.

³⁰ Kant, *Idee zu einer allgemeinen Geschichte in weltbürgerlicher Absicht*, AK VIII, 30.

the chapter in which Kant states the positive effects of the Dialectic of pure reason: "The *Final Purpose* of the Natural Dialectic of Human Reason". Here, the purposiveness cannot be attributed to the will of the protagonists of the dialectical debates presented in the Antinomies, because no one would willingly accept to fall prey to such a transcendental illusion. The purpose is rather a design of nature and it aims at awakening philosophers from their dogmatic slumber. Here the purpose of Providence is not fundamentally different from the finality of the "ungesellige Geselligkeit" found in the article on history. Human beings fall into the intricacies of the Antinomies in the same manner as they unwillingly get involved in wars.³¹ If such a parallel is legitimate, this means that critical philosophy relies on ultimate metaphysical premises that are not in themselves subjected to philosophical investigation, simply because they sustain Kant's critical project from the beginning. These presuppositions no doubt have far-reaching consequences, if only it can be shown that they are determining for Kant's conception of human reason as a whole.

As a matter of fact, Kant did not wait until 1787 to introduce biological metaphors into the development of the *Critique of Pure Reason*. The occurrence of the theme of epigenesis in §27 of the Deduction is just one more reference to an inner teleology of reason that was already at work in the first edition.³² To tell the truth, the epigenesis of the categories had been anticipated in 1781 at the very beginning of the *Transcendental Analytic*. Kant insists on specifying that these concepts find their "birthplace" in the understanding "alone": "We shall therefore follow up the pure concepts to their first seeds and dispositions in the human understanding, in which they lie prepared, till at last, on the occasion of experience, they are developed..."³³ This sentence helps us to recapitulate what is at stake in the metaphor of epigenesis. We have to consider that even though Kant stresses the fact that epigenesis makes room for a real act of production -- instead of a mere education, as in the case of preformation -- there is nevertheless an element of

³¹ See my «La métaphore de la guerre et du tribunal dans la philosophie critique», in *L'année 1795. Kant, essais sur la paix*, ed. P. Laberge et al. (Paris: Vrin, 1997), 389-401.

³² This point has often been stressed in secondary literature. Lately, Bernd Dörflinger has devoted an interesting study to the organic metaphors in the Deduction of the categories in relation to their systematic unity. For my part, as it has now become obvious, I insist on those metaphors in relation to the problem of origin. See Bernd Dörflinger, "The Underlying Teleology of the First Critique," in *Proceedings of the Eighth International Kant Congress* (1995), vol. I, part 2, ed. H. Robinson (Milwaukee, Marquette University Press, 1995), 813-826.

³³ *Kritik der reinen Vernunft*, A 66/B 91.

predetermination in his conception of epigenesis. This is why he argues that nature has placed in reason the seeds and dispositions (*Keime und Anlagen*) of the categories in order for them to come into use "on the occasion of experience" and become representations. The fact that they "lie prepared" indicates that the understanding cannot produce these pure originary concepts in indefinite number: the guidelines have been, from the start, imprinted in the mind. This is the reason why Kant in §81 of the *Critique of Judgment* does not hesitate to define epigenesis, not as an arbitrary production, but, much to our surprise, in terms of "preformation". He calls it "generic preformation" in order to contrast it with "individual preformation" whereby every individual of the species is totally predetermined (Leibniz). Generic preformation, as opposed to the pre-established harmony implied in individual preformation, leaves room for initiative, for a real act of production, but initiative according to a finality whose broad lines are set in advance. From the point of view of his own consciousness, the knowing subject conforms himself to these guidelines without being able to say why he acts according to these specific categories and no others. This matter of fact is purely contingent. Even the critical philosopher is not able to justify why the pure forms of intuition and the pure concepts of the understanding are such and have this specific number. He can only tell the knowing subject that he acts each time precisely according to this set of categories.³⁴ As for the initiative left to the individual in the theory of epigenesis, Paul Menzer describes it in terms of *Spielraum*. See his *Kants Lehre von der Entwicklung in Natur und Geschichte* (Berlin: Verlag von Georg Reimer, 1911), 106.

If we consider Kant's critical system in its entirety, we come to realize that teleology is not only present in the first and, most obviously, in the third *Critique*. The second *Critique*, for instance, does not leave the human freedom to act totally undetermined. As the writings on practical philosophy have taught us, it is impossible to conceive of a free will that would be deprived of any law.³⁵ Even though Kant in the end remains incapable of deducing and grounding the moral law, he feels obliged to admit it as a fact of reason, as a fact that specifies the ultimate purpose of reason. However, this purpose is no

³⁴ *Kritik der reinen Vernunft*, B 145-146: "The peculiarity of our understanding, that it can produce *a priori* unity of apperception solely by means of the categories, and only by such and so many, is as little capable of further explanation as why we have just these and no other functions of judgment, or why space and time are the only forms of our possible intuition." On this topic, see P. F. Strawson, "Sensibility, Understanding, and the Doctrine of Synthesis: Comments on Henrich and Guyer," in *Kant's Transcendental Deductions*, 69-77.

³⁵ See Kant, *Grundlegung zur Metaphysik der Sitten*, AK IV, 446.

determination in the sense that the moral agent would be compelled to act according to the good. In his text on *Religion*, for instance, Kant refuses to admit with Rousseau that man is good "by nature", because this would make the ascription of blame impossible and deprive him of any merit. The moral law does not determine human action mechanistically since this would manifestly annihilate any claim to freedom. This is well known, but what is often neglected is the fact that the relation of man to moral goodness is systematically and carefully described by Kant in terms of an *Anlage* : disposition. In fact, we find many occurrences of this term in the text on *Religion*.³⁶ Such a reference to the biological term *Anlage* is crucial to Kant insofar as it makes room for freedom and initiative, that is, for a free production of the good, while resisting the "inclination" (*Hang*) to the bad. Goodness is certainly not "innate" to human beings, but the disposition to goodness is. To be sure, the designation of goodness as a disposition in human beings certainly comes late in Kant's development; it is nevertheless symptomatic of the way in which he envisages the teleology inherent in human reason. This faculty is endowed with a telos, but it is up to the human being to realise it. Therefore, the initiative left to the individual in the biological theory of epigenesis can count as a paradigm for pure reason as a whole.

³⁶ Kant, *Die Religion innerhalb der Grenzen der blossen Vernunft*, AK VI. Here are a few of these occurrences: 20, 28, 32, 36, 43.