

Giorgio Rizzo

# SPACES

A PHENOMENOLOGICAL INVESTIGATION



Philosophische Reihe

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[My translations from Husserl's German are sometimes intentionally literal.]

*To Captains J.T.Kirk and J.Konig – whom I have to thank for introducing me into at least one dimension of (the notion of) space in depth ...*



# CHAPTER I

## ***THING AND SPACE IN HUSSERL***

### *1.1 Thing and Space*

*Thing and Space* is the title of a course held by Edmund Husserl in the Summer Semester of 1907 at the University of Göttingen. The German original was published posthumously in 1973, as volume XVI of *Husserliana*. The course began with five introductory lectures which were already published in 1947, bearing the title *The Idea of Phenomenology*.

The specific matters at issue in this course are “thing” and “space”, which are analysed under the general frame of a “critique of reason”. Whereas for Kant the task of reason is that of investigating the *scientific reality* of things, for Husserl, on the contrary, the real question at issue is the things and reality we meet in the course of our *everyday experience*.

What we need to do, Husserl declares, is:

to clarify, from the side of experiential cognition, not only the lower levels of the experience which lies prior to all deduction and induction- in short, prior to all logically mediated cognition in the usual sense- but also, and *a fortiori*, we would need to clarify the higher levels <sup>1</sup>.

In short, theoretical reason aims at showing how the things conceived by the scientific and natural way of thinking result in fact from a *construction* upon the unitary and meaningful things of everyday experience.

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1 TS,2.

The focus of the inquiries concerning thing and space is to show how the abstract, and formalized, constructions of a science of space have their roots in the most fundamental layer of the most “foundational” – or fundamental - things – the layer in which such constructions are *constituted*.

Constitution, from a phenomenological point of view, represents that key notion capable of bringing every formalized and abstract acquisition (“Sustrukturion” in Husserl’s term) back to its tank (or repository) of sense, that is to say, the precategoryal experience.

This lower foundational stratum, called by Husserl “phantom”, is the appearance of a mere *res extensa*, that is, an extended structure filled merely with *sense qualities* and not yet with *substantial properties*.

To do this job of constitution, the investigations ought to solve the “riddle of transcendence”, making the phenomenological reduction effective, in order to arrive at a sphere of “pure phenomena”<sup>2</sup>.

Husserl prefaces the proper analysis of the “Thing-Lectures” with a brief introduction in which he affirms that the matter of contention is the correct analysis of natural, pre-scientific experience, which has primarily a *perceptual character*.

In and through such *natural attitude*, we experience a world that is *familiar* and always *already there*:

In the natural attitude of spirit, an existing world stand before our eyes, a world that extends infinitely in space, that now is, previously was, and in the future will be. This world consists of an inexhaustible abundance of things, which now endure and now change, combine with one another and then again separate, exercise

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2 Cfr. IPP,I,33.

effects on one another and then undergo them. We ourselves fit into this world; just as we find the world, so we find ourselves, and we encounter ourselves in the midst of this world. A pre-eminent position in this world, however, is proper to us: we find ourselves to be centers of reference for the rest of the world; it is our environment<sup>3</sup>.

Since the end of the XIX century, Husserl aims at the clarification of the *scientific concepts* by returning to the *intuitive ground* from which they spring; for this reason, he insists that the analysis of *geometric space* should be anticipated by the investigation of *intuitive space*, for intuitive space constitutes the *genetic foundation* of the former. In *Raumbuch*, Husserl also declares that what distinguishes geometrical concepts from experiential concepts is the fact that the former are obtained through a *process of idealization*. Thus they cannot be considered as *morphological concepts* which are apprehended on the basis of sensible perception. Sensible perception is, *per definitionem*, inaccurate and vague.

Geometrical concepts instead can be viewed as (results of) *passages to limits*, i.e. also ideas in a Kantian sense, insofar they are guided by essential processes which *go beyond* experience. This relevant difference between the space of experience and the space of geometry notwithstanding, it is undoubted, in Husserl's view, that *geometry takes root in the intuition*, for it has a *fundament with content* (as we could pregnantly translate Husserl's technical usage of the word *Inhalt*).

In a brief to Natorp dated 15.3.1897, Husserl writes that through mere formal determinations we cannot arrive at space, but only to an *Euclidean variety*. In §70

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3 TS.2.

of *Prolegomena to Pure Logic*, He writes:

If we use the term 'space' of the familiar type of order of the world of phenomena, talk of 'spaces' for which, e.g. the axiom of parallels does not hold, is naturally senseless. It is just as senseless to speak of differing geometries, when 'geometry' names the science of the space of the world of phenomena. But if we mean by 'space' the categorial form of world-space, and, correspondingly, by geometry the categorial theoretic form of geometry in the ordinary sense, the space falls under a genus, which we can bound by laws, of pure, categorially determinate manifolds, in regard to which it is natural to speak of 'space' in a yet more extended sense<sup>4</sup>.

Euclidean geometry thus corresponds simply to the *most direct* idealization of the phenomenal space. For its space is, as a matter of fact, as *infinite, tridimensional, homogeneous* and *isotropic* as the space of intuition.

To avoid misunderstanding, it is important to stress that the processes of idealization do not occur "on" the ground of intuition, but are prepared (already) "inside" of it, through *passive synthesis* by virtue of which the world is constituted for us. Idealization, as we suggested above, does not mean *construction* or even *abstraction* for it is founded, however indirectly, in that primordial layer of experience which *precedes* language, historically determined cultures, and science itself:

Thus one can put forward by itself the problem of the manner of being of the life-world; one can place oneself completely upon the ground of this straightforwardly intuited world, putting out of play all objective-scientific opinions and cognitions, in order to consider generally what kind of "scientific" tasks to be resolved

with universal validity, arise in respect to this world's own manner of being<sup>5</sup>.

The world of experience is not chaotic and disorganized, but it has an *invariable style*, a particular spatial-temporal form. The surrounding world is firstly *prefigured* by “a range of harmonious possibilities” that can be iteratively continued and followed; secondly it is *conceptualized*, that is, “expressed in judgments by ontology”<sup>6</sup>.

### 1.2 The theory of “varieties” (*Mannigfaltigkeitslehre*)

At the end of the XIX century, Husserl aims at the clarification of the presuppositions that are necessary in order to give a geometrical meaning to the notion of variety (*Mannigfaltigkeit*). He intends to build a new philosophical theory of geometry which would find its place in the announced (and never published) second volume of the *Philosophy of Arithmetic*. In the years 1891-1892, as a consequence he comes to be concerned with the very *logical determinations* of the notion of variety, distinguishing between a *wider* and a *narrower* meaning of the same. The wider meaning refers to the definition of variety given by Georg Cantor in his work *Grundlagen einer allgemeinen Mannigfaltigkeitslehre*<sup>7</sup>. In this work the concept of variety is made similar to that of set (*Menge*) on the ground of purely arithmetical laws.

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5 CES, 123.

6 Cfr. E. Husserl “Foundational Investigations of the Phenomenological Origin of the Spatiality of Nature: The Originary Ark, the Earth, Does not Move” in M. Merleau-Ponty, *Husserl at the Limits of Phenomenology*, Northwestern University Press, Evanston 2002, pp. 119-120.

7 G. Cantor, *Grundlagen einer allgemeinen Mannigfaltigkeitslehre*, B.G. Teubner, Leipzig 1883.

To Cantor's point of view, which is based on the *synonymity* between the terms "variety" and "set", Husserl opposes a notion of "variety" borrowed by Riemann, according to which a variety is an *aggregate* of elements that are not only united, but also *ordered* and *connected* in a continuous way<sup>8</sup>.

In a letter sent to Paul Natorp, dated 29 March 1897, Husserl defines the Euclidean variety as a well-defined form of "sequence" (*Reihenform*) whose simplest case is represented by an open infinite sequence. For all the favour with which Husserl greets Riemann's conception of variety, he still sees in it a certain narrow-mindedness – since also this conception would, in a sense, disregard the specific properties of different forms of variety, particularly the geometric ones, reducing them to mere "numbers variety" (*Zahlenmannigfaltigkeiten*). - The kind of generalization founded on the existence of  $n$  variables of a function  $ds$  constitutes an *analogon* of the common geometry, even though it remains an analytical *analogon*, that is, a generalization that does not take into account the relations and the system of relations pertaining to a variety<sup>9</sup>.

(According to Husserl, by replacing the notion of concept with that of *algorithm*, that is, of a "calculating with signs" on the basis of determined rules, we can grasp the concept of "formal number" in the sense of a "mere concept of something" whose objects are subject to *connections* and *relations* on the basis of laws expressed in the form of fundamental principles<sup>10</sup>.)

At any rate, a formal definition of "variety" is obtained

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8 Cfr. HUA, XXI, 95-6.

9 Cfr. HUA, XXI, 407. Cfr. also M.H. Hartimo, "Husserl and the Algebra of Logic: Husserl's 1896 Lectures", in *Axiomathes*, 22, 2012, pp.121-133.

10 Cfr. HUA, XXI, 63.

through *abstraction* from the particular nature of the objects, in order to define them by virtue of the *form* of their relations<sup>11</sup>. Through the introduction of the notion of variety, arithmetic can get rid even of the concept of *quantity*. Such a transformation of arithmetic has important consequences on the conception of logic, since Husserl, at the end of the XIX century, aims at the construction of a *formal logic* intended as a *science of signs* which, by virtue of *algorithmic proceedings*, could represent the most important vehicle for the progress of the exact sciences. Logic however cannot be reduced to a practical discipline, to a “Kunstlehre”<sup>12</sup> for it, *qua* pure logic, is a theoretical discipline which serves as doctrine of science (*Wissenschaftslehre*). Or, to put it in other words, a science researching the *conditions of possibility of science in general*, that is investigating, in its own way, the *primitive concepts* and the *pure laws* which pertain to the form of every theory in general.

The tasks assigned to a *Wissenschaftslehre* can be so described:

1) the *clarification* of the “primitive concepts” by virtue of which we may grasp the ideal link constituting the unity of a theory;

2) the *definition* of the laws based on primitive concepts, regarding the objective validity of the resulting constructive forms;

3) the *formation* of an additional science, treating *a priori* the essential species of theories and the corresponding relational laws.

Related to the third question, that is, to the idea of a *theory of theories*, is, again, the “doctrine of varie-

11 Cfr. HUA, XII, 493.

12 Cfr. LI, I §§ 67-70.

ties". This is interpreted by Husserl *qua* the objective correlate of the concept of a "possible theory", a theory determined only according to its form. Such a correlate amounts to a possible field of knowledge over which a theory, of a determined form, will "preside":

Such a field is, however, known in mathematical circles as a *manifold*. It is accordingly a field which is uniquely and solely determined by falling under a theory of such a form, whose objects are such as to permit of *certain* associations which fall under *certain* basic laws of this or that *determinate* form (here the only determining feature)<sup>13</sup>.

The objects of a variety are *thought-objects*, that is, quite *indefinite* as regards their matter- not determined directly as individual or specific "singulars" (particulars), nor indirectly by way of their material species or genera- since what counts in order to define them is only the *form of the connections* attributed to them. In this sense, every theory results as a specialization or singularization (*Singularisierung*) of (a) corresponding form(s) of theories. To provide an example, the theory of *n*-dimensional manifolds, whether Euclidean or non-Euclidean, can be seen as a generalization of the geometric theory. The *variation of curvature* is the feature that expresses the mutual "legal" connection among pure forms of theory of determinately distinct types. Husserl, however, warns us against a misunderstanding of such geometric theories which, according to their true intention, are only *categorical forms*.

Thanks to the work of mathematicians like Riemann or Helmholtz then, varieties can and must be seen as *generalizations* of geometric theory, not as the basis of it. The idea of a variation of curvature allows space-like



manifolds to “pass” one into another. This emphasis on the *Mannigfaltigkeitslehre* makes clear and evident to us the purely *formal* nature of mathematics, since even the form of space (which concerns the “regional” form of real nature and of every possible nature) has nothing to do with the *categorial* form. The form of space constitutes only an individual, basic singularization of this categorial form. Thus, investigating space from a categorial point of view, we are concerned solely with *formal possibilities*. These, in themselves, do not show any concrete - or material - *fundamental* content. In an analogous way, the definition of a golden mountain does not imply anything about the possible existence of such a mountain <sup>14</sup>.

In a precise sense, I think that the above distinctions also echo back to Hermann Grassmann’s *Introduction* to his *Ausdehnungslehre*, <sup>15</sup>in which he attributes to geometry a reference to a real being (space) in contrast to the formal sciences intended as a sheer *Formenlehre*.

The difference between geometrical and categorial formations notwithstanding, there is an essential *correspondence* between the objectual field determined by spatial data and the corresponding variety, *importantly the same kind of correspondence holding between formal essences and material essences*. To put it in a nutshell, the idea of a pure theory of manifolds- in which the ideal elements of logic are defined independently of all psychological acts- is introduced by Husserl firstly

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14 See HUA, XXX, 266.

15 H. Grassmann, *Gesammelte Mathematische und Physikalische Werke*. I Band, Erster Theil: *Die Ausdehnungslehre von 1844 und die geometrische Analyse*, Leipzig 1894. Husserl investigates different kinds of manifolds, even if, until 1897, he still thinks that the only satisfactory framework for Euclidean multiplicities can be found in the cited work of Grassmann’s. See also letter to Natorp, dated March 29, 1897 in BW,V,80.

as an argument against psychologism, but, secondly, in order to provide formal-ontological categories for his general ontology, and thus to reveal the *formal* structure of the world.

It is important to stress that, according to Husserl, a pure theory of a manifold in general can be developed only through the introduction of the notion of *definiteness* intended as a complete (*vollstaendiges*) axioms' system<sup>16</sup>.

The notions analysed above remain central to Husserl's phenomenology all through its development. In *Formal and Transcendental Logic* of 1929, Husserl still strives to define the "ultimate sense" of logic in a manner consistent with these presuppositions. In other words, he tries to define what it means for a given or possible theory to correspond to the Euclidean ideal of a form of a theory.<sup>17</sup> Likewise, even in the *Crisis*, Husserl still mentions the concept of a "definite manifold" - which only would introduce us into the formal-logical idea of a "world-in-general"<sup>18</sup>.

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16 Cfr. M.H.Hartimo, "Toward completeness: Husserl on theories of manifolds (1890-1)", in *Synthese*, 2007, Vol. 156, pp.281-310. The concept of "definiteness" is close to that of "soundness", which means the validity of calculation, that is, again, the correspondence between operations on signs and concepts. Husserl, according to Hartimo, anticipates the distinction between syntax and semantics since "the conceptual structure is his semantics and the external and 'blind' calculations are his syntax" (M.H. Hartimo, cit., p.289). - Husserl advocates a concept of completeness closely related to the axiom of completeness that Hilbert introduces for the foundation of arithmetic. His theory of complete manifolds (*Mannigfaltigkeiten*) is based on a finite number of concepts and propositions which determines completely and unambiguously-from a logical point of view- the totality of all possible formations in a domain. Husserl, in short, maintains that the concepts of truth and formal implication are equivalent. See on this topic C. Ortiz Hill, „Husserl and Hilbert on completeness“ in J. Hintikka (ed.), *From Dedekind to Goedel. Essays on the Development of the Foundations of Mathematics*, Kluwer, Dordrecht, 1995, pp.143-63.

17 See FTL, § 31.

18 See CES, sec.8f. For a more detailed investigation into the Husserli-

The decisive concept of “definite manifold” can be explained in the following terms:

The concept of the definite multiplicity served me originally to a different purpose, namely to clarify the logical sense of the computational transition through the “imaginary” and, in connexion with that, to bring out the sound core of Hermann Hankel’s renowned, but logically unsubstantiated and unclear, “principle of the permanence of formal laws”. My questions were: Under what conditions can one operate freely, in a formally defined deductive system (a formally defined “multiplicity”), with concepts that, according to the definition of the system, are imaginary? When can one be sure that deductions that involve such an operating, but yield propositions free from the imaginary, are indeed “correct”—that is to say, correct consequences of the defining forms of axioms? How far does the possibility extend of “enlarging” a “manifold”, a well-defined deductive system, to make a new one that contains the old one as a “part”? The answer is as follows: If the systems are “definite”, then calculating with imaginary concepts can never lead to contradictions<sup>19</sup>.

In short: a given combination of truths forms an objective theoretical unity only in that such unity is guaranteed by a foundational – and logical - nexus which, in its turn, is not determined by any *objectual* (in German: *gegenständlich*) domain. Therefore, as stated by Husserl in the section 62 of *Prolegomena*, there are three senses by which the unity of science can be characterized:

a) a *subjective unity* depending on the anthropological and psychological unity of thought acts;

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an notion of “definiteness” or “completeness” see also M. H. Hartimo, “Toward completeness. Husserl on the theories of manifolds: 1890-1901, in *Synthese*, 2007, 156, pp.281-310.

19 FTL, 97.

b) an *objectual unity* – as defined above -determined by the domain of objects investigated by a science;

c) an *objective unity* regarding only the *complexion of truths* relative to a domain of science.

It is obvious that, according to Husserl, the unity of the objectual domain is *necessary but not sufficient* to determine the unity of truths relative to such a domain. Haddock pinpoints such a theoretical position with great clarity:

The link between the different truths about a scientific domain does not lie in the domain of objects, but in the relations between the different truths about that domain. In fact, sciences are precisely complexions of truths. Their unity corresponds but does not coincide with that of the domain of the science. Thus, the second law of Newtonian mechanics, namely, Force=Mass x Acceleration, as well as the other laws of Newtonian mechanics, relate concepts from the same scientific domain of objects, but the objectual relation does not determine those laws. There could be a different set of ‘truths’ about those objects. The objectual connection between acceleration, force and mass would remain the same even if the second law of Newtonian mechanics were false<sup>20</sup>.

Summing up, Husserl’s *Wissenschaftslehre* – with all these implications we have analysed - can be characterized in the following fourfold way:

I. a theory depicts, by virtue of a *categorical intuition*, objects given in a *field*.

II. the field of objects is sorted thanks to a system of *deductive relations* among its propositions (which hold by virtue of their logical form).

20 G. Rosado Haddock, “A Comparison with Duhem’s and Poincaré’s Views”, in *Axiomathes*, 22, 2012, pp.172-3.

III. the *form* of the theory is correlated systematically with the *form* of the field.

IV. a *manifold* is defined as the form of the field<sup>21</sup>.

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21 Cfr. on this topic, D.W.Smith, *Husserl*, Routledge 2007, pp.104-9. There subsists a strong analogy between Husserl's layering of space and the conceptual distinctions that Rudolph Carnap uses to articulate the notion of space. According to Carnap's *Der Raum. Ein Beitrag zur Wissenschaftslehre*, we need to distinguish three different meanings of space: a formal (*formaler Raum*), an intuitive (*Anschauungsraum*) and a physical (*physischer Raum*). In the introduction to this work, Carnap declares that the contradictions which are contained in the theory of space are due to the fact that the term "space" includes different notions or objects, which cannot be confused or put together. He writes, as a matter of fact: "Und in der Tat lehrt die nähere Untersuchung der Frage, dass der Anschein des Widerspruchs nur dadurch entstanden ist, dass auf den verschiedenen Seiten von sehr verschiedenen Gegenständen die Rede ist" (R. Carnap, *Der Raum. Ein Beitrag zur Wissenschaftslehre*, von Reuther & Reichard Verlag, Berlin 1922, S.5). The relation between these different notions of space is that holding between a rule and its application (*Anwendung*). More particularly, the relation (*Verhältnis*) between the formal space and the intuition space is that of "substitution" (*Einsetzung*), whereas the relation holding between the intuitional space and the physical space is that of subsumption (*Unterordnung*): "...dort Einschränkung der begrifflich-allgemeinen Regel auf einen Sonderfall, dem aber noch gegenüber der Wirklichkeit Allgemeinheit zukommt" (ivi, S.61) The aforementioned distinction corresponds, according to Carnap, to Husserl's distinction between formal ontology (Leibniz's "mathesis universalis"), regional ontology and state of affairs science (*Tatsachenwissenschaft*).

The formal space, according to Carnap, takes into account only determinate relations (*Beziehungen*) between fundamental structures (*Grundgebilde*), of which the one that really counts is only their logical form. Applying this change of attitude towards geometry, we arrive at a pure theory of relationships (*Beziehungslehre*), or theory of order (*Ordnungslehre*): "Denken wir uns auch alle Lehrsätze in diese allgemeinere Form gebraucht, so haben wir an Stelle der eigentlichen Geometrie, nämlich der Punkte, Geraden und Ebenen, eine <<reine Beziehungslehre>> oder <<Ordnungslehre>>, d.h., eine Wissenschaft von unbestimmten Dingen und unter ihnen geltende ebenso unbestimmten Beziehungen, für die einige wenige Grundsätze vorausgesetzt und auf Grund davon Lehrsätze in unbeschränkter Zahl abgeleitet werden" (Ivi, S.8).

The advantage of starting from a formal consideration of space has to be found in the "logical closure" (*logischen Geschlossenheit*), "strictness" (*Strenge*) and "fruitfulness" (*Fruchtbarkeit*) of an analysis which doesn't depend on experience.

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Space of intuition is, according to Carnap, an ordered structure (*Ordnungsgefüge*) which can be conceptual and formal delimited. At stake, here, is not the psychological question of the origin of the intuitional representation of space - but, much more, the logical foundation of our knowledge of space, that is, the principles (*Grundsätze*) which can be inferred from the formal-conceptual understanding of the intuitional space for which experience has no role. These principles are not facts, but essences which can be grasped in one shot, so to speak. Intuition, in a broader sense, can be interpreted as the vision of essence (*Wesenserschauung*). Carnap writes: “Denn es handelt sich hier, wie Husserl gezeigt hat, gar nicht um Tatsachen im Sinne der Erfahrungswirklichkeit, sondern um das Wesen (<<Eidos>>) gewisser Gegebenheiten, das in seinem besonderen Sosein durch einmaliges Gegebensein erfasst werden... Im Allgemeinen mag aber der Ausdruck Anschauung auch die Wesenserschauung mitumfassen, da er in diesem weiteren Sinne auch schon von Kant her gebräuchlich ist” (*Ivi*, SS.22-23).

The a priori character of the *Anschauungsraum* is not founded on an intra-subject form of possibility of any outer experience (as for Kant), but in objective conditions of experiencing whatever object is given. The apriority of space is to be intended with respect to different metric spaces - which, in their turn, rest on conventional devices of measurement. According to Carnap, Kant was right in identifying the perceived space with the Euclidean manifold, because of the fact that the most general, eidetic form of space is topological, and so of higher order with respect to any metric space.

It is important to note that the latter Carnap, that of the *Logical Structure of the World*, marks his distance from the Husserlian *Anschauungsraum* in that he does not assume the two-dimensional field to be anything given but, on the contrary, something that must be introduced constructionally (cfr. R. Carnap, *The Logical Structure of the World. Pseudoproblems in Philosophy*, University of California Press, 1967, § 124). In the *Aufbau*, then, visual space and its configurations are not considered as primary beings, but rather as objects subject to the construction (See R. Carnap, *The Logical Structure of the World*, cit., § 125).

Returning to the Carnap of *Der Raum*, in the *Anschauungsraum* we are confronted with fundamental formations ( points, lines, surfaces) which cannot be conceptually delimited; to make an example, the infinite line of which we have only partial experiences can be found not only in our normal space but also in an elliptical space, where lines are infinite even if closed: “Zwischen beiden entscheidet weder die Anschauung, noch jene Forderung. Anschauung und Forderung zusammen helfen uns so zwar über das Endliche hinaus, lassen aber trotzdem bestimmte Fragen über das Unendliche offen” (R. Carnap, *Der Raum*, cit., SS. 23-24). At any rate, Carnap proceeds to enunciate the fundamental principles (*Grundsätze*) to which the *Anschauungsraum* obeys:

a) “bond” (*Verknüpfung*). For example, only one line goes through two points or only one place goes through three points (which don't stay on a line);

### 1.3 The role of intuition

The introduction of notions such as “category”, “manifold”, “axioms system” raises the question of the contribution, if any, of intuition to logical and mathematical thinking. Husserl’s answers to this significant question finds a more nuanced and richer form in later writings, especially in *Formal and Transcendental Logic*. Here we find the following theses:

I. Formal analytics is *objectively oriented*.

II. The fundamental structure of objective orientation can be found in the *originary perceptual experience*.

III. Perceptual experience *is not limited* to what is experienced.

IV. The intuited can be made transformed into an *objectivity of higher order*.

V. Formal logic is *motivated by truth*, that is, by an *interest* in the things of the natural world<sup>22</sup>.

These theses connect Husserl’s reflections on the nature of science to the general, running debate between formalism and intuitionism. According to the German philosopher, the foundations of logic lie in intuition - even if intuition is not “an external touchstone or source that would lend linguistic formulations an added character of evidence”<sup>23</sup>. *Evidence* is not something

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b) “ordering” (*Anordnung*). If a point stays between A and B on a line, then it stays also between B and A.

c) “congruence”. If two segments are congruent to a third, then they are congruent to each other.

22 Cfr. J. Dodd, “Husserl Between Formalism and Intuitionism”, in L. Boi, P. Kerszberg, F. Patras (Eds.), *Rediscovering Phenomenology. Phenomenological Essays on Mathematical Beings, Physical Reality, Perception and Consciousness*, Dordrecht, Springer, 2007, p.270.

23 *Ivi*, p.301.

that you can find ready-made. For it is brought to light only by the phenomenological method – the only one which displays the very role of intuition, providing the medium for those passive and active movements that give rise to higher formations of sense. Such movements are guided by different and complex interests (of the subject(s)). Among these interests, the purely logical one is concerned with the *level of meaning*<sup>24</sup> and ultimately with a closed systematic theory of senses (*Sinne*). Pure senses, and the *mathesis* corresponding to them, are to be considered as particular manifold-forms of a scientific theory: e.g. the formal structure called “Euclidean manifold” amounts to a formalized system-form of Euclidean geometry.

All the forms of theories are modelled within the pure region of sense in which a *mathesis universalis* articulates, independently from all explicit questions of truth, all the possible categorial sense-forms. The world of formal axiomatics does not deal with real possibilities even if, according to Husserl, the development of logic cannot neglect the question of *pure thinking* or *genuine knowledge*. As James Dodd puts it, if logic remains within pure analytics, “it will remain an *incomplete* theory”<sup>25</sup>.

Only by treating logic as pure meaning- a theme prepared already by an investigation into the essence of intuition- doors are open for a *reduction* of formalized theory forms to unities of meaning, and successively to those subjective interests which constitute the *sense reservoir* on which all higher theoretical layers are founded. Such a reduction can be taken either, (1), as

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24 Cfr. FTL, 137.

25 J. Dodd, “Formalism and Intuitionism”, in L.Boi, P. Kerszberg, F. Patras, *Rediscovering Phenomenology*, cit., p.303; cfr. also FTL, 140-1.



a move from generalized formal structures to the very life of that thinking which constitutes such structures *eidetically*, or, (2), as a *derivation* from the “something in general” to objects which are now *substrate senses*, i.e. substrates of *predication*:

As the correlate of a *possible* systematic theory, we have a *possible multiplicity*, a possible object-province that it theorizes systematically. When this possibility is left out of account, its place is taken by a multiplicity, -not of objects *simpliciter*, but of supposed objects as supposed- that is to say, *object-senses, as substrate-senses, that are adapted to function harmoniously in a judgment system* as substrates of predications<sup>26</sup>.

However formal this analytics may appear to be, it has sense only within the life of consciousness and its experience of things. In this way, formal analytics, intended as *mathesis universalis*, is reduced to the science of apophantic sense whose interest is in possible truth given to us. Ultimately, “there is always a material side to the most formal of formalism”<sup>27</sup>.

The formal character of analytics does not get lost, however, to the extent that it remains, after all, not an ontology of the something in general, but of a particular region of objects, that is to say, pure senses (*Vermeintheiten*). The question of the reality of objects, with which science is concerned, goes beyond the ontological boundaries of pure sense. Yet this does not mean that genuine logic has no interest in true being; on the contrary, logical thinking reveals itself – according to Husserl - as an ongoing “back and forth” between judgments and objectivities, that is to say, between pure senses and possible objects of truth:

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26 FTL,142.

27 J. Dodd, “Formalism and Intuitionism”, cit., p.305.

*Categorially formed objectivity is not an apophantical concept; rather it is an ontological concept*<sup>28</sup>.

In short, the nominalist focus on language and symbolism fails to recognize that even the most arid and abstract form of logicism (in a wide sense) finds its (final, ontological) resources in the intuitivity of thinking.

#### *1.4 The thing in “Ideas I”*

The link between ideation and geometrical intuition stated above can help us to reconstruct the way by which we arrive to the notion of thing, *from a phenomenological point of view*. In § 150 of *Ideas I*, Husserl considers how the region “physical thing” can serve as a *clue* for a phenomenological investigation. We can arrive to the region “physical thing” through the attitude of *ideation*, proceeding like the geometer does, in the “freedom and purity” of his own geometrical intuition.

Through such ideation, we have evidence of the fact that the *regional idea* of the physical thing- the identical X with its sense-contents- “prescribes rules governing the multiplicities of appearances”<sup>29</sup>. In this sense, as underlined by Ulrich Claesges, *transcendence* reveals itself as a *noetic-noematic structure*, that is, as *modus* by virtue of which natural consciousness, through “Abschattungen” (aspects or sides – or *sense-data* - of an object), posits the self manifesting object.

The totality of (the essence of) the thing however remains transcendent, falling out from the field of the transcendental subjectivity thus defined:

Die Totalität des Wesens scheint in der transzenden-

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28 FTL,145.

29 IPP,I, 361.

talen Reflexion nicht einholbar. Das Wesen wird zu einem X, das in unaufhebbarer Diskrepanz zu dem steht, was von ihm zur adäquaten Gegebenheit kommen kann<sup>30</sup>.

Notwithstanding this inaccessibility of the totality of the essence “physical thing”, we can discover, through *eidetic variation*, that each physical thing-appearance necessarily includes in itself a stratum which is called by Husserl “physical thing-schema”:

...it is the spatial shape merely filled with “sensuous” qualities- without any determinateness of “substantiality” and “causality”... .<sup>31</sup>

Adopting this way of investigating the questions concerning phenomenological constitution, Husserl concludes that all the difficulties regarding the origin of the idea of space can be *reduced* to the phenomenological analysis of the essence of all noematic and noetic aspects in which space is intuitively presented – and, that is, it is constituted as the unity of appearances.

Thus, through our originary experiencing in consciousness, we can arrive at determining the different *levels* and *strata* of constitution of the physical thing:

Every level, and every stratum in the level, is characterized by the fact that it constitutes an own peculiar unity which, on its side, is a necessary middle member for the full constitution of the physical thing<sup>32</sup>.

At the level, for instance, of the perceptual physical thing, we can find many sorts of unity-strata: from the lower order of the “sight things” to the higher level of the substantial-causal physical things. Another level

30 U. Claesges, *Edmund Husserls Theorie der Raumkonstitution*, Martinus Nijhoff, Den Haag 1964, S.50.

31 IPP,I, 361.

32 IPP,I,363.

is that of the *intersubjectively* identical physical thing which is constituted by subjects “understanding one another”: at this level of constitution an important role is played by *empathy* which is the noetic-noematic correlate of the intersubjective world. The constitution of thing is, as a consequence, not a rigid and finite process; it goes through *limitless progressions* in which every positing undergoes confirmation or nullification (in cases, e.g., of illusion or misinterpretation): “[t]here is only more precise determination here, never determination otherwise”<sup>33</sup>.

All these analyses, however, pivot on the fundamental distinction between the physical thing pertaining to the experiencing subject, and the physical thing *qua* determined by physics – with respect to which the “sensuously” given thing amounts to a “mere appearance”, or to something “merely subjective”. At stake, at this point of the investigation, is the tenability of *realism* – according to realism, the appearing thing should be regarded as something thanks to which we can infer something else, something “intrinsically foreign to it and separated from it”<sup>34</sup>.

It is as though, in order to justify the intuitively given manifestations of the things, we ought to recur to entities which are completely unknown to us by *acquaintance*. The “mythologizing” of nature occurs right in this case, when the data of reason are transformed into an unknown world of physical realities which are “hypothetically substructured” in order to explain *causally* the appearing objects.

Such a philosophical approach (which is Russell’s, in 1912), would, in Husserl’s point of view, turn into an

33 IPP,I, 364.

34 IPP,I, 118.

absurdity (*Widersinn*). Put in other words: is it possible a mathematical *experience* of the world? Or is such an experience a *contradictio in adjecto*? Husserl's answer to this question *must* be clear and unambiguous: for phenomenology, experience *in se et per se* cannot be mathematical at all. This is explained as follows:

One does not pay attention to the *evident* sense of the constructional unities produced by thinking, *as constructional*; and one overlooks the fact that here the hypothetical is restricted to the sphere of cogitative synthesis. Not even a Divine physics can make simply intuited determinations out of those categorial determinations of realities which are produced by thinking, any more than a Divine omnipotence can bring it to pass that someone paints elliptic functions or plays them on the violin<sup>35</sup>.

Before investigating further, it is noteworthy to emphasize that *all* the objectivities of higher order, even if founded in the lowest level- that of the *material Nature*- , cannot be reduced to this level, for they present a “novel factor” which demands its own peculiar constitutive phenomenology and therefore “a new concrete theory of reason”<sup>36</sup>. The idea of space depends thus on the spatial aspects of the thing, even if only by means of a *methodological abstraction* we can get the idea of the thing as a mere *res extensa*, ignoring – in this way - the essential properties which characterize the thing as *res materialis*:

Finally, the physical thing is a *res materialis*; it is a *substantial* unity and as such a unity it is a unity of *causalities* and, with respect to possibility, of infinitely complex causalities<sup>37</sup>.

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35      IPP,I, 123.

36      IPP,I, 365.

37      IPP,I,359.

Being space related to thinghood, the analysis carried forward by the phenomenology of constitution cannot be labelled as “theory” or “metaphysics”. What matters instead are *eidetic necessities* found in the thing-noema and correlatively in the consciousness “preventive” of the physical thing.

### 1.5 The thing in “Ideas II”

To begin with, we should take into account that, in pure *phenomenological attitude*, there are groups of features which are not represented in the apprehension. The thing which appears *at rest* and qualitatively unchanged shows us only its sensuous schema, so that it is not a thing in the usual sense, a *material-real* thing.

In fact, the thing occupies and *fills* a determinate sector of space which is an innerly constitutive determination of the thing itself. This sector has a determinate structure which is geometrical and the unity of structure and location is what can be called the *spatial schema*. In virtue of its extension, the thing fills the space as a the unity of a form in a location; for this reason, extension cannot be seen, from a phenomenological point of view, as a “mere piece of space”, because “every alteration of position is an alteration of the extension”<sup>38</sup>.

The “sensuous matter” (*sinnliche Materie*), along with the spatial schema, constitutes followingly a further unity: the unity of the phantom of the thing (*Dingphantom*). A place is a place insofar as it is filled by a *quality* which, for its part, is individuated by the place it occupies:

...the place can never be overlaid at one and the

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38 IPP,II,32.

same time by two (*visual* or *tactile*) qualities belonging to the same genus—whether by two *equivalent* or by two *different* qualities... if the species of the quality is determined and if the place is determined, then... the *concrete individual part* is determined. The *place* ‘makes’ the infima species of quality into an individual quality. The place is the *determination that determines individually*<sup>39</sup>.

It is also remarkable that the concept of schema cannot be merely restricted to one, single sense-sphere:

A perceived thing also has its *tactual schema*, which comes to light in tactual grasping. In general, *there are precisely as many strata there to be distinguished in the full schema as there are to be found classes of sensuous data* which are spread over the spatial extension (appearing as something identical) of the thing<sup>40</sup>.

Up to this point, we have taken the thing in isolation. It is now time to reflect on the fact that it is always in relation to *circumstances* that the thing is what it is. Reality, considered as “materiality”, does not consist only of the mere sensuous schema; there are, in fact, some *functional connections* which relate the schematic modifications of one aspect (of the thing) to those of other aspects.

So long as circumstances remain unchanged, the schema remains unchanged as well; at any rate, there is a rule according to which to *similar circumstances belong similar functional dependencies*:

A steel spring, once struck, executes certain oscillations and runs through certain successions of states of relative change of place and deformation: the spring has the real property of “elasticity”. As soon as a certain impetus is given, there occurs a corresponding

39 PCIT, 259.

40 IPP,II,41.

deviation from the state of rest and a certain corresponding mode of oscillation<sup>41</sup>.

The apperception of real properties include, as a matter of fact, not only their articulation in (given) circumstances, but also the functionally dependent changes of schemata, in such a way that this kind of dependency holds in any given case. By virtue of a “realizing apprehension”, that is, of a kind of apprehension which constitutes the real thing as *substrate* of real properties, then the schema (or phantom) acquires the character of a real determinateness:

Over against the real unitary property, in our example the unchanged Objective color, there stands the momentary real *state*, which corresponds to the “circumstances” and which changes according to rules. The state coincides with the schema; yet it is not a mere schema (the thing is indeed not a mere phantom)<sup>42</sup>.

Thing-apprehension, in other words, sees in the schema as defined not a mere extension filled sensuously - but also a primal manifestation (or “documentation”) of real and causal properties; causal dependencies, according to Husserl, come to *originary givenness*, that is, they are not merely supposed, but also *seen* or *perceived*<sup>43</sup>. It is possible, as a consequence of this, to

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41 IPP,II,45.

42 IPP,II,46.

43 Cfr. CES, §34; in part. Husserl writes: “The contrast between the subjectivity of the life-world and the “objective”, the “true” world, lies in the fact that the latter is a theoretical-logical substruction, the substruction of something that is in principle not perceivable, in principle not experienceable in its own proper being, whereas the subjective, in the life-world, is distinguished in all respects precisely by its being experienceable” (CES, 127). There seems to be some resemblances between Husserl’s and Russell’s conception of perception since they both avoid any reference to hypothetical and not intuitive entities (Cfr. on this matter B. Russell, „Our Knowledge of the External World“, Allen & Unwind, 1926, pp.83-88).Such apparent affinity however does not fill the gap opening



have various (kinds of) graspings of the thing, even if it remains the *identical substrate* of states, related to different circumstances:

There are as many directions of unity prefigured in the causal apprehension of the schema (i.e., directions for possible series or perceptions in functional relation to series of perceptible circumstances) as there is multiplicity in the way in which the reality-thing, the unitary material “substance”, is determinable according to *properties* corresponding to the apprehended sense itself<sup>44</sup>.

### 1.6 Systematic constitution of space

Each body is constituted, according to Husserl, in an *orientation*, and this means that each body is given to intuition in a kind of “quality”, in a location which has its own dimensional modifications.

A body is constituted as a sensuous schema by the sense of *sight* and *touch*, but this is not the end of the story: every sense in fact is a sense only “through an apperceptive conjunction of the corresponding sense-data with kinaesthetic data”<sup>45</sup>. A kinaesthetic field is, in Husserl’s point of view, a field of *continuous* data; it is variable *immediately* and *freely*.

The notion of kinaesthetic field is introduced for the purpose of penetrating as deeply as possible into the phenomenological constitution of the three dimensiono-

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between the very distant position of the two philosopher with regard to the notions of „sensation“ and „sense data“- which, for Russell, ought to be identified with each other, whereas, for Husserl, they must remain separate. Russell later writes: „For reasons explained in „The Analysis of Mind“ I have come to regard the distinction as not valid, and to consider the sense-datum identical with the sensation“ (Ivi, p.83).

44 IPP,II,47.

45 TS,257.

nal spatiality: all spatiality, as a matter of fact, comes to givenness in *movement*, that is, in the movement of the object itself and in the movement of the bodily Ego. It is, as a matter of fact, a *phenomenological law* of constitution that the unity of the object demonstrates itself only in the unity of *synthesis* continually joining the manifold of perceptions:

In our case, it means that an identical and unchanged spatial body demonstrates itself as such only in kinetic series of perceptions, which continually brings to appearance the various sides of that thing<sup>46</sup>.

Visual contents are not sufficient by themselves to serve as apprehensional contents for visual spatiality and for a thing in general, even if only visual and tactile data have the peculiarity of *coalescing* into fields, capable as they are of bringing a thing to *presentation*; classes of sensation that have no fields are therefore incapable of a *projective presentation*:

I am naturally thinking here of the sensations of movement. They play an essential role in the apprehension of every external thing, but they are not themselves apprehended in such a way that they make representable either a proper or an improper matter; they do not belong to the “projection” of the thing. Nothing qualitative corresponds to them in the thing, nor they adumbrate bodies or present them by way of projection. And yet without their cooperation there is no body there, no thing<sup>47</sup>.

According to Husserl however, the incapability of sensations of movement to present any matter does not also apply to the Ego-body - into which these sensations are *inserted* as appearances. If, as a matter of fact, the living body is also a thing, a physical thing

46 TS,132.

47 TS,136.

like any other, it is also, on the other hand, the *bearer* of the Ego which has sensations – sensations that are *localized* in the body itself.

The touching hand “appears” as having touch sensations. If we turn to the touched Object, smoothness and roughness appear as belonging to it. But if I attend to the touching hand, then it possesses the sensation of smoothness and the sensation of roughness, and it possesses them on or in the appearing fingertips. Likewise, the sensations of location and of movement, which have their objectivating function, are attributed immediately to the hand and to the arm, as encased in them<sup>48</sup>.

With regard to visual data, we can have different kinaesthetic situations:

1) *I do not walk or run*, even if I can move my eyes, my head, my upper body. In such case all locations are ordered with respect to depth in such a way that we may arrive at *an absolute limit* of depth;

2) *I walk*: depth, in this case, becomes *relative*; on such basis, the *infinite space* is constituted.

In cases 1) and 2), if the object maintains its identity, two types of change of location can occur:

1a) Changes of location, while kinaesthetic systems keep still;

2b) Changes of location depending on the “I move myself” pattern. At this level, we have to distinguish:

2c) The system of *finitely closed* orientations.

2d) The system of the *open* orientations.

Generally, it seems that, if kinaesthetic systems stand still, and all changes in orientation cease, then

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48 TS,137.

the external body rests; conversely, if there are changes in location accompanied by a kinetic non-change (the lived body stands still), the physical body moves. With respect to my corporeal body: if all environing bodies keep still, displaying a stationary orientation, while I move myself, then my body retains its position as the *null-body* within the orientational system, even if it moves; if however, the environing bodies retain their orientation, while my body stands still, everything is then *objectively* stationary.

Every field is, according to Husserl, a fixed system of locations, and this means that every element of sensation has its corresponding location, its (a) “here”. More specifically, the visual field is a two-dimensional manifold which is, in itself *congruent*, *continuous*, utterly *coherent*, *finite* and *bounded*. All the terms that are appropriate to the visual field such as “line”, “point”, “location”, “shape” cannot be, in Husserl’s point of view, understood in the spatial sense:

As we already remarked, the visual field is not some sort of surface in Objective space. To assume this would make no sense as far as intuition is concerned, any more than it makes sense to assume that “real” points and lines in the visual field *are* points and lines in Objective space, or even that they have any spatial relation whatsoever to spatial points and lines<sup>49</sup>.

A *concretum* in the field can change, so to speak, “*quasi-materially*” – where “quasi-” means here that the parameters involved are not empirically objective, but phenomenological law-like, according to variables such as “quality”, “brilliance”, “saturation” and so on; it can also change in size, shape or location by virtue of kinaesthetic sequences.

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49      TS, 141.

Kinaesthetic sensations lack an *essential relation* to visual sensations, “they are connected to them functionally but not essentially”<sup>50</sup>. Kinaesthetic sensations form continuous multidimensional systems in which continuous unities appear only as sequences, that is, by filling a span of time. To make an example, we assume that a kinaesthetic ocular sensation  $K_1$  is at first constant, the thing remaining stationary too, during the stream of time  $t_0-t_1$ ; in this streaming time then, the visual image  $i_1$  remains constant too. If then  $K_1$  changes, in a continuous sequence, into  $K_2$ , then the image  $i_1$ , during the new span of time, changes also into  $i_2$ .

If  $K_2$  reverts back to  $K_1$ , then  $i_2$  changes into  $i_1$  in the same time span:

In every appearance of a stationary thing, these two factors or sensation are involved, the K-factor and the i-factor. Their relation is one of dependence, as we have just attempted to determine. And the dependence is reciprocal. The same K-sensation is accompanied by the same image, and the same image also by the same K-sensation<sup>51</sup>.

To a complex of  $K$ 's and  $i$ 's is attached an *apprehensional character* which refers to the possible sequences of  $i$  in the total system under the possible kinaesthetic circumstances. *Ideal possibilities of fulfilment* then arise in the elapsing of such system:

In every such nexus of fulfilment, the images are subtended by the consciousness of unity, which is and remains the same, where the appurtenant appearances are fulfilled, under the relevant kinaesthetic circumstances, in the sense of the general type<sup>52</sup>.

50 TS, 143.

51 TS, 149.

52 TS, 157.

The consciousness of unity constitutes the one identical thing as presented identically *through* the images and *under* the relevant circumstances; the continuity of images is a *linear manifold* “extracted out” of a *multidimensional* manifold of possible images which are linked to *K*’s through the unity of the continuity of apprehension: thanks to the latter, *K*’s and *i*’s, in a determinate temporal phase, constitute an apprehensional unity.

In every apprehensional phase, the *i*-component and the *K*-component operate then in the following way:

The former supplies the “intention toward,” the latter the motivation of this intention. The “intention toward” is differentiated and directed in such and such a way under these circumstances *K*. More precisely, the stream of the *K*’s or, to be exact, the stream of these *K*’s, determines by way of motivation the type and form of the “intention toward” in its elapsing. Every phase of the *i*-component is an “intention toward” in such a way that it penetrates the next phase, i.e., penetrates its image, by referring to it and referring through it: here the *i*-component fulfils itself, but it again penetrates the next phase and again is fulfilled, etc., such that every *I* is both fulfillment and fulfilling and is so natural by means of its apprehensional function<sup>53</sup>.

The system of *K*’s becomes more complex when we expand the system of movements: besides the elapsing of kinaesthetic sensations of the eye, designated above as *K*, we can find also the elapsing of kinaesthetic sensations pertaining to the *head*, the *trunk* and so on. In this respect, we are provided, as it were, with a complex of variables (*K*, *K*’, *K*”...) that, as Husserl notes, are *independently* variable in relation to one another, but in such a way that they form a system where each of the variables has a definite value:

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53      TS, 158.

Nevertheless, since the change in the images, i.e., the character of the delimitation and fulfillment of the visual field, is not merely dependent on the individual K-variables, but also on the manifold system (K, K', K'', ...), and since the variation of the K's ( a name for the "K', K'', K'', ...), in the case of the constancy of K, determines new occurrences and manifolds of images of a new type, the intentional system from the very outset is therefore a very complicated one<sup>54</sup>.

To the *closed* system of possible circumstances corresponds a closed system of possible changes in images: if we keep changing our bodily posture, the system of mere eye-movements also undergoes a transformation, in the sense that the system of images, coordinated to this kinaesthetic system, changes. In such case the K modification (pertaining to eyes movements) is not *motivated* only by itself - for, thanks to the changing of our bodily posture, we can acquire new "dimensions" for the constitution of the thing before us. Under such presupposition, there is no more a fixed corporeal posture  $K'_o$ , since now the K's may run through whole series of changes. In such circumstances, the previous identical oculomotor side will also undergo a system of transformations, becoming the "presentational foundation" for a system of intentions which endow the side of the thing with new, and richer, intentional characters. What "remains" identical, in such transformations, constitutes exactly an objectivity of *higher level*.

### 1.7 The stationary thing

Let us start from an absolutely stationary world of things, a world, as it were, which lacks qualitative or phoronomic changes of its objects; *qualitative disconti-*

*nunity* is what gives the oculomotor image separate existence: the figure or object is discriminated thanks to its coloration, that does not blend into that of the surroundings. Change in *orientation* and in *expansion*, in the continuity of the oculomotor fields, creates unities of *appurtenance*, and contains principles of *conjunction*. For, such changes notwithstanding, an *identity* penetrates every constant modification, so that “every part which has arisen as continuous out of one part of the original image presents the same image”<sup>55</sup>.

The same holds for the *concealment*: if an image constantly obliterates another image then, according to a *rule*, the image that is not yet obliterated remains a presentation of the same thing; when nevertheless the movement is reversed the object is continuously built back up:

This constant demolition and rebuilding due to such a concealing Object is a system of modifications which is strictly motivated by the kinaesthetic circumstances<sup>56</sup>.

When an object is constantly concealed, the intentions directed at it, as a matter of fact, become empty, even if they do not lack the character of perceptual intentions, motivated in the motivational nexus.

Let us now proceed to the class of modifications included under the term “expansion”; it can apply unitarily to the whole field or to different pieces of the same.

It holds, according to a phenomenological law, that what pertains to the unity of a continuous expansion also pertains to the unity of a presentation.

Admittedly, it is possible that different types of expansion can indeed be joined into the unity of an object:

55 TS, 208.

56 TS, 208.



Think, for instance, of the case of two mutually bounded surfaces. Let us take simultaneously visible and mutually bounded surfaces of a polyhedron which present themselves in different expansional modifications. Yet the two series of modifications belong together; they pertain to the same kinaesthetic circumstances, they stream on together, and they form in this unitary stream a determinate type of unitary modification<sup>57</sup>.

Expansion moreover can be mixed with concealment as in the case of an undulating surface which undergoes kinaesthetic change.

Under the heading of the modification of *turning*, we require that concealment and unconcealment come into play in a way different from that of acquisition or loss of presentational content. In the latter, what counts is the entering and exiting of parts of images into or out of the oculomotor field.

Husserl distinguishes also between “pure receding” which is a *linear modification*, that is, a kinaesthetic system in which the motivating circumstances vary infinitely in a *linearly orthoid* form, and “pure turning” that is a *cyclical modification* where the kinaesthetic circumstances vary cyclically, bringing back the turning series of images. When, instead, an object undergoes a modification of *remoteness*, the image contracts *in infinitum*, having the “null-point” as the limit; in the reverse direction, we encounter the infinite enlargement of the image. In these cases the appearing side is ever the same; the other sides, as it were, appear through the possible modifications of turning.

Husserl remarks that mere expansion is a modification that is not related to mere change in orientation, because the latter is the displacement or rotation of

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57 TS, 210.

a figure that maintains its identity in the oculomotor field:

As regards expansion, on the other hand, the points do not retain their reciprocal orientation. The concept of expansion implies in the first place, generally speaking, a change in the location of the points in the field. Where all the points maintain their location, we can naturally not speak of a modification<sup>58</sup>.

*Turning*, as distinct from expansion, constantly brings new presentational contents so that to say “the object is turning” means the same as saying that it constantly shows itself from new sides; when a complete revolution is carried out, the sequential appearance of sides brings to appearance the *closedness* of the nexus of sides and therefore makes the complete corporeal surface appear as a closed one. Expansional modification lacks, as mere receding and approaching, the *cyclical* character; it has, as a matter of fact, just the character of “bilaterality” - where “bilateral” means that it has two and only two directions which fuse as opposites into a linear manifold.

The system of stationary manifold exhibits two basic forms of expansion: *turning* and *receding*, and, apart from their combinations; approaching or receding do not imply gain or loss of presentational contents, since they lack any self-concealment or self-unconcealment of the objectual data. In mere receding *stricto sensu*, in fact, the object presents only one side.

The manifold of remoteness is characterized by the fact that it does not proceed infinitely on both sides: with regard to receding, for example, the manifold of remoteness exhibits a *null-limit* where the image contracts to a *point*. As regards approaching, remoteness

58 TS, 213.

involves a positive expansion of an image, ideally speaking, *ad infinitum* - even if, kinaesthetically, the image presents an ideal finite limit.

### *1.8 Qualitative and phoronomic change of the thing*

In the preceding remarks we started from the assumption that the world of things is absolutely stationary, stationary not only in the phoronomic sense but also in the qualitative one. We can consider now the changeableness of qualities, e.g. coloration, of the things involved in experience.

Every thing has its *pre-empirical* form (size, for example) and its pre-empirical qualities (colour, for example) as filling the form in all its parts: both these components can undergo their changes, thus constituting the objective form filled throughout with objective qualities. Coloration, Husserl adds, is, on one hand, variable *independently* of the form, but, on the other hand, it is inseparable from the latter, because it reveals itself as the *condition of possibility* of the concrete form, that is, the *conditio sine qua non* for the constitution of corporeality.

As to the question of how is the thing constituted as identical in (through) qualitative change, we can state that the thing is *what is unitary when the qualities change and the form remains identical*. The thing then is a *multidimensional infinite manifold* of image-modifications, which become the bearer of the consciousness of unity: when, e.g., coloration changes unexpectedly, then the actual perception experiences a leap by virtue of which it no longer elapses in the sense of the original apprehension. In this way, the apprehension

*disappoints* the intention instead of *fulfilling* it - so that consciousness has the form of the “otherwise”.

When coloration changes continuously, kinaesthetics can be absolutely stationary for a certain period of time. In this case, the image endures unchanged with regard to pre-empirical form and location, even if the coloration changes. Passing over to the complete system of kinaesthetic motivations, the image (we see) is absorbed into the infinities of possible modifications, all pertaining to the kinaesthetic systems of the lived body:

In the system of absolute non-change, to every kinaesthetic situation, to every determinate Bodily position (once the coordination is carried out through a first perception) pertains a strictly determinate appearance – one not varying according to color as well as form. And, to every kinaesthetic series, to every determinate change in position, pertains also, as a consequence, a determinate series of appearances <sup>59</sup>.

A second basic type of change is *movement*, first of all, movement without qualitative change, thus mere movement.

What characterizes movement is the fact that the object occupies different locations, thus undergoing a change, even if it remains the same. “Sameness” here means that two co-existing things are completely the same, except for their location, if each of them is constituted in the same manifold of appearances. Their difference can reside only in the kinaesthetic relations, in their relations to other things; in this case, the continuous change does not actually affect the kinaesthetic coordination:

For instance, if I keep my body stationary, perhaps

59 TS, 230.

while sitting, and even keep my eyes still, then, at the beginning of the course of movement of the thing, the image  $\alpha$  pertains to this bodily posture, thus to the determinate K-complex. Now the thing moves. If we extract a phase of the movement, it offers a different image,  $\beta$  as pertaining to the same K (I am still sitting) but to a different time. Thereby, however, this  $\beta$ -image also already pertains to the thing in its initial location, prior to the movement. But in order to reach this image, I must assume a different bodily posture: K'. Due to the movement of the thing, however,  $\beta$  is now connected to K instead of K'. Likewise,  $\alpha$  also pertains to the thing in its new location, but  $\alpha$  is not coordinated to K but to a different K, let us say K''<sup>60</sup>.

### *1.9 The importance of the lived body for Husserl*

It is undoubted that the world of things manifests itself only thanks to the *constituting function* of our lived body.

According to Husserl, the importance of the lived body is due not only to the fact that it is the basis of the three-dimensional space, but also to the more massive fact that everything that appears belongs to its environment. Thanks to the body, I am *at the center* of things, and, for this reason, the “I-myself” is a bodily self, as it were, and thus the “I-center” of all my experiences.

My body then can be conceived as a “null-body” (*Nullkörper*) thanks to which everything in my immediate surrounding is given a *location*. My body, as the zero point in analytical geometry, has the property of seeming always to be unmoving in relation to the surrounding world. The lived body presents *fundamental*

*anomalies* which distinguish it from all other things:

In popular terms, every thing in the whole world can escape from me, except for my own Body... the manifold of images that pertains to the Body has a distinctive kinaesthetic motivation in contrast to other things<sup>61</sup>.

To make an example: when we walk, we do not experience only a movement of the legs in relation to the other parts of the body, but also a movement of the entire visible body through a change in its distance from other bodies. The Ego-point does not recede, it is always co-moved:

The Body moves, but does so without “receding” from itself: the images of it do not change in the sense of “receding”. In this way, therefore, the Ego moves<sup>62</sup>.

The lived body thus is stationary with respect to itself, so that the true *stabilitas loci* is not to be found in God or in the perduring landmarks, but in myself. According to Edward S. Casey, Kant is then right to think that the body is the source of orientation, but he does not show that it is such a source only inasmuch it is the stable center of the perceptual field of the lived body<sup>63</sup>.

Husserl posits between the lived body and the objective space a *Sehraum*, a purely visual space, in order to make the objective space a *lived space*. The visual space has its own system of places (*Ortssystem*) - even if “place” here is conceived mainly as simple location; this assumption would be demonstrated by the fact that Husserl uses *Ort* (place) and *Lage* (position) interchangeably here <sup>64</sup>.

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61 TS, 241.

62 TS, 242.

63 See E.S. Casey, *The Fate of Place. A Philosophical History*, University of California Press, 1998, p.218.

64 See. E.S. Casey, cit., p.218.

Anyway, it seems that Husserl does introduce a new conception of place in a sense - inasmuch as the kinaesthetic motivations make out of the invariably given manifold of places something which is never given without a *K* (e.g. a kinaesthetic sensation). If I feel my own body being or moving in a place, then it influences the way I experience such a place. Casey writes:

And if kinaesthetic self-awareness is itself the basic form that awareness of my body takes (whether this corporeal consciousness be visual or tactile), then it will constitute a privileged entry into place as I actually experience it. Feeling my body means feeling how it is to occupy the place it is in <sup>65</sup>.

Kinaesthetic self-awareness has then the character of spontaneity (*Spontaneität*), and this means that its domain is a system of kinaesthetic situations; the prerogative of spontaneity is that of a “von-mir-aus-Geschehen”<sup>66</sup>, as it were, of an *occurring thanks to me*. Such a system, characterized in terms of spontaneity of the kinaesthetic consciousness, actualizes practical possibilities (*Vermöglichkeiten*) and, for this reason, has the proper character of movement (*Bewegung*).

It is also evident, on the ground of pure phenomenological analyses, that receptivity (*Rezeptivität*)- givenness of appearances without any conceptual apprehension- depends at last on kinaesthetic situations - so that even the most passive layer of consciousness rests ultimately on the active (though not reflective) layer of the same<sup>67</sup>. The interaction between receptivity and spontaneity is then achieved by the lived body

65 E.S. Casey, cit., p. 219.

66 See U. Claesges, *Edmund Husserls Theorie der Raumkonstitution*, cit., p.127.

67 Cfr. L. Landgrebe, “Prinzipien einer Lehre vom Empfinden”, in *Zeitschrift für philosophische Forschung*, VIII, 1954, p. 205.

which functions as a structural regulative system (*Regelstruktur*).

Ludwig Claesges writes on this:

Durch den Leib (als Moment des kinaesthetischen Bewusstseins) wird die Rezeptivität so geregelt, dass *sie nur als Empfindung möglich ist*, d.h. zugleich immer auch als ein Vorkommnis an einer in Raum und Zeit erscheinenden Gegenständlichkeit aufgefasst werden kann<sup>68</sup>.

The foundational correlation between receptivity and spontaneity would thus depend, ultimately on the very uniqueness of the “lived body”: it comes, as a matter of fact, *ahead of every constitution of spatial-temporal objects*, even ahead of that constitution thanks to which it (the body itself) appears as *res extensa*. The lived body is thus not primarily an object, it is much more a structural totality (*Strukturganzheit*), which is *prior to the perceptual and kinaesthetic consciousness*.

Thanks to the lived body and this theory of it, moreover, we get a very deep insight into the foundation of intersubjectivity - since “*la chair est l’oeil de l’esprit. Si l’oeil veut se voir, il doit se mirer en un autre oeil*”<sup>69</sup>. To put it in other words, my comprehension of myself depends on the apprehension by others. Through the “lived body”, immanent time and perceptual space enter into reciprocal communication, thus laying the ground for such an *intersubjective* world. For, in fact, perception already presents itself with a distinctive empathical character, which provides a common world for all (since the start of my living it, so to speak). – In this way, it also happens that the time of consciousness becomes spatialized:

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68 U. Claesges, cit., p. 129.

69 P. Trotignon, “L’oeil de la char”, in A-T. Tymieniecka (Ed.), *Soul and Body in Husserlian Phenomenology*, Reidel, Dordrecht 1983, p.49.



La conscience intuitive que j'ai des autres sujets présente ainsi deux aspects: c'est un caractère transcendantal du moi pur, mais je dois y voir aussi une spatialisation du flux temporel vécu par le biais de ma propre chair<sup>70</sup>.

The lived body, in contrast with other “Gegenstände”, is constituted by the “reflection” (*Reflexivität*) of the tactile system; insofar as it is subject to the availability or “availableness” (*Verfügbarkeit*) of the Ego. Being all the kinaesthetic structures systems of the movements of bodily organs, the lived body reveals itself as an Ego opposed to the outer world:

Dadurch ergibt sich ein doppeltes Verhältnis des Ich zu seinem Leibe. Zum einem muss sich das Ich mit seinem Leibe identifizieren koennen, denn sonst wäre nicht einsichtig, wieso das Ich selber in der Welt sein könnte; zum anderen muss sich das Ich von seinem Leib unterscheiden können, denn der Leib ist eine kinaestetisch konstituierte Gegenständlichkeit, die als solche ein Ich der kinaesthetischen Vermöglichkeiten voraussetzt<sup>71</sup>.

Husserl, however, seems to lack an articulated concept of *lived space* (in the sense hinted at above), even if he resorts to various substitutes of the same: think not only of the notion of “concrete appearance” (*Apparenz*), but also, and above all, of that of “the near-sphere” (*Nahsphäre*) which is characterized by Casey, again, in the following terms:

Thanks to my kinesthesias, I have access to a near-sphere that is a major part of my “core-world” (*Kernwelt*). In and through- and around- this circle of nearness, places are constellated as nearby areas in/ to which I can move. The near-sphere includes the

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70 *Ivi*, p.50.

71 U. Claesges, cit., p. 122.

approachability implied in the “I can” of kinaesthetic awareness. My own near-sphere is in effect the proximal place or places in which I *am* or to which I *can go* (my far-sphere, in contrast, contains places to which I do not have immediate access)<sup>72</sup>.

The *near-sphere* not only fills the gap between the lived body and the place, but it is also relevant for the constitution of space, since the “representation” of it does not arise from pure intuition but from concrete things to which we have access. “Nearness” can be defined as what I can see in a small stretch of time, in a unitary comprehensive intuition, and in a kinaesthetic aspect which is relative to a unified consciousness<sup>73</sup>.

The Husserlian notion of “nearness”, even if more theoretical, can be compared to the Heideggerian idea “closeness”, which, in its turn, presents also additional “existential” overtones. Heidegger thinks of the human implacement in terms of “the aroundness of the environment and Dasein’s spatiality”. “Closeness” represents, from his point of view, very generally the most salient characteristic of the spatiality of the *ready-to-hand* in its familiarity:

The things at hand of everyday association have the character of *nearness*. To be exact, this nearness of useful things is already hinted at in the term which expresses their being, in “handiness”. Beings “at hand” have their various proximities which are not ascertained by measuring distances. Their nearness is determined by the handling and use that circumspectly “calculate”. The circumspection of taking care of things at the same time establishes what is thus near

72 E.S. Casey, cit. p.219ff.

73 See Beilage 73 “Die Konstitution des Raumes in synthetischen Übergang von Nahraum zu Nahraum”, in HUA XIV, where Husserl says, among other things, that “der Raum [ist] konstituiert im Übergang von Nahraum zu Nahraum durch Fernkinästhesen” (S.546).

with respect to the direction in which useful things are always accessible. The structured nearness of useful things means that they do not simply have a place in space, objectively present somewhere, but as useful things are essentially installed, put in their place, set up, and put in order. Useful things have their *place*, or else they “lie around”, which is fundamentally different from merely occurring in a random spatial position<sup>74</sup>.

The richness of the notion of “closeness” as introduced here, associated as it is with terms (pragmatic) such as “familiarity”, “calculative manipulating” or “equipment”, marks its distance from the Husserlian concept of “nearness”, which has very little to do with the pragmatic, “existential” concreteness of Heideggerian “closeness”.

(Anyway, his notions of “closeness” and “nearness” do assume an even more important role in Heidegger’s very late writings. This relevance is indicated by the verbal proliferation of terms like the active gerund “nähernd”, or noun forms like “nearhood” (*Nahheit*) and “nighness” (*Nahnis*). Thanks to *this* nearness, the Open is not enclosed from without, nor gathered as a region, nor located as a thing: it points much more to a *neighborhood*, that is, to the nearness of things and people who coinhabit a place in common.)

It remains now to answer the question about what, in Husserl’s point of view, makes possible the passage from the *near-sphere* to the *objective space*. Spatiality, that is, objective space, is constituted through the *concatenation* of places available to me in my near-sphere: that is, according to Casey, what we call “space” is not just the correlate, as it is for Claesges, of my

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74 M. Heidegger, *Being and Time*, State University of New York Press, Albany, 1996, p.95.

kinaesthetically felt near-sphere – but rather its very *expansion*. In Husserl’s point of view, the apperceptive expansion (*Erweiterung*) of the near-sphere is achieved in a *homogeneous infinite* open world: this amounts to saying that the *emptying* and *amalgamation* of particular spaces, each of which is felt kinaesthetically by the lived body, becomes, in short order, the planiform, absolute space of Newton. All this, however, is possible only to the extent that places themselves depend on the lived body as the I-center or null-point, the “absolute here”, of any given perceptual field<sup>75</sup>.

The lived body, as a matter of fact, is not itself *in* space as a physical object exists in space for it moves *through* space as “indirectly co-localized” in its movements:

My body- in particular, say, the bodily part “hand”- moves in space; [but] the activity of holding sway, “kinesthesia”, which is embodied together with the body’s movement, is not itself in space as a spatial movement but is only indirectly co-localized in that movement<sup>76</sup>.

Only by virtue of the bodily *holding-sway*, am I then able to understand another physical body as a living body in which another “I” is embodied, and holds sway in his or her turn. If we believe that only natural sciences can capture the true nature of things, then, as a matter of fact, we are compelled to think that the *life world* is merely subjective and relative - in contrast to the objective world which exists independently of any human accomplishment. Husserl opposes this view because it does not do justice to the “very subjectivity which accomplishes science”<sup>77</sup>. Husserl’s ambitious

75 Cfr. E.S.Casey, cit., p.220.

76 CES, 217.

77 See on this topic , J. Patočka, *An Introduction to Husserl’s Phenomenology*, Carus Publishing Company, 1996 (in part. chap VIII). Cfr. Also J. Patočka, *Body, Community, Language, World*, Carus Publishing Company, 1998. See in

program ends, as a consequence, with the *radical subjectification* of secondary qualities.

Qualities cannot be treated as geometrical shapes because the former can be only *indirectly* mathematized. The mistake of Galileo is to think that there is “only *one geometry*...without having a second [geometry] for *plena*”<sup>78</sup>. Moreover, it is unjustified to think that there is a *single universal causality* encompassing all worldly things: beneath the natural causality, there is also the spatio-temporality of the pure *Lebenswelt* which has, as its distinguishing mark, an *invariant general style*:

It is in this world that we ourselves live, in accord with our bodily personal way of being. But here we find nothing of geometrical idealities, non geometrical space or mathematical time with all their shapes<sup>79</sup>.

In the positivist *Weltanschauung*, the simple evidence of fact is replaced by the complex abstractness of facts, whose only legitimacy rests on scientific theories. For this reason, the positivist approach to the world is characterized by a kind of *formal legalism*:

...the positivist attitude is not a kind of empirical concreteness, a closeness of science to the most immediately sensitive and common mode of considering the things around us. Rather, historically, it comes into being first as the philosophical adjustment...of the Galilean method as the legal form of science and of “doing” science in Western society<sup>80</sup>.

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part. the fourth lecture “Personal Space: Reflection, Horizon”.

78 CES, 34. Even though Galilei holds the experience of senses in great esteem, these are reduced to a function of scientific theory. See on this topic, R. Romani, “Natural Man and His Soul”, in A.-T. Tymieniecka, *Analecta Husserliana*, vol. XVI, Reidel, 1983, p.133.

79 CES, 50.

80 R. Romani, “Natural Man and His Soul”, cit., p.133.

There is a *primary world* that is not suitable to *direct mathematization* and this world is experienced by the holding-sway (*Walten*) of the lived body at stake in kinaesthesias. Husserl, however, seems more concerned about the investigation into the *lived body* than about a reflection on the relevance of the *lived place*. But, more generally speaking, is not place itself something that is felt *from within* kinaesthetically - and, on the other hand, an *arena* in which perceived bodies appear *from without*?

Husserl here brings us to the very verge of lived place, yet leaves us dangling. We sense that a crucial clue is still missing: something that would show *in concreto* just how lived body and lived place link up with each other<sup>81</sup>.

However, the charge, often addressed to Husserl, of neglecting to some extent the theoretical importance of “place”, does not take into account the fact that there are various passages in his works where the above mentioned link between lived place and lived body is carefully examined.

When he, as a matter of fact, singles out the experience of *walking*, he lets us understand, in some way, how fragmentary and kaleidoscopic appearances can become a coherent *core-world* of lived places. By walking, sure enough, we bring together in one unified spatiotemporal ensemble the *near-sphere* of familiar and accessible appearances and the *far-sphere* of unfamiliar and unknown things. This bringing together disparate spheres, however, does not occur by virtue of a merely looking around (the model of the *Sehraum*), but, on the contrary, by virtue of a moving Body that, prior to unifying its environment, has to unify itself,

81 E.Casey, cit., p.224.

since the lived body cannot walk as if it were disjoint thing. As a body, I am an articulated organism, a total organism, so that it can be affirmed that the first kinesthetic activity of the individual is to unify its own moving body. The *organic self-unification* is the *conditio sine qua non* of the unification of the surrounding world.

This model concerning the moving, lived body also accounts for the orientation- that is *radial*- affected by the moving Body itself. Whereas Kant locates the source of such orientation in the body's *two sidedness*- we have a left and a right hand, a left and a right foot, and so on- Husserl points to that "exceptional position" represented by the *absolute hereness* of the lived body.

The "hereness" about which, at this point of the phenomenological analysis, we are concerned, is not a "shifter" or a *deictic universal* (as for Hegel, at the beginning of the *Phenomenology of Spirit*), that is, a point in principle interchangeable with any other point: if I am "absolutely here", it means that I am *in this place* with *my body*. The place in which my body stands or sits or walks is not a mere *position*, since, with regard to position, the "here" in which I am with my lived body does not depend on any "theres" which, on its turn, must presuppose a pre-given order of coexistent things.

Even though this conceptual autonomy of the lived body's "hereness" is admitted, however, we cannot conclude that the absoluteness here involved amounts to a form of absolute isolation: for my body, in fact, relates to other bodies even if its place does not depend on its the relation with other bodies. The "hereness" we are accounting for is not something *punctual* - because it always extends to near and far spheres of the

body's circumambient core-world; my *being-here* is the absolute product of my lived body and my immediate place, playing together with each other *compositionally* (that is to say, in such a way that the spatial, but also emotional, "perturbations" of the former immediately influence the ones of the latter, and *vice versa*).

Think again about the paradigmatic case of walking. In it, at the very same time, the individual actually moves and yet he or she experiences itself as a stable null-object, oscillating between the modes of *keeping still* and *keeping-in-operation*. By walking, we establish oriented things as identical things and, at the same time, we constitute a fixed system of places (*feste Ortssystem*). It is the experience of walking that accords to place a dynamism which, at first, it completely lacked. By walking we are introduced into the dimension of the lived place which Husserl calls "steady system"; place is no more an isolated position but a *settled set* or a *field* in which things are perceived. Things, on turn, *anchor* and *locate* the *Ortssystem*, even if the kind of anchoring here presupposed has the character of a practical *engagement* which endows places with a sort of animating function.

As expressed, with almost poetic words, by Merleau-Ponty, our own body is in the world "as the heart in the organism":

It keeps the visible spectacle constantly alive, it breathes life into it and sustains it inwardly, and with it forms a system<sup>82</sup>.

Against every formal exaggeration, we comprehend, on the basis of the significance of our lived body, how even the most abstract representation of our surroun-

82 M. Merleau-Ponty, *Phenomenology of Perception*, Routledge&Kegan Paul, 1962, p.235.



ding world cannot escape its “translation” in terms of our corporeality. To give one more example, drawing a plan of, e.g., a house, cannot be completely performed without the mediation of bodily experience:

...for what I call a plan is only a more comprehensive perspective: it is the flat ‘seen from above’, and the fact that I am able to draw together in it all habitual perspectives is dependent on my knowing that one and the same embodied subject can view successively *from various positions*<sup>83</sup>.

The implications we can gain from a new perspective on the *embodiment* of place are now enriched by a further, important phenomenological distinction: between the *body-as-enacting* and the *body-as-enacted*. If the *body-as-enacting* concerns the ideal system of kinaesthetic capabilities, those summarized by the expression “I can” (*Ich kann*)- that work together to go about their different tasks- the *body-as-enacted*, by contrast, displays a certain *sedimented style* of embodiment:

It is at this point that we might characterize the *body-as-enacted* as a “habitual body”—not just as a visible thing that manifests one’s typical manner of making a body and of employing certain familiar possibilities in the service of typical tasks, but as a nexus of specific kinaesthetic tendencies whose reiteration constantly renews the habitualities in question<sup>84</sup>.

To take place - or to embody a place - means for a lived body not only to fill a spatial position but, much more, to put some sedimented kinaesthetic tendencies back into service. It is as though the place, mediated by the lived body, could live and acts as a living creature.

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83 *Ibidem.*

84 E.A.Behnke, “Bodily Protentionality”, *Husserl Studies*, 25, 2009, p.193.

The conceptual relevance of approaching the lived body from the point of view of its *implacement*, its taking place, emerges when we see that, making use of this philosophical perspective, we are eventually able to escape the traditional dialectic between *transcendentalism* and *realism*. The lived body is namely also a physical body (*Körper*) and as such it does not only *found* places - it also, as an extended thing, *finds* places. Unlike Kant, we can say that space is *already* a system of places, and this realist argument becomes effective even when we *walk*, and give attention to this: by walking, we constitute near-spheres, even if walking would have no sense if the places went through were not *reliable* and *stationary* places, that is, places that are *resting* places.

According to Casey, it is exactly by means of the conceptual and phenomenological priority of *rest* that Husserl, even if not explicitly, softens the “transcendental turn” of his later philosophical enterprise, finding in the notion of place - more particularly in its steadiness (*stabilitas loci*) - a way of *reconciling* transcendentalism with realism:

The overall primacy of rest—which reaches an acme in the case of earth, which is experienced as resting *without* moving—bespeaks Husserl’s desire to find an ultimate stability in the transcendental landscape to which he is otherwise so fully committed. By considering rest as “something decisive and absolute,” he establishes an Archimedean point to which all change must be related<sup>85</sup>.

And this is right, in the light of what we explained above. Being the experiential ground for all bodies, the

85 E. Casey, cit., p.227; cfr. also E. Husserl, “The Origin of the Spatiality of Nature”, in M. Merleau-Ponty, *Husserl at the Limits of Phenomenology*, Northwestern University Press, Evanston 2002, p.224.

earth does not move and even does not rest, for “rest” and “movement” belong to higher level of constitution. In comparison with the *horizontality* of the world- due to an “apperceptive transference of sense”<sup>86</sup>- “rest” and “movement” (relating to earth) are acquired and legitimated by a conceptual and historical transformation, the one provided by the Copernican Revolution.

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86 By “apperceptive transference of sense” Husserl intends, by analogy, the way through which the experiential fields of a subject are unified, constituting synthetically and continuously more and more wider representations of the surrounding world. Husserl gives an example of the way this synthesis goes forward: “Openness of the countryside—knowing that I have finally arrived at the borders of Germany—then arriving at the French, Danish, etc., countryside. I have not paced off and become acquainted with what lies at the horizon, but I know that others have become acquainted with a part further on, then again others yet another part—representation of a synthesis of actual experiential fields which mediately produces the representation of Germany, Germany within the boundaries of Europe, and gives rise to a representation of Europe itself, etc.—ultimately of the earth” (E. Husserl, “Foundational Investigations of the Phenomenological Origin of the Spatiality of Nature”, cit., pp.117-8). “Apperceptive transference” serves as reference for confirmative intuitions, and not as a theoretical device “constructed” through demonstration.

## CHAPTER II

### PLENA

#### 2.1 Geometrical idealities

According to Hermann von Helmholtz<sup>1</sup>, the axioms of geometry cannot be considered as synthetic a priori judgments: the free movements of rigid bodies, by virtue of which *congruence* can be justified, cannot be proved on the basis of rational foundations, contrary to what Kant had thought. - Geometry has an *empirical grounding* instead, so that beings living in a space (*Wohnraum*) different from ours could formulate different geometrical axioms. Think, for example, of beings living in a two-dimensional space achieving alternative axioms compared to that conceived by beings living in a three-dimensional space. All this amounts to a demolition of the Kantian argument as expounded in his *transcendental exposition* of the space concept<sup>2</sup>.

Even if Husserl, in some sense, still endorses the Helmholtzian conclusions, he criticizes the German mathematician for having blurred two different meanings of the word “experience”: a *psychological* meaning and a *physical* one. While the first has to do with our representation of space, -which comprises perception of spatial extensions and pure geometrical bodies-, the second, on the contrary, concerns real and external things, that is, material things in the full sense.

In order to explain the origin of geometrical idealities,

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1 See H. Helmholtz (von), “Über den Ursprung und die Bedeutung der geometrischen Axiome”, in Id., *Vorträge und Reden*, 2 voll., Braunschweig 1884, II, pp.1-31.

2 See I. Kant, *Critique of Pure Reason*, Pennsylvania State University, 2010, First Part, Section I, § 3.

we have to distinguish, as a matter of fact, a *justification logic* from a *discovery logic*. The first approach starts from already constituted geometrical formations on which it is possible to “construct” other exact idealities. The way in which these mathematical essences are constituted is, however, not investigated by Husserl. The second, in contrast to the first, starts from an investigation into the idealizing abstraction.

In the first approach, the concern is with the visual field *per se*, while, in the second one, the matter of interest is the visual field presenting a two-dimensional side or the appearance of an object. The *justification logic* neglects the relevance of the objects given in a three-dimensional space, focusing thus directly on the *shape* and *dimensionality* of the visual field. In doing so, it ignores, for the moment, the fact that our ordinary perceptual concern is with objects in space and their shapes and not with the visual field *per se*.

According to the *discovery approach* instead, the visual field comes into real awareness only in the *reflective concern* with the appearance of *objects*; if this theoretical interest is not taken for granted, the risk is that of missing the *motivations* (for example, the exactness of shapes) which bring the subject from the *generalizing* mode of investigation into the *idealizing* one<sup>3</sup>.

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3 John Drummond blames Oskar Becker for having forgotten the discovery dimension of geometric idealities which are to be grounded in our ordinary perceptual concern with objects in a three-dimensional space. Drummond writes: “Becker begins his analysis with the shape of the field and its dimensionality rather than with the three- dimensionality of objects and the manner of their presentation. But our ordinary perceptual concern is with objects in space and their shapes and not with space itself or the field which presents space. The transition to the field as an object of concern, to the field as the starting point for geometric constructions, and the motivation for its contraction to the vanishing point require explanation, but Becker gives none” (J. J. Drummond, “The Perceptual Roots of Geometric Idealizations”, in *The Review of Metaphysics*, vol.37, No.4, 1984, p.800). See also O.Becker, “Beiträge zur Phänomenologischen Begründung der Geometrie und ihrer physikalischen Anwendungen”, in *Jahrbuch für Philosophie und phänomenologischen Forschung*, 1923, 6, pp.399-401.

Besides, the search for the phenomenological sense of geometrical idealities cannot be carried out without taking into consideration the Kantian definition of space and his interpretation of the *a priori*. Kant's notion of *a priori* is indeed permeated, according to Husserl, by two distinct concepts of "independence" which are incorrectly blurred by Kant:

a) "independence" of *a priori* can be interpreted as "not depending on" *existence* or as b) "not depending on", from a logical point of view, any *material content* given by experience. If the first interpretation of the notion of "independence" can be accepted, compatible as it is with the definition of an *analytical a priori judgement*, the second one, in Husserl's point of view, faces some conceptual difficulties, since *synthetic a priori judgements* are grounded on the specific nature of contents. As is well known, Kant would see a priori synthetic judgements, grounded on a specific objective nature, as a *contradictio in adjecto*<sup>4</sup>. But Husserl writes:

It was ominous that Kant (to whom we nonetheless feel ourselves quite close) should have thought he had done justice to the domain of pure logic in the narrowest sense, by saying that it fell under the principle of contradiction. Not only did he never see how little the laws of logic are all analytical propositions in the sense laid down by his own definition, but he failed to see how little his dragging in of an evident principle for analytic propositions really helped to clear up the achievements of analytic thinking<sup>5</sup>.

If, for Kant, space does not represent properties of things *in se*, for Husserl, on the contrary, space is a *formal disposition* of things which systematically prevails over the subjective conditions of intuition. Kant's position on space would then turn, from Husserl's point of view, the very constitution of space into an *absurdity* - since, on

4 See I. Kern, *Husserl and Kant. Eine Untersuchung über Husserls Verhältnis zu Kant und Neukantismus*, M. Nijhoff, Den Haag, 1964; in part. pp.57-59.

5 LI,II,319.

the one hand, space *cannot* be intuited otherwise and, on the other hand, it reflects the *subjective* disposition of intuition, thus introducing the danger of *anthropological relativism* into the heart of the foundation process. The mistake Kant makes is that of conflating a *gnoseological* (*epistemological*) approach to space with a *psychological* one, that is, the universal necessity (*allgemeine Nötigung*) resting on a matter of fact- i.e. the subjective disposition of intuition- with the necessity (*Notwendigkeit*) depending on the *logical character* of something which cannot be otherwise<sup>6</sup>. Psychological necessity, intended as *natural lawfulness* of the functions of the soul, cannot reach the kind of universality required by a transcendental investigation into space; moreover, Kant believes (in Husserl's own interpretation, at least) that only analytical judgments can be fully rationally founded, whereas properly synthetic a priori judgements can be traced back to the *factum* of human faculties:

Kant steht auf dem Boden des formal-rationalistischen Vorurteils, dass im echten Sinne rationale Erkenntnis nur analytische sein könne...synthetisch apriorische nicht, sie entbehrt echter Rationalität. Wir fühlen uns zwar, wenn wir die betreffenden Urteile fällen, gebunden, wissen aber eigentlich nicht, warum. Das Warum erhält seine Antwort durch Rekurs auf eine Faktizität, auf die Eigenheit der menschlichen Intelligenz, die nicht die einzig mögliche ist<sup>7</sup>.

Kant therefore seems (to Husserl's eyes) overwhelmed by the autonomous power of an *epistemological approach* to space, an approach which obscures some pre-phenomenological adumbrations contained in his *Aesthetics*. If, as a matter of fact, the question of space is seen as the question of the manner by which the

6 Husserl points out: "Kant verwechselt die Notwendigkeit und Allgemeinheit, die zum Inhalt der Einsicht gehört und die das Gegenteil zu allem Faktum ist (HUA VII, S.359); cft. also Ms. B IV I/75,76; I. Kern, *Kant und Husserl. Eine Untersuchung über Husserls Verhältnis zu Kant und zum Neukantismus*, cit., pp.117-119.

7 HUA VII, p.359.

subject is affected by the things (that is, as a problem belonging to the “*subjektiven Beschaffenheit unseres Gemüts*” and not as a matter pertaining to the justification of the synthetic a priori judgements of geometry), then the analysis loses its *static character* and is to be inserted into the conceptual order of *constitution*<sup>8</sup>.

It is moreover through *schematization* that reflection on space acquires a more dynamic character. In order to achieve an authentic representation of space, then, bringing it to pure givenness, we have to introduce *eidetic variation*. This which does not, contrary to Kant’s mode of analysis, simply *abstract* qualitative elements from the representation of a thing, but, rather, considers them as irrelevant in themselves. As Husserl points out:

...Kant hat, was hier Notwendigkeit ist, die zu erklärende Sachlage selbst nicht konkret beschrieben. Sonst hätte er gesehen, dass nicht sinnliches Material notwendig räumlich geformt ist, vielmehr dass sinnliche Eigenschaften eines sinnlich gegebenen Dinges notwendig, bei aller Variation, räumlich <gegeben> sein müssen, wenn ein identisches Ding bleiben soll, und dass die Variation der Raumgestalt gebunden ist an die Form Raum; aber nur, wenn ich von Dingen ausgehe, nicht aber von Empfindungsdaten<sup>9</sup>.

Geometrical space, so as it is intended by phenomenology, is not something which can be grasped only by virtue of a mere sensible synthesis, since it is a conceptual representation. This approach to the space of intuition is different from that adopted by Kant - for whom space, as an *object*, can be given to a *formal intuition*:

Space represented as an object (as geometry really requires it to be) contains more than the mere form of the intuition; namely, a combination of the manifold given according to the form of sensibility into a representation that can be intuited; so that the form of the intuition

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8 See P. Ricoeur, “Kant and Husserl”, in *Philosophy Today*, 10,3,1966, pp.146-168.

9 HUA VII, S.358.



gives us merely the manifold, but the formal intuition gives unity of representation. In the aesthetic, I regarded this unity as belonging entirely to sensibility, for the purpose of indicating that it antecedes all conceptions, although it presupposes a synthesis which does not belong to sense, through which alone, however, all our conceptions of space and time are possible. For as by means of this unity alone (the understanding determining the sensibility) space and time are given as intuitions, it follows that the unity of this intuition a priori belongs to space and time, and not to the conception of understanding<sup>10</sup>.

## 2.2 Mathematical and morphological determinations

When the subject tries to describe the world of objects, she is confronted with a series of characters which belong to completely distinct modes of observation: words like “jagged”, “umbrellalike”, “egg-shaped” are very distinct from terms like “triangular” or “spherical”, since the former present merely *vague* and, for this reason, *fluid* determinations, whereas the latter express *logical necessities*. Morphological concepts are *extensional* concepts and this means that the number of objects falling under them is determined in principle; to put it in other words, *the greater the extent of the concepts, the lesser is their content*. Anyway, the above *de jure* distinction does not imply the impossibility to find mathematical determinations in the space of intuition:

After all, in the pre-reflective consciousness of sensory intuition the categorical difference of both types that emerges here does not at all come into view [...] with the use of these non-morphological features in the space of intuition, the subject turns out to be a participant in a differently construed domain of concepts and universality<sup>11</sup>.

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10 I. Kant, *Critique of Pure Reason*, cit., p.128.

11 E. Ströker, *Investigations in Philosophy of Space*, Ohio University Press, Athens 1987, pp.185-186.

The number of things which fulfil intuitively mathematical determinations is irrelevant - since the universality of mathematical concepts is not equivalent to that of the universality of *genera*; the mathematician does not investigate singular formations in order to arrive to *abstractively* higher ones, but, to the contrary, she *directly* seeks for universal structures which will *eo ipso* justify the special cases as well. When the mathematician is confronted with individual formations, she proceeds so, that these are taken as *variables*, which, on their side, have lost any *pictorial* or *symbolic* value. If these were still present, they would represent the *intrusion* of morphological elements into the mathematical conception.

In our unreflective behavior toward the world, things are given “in the flesh”, so to speak. We intend them not in a merely *signitive* mode - so as it happens, for example, in all symbolic thinking. And this means that the objectivity we can reach in the lived space bears the character of *self-givenness*. What, however, establishes the progress from the old geometry to the modern analytical geometry is the complete *dissolution* of pictorial-symbolic intuition in favour of a “signitive” symbolization. This particular kind of symbolization “represents” what is generally meant and understood by means of signs that are very distinct from the “geometrical” picture of the world - and have lost any rooting in our *corporeality*. We have only to think of modern analytic geometry, in which signs are fundamentally distinct from geometrical pictures: signifying e.g. points of space with numbers is a fundamental act, by virtue of which distinguishable extended spatial formations-multifarious in position, size and form- can be mastered collectively by the *constructive order* of the numerical domain, in such a way that a geometrical formation is no more a rigid pictorial-intuitive figure, but something *emergent* from pure number sequences, which are also dynamically capable of capturing its properties. The

analytical conception then *introduces* a complete factual modification of *geometrical meaning* : the Pythagorean theorem, just to make a simple example, will serve no more as means of measuring the line segments of a right triangle, but only for an algebraic state of affairs, that of a pure quadratic form. In this way, as a matter of fact, we can arrive at a great, essential *broadening* of the sense of geometry.

The new concept of geometry then, has no more a limitation to two or three dimensions, since only the *degree of the equation* establishes its geometric meaning. Consequently, the *metric structure* of various mathematical spaces depends on the pure algebraic form of a particular equation, that is to say, the *fundamental tensor*. The algebraic criterion then prevails over the geometric meaning - and all this thanks to a radical transformation of the symbolizing acts which produces the transition from the elementary synthetic geometry to the analytic geometry. While the old geometry used *pictorial symbolic* representations of its formations, the new geometry instead- the analytic one- requires the negation of every pictorial element thanks to sign-symbols. To point out the difference: if, through the pictorially intuited figure, the ideational intention “touches” what is meant, the signitive symbolization points to what is meant by way of different and distinguishable “indices of refraction”: the mode of intending a circle drawn on the blackboard is very different from that contained in the equation “ $x^2+y^2=a^2$ ”. In the latter case what is “represented” in the signs is not the circle but the *functional equation* of it.

At stake is, in this case, a kind of relationship between sign and signified- that is in contrast to that between picture and its object- no longer direct. So, as a consequence, the meant object plays no essential role in prescribing the signifying symbolism. This implies that the sign-symbol can be *chosen* and established through *agreement*. The ray of intention, so to speak, contained

in the signifying mode of intentionality, still encounters the object, but only running through a disrupted path. Along this path are lodged different levels of mediations between the symbol and what is meant. To avoid misunderstanding, we must remark that we cannot think that the aforementioned multi-levelled mediation means (to Husserl, or in general) that the signs-symbols are completely isolated from the objects for which they stand. On the contrary, the apprehension of a sign as a *Sign for Something* is joined into the objective and objectifying acts of the mind themselves - even if it is, in principle, possible for an act to neglect, or even to ignore completely, the specifically geometric meaning of the sign. (Indeed, it is *de jure* possible to ascertain, phenomenologically, the presence of different levels of transcendental constitution, each one characterized by a greater or smaller degree to which we consider, and analyze, the objects for which the signs stand.).

In short, concepts or contents can be given in (at least) two ways:

1. *authentically*, that is, as what they are.
2. *inauthentically* or *symbolically* through the mediations of signs.

How is it that signs can *stand in for* such objects, that can lack, or spare themselves, an authentic cognitive grasp? Signs, according to Husserl, can either *exemplify* the concept or property to which they lead, or they can foster, in our mind, other mental acts, that will eventually grasp in an authentic fashion - the property involved by them<sup>12</sup>. (In calculus, the sign has no affinity with the

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12 Cfr. WPLM, 31 where Husserl writes with regard to symbolic consciousness: "In virtue of the fact that the deputizing signs (changing from moment to moment in relation to the same object) either include in themselves, as a partial content, precisely the property upon which the momentary interest bears, or at least possess the aptitude to serve as the beginning or connecting point for psychical processes or activities that would lead to this property- or even to the full concept involved- and that we can arouse and produce wherever it may be required".

signified to the extent that the former is taken *for itself*. Sign lacks therefore any semantic background, exhausting itself in being purely *operational*. What ultimately counts is not *what* signs mean, but only *how* they can be manipulated and used, or applied.)

The very same thing also holds for the notion of *movement*, when it is transferred from the domain of the lived body to that of geometric objectivities - in which every tie to the world of the lived things is, so to speak, "frozen".

It is true that, in some sense, the concept of movement in geometry-fundamental for the property of *congruence* as it is -serves as a scientific precursor, a kind of *heuristic principle*, for the style of modern geometry. But this fact cannot prevent us from thinking that "movement" is irrelevant in order to grasp the essence of geometry. The application of the notion of movement to geometry, even though geometry itself, at this level, has lost almost all forms of connection to the "real" world, it must retain some characteristics that can also be found in the space of intuition:

- A. The *identity* of the intuited thing in its changes of place;
- B. The *attainability* of any place by paths, chosen arbitrarily;
- C. The *feasibility* of various types of movements.

All the properties mentioned above reveal an existing nexus between geometric notions and their bodily correlates. The problems, however, arise when we find that corporeal movement cannot constitute those conditions required for those geometric notions on which modern geometry is grounded. To make an example, the notion of "edge", seen as the phenomenical boundary of a fixed  
Cfr. also on this issue, D. Willard, "Knowledge", Ch. IV of B. Smith, D. W. Smith (Eds.), *The Cambridge Companion to Husserl*, Cambridge University Press, 1995, pp. 139-147.

body, is, by itself, insufficient to exploit all the determinations contained in the concept of “line segment”.

This concept (and “edge”, or “boundary”) realizes its functions, so to speak, by rendering reciprocally *comparable* some geometric formations which, founded as they are in morphological qualities, could not be related to each other *per se*: the radius of a circle, and the side of a square inscribed in the circle, can be reduced to their *metrical characteristics*- which make them comparable- only if their morphological significance is “bracketed” so that, in the end, what counts is only the formal relationship holding between line segments.

Even though it is certainly possible to “bracket” all the material acquisitions, and remains, of geometry, for Husserl it is a typical phenomenological finding of great importance – though, again, not one without inner tensions – that even the most abstract geometrical formations have their own foundation in the bodily dynamics of a measuring subject. For example, the equivalence and its principles, as established by the *theory of congruence*, can be understood in its really profound sense only if it is “reverted back”, so to speak, to the corporeal motility of the subject, *qua* a geometrically engaged subject. The *kinematic* required for an apprehension of the geometrically engaged subject, however, seems (to scientific thinking at least) not to be really relevant for the grasping of the ideal world of geometry.

### 2.3 *Mathematization of plena*

Having so investigated both morphological and mathematical determinations of space, we can tackle the important question of the possibility of *formalizing*, through schematization, eidetic descriptions. This is a task which amounts, in a sense, to *naturalizing* phenomenology (and its objects).

Such a task also becomes, in a way, the characterization of the mathematical concept of “manifold” in terms equivalent to the fundamental property which characterizes the field of spatial perception as an *amorphous topological continuum*<sup>13</sup>. Sophisticated concepts of differential geometry, such as those of “smooth manifold”, “fibration”, “stratification”, can help us in this enterprise. According to Husserl, perception itself constitutes a *regional ontology*, which includes sensible objects given pre-judicatively, or, “in person” - that is, via aesthetic-noetic synthesis. But, as was anticipated above, this mode of appearing gives us not concrete material things, but only sensible schemata, or phantoms, constituted through adumbrations, *Ab-schattungen*.

Three phenomenological characters of such sensible schemata can be mentioned:

a) the *relation of foundation* of sensible qualities within their spatio-temporal extension;

b) the *saliency* of the form or *Gestalt* characterized by qualitative discontinuities;

c) the *adumbrative* perception.

To begin with, we can take into consideration the formalization of a very simple eidetic description, namely the morphological description of a form, a *visual Gestalt*. In the first chapter of the third *Logical Investigations*, for instance, we are confronted with two fundamental gestaltist concepts, that of “merging” (*Verschmelzung*), and that of “segmentation” (*Sonderung*). Such concepts are strictly related to those of “covering” (*Überdeckung*) and “fulfilment” (*Erfüllung*).

The relation between a particular spatial extension and its immediate qualitative moment is a *functional dependency*, whereas the one between the kinds of ex-

<sup>13</sup> Cfr. L. Boi, “Questions Regarding Husserlian Geometry and Phenomenology. A Study of the Concept of Manifold and Spatial Perception”, *Husserl Studies*, 20, 2004, p.207.

tension and the quality is an *eidetic law* that “legalizes” – or phenomenologically legitimates - the functional dependencies themselves. In §§ 5-7 of the third *Logical Investigation* Husserl clarifies the above distinctions, giving the above mentioned eidetic law the status of “apodictic evidence” instantiating a *synthetic a priori* principle.

In *Thing and Space* Husserl notes that, thanks to the *cohesion* of extension (its *topology*), unity can be conferred upon qualities:

The color-data are not dispersed and without connection; they have a rigorous form, the form of pre-phenomenal spatiality<sup>14</sup>.

Spatiality, then, is a *universal topological format* for sensible qualities and, in this sense, we can affirm that there exists a primacy of extension, since the dependence relation “quality→extension”, even if bilateral (an extension can exist only if it is qualitatively fulfilled and conversely), is fundamentally *asymmetric*:

Therefore the pre-empirical, spatial order lays the foundation. The determinateness of the coloration is the localization in this order, the circumstance that this quality covers this point of this plane, that this spatial part is covered over uniformly and the other part is covered with a different quality or with a different uniformity (with a different density, as it were) and not the reverse...The places do not receive their order through the colors, but instead the colors through the places<sup>15</sup>.

Qualitative discontinuities are, to make an example, discontinuities of the functional dependency “quality→extension” that can be grasped only if discontinuities are contiguously unfolded against the background of the continuously varying spatio-temporal moment. This moment, in its turn, plays the role of the medium for the spreading (*Ausbreitung*) of qualities. For objects to appear (also qualitatively?), then, some segmenting lines of pre-phenomenal

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14        TS, 57.

15        TS, 304.



delimitation must exist; and *segmentability* is a characteristic of the visual field closely related to its spatial order, or its topology, through which a *pre-phenomenal mereology* is provided. A good question, at this point, is to ask which *mathematical status* can be assigned to the regional ontology of perception- an ontology in which such *synthetic a priori* laws (such as the dependence law “*quality*→*extension*”) invariably hold (or so it seems). Such a question is complicated by the fact that - for Husserl - only analytic laws can be completely formalized.

This Husserlian incompatibility between analytic laws and synthetic a priori laws is directly justified, once again, by the difference subsisting between the *vague* morphological essences of intuition, and mathematical idealities such as the geometrical ones:

The essences which direct ideation [*Ideation*] elicits from intuitive data are ‘inexact essences’, they may not be confused with the ‘exact’ essences which are Ideas in the Kantian sense, and which (like an ‘ideal point’, an ideal surface or solid. Or ideal Species of colour in the ideal colour-pyramid) arise through a peculiar ‘idealization’ [*Idealisierung*]<sup>16</sup>.

Husserlian rejection of any morphological geometry leads to a grand opposition, or divide, between descriptive eidetics and science - so that *every* attempt at reconciling phenomenology and science ought to start from the aforementioned task of *naturalizing* the former:

First, we convert the phenomenological descriptive eidetics into a geometrical one. The geometrical schematization of synthetic a priori laws is the key to naturalization. It does indeed provide a non-naively formal version of noematics<sup>17</sup>.

As a consequence, the geometrical conversion of descriptive eidetics must also take into account the following phenomenological terms and laws:

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16 LI,II,15.

17 J. Petitot, “Morphological Eidetics for a Phenomenology of Perception”, in J.Petitot, F.J.Varela, B. Pachoud, J-M Roy (Eds.), *Naturalizing Phenomenology*, Stanford University Press, 1999, p.338.

- a) space-extension;
- b) concrete/abstract qualities, species;
- c) dependence/independence, separability/inseparability;
- d) continuity/discontinuity;
- e) unilateral functional dependency “quality→extension”,  
covering, filling-in;
- f) diffusion, spreading (*Ausbreitung*).

To achieve the important task above, we can follow the paradigmatic schematization of the foundational law *quality→extension*. This process will, in the end, result in the building of a *category* of the relevant mathematical structure<sup>18</sup>. The relevant category of structure is to be found, in the present case, in that of *fibration* or *fibered space*: a fibration, intuitively, is a differentiable manifold  $E$  endowed with a *canonical projection*  $\pi : E \rightarrow M$  over another manifold  $M$ .  $M$  is called the *base* of the fibration, and  $E$  its *total space*. The inverse images  $E_x = \pi^{-1}(x)$  of the points  $x$  (belonging to)  $W$  by  $\pi$  are called the *fibers* of the fibration and they are subspaces of  $E$  that are projected to points in  $M$ .

In our case, concerning the foundational law *quality→extension*, the base manifold  $M$  is the ambient space of the substrate’s extension  $W$ , and the fiber  $F$  the space  $G$  of the sensible qualities under consideration (e.g. the color-space or the touch-space); the canonical projection  $\pi$  schematizes, from a geometrical point of view, the law of foundation, introducing a *dissimmetry* between  $M$  and  $F$  where  $M$  is an *external-extensive* space, whereas  $F$  is an *internal-intensive* one.

Jean Petitot summarizes this point as follows:

The very fact that  $\pi$  projects  $E$  on  $M$  expresses the unilateral dependency of the intensive magnitudes and secondary qualities to the extensive magnitude and the primary space quality: the external space *controls* the internal state<sup>19</sup>.

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18 From now on, I make use of the procedure adopted by Jean Petitot in the above mentioned essay “Morphological Eidetics for a Phenomenology of Perception”.

19 J. Petitot, cit., p.341.

Petitot's categorization of *internal-intensive-* spaces finds its application in neurophysiological as well as technological domains, giving thus a form of concrete reality to the classical project of naturalizing phenomenology. What however about Husserl? Is, in his point of view, the mathematization of *plena* really possible? And in which sense?

For Husserl, science has its origin in Greek philosophy, with its discovery of an *exact* form of *reasoning*, which determines things by virtue of ideas. Science is, therefore, always confronted with the problem of that which "exists in itself, existing in itself over against the multiplicity of subjective manners of givenness"<sup>20</sup>. Hence, the most fundamental question must be the one regarding the possibility of overcoming the *relativity* and *inadequacy* which characterize sensible experience. One way of achieving this task rests on the mathematization of *plena-* colours, smells, sounds and so on- through the *practice of measurement*:

If we adhere strictly to Galileo's motivation, considering the way in which it in fact laid the foundation for the new idea of physics, we must make clear to ourselves the *strangeness* of his basic conception in the situation of his time; and we must ask, accordingly, how he could hit upon this conception, namely, that everything which manifests itself as real through the specific sense-qualities must have its *mathematical index* in events belonging to the sphere of shapes-which is, of course, already thought of as idealized- and that there must arise from this the possibility of an *indirect* mathematization, in the fullest sense, i.e., it must be possible (though indirectly and through a particular inductive method) to construct *ex datis*, and thus to determine objectively, *all* events in the sphere of *plena*<sup>21</sup>.

We can say then that the application of mathematics to the sphere of *plena* amounts to a *disempowerment* of the concretely perceived reality by way of a *replacement* of the phenomenological world through the ideal world of the exact sciences.

The scientific notion of causality, to make one example, has little to do with that *lebensweltlich* concept

20 CES, 301.

21 CES, 37.

of “causality”, expressing as this is just *rough functional dependences*, that is to say, kind of relations not expressible by means of numbers and formulas. We can say, therefore, that the scientific notion of causality undergoes a “shift of sense” (*Sinnverschiebung*), with regard to that employed in the familiar experiences we have with everyday things and their contexts. In some sense, we admit that the sense of the notion of “causality” used in our *commercium* with the life-world is hidden by the scientific notion of it.

Galileo, the discoverer —or, in order to do justice to his precursors, the consummating discoverer— of physics, or physical nature, is at once a discovering and a concealing genius [*entdeckender und verdeckender Genius*]. He discovers mathematical nature, the methodical idea, he blazes the trail for the infinite number of physical discoveries and discoverers<sup>22</sup>.

Contemporary thinking knows here a difficulty that, perhaps, was not seen in all its severity in Husserl’s (and Russell’s) times. Even though, since those early times, and more intensely in the last fifty years, there were many valuable attempts to “naturalize” so-called *qualia*, as a matter of fact it is very hard to identify the sensation of heat we feel when we are, say, near a heater with the *numerical* quantity of heat expressed by *causal* laws of physics. If, however, the task of the mathematization of the spatio-temporal world seemed to be so easy, because of the *content homogeneity* between experiential formations and idealized formations, the same task encounters many difficulties if we are confronted with the world of *plena (Fülle)*<sup>23</sup>. Their measurability can be attained only by virtue of a method which, in some way, brings back these determinations to those which can be found only in the extensional world of idealized objects. This operation, even if *indirect*, is achieved, according to Husserl, via the employment of *causal quantitative laws*

22 CES, 52.

23 Cfr. CES, §16.

which define exactly the *functional contexts* in which *plena* dependencies manifest themselves<sup>24</sup>. (In a sense, “naturalization” had a different meaning to him.)

At any rate, the *plena* we experience in the *Lebenswelt* belong to a conceptual order which cannot be reduced to that to which the mathematized *plena* pertain: sensible qualities can be seen, touched, smelled, whereas mathematized *plena* have their home solely in the domain of reason, and are, as such, *abstractions*. The (partial) mathematical schematization of sensible properties has thus relevant consequences for the notion of the phenomenal world in its totality:

The phenomena are only in the subjects; they are there only as causal results of events taking place in true nature, which events exist only with mathematical properties. If the intuited world of our life is merely subjective, then all the truths of pre- and extrascientific life which have to do with its factual being are deprived of value. They have meaning only insofar as they, while themselves false, vaguely indicate an in-itself which lies behind this world of possible experience and is transcendent to it<sup>25</sup>.

To achieve the mathematization of the world of experience, science has only two choices: the first one is *ontological*, whereas the second one is *epistemological*. If the *ontological* move establishes the mathematical reality of the world, the *epistemological* one supports the idea that only what is mathematizable- construed in mathematical terms- can be true.

Acceptance of both hypotheses, however, brings to a clear absurdity: if the objects of the world are idealities, what kind of experience can correspond to such a world? Isn't the mathematization of experience as absurd, in its consequences, as the complete reification of idealities turns out to be? Indeed, if experience has to retain its rooting in perception, and if perception cannot do

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24 Cfr. CES, 301-314.

25 CES, 54.

without resorting to consideration of those singularities, with which the world presents itself, then its (complete) mathematization would also amount to the utter loss of its fundamental prerogatives. (Compare what was said above about *qualia* – an otherwise non-Husserlian concept.)

However, the ensuing impossibility, according to the phenomenologist, of experience being mathematized, at least directly, does not necessarily preclude its objective validity, for Husserl. What we experience has meaning only insofar as it points to an open horizon of possible perceptions, that is to say, to a systematic multiplicity of all possible perceptions included in what we experience. The flow of our experience is not casual, but is sustained by the *harmony* of our total perception of the world. Moreover, the flowing world-perceiving of a subject is not isolated but, on the contrary, shared with other living beings:

Thus in general the world exists not only for isolated men but for the community of men; and this is due to the fact that even what is straightforwardly perceptual is communalized<sup>26</sup>.

The kind of the world knowledge we can accomplish then is not that of something *in se* and *per se* but, much more, of something whose validity is given *relatively* to an experiencing subject in contact with other subjects. This way, an “intersubjective harmony” of validity is established, which seems to have nothing of the ontological fixity pertaining to the classical philosophical investigation. What, in the end, counts is not the grasping of a timeless *eidos*, but, on the contrary, the acquisition of those *conditions of normality*, under which our experience of the world is *intersubjectively justified*. The search for intersubjectively justified experiences is a limitless enterprise, since every particular experience, even if intersubjectively grounded, implies, in its turn, a “whole horizon of nonactive [*nicht aktuelle*] and yet

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26 CES, 163.

cofunctioning manners of appearance and syntheses of validity"<sup>27</sup>. For this reason, every acquisition of experience is subject to the *universal a priori of correlation* according to which past and present correlations predelineate, by virtue of essential motivations (and not causes), new correlations, which further incite us to inquire into new horizons of experiences.

The way we experience the world, and the things contained in it, is *dimensional* and *horizontal* - and this means, once again, that what is experienced is not a *mere aggregate* for it has a *typic*, a *style*. According to Merleau-Ponty, the apriority which allows us to experience the world is a "horizon of humanity" - that is, it is a "determinate indetermination" which finds, a priori the *Einfühlung* of beings other than me:

We are in humanity; we are of it: in the horizon, there is no subject and object. We are like others; we are, like others, drawn out of this horizontal being, divergences or variants in relation to it<sup>28</sup>.

On the other hand, the communalization of the world is due to the above mentioned horizon of humanity which, in its turn, rests and depends on language<sup>29</sup>. Language - intended by Merleau-Ponty as the ability to express (*aussprechen*) - constitutes things insofar as it *expresses* them and, in so doing, it makes things part of the shared horizon of humanity.

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27 CES, 159.

28 M. Merleau-Ponty, "Course Notes", in Id., *Husserl at the Limits of Phenomenology*, cit., p.36.

29 Merleau-Ponty underlines: "The horizon of humanity understands language (it gehört <"belongs"> to this horizon), language understands the openness to the horizon (the horizon depends on language, has a hole cut into it by language)"(Ivi, p.37).

## CHAPTER III

### SPACES

#### 3.1 Spaces

We ought to reject, at least from a phenomenological point of view, the thesis that space is given only if it is accessible to *measurement*. Space is a *condition* of measurement, and not a mere *medium* of measurement; for in its most primordial, and ontological, form, it does not have a *numerical* or *quantitative* determination. According to Elisabeth Ströker, the primary characteristic of space lies in its “being a quality and an expressive fullness”<sup>1</sup>. Space conditions, in some given way, the existential dimensions of an *attuned being*, the human being; and can, for this reason, be generally characterized as *attuned*. It is further articulated in a space of *labour*, *leisure*, *pain* and so on - and it can be *loved*, *feared* or *avoided*.

To *understand* what an attuned space is, we cannot recur to perception or cognition; we need, on the contrary, a *comprehensio* which resembles a mode of *being moved*. In this sense, attuned space escapes all the conceptual determinations of thought, founded as they are on the *opposition* between subject and object. The experiencing of this space also has nothing to do with an *oriented engagement*, for it lacks intentionality. Understanding shows here the value of an expressive activity, a form of communicating with the world, and as such it presents itself as a “pre-reflective orientation” toward the world itself. Space, in this particular sense, has not only to do with spatial determinations, but also with *temporal* ones: we frequently talk about the space of our future and our past, of our wishes and hopes.

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1 E. Ströker, *Investigations in the Philosophy of Space*, Ohio University Press, Athens 1987, p.19.



Attuned space is accessible only from its *fullness*, that is to say, we encounter it *via* the character of things “in” it. We have to warn here against preconceptions about the notion of “thing” in an attuned space: our conceptual thought, with its categorial distinction between “property” and “thing”, ought, as a matter of fact, to be abandoned at this level of the analysis about thinghood. Thing, in an attuned space, is the *bearer of (an) expression* - and, as such, has no perceivable properties; on the contrary, it is the very *character* of things which *strikes us*<sup>2</sup>.

Furthermore, in attuned space there is no distinction between primary and secondary qualities, since even the *size* of the things is far from being a mere quantity. Their size is, as a matter of fact, a moment of the *expressive totality* of the things we encounter; size and form are certainly the constitutive factors by which we apprehend, for example, the *perspectivity* of space, and all those determinations related to it, such as *centricity*, *orientedness* and *finitude*. But all this is significant only from a *physiognomical* point of view - for, in the attuned space, what counts is the *spatial atmosphere* which envelops it. To avoid misunderstandings, we cannot assume that attuned space is not perspectival, even if perspective is not a *structural property* of it: the expressive moment related to the perspectival order of the attuned space is given in it, just because of the fact that the experiencing subject does not live without any presupposition of the objective space:

Attuned space therefore bears determinations that allow it to appear as profiled against the background of the pure space of intuition: thus it is never free from determinations of the latter<sup>3</sup>.

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2 See on this topic L. Klages, *Ausdrucksbewegung und Gestaltungskraft. Grundlegung der Wissenschaft vom Ausdruck*, Leipzig 1923.

3 E. Ströker, cit. p.24. Stephan Grätzel warns against the danger of thinking that a space is constituted and experienced apart from the contribution of other spaces. To make an example, the *Lebenswelt* is contaminated by the geometrical space: “Diese Form der Welt aber ist genau genommen ein Kunstprodukt, obwohl

Only in a *purposeless lingering* does the attuned space yields itself fully and completely (to us): in such a space the “there” and “yonder” of things are not pure positions in space, so that they may be arbitrarily and externally interchangeable for the position of things. Rather, in the attuned space, positions themselves belong to the *expressive power* and *physiognomy* of the things: the pieces of furniture of home do not belong in a great marketplace, nor church windows in an office.

In an attuned space, events keep most of their *coherence* (what Husserl also calls “integral togetherness”) for, even if unprecedented, they take place within a *stable* and *familiar* world. The unity of sense by which our world-apprehension is characterized does not leave out the possibility of a *dissonance* and, consequently, of a *disintegration* of such unity. In such circumstances, the meaning of the events suddenly falls apart and ceases to cohere. This is what probably happened, for many, on September 11<sup>th</sup> 2001, just when the second plane impacted directly the second tower of the World Trade Center<sup>4</sup>.

Attuned space is free from differentiations of *orientation*, for this is characterized by two factors: on the one hand, orientation presupposes *differentiable zones*, determinable positions, that is, a “here” and “there”; on the other hand, it implies the possibility of a *movement* which appears as *directed to* and oriented. Orientation is, additionally, structurally tied to the formation of a

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sie uns als idealisierte und sogar konstruierte Welt umgibt. Denn die Lebenswelt ist komplett vermessen und konstruiert. Der Raum in dem wir uns aufhalten, ist ein durch die Technik verwirklichter, konstruierter Raum” (S. Grätzel, *Raum-Zeit Kausalität. Propädeutik der Praktischen Philosophie*, Turnshare Ltd., London 2008. p.34). Husserl too is aware of the splitting of our space experience: “So familiar to us is the shift between a priori theory and empirical inquiry in everyday life that we usually tend to separate the space and the spatial shapes of experiential actuality, as if they were one and the same” (CES, 24).

4 Cfr. D. Welton, “World as Horizon”, in D. Welton (Ed.), *The New Husserl. A Critical Reading*, Indiana University Press, Bloomington, 2003, pp.224-5.

center, that can be constituted by a corporeal subject<sup>5</sup>. The latter appears, in one respect, as an *acting body*, as the point of departure of *goal-oriented activity*, and, on the other aspect, as the point of reference of sensory intuitions. A fundamental, and formal, determination of the space of action is the “wherein” of all possible activities *projected* and *realized* through the “lived body”. This body must be seen as capable of *manipulating implements*. The subject, however, does not merely *employ* these implements. He or she does much more than this, s/he *understands* the use of them, basically because of the fact that the equipment itself is manufactured according to the geometry of measure and the theories of physics:

...coming into contact with the art of measuring and the guiding it, mathematics—thereby descending again from the world of idealities to the empirically intuited world—showed that one can universally obtain objectively true knowledge of a completely new sort about the things of the intuitively actual world, in respect to that aspect of them (which all things necessarily share) which alone interests the mathematics of shapes, i.e., a [type of] knowledge related in an approximating fashion to its own idealities<sup>6</sup>.

When the expressive world of attuned space dissipates into the space of action, then the *expressiveness* of things grows into their *qualitative* characteristics - to the extent, at least, that qualities are required for the utility of things:

Thus they lose their effective and communicative physiognomy; now they reveal their suitability or resistance “in view of a goal”<sup>7</sup>.

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5           Stephan Grätzel writes on this topic: “... Ich- als Leib-Subjekt- bin jetzt hier in diesem Raum. Mein Bezug zu diesem Raum ist nicht auswechselbar. Deshalb wird dieser Raum von mir aus erschlossen und ausgerichtet... Die Welt ist in dieser Weise ausgerichtet, hat also die vom Leib ausgehenden Richtungen der Lebenswelt, die auf den Leibraum zurückgehen” (S. Grätzel, cit., p.34).

6           CES, 32.

7           E. Ströker, cit., p.50.

The usefulness of entities is opened into *projects* of an activity, which in its turn involves specific modes of seeing, those mode that are called by Heidegger “circum-spection”<sup>8</sup>. The space of action has thus a *dynamic texture*, since it implies a *temporal* moment: as an acting being, the subject comes up to this very moment in her full *historicity*, finding herself, that is, in an already acculturated world, participating in its constitution. The space of action is articulated according to *place* and *region*.

Place is characterized as the “locus” of what is usable according to the aims of the acting body, that is to say, as the locus where *implements* belong. Yet *belonging* to a place is not identical with the *appertaining* of implements to a place: implements belong in a place that is *variable* within a broad limit, without a loss of their character of specific instruments. For instance, I’m in the office, and I move my pen holder from the left side of my desk to the right one. Such displacement does not remove the *ready-to-hand* character of the pen holder.

It is possible, as a matter of fact, to attach to the term “handiness” two different meanings: on the one hand, it means *adaptability* to the organization of the lived body, that is, it includes the sense of what is *tailored* to a body, which *projects* something. On the other, “handiness” means *having in hand* something that is comfortable and useful, containing thus a *principle of economy*. It is this *second* sense that is related to the notion of place, being an actual *function* of it:

For a thing to have “its” place as an instrument means that the place is constitutive not simply for its mode of being ready-to-hand per se, but for its handiness within a project. In order to be handy, to refer to a project, it must be empowered by the choice of a subject.<sup>9</sup>

A ready-to-hand thing can be prepared, appropriately

8 Cfr. M. Heidegger, *Being and Time*, cit., secs. 15-16, pp.62-70.

9 E. Ströker, cit., p.53.

placed, accommodated and even misplaced. Such characteristics do not belong to the things of the attuned space, that has places less *provisional* than those of the space of action in its variability. From this, it also follows that the place of an implement cannot be fixed without an *index of variability*, and it is this property of implements that anticipates some structural characteristics of the (concept of) *region*.

In a project of action, however, implements are always “transgressed” toward a possible *totality of involvements* - so that every ready-to-hand has its applicability in a larger functional context: every “where” is, at the same time, a “whence” and a “whither”, as well as every “there” points toward other “theres”. In contrast to things that have a place assigned to them by a living subject, this last kind of thing, in its turn, “assigns” its own place to itself.

Every functional context of implements is, as a matter of fact, ordered and articulated by virtue of a “here”, which is *singular* and *not-relativizable*, even if freely chosen.

The “here” mentioned above, that is, the place of the “lived body”, is not a place of instrument which could be, *in principle*, distinguished from other places occupied by other implements. The latter are all equivalent among themselves, compared to the place of the “lived body”. If “here” and “there” are essentially distinct, all the “theres” allotted for ready-to-hand things are *interchangeable*.

But, if the “theres” result interchangeable, the “here” instead is an incomparable *locus*, being the *center* thanks to which everything is *what it is*. Because of the *non-equivalence* between “here” and “there”, the space of action is *non-homogeneous*. Moreover, the acting subject is also a living corporeity to the extent that he cannot choose not to be corporeal at all, even if he can, in some

way, *transcend* his corporeality by having it fully at her disposal, for example moving herself in order to reach the things there in the world. As a subject, I can orient *intentionally* (that is, non-spatially) myself toward the world. From an ontological point of view, the spatiality of the corporeal subject can be characterized *dimensionally*: she is oriented toward a “there” in the world and, at the same time, she *finds herself* at that “there” that, in its turn, can threaten the corporeal subject:

This dual determination of the lived body is the reason why its locus in the space of action is graspable only as a region<sup>10</sup>.

The threatening of things located *there* with regard to the *here* seized by the corporeal subject can be made evident by the phenomenon of *leeway*: if the *leeway* is too limited, then things, too near to the corporeal subject, become unhandy, overlooked and even dangerous for her. In this case, the space of action undergoes a process of *destruction*, resulting finally in the change of place and of the here-region of the corporeal subject; implements therefore are no more felt as *useful* things in order to accomplish a project, but as *resistant* and *disconnected* entities. The space of intuition, as regards that of action, is also an *oriented space* with its center in the orienting corporeal being, which encounters things *above* or *below* others, to the *left* or to the *right* of them.

The topographical features of such a space depend only on the assumption of a *standpoint*, to the extent that the order subsisting between things is not a *pure relation* of positions, nor a *constellation*, but rather a *situation*, that is, an *emplacement of accomplishments of a subject* in a given “here and now”. In comparison with the space of action, as a matter of fact, the qualitative differences of dynamical forms (e.g. grasping an object with a left or right hand)- which ground the orientational oppositions- are *levelled out* and *reduced to a minimum*:

10 E. Ströker, cit., p.59.

the *anisotropy* of the space of action is here *equalized*:

The differentiated activity of the left and the right hands in grasping disappears completely in the space of intuition. When the hand is used to point- in its only function within the space of intuition, a function intermediate between grasping and seeing- left and right are equivalent<sup>11</sup>.

The opposites “front” and “back”- which in the space of action undergo a pronounced opposition- lose, in the space of intuition, their reciprocal tension even if the latter remains, after all, a *frontal* organized space, so that seeing toward the back, so to speak, is *functionally* impossible.

In sum, attuned space, in comparison with spaces of action and intuition, is experienced as a *surrounding fullness* - whereas the space of action confines the effectiveness and the potentialities of the back-sphere, and the space of intuition loses *completely* the back-sphere itself, since the “lived body” has things exclusively *over against* itself.

The “lived body” thus presents itself, from a phenomenological point of view, as a *dual polarity* consisting of:

a) an *inner-spatial there* of things - against the *here* of its position;

b) a non-spatial tension between a *spaceless subject* and a space *constituted* by a subject.

From all the above it follows that the question of *how* the corporeal subject can draw the conception of a unique objective space - on the base of the perspectival space of appearances given to him - can possibly never be answered in an exclusively *reflective* attitude:

His monadologically spatial world is nothing else than the *mode and manner* in which he as a *corporeal* subject already has the presence of “the” space<sup>12</sup>.

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11 E. Ströker, cit., p.91.

12 E. Ströker, cit., p.93.

### 3.2 *The tactile space*

Being the sole *directly* perceiving sense, tactile sense has the character of *reality* and *primacy* for all sensory knowledge<sup>13</sup>. Tactile phenomena can be recognized as *bipolar*, for they contain a *subjective* (related to the lived body) and an *objective* (witnessing the objective characteristics of the things) components. Thus, on the one hand, the tactile sense explores the manifold of locations of the given; but, on the other hand, it reveals *mode* and *manner* in which corporeality is given to tactility self, that is to say, through *sensations* and *kinesthesia*.

Some answers to the fine questions of the constitution of tactile space come from neuropathology: patients lacking all optical representations (blind persons) will have to resort for localization to purely tactile data, thereby confirming the autonomy of the tactile field. It is important to stress, however, that one thing is to approach tactility, assuming there is a manifold of positions accessible to touch in an otherwise pre-given space, quite another thing would be to assume that *spatiality itself is primarily constituted in tactility*. If we cling to the second thesis, we ought to admit that tactile space is completely different from the visual one. Husserl distinguishes with the following words the two sorts of space:

Die in der lebendigen Gegenwart erscheinende Welt bietet sich in einer Persektivierung von nah und fern und zwar so, dass eine Nahwelt als eine in gewisser Weise optimale Kernwelt ausgezeichnet ist, nämlich als solche, die innerhalb der lebendigen, eigentlich perzeptiven Gegenwart einem Umkreis optimal zugänglicher Dinge enthält, die man willkürlich heranruecken kann..., um sie in einen absolut optimalen Aspekt zu bringen...<sup>14</sup>

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13 Cfr. M. Palágyi, *Weltmechanik*, Ges. Werke, Bd. III, 3rd Lecture, Leipzig 1925; cfr. also D. Katz, "Der Aufbau der Tastwelt", *Zeitschrift für Psychologie*, 11, 1925.

14 Ms. D 12 III, 1931, S.6.



Anders für den haptischen Raum: hier gibt es keine innerhalb des Verfügungsbereiches der Kinaesthese sich vollziehende Annäherung und Entfernung. Das Tastphantom ist entweder in einer optimalen Nähe, sofern es tatsächlich getastet ist, oder es ist taktuell völlig abwesend<sup>15</sup>.

Thanks to the above described properties, according to Husserl the sense of touch serves as “Nahsinn”, that is, as the *sense of nearness*. In a touch field, it is possible to have not only experiences of nearness, i.e. the degree zero of nearness, but also of *farness* - to the extent that, when the “lived body” moves away through space, an object disappears from the domain of the sense of touch itself:

So vollzieht sich durch die Kinaesthese des Gehens auch eine ständige Erweiterung der haptischen Nahsphäre (die Sphäre der im Stillstehen tastbaren Dingen) zur haptischen “Welt”<sup>16</sup>.

At any rate, all the above described characteristics of the touch sense do not mitigate the problems that we have to cope with, when we try to treat this sense from a phenomenological point of view. At a first glance, any phenomenological concern with the sense of touch is hampered by the *pre-given interlacing* of the tactile and the visual “thing” in (complete) perception. Even if we can conceive of a touching corporeality that does not require any additional sensory functions for its operations, it can, nevertheless, be comprehended fully only in terms of a being that comprises, in itself, the *functional unity* of both touching and seeing.

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15 Ms. D 12, III, 1931, S.3.

16 U. Claesges, *Edmund Husserls Theorie der Raumkonstitution*, Martinus Nijhoff, Den Haag 1964, p.93. Husserl writes with reference to the nearness and farness of the touch sense: “Im eigentlichen ‘Gehen’ als Lokomotion vollzieht sich die Synthesis der Nahräume, auch hier haben wir Nahraum mit orientierter Darstellung, ein Hier und Dort, und alles Dort um ein Hier geordnet. Haptischer Nahraum ist perzeptiv konstituiert durch Stillstehen der Geh-Kinaesthese, die Aussendinge darin, die wirklich perzipierten, in der Koexistenz führen sie die Potentialität mit sich, noch andere wiederfinden und sie selbst wiederfinden zu können” (Ms. D 12 III, 1931, S.4).

Neglecting, for the moment, these peculiarly phenomenological difficulties, and trying to describe abstractively the properties of the sense of touch, we can, as a first thing, remark that the world is given to the sense of touch as *standing in opposition*: that is, touch touches *something* which confronts it, and produces the experience of the thing's *resistance*. To the resistance of the tactile material is tied to another fundamental characteristic of tactility, that is to say, its *continuity*. Such a continuity seems not to presuppose the integrating function of the visual representation, since the tactile *continuum* presupposes another kind of spatial continuity. The blind person, for instance, does not touch *point for point* her surroundings etc., for she would then miss the givens of the visual capacity utterly, and helplessly. Rather, she acts as she does for the reason that she wants to inform herself about size and form of the objects - whose tactile continuity is *already* presupposed by default.

Certainly, in contrast to the visual continuity, the touching continuity is not given *simultaneously*, but *successively*: in this sense, the tactile sense is a *motile* sense. The order of succession of the tactile positions is given as such only in relation to the successive continuity of the movement of the corporeal members, which are, in their turn, experienced *from within*, that is, kinaesthetically, as a continuous succession of corporeal phases of movement. It is, therefore, the continuity of movements constituted in touch which founds, in a sense, the very continuity of the visual field (as a presupposition).

The touching corporeality experiences not only material properties - such as hardness or softness - but also form and size, so that the distinction between primary and secondary qualities takes place *originally*, for Husserl and for us, in the *touching* corporeality. The above distinction, however, does not exclude the fact that every quantitative determination remains, in some sense, attached to a qualitative determination, to the extent at

least that the former is completely *incorporated* in the multifarious movements of the corporeal members. In contrast to the visual field (where each individual aspect contains an *indication* toward other aspects so that every anticipation “horizontally” follows a predelineated style), touching lacks any kind of co-given indications or anticipations.

The resolution of every touching anticipation has, in contrast to the visual fulfillment, a certain degree of uncertainty - so that only the *actual* process of touch, surface for surface, form for form, can bring about the total determination of the object for us. In addition to this, *the tactile manifold has no nearness or remoteness* since the touched object lacks any spatial distance to corporeality. Because of this lacking of objective distance between the touching body and the touched thing, the tactile manifold does not even have a *perspectival structure*.

The above conclusion is, however, only partial, since even touch can reveal a particular *order of depth* in some cases<sup>17</sup>. The “lived body”, as a matter of fact, is a thing among other things, but also a feeling body that feels *from within* - for tactile impressions can be experienced more or less *peripherally*, so that the quality and intensity of the touch impressions can be traced at various depth levels. By touching, e.g., our body, we experience not only the *outer* (touched) surface of it but also the *inner* condition or state of a feeling-and-felt corporeality. In this way, we can affirm that the depth experienced in touch- compared to that perceived in the visual space- “remains halfway between inner and outer”<sup>18</sup>.

### 3.3 Hermann Schmitz’s “feeling space”

The notion of space can be enlarged so as to inclu-

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17 Cfr. E. Ströker, cit., p.136.

18 *Ibidem*.

de Hermann Schmitz's "feeling space" (*Gefühls Raum*). Schmitz is concerned - in his *System der Philosophie* -with the notion of "enclosure" (*Umfriedung*): building a house or setting up an apartment is more than constructing a box, or a shell, that will protect us against warm or cold weather, for it really amounts to the constitution of an *indoor space* (that will shield us from an *outdoor space*). Such a space may have, for instance, the function of *hindering* the undesired people from getting inside. For this reason, the indoor space carries out- through *locking* and *opening*- interactions with the surrounding space. According to Schmitz, this interaction provides for the constitution of a particular "atmosphere" and "climate"<sup>19</sup>.

The inside of a space is thus confronted with the threatening moods - and atmospheres -of an outside space, so defined that it is hard to keep it under the (general, reflective) control of orientation coordinates. Atmospheres and feelings elude the hold (*Zugriff*) of the orientating body itself:

Die mächtigen, ergreifenden Atmosphären, die als Gefühle schicksalhaft unser Leben und Erleben durchwalten und eine Autorität besitzen, die sie im Höchsthfall unbedingten Ernstes...zur Göttlichkeit im eigentlichsten Sinn erhebt, lassen sich also nicht so wie das Körperhafte durch leibliche Richtungen gleichsam stellen; sie entziehen sich einem Zugriff, der darauf aus wäre, sie an eine Quelle zurückzuverfolgen und diese als ein Gegenüber oder als Richtungsterm (z.B. Blick-oder Greifziel) zu fixieren. Die aus der Enge des Leibes hervor durch ein Richtungsnetz die Umwelt überziehende Orientierung

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19 Stephan Graetzel writes on this topic: "Jede Wohnung hat einen Grundriss, der nicht nur Zimmer abtrennt, sondern auch Atmosphären und Stimmungen. Durch ihn werden sie nicht nur nach innen und aussen, sondern auch gemäss der Dimensionierung eines Dazwischen, unter den Räumen selbst aufgeteilt. So steht jedes Zimmer nicht nur für sich, sondern hat auch die Funktion, zu der Wohnatmosphäre beizutragen" (S. Grätzel, *Raum-Zeit Kausalität*, Turnshare Ltd., London 2008, p.64).

kann dieser Atmosphären nicht habhaft werden<sup>20</sup>.

Feelings like pain, or titillation, can be easily localized in the living body, and belong to the realm of the *intimate*. But, as long as we displace our feelings toward the outside, the world of life, our moods become more indefinite, even if, in a sense, deeper and more constant:

Je weiter in diesem Kreisschema nach aussen gehen, umso diffuser und ungerichteter einerseits, aber auch andererseits umso tiefer, abgründiger und vor allem stetiger werden die Gefühle<sup>21</sup>.

According to Hermann Schmitz then, the landscape of moods and atmospheres is not plotted by our subjective attitudes, independently of what science and common sense say about this subject. “Gefühle”, “Stimmungen” and “Atmosphären” are objective on their own: if we are introduced to a joyful fellowship, the joyful (feeling) we experience is something which we *encounter* - and simply *not a feeling which has a location in our head*:

Wir haben ein sehr feines Gefühl dafür, in welche Stimmung wir geraten und wie sich diese Stimmung zu unserer eigenen Befindlichkeit verhält<sup>22</sup>.

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20 H. Schmitz, *Das Göttliche und der Raum*, Bouvier, Bonn 1977, p.212.

21 S. Grätzel, *Raum-Zeit Kausalität*, cit., p.67.

22 *Ivi*, p.68.

## CHAPTER IV

### QUESTIONS OF CONSTITUTION

#### 4.1 Constitution of space

If in Kant space, as *infinite structure* of the world, cannot be brought back to the syntheses which constitute the objects -that, being temporal, are finite- so that the *metaphysical question* of the *origin* of space arises, in Husserl, to the contrary, “spatiality” (subject-related) and “space” (world-related) are “reconciled” through synthetic proceedings. In Husserl, accordingly, synthesis is seen as the *universal organon* of the constitution of world and object.

Domenique Pradelle writes on this topic:

...là où Kant admettait une séparation entre space et spatialité, horizon du monde et structure des objets, la démarche husserlienne sera de les replier l'un sur l'autre, et de faire de la synthèse l'*organon* universel de la constitution du monde et des objets; là où Kant admettait une division de principe entre esthétique et analytique, doctrine des horizons infinis et doctrine de la synthèse productrice, elle sera d'unifier ces domaines en une *doctrine universelle de la synthèse* qui réduit les objets et les horizons à de simples correlats des actes synthétiques<sup>1</sup>.

Husserl avoids the danger of stumbling onto the dangerous stone of an *anthropological relativism*, by aiming rather at a new way of approaching the constitution problem: a way which may eradicate every *transcendent-presupposition* concerning the nature of the subject (and its environments, as we saw). So he takes, as point of departure for his “constitutional” analysis, only simple

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1 D. Pradelle, *L'archéologie du monde. Constitution de l'espace, idéalisme et intuitionisme chez Husserl*, Kluwer, Dordrecht 2000, p.XIII.

objects, and the multifarious layers of the objectivity investigated *via* pure intuition.

The problem with which we are confronted when we try, as here, to come to the heart of the *architectonics of the (phenomenological) doctrine of objectivation itself* is, then, to evaluate the real contribution that the sensible can give to the constitution of objectivity. To put it in other words, does the sensible contain in it some *functions* which the philosophical tradition actually attributed to the intelligible, or some other ones?

Pradelle states, about this problem:

Ce qui se joue ici est la difficile question de l'*architectonique de la doctrine de l'objectivation*: en l'absence du renversement copernicien, qui permettrait de régler l'architectonique des structures de l'objet sur l'ordre subjectif des facultés, que peuvent être le principe architectonique et l'ordre d'élucidation? Peuvent-ils se régler sur l'ordre traditionnel allant du sensible à l'intelligible, ou l'élucidation du sensible enveloppe-t-elle déjà des fonctions signifiant traditionnellement considérées comme supérieures, et de ce fait comme postérieures<sup>2</sup>?

We can try to give a solution to the above problem by putting in a relationship the notion of sensibility with that of fulfilment (*Erfüllung*). Whereas, in Kant, sensibility has an *essential* - even if *minimal* - function, since the a priori unity of the object is depending on the formal unity of the "ich denke" as given to the subject, in Husserl the transcendental continuity of experience is warranted, rather, by the *empirical affinity* of sensations, "c'est-à-dire de leur analogie suffisamment grande, qui permet à la synthèse de les réunir en une unité objective"<sup>3</sup>.

Sensibility thus retains, in Husserl, a function of objectivation, since it *fulfills* the intentional *Erlebnisse*, by giving them an *objective* sense, which in turn depends on the *concordance* or *discordance* of the sensible as-

<sup>2</sup> *Ivi*, p.XV.

<sup>3</sup> *Ivi*, p.229.

pects of things. Having this function of *mediation* and fulfillment, sensibility plays, in its full phenomenological relevance, the role of *arbiter of objectivity*:

... elle garantit contre tout arbitraire des donations de sens, contre toute spontanéité de l'interprétation objectivante non réglée qui ferait de la sphère de l'*Ich Fremdheit* un simple produit de l'activité de l'*ego*, bref contre une interprétation fichtéenne, qui ferait de la constitution, sans restriction, la production du non-moi par le moi, et d'une interprétation hégélienne qui ferait d'elle l'auto-déploiement de l'esprit produisant toute détermination objective...<sup>4</sup>.

In this sense, we can further establish that sensibility has, from a phenomenological point of view, the task of *reconciling* transcendental idealism- which reduces the object to phenomenon- with empirical realism- which warrants the ontological status of the appearance itself (as absolute). For this reason, Husserl, in determining the character of noetic activity, does *not* use the term "Deutung" - which would bring us back to the notion of interpretation. On the contrary, he makes use of the term(s) "beseelende Auffassung", because this form of words, composed as it is by the notion of "apprehension" and that of "animating", makes evident 1), the fact that noetic *Erlebnisse* are intimately tied to sensations, and 2), that apprehensions serve as constraints to the "sense donation" exerted by the noetic acts:

Le caractère radical de l'idéalisme en est fortement atténué, au point de le distinguer nettement d'un idéalisme absolu de type hégélien...<sup>5</sup>.

The opposition between *apprehension* and *interpretation* permits us now to deepen, in a particular way which we have already hinted at various times, the very meaning of the notion of *genesis*. Infact, we have now to distinguish between a *passive* genesis-concerning percep-

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4 *Ibidem.*

5 *Ibidem.*



tual objects- and an *active* genesis- concerning practical and cultural objects, such as numbers or paintings and so on. Whereas we, through a passive genesis, regularly *apprehend* or identify objects, through an *active* genesis, on the contrary, we *create* (*erzeugen*) objects, making use of the very activity of *idealization* already discussed above:

...ainsi, seuls les objets perceptifs seraient passivement pré-donnés et relèveraient d'un plan réaliste de l'objectivité, tandis que les objets d'ordre supérieur recevraient une interprétation idéaliste<sup>6</sup>.

Anyway, such a relevant distinction must be *relativized* in its turn, since even perception implies a certain degree of activity, which is founded on the absolute passivity of sensory impressions. On the ground of this phenomenological assumption, we can say then that only *receptivity* can be retained as absolutely passive. At this level of the analysis, we are confronted, namely, with an interesting problem concerning the sense of the notions of “description” and “constitution”: constitution, as a matter of fact, characterizes perception as an activity, while the purely phenomenological description sees in it only a passive (form of) apprehending:

Ainsi la méthode constituant, par son aspect constructif, caractérise-t-elle comme constitution active la perception que la description phénoménale avait saisie comme passive, le “faire” constitutif relativisant les données du “voir” descriptif. Est-ce à dire que la différence entre activité et passivité n'est que de degré...<sup>7</sup>.

To avoid misunderstanding, it is worth noting, again, that the synthesis which guides the constitution of perceptual objects is *passive* insofar it is grounded on the law of *association*. Such a law ensures, as we saw above, also the *compatibility* between transcendental idealism and empiricism. According to this point of view, association

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6 *Ivi*, p.230.

7 *Ibidem*.

also loses its psychological character, since it is sense (*Sinn*) which founds it and not conversely.

Claude Romano writes:

L'associationnisme, même sous la forme intentionnelle raffinée que lui confère Husserl, repose sur un cercle, puisqu'il doit présupposer que l'expérience possède déjà un sens immanent pour pouvoir rendre compte de la manière dont elle peut être associée passivement à des expériences passées *du même type*, et ainsi expliquer comment elle peut <<recevoir>> de cette association elle-même le sens qu'elle possède pour moi actuellement. *L'association présuppose le sens pour rendre compte de sa gènese*<sup>8</sup>.

It is, in a sense, the converse of the spontaneity of conscience that which eventually allows us to reach, and understand, the realism already contained in the phenomenological analysis, since notions such as *motivation*, *association* and *indication* make out of the intentional apprehension - that goes well beyond what is actually perceived<sup>9</sup>- not an arbitrary "gesture" of interpretation but, much more, the very constitution of an objective sense, which is firmly grounded on motivated and associated *Erlebnisse*. If, on the contrary, we choose to phrase the whole sense of the phenomenological genesis in terms of the factual, even if pure, history of conscience, we cannot understand in which way the *intentional surplus* (which, notice, permeates every perceptual apprehension) can do its job with regard to the question of the origin of space.

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8 C. Romano, *Au coeur de la raison. La phénoménologie*, Éditions Gallimard, Paris 2010, p.599.

9 Pradelle makes a point in favor of going beyond of intentional *Erlebnisse*: "...la vise est toujours une survisée, puisqu'elle intentionne toujours infiniment plus que ce qui lui est donné et implique une infinité potentielle de vises partielles qu'elle synthétise par la mémoire et l'anticipation..." (D. Pradelle, cit., p.231). Romano pinpoints the sense of what written above: "Une expérience n'est une perception que si elle for système avec le tout de la perception: ainsi s'énonce le holism structural...Mais nous ne percevons pas le choses sans plus; percevoir, c'est toujours percevoir de telle out elle manière, selon tel ou tel sens" (C. Romano, cit., p.673).

Indeed, what permits us to fulfill the *perceptual closure* of an object, say a tree, is, as matter of fact, the *finiteness* of it together with the *familiarity* of the horizon in which it is apprehended (it is an object of a *certain type*). What does it happen, however, when our phenomenological glance goes beyond finiteness toward the infinite?

Cependant, et c'est la limite fondamentale d'une telle analyse génétique, l'*habitus* "objet spatial" renvoie en dernière instance à la constitution première du sens d'objet spatial, à la première visée spatialisante à propos de laquelle se pose à nouveau, et cette fois de manière insoluble, la question de savoir d'où provient l'excès infini de la visée globale sur les visées partielles: tout sens objectif disponible comme *habitus* est reconduit à la fiction méthodologique d'un *Erstmaligkeit*, d'une formation originaire de sens dont le mystère reste entier<sup>10</sup>.

In addition to the above mentioned problem, there is another question which raises doubt about constitution of space: if, as a matter of fact, the hyletic given is something which is bereft of extension (remember what was said about the introduction of *res extensa*), how can we get (to have) spatial objects? Such a question, as a matter of fact, arises only by taking a Kantian path over a Husserlian one: a path, that is, which forks off into two unrelated directions, i.e., the *a posteriori* and the *a priori* form of knowledge. Such a path presents also the danger of separating time from space, for, whereas the former, as pre-empirical (extension-less) and hyletic temporality, represents the form preceding every mundane temporality, the latter, as subjective (also extension-less) form, cannot found the objective spatiality symmetrically (as it is provided with extension).

Such a question nevertheless arises only if we, again,

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10 D. Pradelle, cit., p.233. Husserl states repeatedly in his works that the objects of the surrounding world are existent for everyone thanks to an "original acquisition—that is: by my original taking cognizance of what I had never beheld previously" (CM, 68).

tend to neglect an important feature of Husserlian thought:

Un tel problème n'a pu être posé qu'en négligeant la *part empiriste de la pensée husserlienne*: certes les sensations ne possèdent pas d'étendue au sens de l'étendue empirique, mondaine, mais elles ont néanmoins une forme spécifique d'étendue, à savoir une extension pré-empirique<sup>11</sup>.

We will understand this better in the next section.

#### 4.2 The dialectic between “place” and “region”

We have already seen that to be somewhere amounts to be in some particular place, that is, in a “there” (*Da*) or “yonder” (*Dort*), which specify the directedness of the place itself. If, however, place is relevant for the locatedness of the ready-to-hand, it is, at the same time, unthinkable apart from (a) *region* – a concept that becomes central to the ensuing spatial dialectic. Paragraph 24 of *Being and Time* explains very well what Heidegger means (partly following Husserl) by the term “region”:

We understand the region as that to which the context of useful things at hand possibly belongs, a context which can be encountered as something directional, that is, containing places and as de-distanced.<sup>12</sup>

While for Kant, just to provide an example, the region is the *aroundness* encompassing place, for Heidegger the region means something more than an increased room, since it provides the *conditio sine qua non* of the *implacement* of the ready-to-hand. The “wither” gives to a region its own “whereabouts” to the extent that it permeates the “Gegend” (German word for “region”) with practical purposes (i.e., the “for-the-sake-of which”), movements (in fact, terms like “hither” and “thither” do

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11 D. Pradelle, cit., p.236.

12 M. Heidegger, *Being and Time*, cit., p.103.

betray the idea of movement), and a range (*Umkreis*).

These regional characteristics are nonetheless unremarked by the *Dasein*, since they are lived by it in the halo of “inconspicuous familiarity”. Anyway, it is by virtue of places that we are aware of a region: the rooms of a house, by their arrangement, indicate and display the sunny side and shady side of the house, that is, two important regions of it<sup>13</sup>. Another important *existential* quality of “region” is shown with clarity by Heidegger with the following words:

With what is encountered as things at hand, there is always relevance in a region. A regional spatial relevance belongs to the totality of relevance which constitutes the being of things at hand in the surrounding world. On the basis of this relevance, things at hand can be found and determined according to form and direction. In accordance with the possible transparency of heedful circumspection, innerwordly things at hand are de-distanced and oriented with the factual being of *Da-sein*<sup>14</sup>.

The statement above makes clear that through “relevance” (*Bewandtnis*), in an already constituted public region, we can come across ready-to-hand items. We witness then a *balancing operation*, clearly hypothesized by Heidegger, and consisting in the fact that - while place is regarded as the result of the *Dasein*'s directional de-distancing (*Ent-fernung*) - region, on the contrary, being in some sense public, cannot be reduced to the *Dasein*'s constitutive activity.

Casey writes on this point:

What is remarkable about this new expression of the balance is that *an implicit idealism is now associated with place and an implicit realism with region*<sup>15</sup>.

If place then is something we “achieve”, by the joint action of directing and desevering, that is, if it is

13 *Ivi*, p.96.

14 *Ivi*, p.103.

15 E. S. Casey, cit., p.250.

a product of *Dasein's* intervention, regions, thanks to their great “gathering” power, offer to the subjects *shared parts* of the environing world. Regions provide for ready-to-hand things *matrixes* of spatial involvements which, in their own turn, do exceed what an individual *Dasein* can itself constitute. *Form* and *direction* of a region are for this reason *pregiven* - and not, in any way, *discovered* or, even worse, *invented* by the *Dasein's* activities.

Summing up, phenomenologically it stands to reason that places are “indicators” of regions, even if the former are, as such, hidden by the latter. At any rate, we need particular places to introduce ourselves into regions, and to situate us there. Regions, in contrast to places, are the *pregiven*, publicly shared parts of the (our) environing world, so that, without their “dense” (or “thick”) presence, we would not have any equipmental context. This fundamental dialectic between place and regions is further explained by Casey with the following words:

A placeless world would amount to an unremitting realism of regions; a regionless world would entail an unrelieved idealism of places. Without places, being-in-the-world would be merely diffuse and disjointed—overt and public and yet shapeless. Without regions, being-in-the-world would be much congealed and punctuate than it is—and overwhelmingly idiosyncratic, merely a function of the interests of individual *Daseins*. With both places and regions, being-in-the-world and the world itself become as coherent as they can be and mainly are (even if they remain uncanny in their depths)<sup>16</sup>.

Consider a worldless place. In such existential situation individuals would not have any opportunity of fulfilling their plans, insofar as it would be simply *senseless* to have plans, projects, aims, in an environment, or pure “ambience”, from which any sign of objectivity is indeed removed. They would live solipsistically, as new Robinson Crusoes, so to speak, in small phenomenological islands, surrounded by an ocean of uncertainty and indetermina-

16 *Ivi*, p.251.

cy. Consider, on the contrary, a placeless world in which every idiosyncrasy is disrupted, eradicated. In such a world, individuals would lose any familiarity with the surrounding space, feeling – we can surmise – a kind of Kafkian alienation (in the “atmosphere”).

Space then, according to the above mentioned thesis, would ultimately result from the complicated composition of *place* and *region*. This “complication” is due to the fact that every attempt to reduce *place* to *position* – or *region* to *space* – lacks a deep understanding of the *ontological genealogy* of space. If region is reduced to space what, at least, counts is the pure “wherein” (*Worin*), in which positions are ordered by measurement. So, even if strictly linked, space and place do not have a direct founding relationship to each other: a particular place is too *condensed* and *focused* – has too little aroundness – to embrace space whereas space, in its turn, is too open to permit the *existential closure* invariably provided by place.

The constitution of space in phenomenology in general is, therefore, strictly related to the way *Dasein* arranges ready-to-hand things. For example, building a house or arranging furniture to our own satisfaction. All these actions present the same common feature, that is, the involvement of “making room” (*einräumen*), that is equivalent to “giving space” (*Raum-geben*). In *making room* the ready-to-hand is made free for its spatiality, that is, for a totality of (virtual) involvements:

There can be no such homogeneous medium as space unless room has been made (and thus spatiality opened up) within a given region of the ready-to-hand<sup>17</sup>.

Some conclusions can be drawn from what was reconstructed in the preceding considerations:

a) space is not- as in Kant- a mental product, since every subject is not (only) mental, but spatial, that is,

17 *Ivi*, p.252.

*in-the-world*. And this means that space is always in the world, and the a priority of it is due to its inhering in the spatiality of *regions*.

b) A *genealogy* of space can be traced, starting from the *circumspective spatiality* of the space of action, going through the *disinterested looking* of the space of intuition (corresponding to the *present-at-hand* worldliness), and ending with the *construction* and *contemplation* of an homogeneous space. In fact, we read:

...the three-dimensionality of space arises from the present-at-hand neutralization of the spatiality of the ready-to-hand; places are reduced to bare positions; and the world, losing its enviring character (i.e., its own “worldliness”), becomes Nature<sup>18</sup>.

Even if Heidegger’s analysis of place and region remains confined to the (pragmatic) world of implements- a world whose fundamental spatial characteristics are *Zuhanden-sein* and *Vorhanden-sein*- it is also true that the German philosopher points, for the first time, not only in phenomenological research, to “spatial” possibilities such as those of *dwelling* or *being at home* – possibilities that *cannot* be explicated by an instrumental point of view. Think e.g. of the existential condition of a *Dasein* which has no place or region.

#### 4.3 Merleau-Ponty on space and “lived body”

According to Merleau-Ponty, our experience of space cannot be explained either in terms of things in space- the empiricist position- nor in terms of a “spatializing space”, that is, a pure unifying activity- or of the intellectualistic position. For, right from the outset, we are confronted with a “third spatiality” (*troisieme spatialité*), which is beyond, or better before, the very distinction between *form* and *content*:

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18 *Ivi*, p.253.



We need an absolute within the sphere of the relative, a space which does not skate (*glisse*) over appearances, which indeed takes root (*s'ancrer*) in them and is dependent upon them<sup>19</sup>....

An intellectualistic approach to space cannot give an answer to the problem concerning the constitution, through our “lived body”, of an oriented space, since it “does not view the spectacle *from anywhere*”. To avoid also a realistic misunderstanding (according to which it is the visual spectacle by itself that provides the fundamental orientations in space), Merleau-Ponty introduces the notion of “spatial level” (*niveau spatial*) - which ought not to be confused with the orientation of one’s own body. At stake here is a phenomenological notion of spatiality that goes back the one originally introduced by Husserl, since for the French philosopher the body- intended as a mere mass of tactile or kinaesthetic data- cannot give that definite orientation which calls for a more general character of experience, that is a “global act” on the part of the perceiving subject. A spatial level is determined by the interaction between a corporeal subject and an environment supplied with “anchoring points” (*points d’ancrage*):

It is as if certain objects (walls, doors and the body of the man in the room), having been seen aslant in relation to a given level, then take it upon themselves to provide the cardinal directions, attracting to themselves the vertical, acting as ‘anchoring points’, and causing the previously established horizontal to tilt sideways<sup>20</sup>.

It is worthy of note that spatiality, here, is not something which, once constituted or established, remains forever the same, unchanged. On the contrary, the notion of “spatial level” introduces a kind of *regressus ad infinitum* into the conception of space, since every level calls for an already existing level:

19 M. Merleau-Ponty, *Phenomenology of Perception*, Routledge & Kegan Paul, London 1962, p. 289.

20 *Ivi*, p.290.

It remains to be seen what precisely is this level which is always ahead of itself, since every constitution of a level presupposes a different, preestablished level—how the ‘anchoring points’, working from within a certain space from which they derive their stability, suggest to us the constitution of a fresh one...<sup>21</sup>.

If the living body has to contribute to the constitution of space, it ought to be seen not as a thing in an objective space, but as a system of possible actions, “a virtual body with its phenomenal ‘place’ defined by its task and situation”<sup>22</sup>. In some sense, we witness, at this point of the analysis, a *paradoxical inversion* of the notion of reality, since it is the *virtuality* of body which gives it a “gearing to the world” (*une prise sur le monde*).

If the phenomenal place (*lieu*) of the body is defined by its task (*tâche*) and situation, then “my body is wherever there is something to be done”<sup>23</sup>. By inhabiting the surrounding world, the living body concludes a “pact”, which gives it the *enjoyment* of space. A spatial level serves, therefore, as one means of constituting an *integrated world*, that is to say, a world which meets the expectations of the bodily motor intentions.

Perception and action are applied onto an integrated world by means of a “perceptual ground”, that is a fundamental basis of my life, a *general setting* through which my body *co-exist* with the world. To avoid any reductionism, we can say that *there is not any body without a world*. The change - or correction - of the visual field exemplified by Stratton’s experiment is obtained neither by means of associations, nor through a process of thought resulting in a transposition of coordinates. It arises only by virtue of an *unreflective* changing of the systems of position similar – a changing akin to the way by which “a man sings, in another key, a tune he

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21 *Ibidem.*

22 *Ivi*, p.291.

23 *Ibidem.*

has heard, though he has no knowledge of music”<sup>24</sup>.

The ability to change space levels is analogue to the ability to change *unreflectively* the key of a tune, inasmuch as the identification of new perceptual fields arises without any conceptual implication. What we can finally grasp here, also by clear examples, is the “organic relations” between space and subject. In such *adjustment* between space and living body, we cannot, from a phenomenological point of view, rest on absolute positions – and the the reason is that the constitution of a level-with its coordinates- presupposes another given level and so *ad infinitum*.

It is of the essence of space to be always ‘already constituted’, and we shall never come to understand it by withdrawing into a worldless perception<sup>25</sup>.

Space, as experienced by a “lived body”, is expansive and opening-up (*espace spatialisant*), and not something fixed or closed-in (*espace spatialisé*). As such its notion cannot correspond to the old metaphors adopted to capture its essence, that is, the metaphor of *containment* or that of a *collection* of points. Space, also as intended by Merleau-Ponty, is then endowed with *expressiveness* and *orientedness*, which are features possessed by the lived-moving body. As such, space has its own *physiognomy*, *moods*, *affectivity* and *style*. If we are able to comprehend space in such a way, then, as a matter of fact, a notion e.g. such as “orientation” is no more a cardinal direction but, in a more fundamental sense, an existential situation, that of *being fitted* or *knowing one’s way around* :

We must therefore avoid saying that our body is in space, or in time. It inhabits space and time...I am not in space and time; nod do I conceive space and time; I belong to them, my body combines with them and includes them<sup>26</sup>.

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24 *Ivi*, p.292.

25 *Ivi*, p.293.

26 M.Merleau-Ponty, “The Origin of the Spatiality of Nature”, in Id., *Husserl*

Such a conception of space has relevant consequences for the already discussed notion of place. This loses its positional character, to become instead the *earmark* of an existential situation which cannot be delimited without a certain amount of ambiguity - so that place, paradoxically, is neither just *where it is* nor just *what it is*:

Knowledge of where something is can be understood in a number of ways. Traditional psychology has no concept to cover these varieties of consciousness of place because consciousness of place is always, for such psychology, a positional consciousness, a representation, *Vor-Stellung*, because as such it gives us place as a determination of the objective world and because such a representation either is or is not, but, if it is, it yields the object to us quite unambiguously<sup>27</sup>.

Due to the essential openness of space, in Merleau-Ponty's point of view (as it happened in Husserl's, in a way), its concept retains a sense only if confronted with (the notion of the) *earth*. In fact, every abstract concept-included that of space- has *to be rooted* in factuality. For the same reason, the notion of "possibility"- which is of great importance for the phenomenological constitution of space- runs the risk of resulting empty, a mere logical possibility, unless it is rooted in the *unique earth*. Possibility then, thanks to the above rooting, amounts to "possibility in actuality" (*Möglichkeit an Wirklichkeit*), and is in itself a horizon, with respect to whatever factual and *prospective interests* a human being intends to pursue (in a given situation)<sup>28</sup>. - Like the earth that, being the soil (*sol*) of every phenomenological notion (including that of space), does not move, the "lived body" is not experienced as a moving body at all, since the experience here at stake is that of an "inner movement". This means that I do not experience my "Ich gehe" as a progressive

*at the Limits of Phenomenology*, cit., pp.139-140.

27 M. Merleau-Ponty, *Phenomenology of Perception*, cit., p.104.

28 Cfr. M. Merleau-Ponty, *Husserl at the Limits of Phenomenology*, cit., p.36. Possibilities which are not yet actual are for Merleau-Ponty un-formed, *gestaltlos*, that is, they are something which needs a *mise en forme*.

movement from a place A to a place B but, much more, as a kind of *moving in place*. All this holds because my body remains always the center of my movement.

Merleau-Ponty convincingly writes on this subject:

First, my body: like the *Boden* and distinguished from *Körper* has no *Fortbewegung*; it has only *Innenbewegung*...My “ich gehe” is in relation to the “ground” and it is no more an objective motion than the ground is an objective restfulness. Even when “ich gehe”, my body is still the *Zentrum*<“center”> for me. Its quasimotion (“Kinesthesen”) and the pseudo-rest of the ground (its identity across the unfolding of “appearances”) belong to the same type—And the very rest of the *Körper* that I see on the surface of the earth as well finally belongs to the same type: when I say that a body is at rest, it is the correlate of an *Erscheinungswandlung*<“change of appearance”> of kinesthesia; this rest is thought by me as the correlate of this *Erscheinungswandlung*, its contrary, therefore as kinaesthetic rest...<sup>29</sup>.

Earth then, from a phenomenological point of view, *cannot* be experienced *primordially* and *actually* as a common body, since it has not a place and it is not susceptible of change - unless we have a new representation of it as an orbiting planet around the sun<sup>30</sup>. - The world is then, in truth, a *totality of perspectives* for me, and a related “perspectival style” governs my perceptual field. As such, this style is constant, and confirms itself in a concordant way<sup>31</sup>. The perspectival style has the function of *layering* things, starting from a “core layer of primary normalcy”<sup>32</sup> in which things rest without qua-

29 *Ivi*, pp.70-1.

30 See E. Husserl, “Foundational Investigations of the Phenomenological Origin of the Spatiality of Nature: the Originary Ark, the Earth, Does not Move”, in M. Merleau-Ponty, *Husserl at the Limits of Phenomenology*, cit., p.122.

31 Husserl writes: “The entire perceptual field of things, insofar as it is a constituted multiplicity of things appearing perspectivally, is a harmonic unity of perspectives” (E. Husserl, “The World of the Living Present and the Constitution of the Surrounding World That Is Outside the Flesh”, in M. Merleau-Ponty, *Husserl at the Limits of Phenomenology*, cit., p.132).

32 *Ivi*, p.133.

litative change. The causal style is, with regard to the perspectival one, a *founded* style. Moreover, under the lowest level of these constituting layers, there is the level of “fantasy images”, in which images and circumstances are also eidetically varied.

## CHAPTER V

### CONCLUSIONS

#### 5.1 The concept of “universality”

In order to project an all-encompassing science or metaphysics, the Greek tradition developed a *critical attitude* toward all those things which are deprived of *universality*, an attitude still alive today. Yet, the notion of universality has, in Husserl’s point of view, no abstract sense at all though. In fact, it presupposes the ideal of a *community* freeing itself from all traditions and achieving a *teleological beginning*<sup>1</sup>. For this reason, only a free and independent *reactivation* or “reestablishment” (*Nachstiftung*) of the Greek model of reason can serve the purpose of shaping anew a universal horizon - on the ground of which sciences can develop again without problems. As it is known however, this great project, according to Husserl, has failed. For the new sciences adopted the Greek model of geometry and mathematics without questioning their primal origin (*Urstiftung*). The kind of universality thus achieved by the modern sciences seems to be affected by *abstraction* and *emptiness*. These are also the most remarkable traits of the one particular historical manifestation of mankind: the European. As pointed out by Rodolphe Gasché:

Indeed, what is exported under the guise of the technosciences is a kind of universality that no longer has any relation to the *one* world, the one in which we all live<sup>2</sup>.

Needless to say, even Husserl seems deeply affected by this traditional European horizon, since the science that

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1 Cfr. CES, § 15.

2 R. Gasché, “Universality and Spatial Form”, in D. Hyder, H-J. Rheinberger, *Science and the Life-World. Essays on Husserl’s Crisis of European Sciences*, Stanford University Press, Stanford 2010, p.119.

sustains his idea of universality is the Greek geometry, so that the question about the origin of geometry can be answered only in terms of a European science.

The primal *sources* and the primal *beginnings* of geometry are without doubt Greek. “Ursprung”, in Husserl’s terms, means not only *origin* but also *source*, so that - if we want to legitimate knowledge - we have to find not only the source of it, but also the ground: that is to say, the original evidence for that knowledge. This is not so clear, however, since we can question the plausibility of the thesis according to which the origin of geometry is *unique*. Geometry has several beginnings so that, for the foundation of it, we ought to take into consideration the contribution to it of many civilizations.

At any rate, whichever the correct answer is, if we reflect on the *oddity*, and *strangeness*, which the notion of universality evoked in the first geometers (when they were confronted with the transcendental and eidetic character of this notion), we will also find that such experience of strangeness cannot be attached to the kind of universality which sustains Galileo’s mathematized world. The strangeness in which permeates, as a matter of fact, the kind of universality adopted by Galileo is due to the *alienation* of the geometrical thought from the life-world, an alienation which is taken over uncritically as an unquestioned cultural acquisition:

The strangeness of the universality peculiar to the modern sciences derives, as we will see, from its alienation from the life-world. The strangeness of this new conception of universality is that of the merely abstract<sup>3</sup>.

For the reasons mentioned above, when Husserl speaks of the Greek project of a universal rational science- that, at first, took the form of an idealization of the form “space-time”- he uses the German term “merkwürdig” that means “strange”, “odd”, but also “remarkable”. On the contrary,

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3 R. Gaschè, “Universality and Spatial Form”, cit., p.122.



when he is concerned with modern sciences, he describes them as “*befremdlich*”, which means strange, but also “disconcerting” or “displeasing”<sup>4</sup>. For the Greeks, as a matter of course, ideality and universality were characteristic only of the realm of the pure forms, so that the real could only have more or less *methexis* with respect to the ideal. But for the modern sciences, starting from Galileo, nature participates in the realm of idealities in such a way, that it becomes, in a sense, nothing but a *mathematical manifold*.

Through the perfecting of the technical capabilities developed about the practical world, according to Husserl, our modern sciences experience an open horizon of conceivable improvement, always tending toward invariant, and never attainable poles. From this difference, it follows that objective idealities are for us, in a sense, *substructions* of thought, whose evidence is different from the intersubjectively experienceable and verifiable evidence (the “ultimate evidence”), with which we are confronted in the life-world.

Of course, what motivates Husserl’s historical reconstruction of the significance of Galilean natural science is the shaping of a renewed transcendental *epoché*, whose first step would consist in turning away from the tasks of the objective sciences, moving toward “the originally intuitive basis, which can alone provide a transcendental or constitutive grounding of these sciences”<sup>5</sup>. In the attempt to reach a transcendental *epoché*, we have now to take up a *reflective attitude* toward the way we experience the givenness of the life-world, discovering the *transcendental correlation* between world and world-consciousness<sup>6</sup>.

Investigating the *Ursprung* of the mathematical attitude toward

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4 See CSE, pp.36-7.

5 M. Friedman, “Science, History and Transcendental Subjectivity in Husserl’s Crisis”, cit., p.106.

6 See CSE, §§ 38,41,44.

the real means, for Husserl, the *historical discovery* of those *a priori* which determinate all the possible knowledge of the domain of science. The *a priori* are historical in the sense that these come into being at historical time- the time of Thales. According to Jacques Derrida, such *a priori structures* could actually be transmitted *only* in the form of *sedimented* and *transcribed* arguments in sentences:

Derrida turned that elementary fact into the amazing doctrine that the sentence is primary and trumps the spoken word. The promotion of the pure sentence, stripped of speech and of both speaker and author, accompanied- may even have led to- the “death of the subject”...<sup>7</sup>.

Geometry is then an acquisition which enlarges itself in new acts and new acquisitions, thanks to an *open chain* of researchers. The *Rückfrage* into the sense-origin of geometry - for Merleau-Ponty an interrogation (*Befragung*) that goes into the deepest aspects of reality - carries with it the problem of an acquisition, a *Sinnbildung*. This *Sinnbildung*, even though it arose within an historical horizon, i.e. a “there in person” (*Selbst da*), presents itself in the form of an idealobjectivity, as we eventually saw in Galileo:

Problem: in this originary act, geometry is only a moment of personal life. But it is something else: idealobjectivity, supratemporal, accessible to everyone and to all times<sup>8</sup>.

Truths can be eternal even if the knowledge of them comes into being in history. Once *a priori* geometrical knowledge comes into being, its proofs, insights and postulates pile up, so that to reach down to the bottom, to the very foundation, of geometry becomes a no longer practicable enterprise - since the notion of *Ursprung*, as stated above, has both the sense of *beginning* and that of *primal evidence*. If, however, we test the Husserlian notion of *Ursprung* against the background of the actual practice of science, or from the point of view of the “working mathematician”, it seems no longer safe to assume that it does work without problems. For a mathematician, when asked for some solutions or models, will not go back to any classic text - which would be the written emblem of such sedimentation.

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7 J. Hacking, “Husserl on the Origins of Geometry”, in D. Hyder, H-J. Rheinberger (Eds.), *Science and the Life-World. Essays on Husserl*’ cit., p.74.

8 M. Merleau-Ponty, *Husserl at the Limits of Phenomenology*, cit., p.21.

She will rather resort to handbooks, and, for example, to pages of scribbles, which all take advantage of the that “primal evidence” that Husserl had advocated. Many questions are open.

## 5.2 Conclusions

From all what we said above, it follows that - if we want to investigate, from a phenomenological point of view, the notion of space - we cannot start from *nowhere*. For our “interest” in space is, as a matter of fact, guided by the exhibition of that lowest layer of space on which other kinds of spaces are *grounded*. This means also that, when our theoretical or practical motivations change, others features of space come into play. For this reason, it has a sense to speak of space only in a plural form: “spaces”<sup>9</sup>. If our concern with space is purely descriptive, we cannot avoid to think that “space” and “thinghood”, as Husserl remarks in many passages, are essentially linked. Such essential finding, however, holds only if the space we investigate is perceptually given. It is other features of our surrounding world come into play when we adopt, for example, an “existential” turn of our investigation. In this case, space is not more given as a system of coordinates- filled by things- relative to our lived body. Much more, it is given as a region, even an “atmosphere”, in relation to which we can feel *at home* or in a condition of *uncomfortableness*.

So Husserl was right in thinking that *grounding relations* are given between different kinds of spaces, but he was too dogmatic to think that the space of the visual field was the perceptual model on the ground of which other kinds of spaces ought to be constituted.

9 Phenomenological method is a practice and as such it is not indifferent to the investigated subject of matter. As Elizabeth Behnke points out: “When we are engaged in Husserlian phenomenological practice—adopting the appropriate attitudes and deploying Husserlian methods in the description and analysis of the “phenomena themselves”—our phenomenological findings will necessarily depend upon the phenomena we choose to investigate, guided by the examples we take as leading clues. And our choices will depend in turn upon the larger context of motivation sustaining our research... Yet in the course of actually putting phenomenological methods into practice on certain themes rather than others, we are not only elucidating these matters, but also simultaneously honing or fine-tuning the very methods we are using... (E.A. Behnke, “Bodily Protentionality”, in *Husserl Studies*, 25, 2009, pp.185-6).

Suppose (to adapt an example of Russell's) a creature living in a world completely covered by water, and endowed with a perceptual system completely different from ours (which live on the surface planet earth). How would his perception of space be? How would he *feel* the surrounding world? Can eidetic variation helps us to find generalities holding also for such a world<sup>10</sup>? And by starting from what?

The plurality of spaces, as stated above, depends mostly on the kind of *concern* or *interest* which orients our practical involvement. For instance, if we are concerned with practical activities which do not need *measurability* of objects, then *generalizing* abstractions may be sufficient for our tasks. If, however, we are geometers or geographers, generalized concepts of shapes no longer suffice, and so on:

Where a concern with measurement rather than a mere concern with the body and its spatial configuration is dominant, a different kind of abstraction, viz., an idealizing abstraction which constitutes both an ideal figure and an exact or ideal unit of measurement<sup>11</sup>.

Some summarizing remarks. The idea that Husserl's investigations on space have not changed much in their results, during the whole span of his philosophical career<sup>12</sup>, seems not so plausible as it may have appeared at first glance. The correlation between space and thinghood, strongly affirmed in Husserl's Lectures of 1907, originally titled just *Ding und Raum*, represents an important shift, and of enduring theoretical significance, for a phenomenological comprehension of the subject. This is perhaps not the end of the

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10 According to David Michael Levin, eidetic variation cannot escape a certain degree of induction, that is, the rootness of every phenomenological experience in a natural, historical, cultural, social context: "...there seems to be no apodictic guarantee ( in the form of a critique) that the variants chosen in a presumably arbitrary fashion are not really, for example, the invisible manifestation of a certain unexamined focus of interest" (D.M.Levin, "Induction and Husserl's Theory of Eidetic Variation", in *Philosophy and Phenomenological Research*, Vol.29, No.1, 1968, p.10).

11 J.Drummond, "The Perceptual Roots of Geometric Idealizations", in *The Review of Metaphysics*, Vol.37, No.4, 1984, p. 788.

12 See for this point J.J. da Silva, "Husserl on Geometry and Spatial Representation", cit., p.6.

story. But if it were not an important part of it, then we would not be able understand the most important feature ultimately underlining our very perception of space: its “enchaînement” with our practical *commercium* with the surrounding world. The “quotient global” of space, in other words, its articulation in different even though unitarily organized different spaces, can be characterized with the following words:

...il n’y a pas vraiment de place pour le *singulier* dans la perception, la perception d’une chose ayant toujours lieu dans un *champ perceptiv*<sup>13</sup>.

...une perception, qui est bien autre chose qu’une ou plusieurs sensations juxtaposés, est toujours une exécution unitaire résultant essentiellement de la façon dont (?) jouent ensemble des fonctions (et modalités) perceptives qui sont en relation de corrélation<sup>14</sup>.

Our normal perceptual experience is that of a three-dimensional material thing in space and this, on turn, is presented in a manifold of two-dimensional appearances. In perceptual experience therefore the very basis is contained, on the ground of which the three-dimensionality of the object is *reduced* to the two-dimensional surfaces which enclose the object. If generalizing abstractions are grounded in perceived shapes, it is to be expected that ideal figures are grounded in our perceptual experience too.

I admire, for example, the façade of the Santa Croce Church in Lecce, Italy; my perceptual attending to the façade has horizons, that is, intimations of other sides of the monument - insofar as the façade is recognized by me as the *façade of the church as a whole*. I can, however, modify my concern with the object and concern myself only with the object, neglecting the horizontal references to other sides of the façade in question. I can, also, *flatten out* the façade, ignoring, e.g., the depth of it and

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13 L. Boi, “Phénoménologie et méréologie de la perception spatiale, de Husserl aux théoriciens de la Gestalt”, cit., p.62.

14 *Ibidem*.

concerning myself simply with the two-dimensionality of it. By concentrating solely on the two-dimensional presentation of the façade, I idealize, in some way, the object, since I put it (partly) out of the visual field. And this implies merely horizontal references, and so on.

According to Drummond, the idealization of an object is, as a matter of fact, characterized by three moments:

1. the shift from a general concern with objects to a concern with their shapes as measurable;
2. the focusing of attention on a side of the object - abstracting from the visual field in which it is presented;
3. the limitation of the attention to the two-dimensionality of the presentation of the object of its side<sup>15</sup>.

Thanks to the third step, we achieve the *dimensional division* of the three-dimensional object into the two-dimensional limiting surfaces of given, particular types. It is important to underline that, in such an idealizing operation, we are not concerned with points, for these are not relevant to the measurability of objects. Points instead arise in an already idealized domain. *Idealizing* abstraction is then not *directly* grounded in generalizing abstraction, since it is only by virtue of a *mediated* focusing on the visual field that the former arises. As a consequence of such a mediation, the visual field, as a matter of fact, is no more given *per se*, but only as presenting a two-dimensional side or appearance of the object - of which only the measurable shape is now, *ex hypothesi*, my concern.

Notwithstanding such mediating steps, the concluding thesis of the present essay must be that, *more or less directly, all spatial formations are grounded in our perceptual experience*. Every perceptual given is in fact inserted into a *temporal* and *associative* stream, and it

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15 J. Drummond, "The Perceptual Roots of Geometric Idealizations", cit., p.797.

finds its “interpretation” within a more comprehensive configuration provided by the visual field. This, in turn, is the correlate of a kinaesthetic system. This means that sensitivity too shows a lower *degree of activity* of its own, even though such an index of spontaneity is not that of an *ego cogitans* but, much more, that of an *embodied ego* – an ego which, thanks to kinaesthesias, inhabits the surrounding world. The transcendental subject thus needs, once again, corporeality, a *Leib*, in its turn, in order to constitute the real world. And this “lived body”, on the other hand, fulfills the transcendental function of manifesting both the thing, and space. *This is a fact, even though we cannot confuse kinaesthetic conscience with transcendental conscience in general.* By investigating into Husserl’s idea of the constitution of space, then, we realize in concrete terms (and also according to contemporary notions) how closely *transcendentality* and *transcendence* are tied - since it is by virtue of the intentional correlation, at stake in the space constitution, that the problem of transcendence makes it its concrete appearance, completely losing the halo of mystery which envelopes it, all through the tradition<sup>16</sup>.

There is no doubt that Husserl’s phenomenological reflection on the constitution of space is not comprehensive enough. Even worse, it tends to stress only the perceptual, visual aspects of it. Moreover, Husserl’s analysis of space constitution is limited by the fact that he does not take into account the possibility of rendering the various different fields of perception intelligible in a *mathematical form*. Only doing this, it would have been possible to develop a *dynamic theory* of perception, intended as a theory of interrelated sensory systems<sup>17</sup>.

16 Husserl writes: “Ich und andere als die Welt konstituierende Subjektivität, also di ihr eigenes Sein “transzendierende” heissen “transzendentele” und danach die konstituierenden Leistungen selbst transzendentele” (Ms. B I V, p. <14>). Cfr. also V. Costa, “La questione della cosa e il realismo”, Introduction to E. Husserl, *La cosa e lo spazio. Lineamenti fondamentali di fenomenologia e critica della ragione*, Rubbettino, Soveria Mannelli, 2009, pp.XLIII-XLV.

17 The space of interrelated sensory systems can be intended as the product of

Finally, a satisfactory theory of spatial perception ought to concern the link between geometrical, physical and perceptual space. According to Luciano Boi, there are four groups of questions which can be considered crucial for an optimal understanding of spatial perception in this sense:

1) The link between the geometrical organization of the neurophysiological structures underlying perception and the spatial features related to the movements of the lived body in the physical space.

2) The developing of *geometric models* for the recognition of visual forms.

3) The relationship between perceived spatial forms and cognitive activity.

4) The relation subsisting between “discreteness” and “continuity” implied by perception and its modalities<sup>18</sup>.

It is certain that Husserlian phenomenology, bound as it is by the constraint of *transcendental reduction*, does not take seriously into account most of the above mentioned theoretical points. Furthermore, even preferring, say, the visual field to the tactile field for the start of the whole analysis, is in a sense an arbitrary philosophical practice.

Various forms of theoretical “neglects” notwithstanding, phenomenology still provides us with the appropriate, and perhaps the best, methodological means to articulate and to deepen the insights implicit in our representation of space. This does not mean turning these multiple insights into Absolutes. The phenomeno-

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many physiological subspaces. Luciano Boi writes on this point: “L’idée de l’espace de la perception comme d’un espace quotient global produit de plusieurs sous-espaces physiologiques- qui n’est pas donné d’avance, mais résulte d’un genèse-, s’est révélée très féconde dans le recherches récentes...” (L. Boi, “Phénoménologie et méréologie de la perception spatiale, de Husserl, aux théoriciens de la Gestalt” in L.Boi, P. Kerszberg, F. Patras (Eds.), *Rediscovering Phenomenology*, cit., p.60). 18 *Ivi*, p.8.



logical thesis that transcendental subjectivity depends, in constituting space, ultimately on sensitivity, means that every transcendental operation is finite. And the finiteness of the subject's commercium with the Lebenswelt is the most important legacy left by Husserl to the philosophical enterprises of the future.

## ABBREVIATIONS

### HUSSERL'S WORKS

(English Translations)

- CES** *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy*, Northwestern University Press, Evanston 1970.
- CM** *Cartesian Meditations. An Introduction to Phenomenology*, Kluwer, Dordrecht 1982.
- FTL** *Formal and Transcendental Logic*, Martinus Nijhoff, The Hague 1969.
- IP** *The Idea of Phenomenology*, Kluwer, Dordrecht 1990.
- IPP,I** *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy. First Book: General Introduction to a Pure Phenomenology*, Kluwer, Dordrecht 1983.
- IPP,II** *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy. Second Book: Studies in the Phenomenology of Constitution*, Kluwer, Dordrecht 1989.
- LI,I** *Logical Investigations, Vol.I*, Routledge, 2001.
- PCIT** *On the Phenomenology of the Consciousness of Internal Time*, Kluwer, Dordrecht 1991.
- TS** *Thing and Space. Lectures of 1907*, Kluwer, Dordrecht 1997.
- WPLM** *Early Writings in the Philosophy of Logic and Mathematics*, Kluwer, Dordrecht 1994.

(Husserliana)

- BW,V** *Briefwechsel. Die Neukantianer*
- HUA VII** *Erste Philosophie (1923/24). Erster Teil: Kritische Ideengeschichte.*
- HUA XXI** *Studien zur Arithmetik und Geometrie. Texte aus dem Nachlass (1886-1901).*
- HUA XII** *Philosophie der Arithmetik. Mit ergänzenden Texten (1890-1901).*
- HUA XIII** *Zur Phänomenologie der Intersubjektivität. Texte aus dem Nachlass. Erster Teil: 1905-1920.*
- HUA XIV** *Zur Phänomenologie der Intersubjektivität. Texte aus dem Nachlass. Zweiter Teil: 1921-1928.*
- HUA XV** *Zur Phänomenologie der Intersubjektivität. Texte aus dem Nachlass. Dritter Teil: 1929-1935.*
- HUA XXX** *Logik und allgemeine Wissenschaftstheorie. Vorlesungen Wintersemester 1917/18. Mit ergänzenden Texten aus der ersten Fassung von 1910/11.*

## OTHER HUSSERL'S WORKS

“Foundational Investigations of the Phenomenological Origin of the Spatiality of Nature: The Originary Ark, the Earth, Does Not Move”, in M. Merleau-Ponty, *Husserl at the Limits of Phenomenology*, Northwestern University Press, Evanston 2002.

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