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*The Husserlian Motivational Legacy as Applied to the Relationship between
Perception and Cognition*

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Introduction

In this work, what we set out to argue corresponds to an attempt to integrate the conceptual framework that structures the Husserlian genetic theory of perception – and thus the articulation of the various forms of passive synthesis characterising it – with the framework of the debate concerning “Cognitive Penetration”.

The legitimacy of this attempt appeals to the possibility of involving a different form of “causation” in the relationship between perception and cognition: the principle guiding reciprocal interactions would, then, no longer be “physicalistic” or, “mechanistic”, so to speak, but designed to account for both content and semantic dimension. This form of legacy will, ultimately, directly depend on the important notion of *Motivation* that, in Husserl’s phenomenology, plays a fundamental role in all dimensions of intentional life.

Moreover, at the core of the analysis of time-consciousness and passive synthesis, the fact that perceptual data “hang together” expresses and reflects the motivational character of experience, implying its subjective structure. The deep intertwining of the concept of motivation with those of association, attention, interest, and horizon, all central notions within Husserl’s genetic theory of perception, allows the relevance of motivation to emerge in light of the phenomenological perspective, along with its epistemic power with respect to the principle of causality.

We intend to demonstrate that it is possible fruitfully to apply this motivational-associative legacy to the conceptual framework of the debate on “Cognitive Penetration” or, better, we intend to show that it is the very definition of “Cognitive Penetration” that requires this “graft”. The nature of the relationship between perception and cognition needs, in fact, to be configured on a semantic level, in order to account for that related to content.

Ultimately, our analysis aims to promote, at least, a deeper understanding of the problematics linked to both these conceptual frameworks, despite a complete awareness as to how challenging any attempt at integration has proven, given the epistemological and ontological differences between the naturalistic and the phenomenological frameworks.

Contemporary studies of the structure of human experience are carried out primarily within the naturalistic-experimental paradigm. This concerns the empirical sciences as well as the cognitively oriented philosophy supported by both the positivistic and linguistic pragmatic epistemologies. Neurosciences play a central role, significantly conditioning the perception of ourselves and of the world. In such a framing, the human subject is treated exclusively as a natural entity, while nature itself is understood as a complex of cause-determined phenomena that can be observed from outside. Consciousness is reduced to the means of functioning of the brain, understood as a causally determined system directed towards information processing.

Of course, the extremely relevant and interesting outcomes that have been obtained with this approach are far from being questioned here, nor do we challenge the general consensus about its relevance in terms of progress. Nonetheless, although good scientific work might often proceed without answering constitutive questions correctly, it remains true that, clarifying key-concepts, and defining the boundaries of the paradigms they refer to, can strengthen and crystallise any form of scientific inquiry. It can help in deepening the understanding of frameworks within which scientific explanations operate, while avoiding mistakes associated with more or less clear forms of reductionism.

Furthermore, we are committed to showings that the majority of concepts used in the discussion around “Cognitive Penetration” could gain in clarity and precision through a phenomenological reconsideration. Obviously, it is important to keep in mind that our attempt at integration calls into question two fields of inquiry drawn from markedly different epistemological assumptions. Nonetheless, we will still argue that there is room for an attempt to integrate these diverse conceptual frameworks, therefore helping to reconceive in another perspective the philosophical significance of the essential problematics at the core of the debate.

Specifically, the first chapter will introduce an essential reconstruction of Husserl’s gnoseological theory, starting with the key-concept of intentionality and an outlining of the phenomenological attitude. A brief analysis of the general structures of consciousness will follow, in order to target the analysis of perception, an issue central to the whole dissertation. This first chapter will close with the distinction between primary and secondary passivity that will be functional regarding the introduction of Husserl’s genetic theory of perception, to be discussed in the second chapter.

The description of the field of pre-givenness and of the many original forms of synthesis will allow us to reach the core of genetic analysis, wherein the conceptual network provides a deep intertwining between the notions of association, affection, attention, and interest. These notions morph into “functions” of some sort, meaning they participate in weaving the network through which we are granted access to so-called “low-level perception”. Thus, we will show how such a network interacts with kinaestheses, habits and, most importantly, with the pervasive and structure-relevant notion of “horizon”. If one maintains this clear framing, it will be possible to introduce the analysis of the notion of motivation with a *further* level of detail, thus recognizing its pervasiveness in light of the whole system.

This reference-point will make it easier for us to focus, within the third chapter, on the subterranean issues bonded to the relationship within perception and cognition, in contrast to the way they are generally tackled within the debate on Cognitive Penetration. Incidentally, this chapter will focus on the definition of the phenomenon of Cognitive Penetration and on the rethreading of the annexed debate. We will also refer to a consistent number of experimental studies that will be of help in identifying the problematic factors at play in the relationship between perception and cognition. The third chapter is concluded with a description of the interpretative hypothesis advanced by Albert Newen and Petra Vetter, which claims the existence of different varieties of Cognitive Penetration and the possibility of identifying a hierarchical “four-stage” model of perception.

In the fourth and last chapter, we will attempt to sketch out an argumentation strategy that supports the integration of the phenomenological and the cognitive-scientific perspectives, by illustrating the transition from the causal to the motivational-associative link. Of course, the argument will raise several issues related to naturalization and the dismissal of the causal paradigm (i.e., the “exclusion problem”). Nevertheless, we are confident that the solutions and replies offered will sustain our final thesis, which the reader will find recapped in the conclusions.

1st Chapter

1.1 Intentionality and the Phenomenological Attitude

The phenomenological perspective and especially Husserl's gnoseological theory provide one of the most significant set of tools for the analysis of the relation between cognition and perception, with enough depth not to incur in dualistic paradoxes or reductionism. The most significant of these tools surely is intentionality, a key concept, at the core of phenomenological theory, to which is deeply related the abovementioned motivational law. In order to understand their functions and explanatory roles of the latter two, we need to draw at least the most salient traits of Husserl's theory of knowledge, starting with the notion of intentionality and the basic phenomenological framework.

Roughly speaking, intentionality could be defined as the property of conscious immanent experiences of being directed towards objects. As it is well known, Husserl inherits the concept from his master Franz Brentano, who had dedicated a careful analysis to this key notion all along the course of the development of his philosophy. Since Brentano's main interest laid in the theory of science, articulated within a framework of a realistic metaphysics, his account of intentionality, defined as "intentional inexistence of the object", was deeply conditioned by his ontological perspective.¹ The development of Husserl's proper account

¹ See especially Brentano, 1911 p. 116. Brentano's distinction between the mental and the physical level can be seen as an original version of intentional dualism, but in many passages of his main work, *Psychologie vom empirischen Standpunkt*, he argues for a direct and inextricable link between the psychic and physical level. Nowadays, the majority of prevalent classical positions in philosophy of mind (like physicalism, functionalism or behaviourism) are quite incompatible with any form of dualism, since such theories are all more or less variants of materialism. Nonetheless, Brentano's commitments to positivism and his understanding of the place of psychology within the sciences had been seen with favour by exponents of cognitive science and analytical philosophy of mind in the last decades of XX century. However, Brentano's conception of the ontological status of the mental cannot be considered equivalent to that sustained by physicalist positions. According to him, the mental is intrinsically representational, since objects and contents are presented in the unity of consciousness without the reduction of their representational basis to physical states or events for consciousness. The representational role of consciousness is the condition due to which objects and meanings can be said to be represented through intentionality; but an objectivist view of the mental cannot account for questions of meaning or of intentional reference. The grounding of intentional reference on the intentionality of consciousness was, instead, properly thematized by Husserl in the *Logische Untersuchungen*, as we will illustrate later. (See Tassone 2012, p. 194ff.)

depended mainly on the critics against his master's notion and, more in general, on his shifting the epistemological background but, for a proper understanding of Husserl's concept of intentionality, it is necessary to illustrate briefly the reference thesis.

Brentano defined intentionality as the distinguishing feature of all mental phenomena, while at the same time characterizing it as a relation; furthermore, Brentano initially made a distinction between the real object, considered in its physical existence, and the intentional or immanent object, to which intentionality should be directed, as a content having a sort of mental or quasi-mental existence. However, from Brentano's later writings this last thesis underwent a radical change, since the immanent object and the thing itself eventually turned out to be the same. Ultimately, his concept of intentionality corresponded to this form of mental directedness, no further analysable and not mediated by any mental content as distinguished from the object intended. Nevertheless, it cannot be properly considered a relation, because a genuine form of relation presupposes, says Brentano, the existence of both terms involved, while intentionality may also refer to something non-existent. Thus, according to Brentano, mental directedness is a relation but not a real one.²

Leaving aside the comments in *Logischen Untersuchungen*³ on his use of a misleading terminology (as for example the problematic use of the scholastic notion of "inexistence"), Husserl's main concern against Brentano's notion of intentionality focused on the validity of the thesis according to which intentionality is the alleged criterion of all mental phenomena.⁴

² See Brentano 1911, pp. 133-138.

³ LU, II.1., pp. 370ff.

⁴ U. Kriegel (see Kriegel 2003 p. 488) argued that Brentano's theory, according to which all mental phenomena are conscious of objects and are characterized by intentionality, displays a phenomenological adequacy that counts as an argument in favour of a neo-brentanian account of intentionality: following Brentano, the feature that makes a mental state conscious is an intrinsic property of mental states, in contraposition to some kinds of high-order theories, widely spread among cognitive science and analytical philosophy of mind (cf. Armstrong 1968; Kegan and Rosenthal 1986; Lycan 1987; Carruthers 1996 etc.). Such theories explain consciousness in terms of self-awareness and conceive what makes a mental state conscious the fact that it is taken as an object by a relevant high-order mental state. The high-order model claims that consciousness is an extrinsic property of those mental states who have it, by attribution from other mental states; therefore, it is possible to distinguish between a first-order content, the object of the mental state, and a second-order content, the act as object. Brentano argues that instead of two distinct mental states, each with its own representational content, there is rather only one with a double representational content. The two theories are therefore structurally similar but Brentano's account has the advantage of being more adequate, phenomenologically. Thus, the dissatisfaction due to the objections linked to the high-order model has motivated people to take a closer look back to Brentano's proposal. However, his proposal did not really succeed in staying clear of the pitfalls of the higher-order view, since speaking of

Husserl argued that only acts are intentional⁵ whereas, for example, sensations (although they are components of acts) or objectless feelings, as for example some kinds of anxiety, are not. Nonetheless, in later writings, Husserl extended the range of intentionality to sensible data and way beyond⁶, getting closer to Brentano's position but ultimately abandoning the idea of intentionality as a criterion of characterization of mental states.

Other critics were linked to the naturalistic-causal framework of Brentano's philosophy of mind, which was absolutely incompatible with Husserl's phenomenological perspective, but that actually didn't influence his concept of intentionality. In fact, despite being a realist, Brentano was aware that the reference to the intended object does not depend on the actual existence of the object of reference. What intentional acts entail is not the real object *qua* real and even if the act points to focus on the reality of it, one has to distinguish between the reality as such and the reality as intended. That means the concept of intentionality implies an ontological neutrality, which allows to overcome realism. Actually, this distinction between the real (*real*) object and the object as intended (*reell*)⁷ also subtends the thesis that objects as

consciousness as if it involved an awareness of its mental states suggests that, in order to have conscious mental states, we must be aware of them as objects. Brentano's supposedly one-level theory goes back being a higher-order theory in disguise (Thomasson 2000, pp. 199-200). This is why Zahavi has suggested to abandon the Brentanian account in favour of a Husserlian position: in fact, the view, ascribed to Brentano, that we are constantly objectifying our own experience, was already totally overcome by Husserl in the First of the *Logische Untersuchungen*, where he argued that sensations are originally simply lived through as moments of experience (*Erlebnisse*), not objectified or taken as objects. (Zahavi 2000, pp. 72-73).

⁵ It is important to remind that an "act", according to the phenomenological definition, is not an activity or a process but precisely an "intentional experience"; see LU V, § 13: "Das determinierende Beiwort *intentional* nennt den gemeinsamen Wesenscharakter der abzugrenzenden Erlebnisklasse, die Eigenheit der Intention, das sich in der Weise der Vorstellung oder in einer irgend analogen Weise auf ein Gegenständliches Beziehen. Als kürzeren Ausdruck werden wir, um fremden und eigenen Sprachgewohnheiten entgegenzukommen, das Wort *Akt* gebrauchen."

⁶ In *Phänomenologische Psychologie*, Husserl comes to support a form of "bodily intentionality", assuming that also the body, and not merely the mind, is characterised by intentionality (see HUA IX, p. 197).

⁷ Husserl distinguishes (leveraging the lexical richness of the German language) between *reell* events, actually and immanently belonging to the stream of consciousness, and *real* objects, not immanent to the act, which correspond to transcendent things: "«Real» würde neben «intentional» sehr viel besser klingen, aber es führt den Gedanken einer dinghaften Transzendenz, der gerade durch die Reduktion auf die *reelle* (my italics) Erlebnisimmanenz ausgeschaltet werden sollte, sehr entschieden mit sich. Wir tun gut, dem Worte «real» die Beziehung auf das Dinghafte vollbewußt beizumessen" (LU, V, note 1, p. 399); what is real, in contraposition to what is ideal, is the individual, whose distinctive feature is temporality, external and objective for what is *real*, internal and subjective for what is *reel*; while the ideal, whose nature is essentially non-individual, results to be also a-temporal (See Lanfredini 1994, nota 21, p. 39).

intended are relative to or dependent on the consciousness of them. Given this interpretation, it is easy to see why Husserl could be accused of metaphysical idealism but this indictment forgets that the sense of what is actually existing is not considered by Husserl as evidence for or against the actual metaphysical status.⁸

The assumption, implied in the concept of intentionality, about the indifference for the existence of the intended object, which allows us to consider it just as intended, leads to the first and most relevant methodological step of phenomenological inquiry: the notion of phenomenological reduction. This operation corresponds to a radical change of attitude in which every kind of objectivity and, more in general, the whole world come to be conceived exclusively as correlates of intentional acts, bracketing all positing of transcendence, in order to gain the research domain essentially proper to phenomenology.

Husserl's phenomenology, defined by its author as the "Grundwissenschaft der Philosophie"⁹, considers the so-called pure consciousness or subjectivity its proper field of investigation and uses the phenomenological reduction expressly to attain such field. The fundamental achievement of this method of access to the sphere of phenomenological research can be said to consist summarily in securing the pure, unmixed givenness for the complex of immanent experiences belonging to a subjectivity.¹⁰ This return to pure consciousness should be understood, according to Husserl, as "an expression of the insight finally gained into what philosophy ought to be about and into the basis upon which, and the manner in which what is thus aimed at can actually be attained."¹¹

The necessity of this change of perspective came from Husserl's rethinking of the skeptical arguments, especially the one by Hume and those by the ancient sophists Protagoras

⁸ See Holmes 1975, p.106. According to Mohanty, the ontological neutrality, implied by the thesis of intentionality, allows to go beyond both realism and idealism, but also beyond body-mind dualism and behaviourism, since the notion of stimulus, usually accredited in both of the explanatory method of these theories, can be reconducted to the concept of intentionality. The well-known S-R formula (stimulus-response), at the base of the major part of the forms of behaviourism, does not entail the existence of the object intended by the response: when R corresponds to a mental state with an intended object, the validity of the claim "S makes R" does not involve a causation principle. The stimulus *qua* stimulus is not a cause and the sense of the directedness of R to its intended object corresponds to intentionality. Phenomenology does not reject the S-R formula, as well as Hume's law of association; they need to be taken up into the phenomenological concepts of intentional implication and motivation. See Mohanty 1970, 105.

⁹ *Ideen I*, I, p. 1.

¹⁰ See Bernet et al. 1993, p. 59.

¹¹ Bernet et al. 1993, p. 62.

and Gorgias, concerning the relation between cognition and object, giving rise to the so-called “transcendental turn”. Husserl’s early attempts to grasp the problems of a logic of experience had to be extended beyond the specifically logical-mathematical oriented thematic of cognition, resetting the problems linked to a critique of cognition and reason in light of a different perspective of clarification: “[eine] Aufklärung der Erkenntnis nach Wesenmöglichkeiten ihrer Leistung.”¹²

According to Husserl, the phenomenological reduction makes it possible to elucidate on an ultimate and primary basis the essential possibility of the being known of the world with respect of the fundamental sense of its being-in-itself. The task of overcoming the naïve pre-giveness of the world as the natural basis of all objectively oriented cognition, that sceptical arguments had made problematic, is the deep motivation at the ground of his idea of philosophy. This attitude discloses the research on pure consciousness and especially on the path leading to the achievement of sense (*Sinnesleistung*), which constitutes objectivity. Thus, transcendental phenomenology has “ein total anderes Thema als alle objektiven Wissenschaften, von ihnen alle getrennt, und doch als Korrelat auf sie alle bezogen”.¹³ It does not determine objectivity “wie sie eine Objektivität, die sie im Voraus in der Erfahrung und im Erfahrungsglauben hat, [...] sondern, wie sie schon in sich zu diesem Haben kommt.”¹⁴

The methodically and distinctly delimiting of the pure subjectivity in its characteristics ownness is performed in reflectively turning our gaze towards the acts of consciousness rather than on their objects, disconnecting/suspending the natural empirical apperception of consciousness and any ontological assumptions. If the task is to clarify and to come face to face with the essence of the possibility of knowledge, we need to consider everything that exists, which is not given immanently, as suspended: its validity is just the phenomenon claiming validity.¹⁵

This is the phenomenological reduction granting us access to the field of givenness, excluding all that is transcendentally posited, along with the physical or psychological sense of the consciousness. In this way also the concept of *reellen Immanenz* is reduced, avoiding the

¹² IP, p. 6. (HU II)

¹³ EP I, p. 68.

¹⁴ EP I, p. 67.

¹⁵ IP, p. 6.

reconducting to immanence in the real (*real*) psychic human consciousness. The absolutely given and the genuinely immanent become one and the same.

The phenomenological reduction also allows us to better understand the relevance of the concept of intentionality, to which, as we have seen, it is strictly connected, also leading us to abandon the causal attitude implicit in any physical-psychological framework in favour of the intentional paradigm.¹⁶ The change of perspective makes way to the phenomenological notion of motivation, which, going beyond the old empiricist notion of association, applies the idea of intentional implication amongst mental states, displaying their true nature:

Conscious states imply each other, lead to one another, are synthesised with each other, and thus constitute a unity - both at the formal level of time-consciousness and at the contentual level- not by mechanical association, nor by logical entailment but by motivating, anticipating and fulfilling each other. To *understand* a conscious state in this sense would require following up all its intentional implications, unravelling its motivations, etc. (Mohanty 1970, 103)

The concept of motivation corresponds to a relation between mental acts whereby the content of one act makes some further meaningful content probable and it will be clearly deepened in the following paragraphs but we would like to underline straight away its structural link with the general epistemological framework here outlined.

1.2 The Development of the Concept of Intentionality in relation to the General Structures of Consciousness

As we have already seen in the previous paragraph, Husserl's phenomenological starting point is metaphysically neutral, since he restricts his investigation only to evident, self-given data. In *Logische Untersuchungen* Husserl took in consideration only adequate data, corresponding to the really (*reell*) immanent contents of consciousness, given in phenomenologically pure reflection, in opposition to the real (*real*) and ideal objects. These contents belong to consciousness and precisely to its continuing flowing stream of immanent

¹⁶ See HUA IX, p. 268; see HUA VII, p. 349; see also *Krisis*, p. 236.

temporality. Thus, although they are undoubtedly given in reflecting experience, their constant flowing makes the descriptive task of the phenomenological analysis problematic. With regard to this issue, Husserl introduces in *Ideen I* his doctrine of the “eidetische Reduktion”, arguing that his phenomenological analysis of consciousness does not claim to be an inductive empirical inquiry but a “Wesenswissenschaft”.¹⁷ This method of description of the essential structures of consciousness involves a concept of pureness in the sense of an a-priori knowledge, according to which the inquiry follows the model of pure sciences: the concrete factuality opens the way to the realm of the ideal and pure possibility and therefore to the a-priori perspective.

This epistemological approach has many significant consequences, which will be examined at a later stage. For the moment, we would like to focus on the exposition of husserlian analysis of consciousness in relation to its different species of activity (perception, fantasy, memory and so on) and to the various modes in performing acts of consciousness (actuality, potentiality, spontaneity and receptivity).¹⁸

We have seen that the phenomenological analysis starts from the real (*reell*) contents of consciousness. These contents do not necessarily have the form of intentional acts, as in the case of data of sensation, but they are always in connection with them or with apperceptive apprehensions. Husserl claims that the description of the intentional act is the only way to outline some remarks on the intentional object, since the essential describing character of the intentional act as *intentionales Erlebnis*¹⁹ is precisely the corresponding intention:

Der Gegenstand ist ein intentionaler, das heißt, es ist ein Akt mit einer bestimmt charakterisierten Intention, die in dieser Bestimmtheit eben das ausmacht, was wir die Intention auf diesen Gegenstand nennen.²⁰

All intentional experiences share this characteristic of “presenting an objectivity” and for this reason they all belong to the class of “objectifying acts”. This moment with the function of presenting an objectivity is defined by Husserl as the matter (*Materie*) of the act: it denotes

¹⁷ See *Ideen I*, Einleitung, p. 6.

¹⁸ See Bernet et al. 1993, p. 88.

¹⁹ See LU (V), §11a.

²⁰ See LU (V), §20.

which object the act will refer to (*bestimmte Richtung auf ein Gegenständliches*)²¹, connoting it, at the same time, within this objective relation. The characteristics of the object and their articulations and forms constitute the intentional content of the act and are just comprised by the material side of the intentional act.²² However, while, for example, in an act of perception the matter or intentional content can correspond to the intentional object, with other kinds of acts it is necessary to distinguish phenomenologically between the object which is intended and the object as it is intended (the well-known example proposed by Husserl is about Napoleon, who is at the same time “the victor of the battle of Jena” and “the vanquished in the battle of Waterloo”); the second distinction regards the difference between the object intended by the component acts and the object intended by the total act. In this last case, Husserl talks about the concept of state-of-affairs (*Sachverhalt*).²³

On the other side, the peculiar way of every intentional act of referring to the object corresponds to its quality (*Qualität*), its *Weise der gegenständlichen Beziehung*.²⁴ For example, all the various acts of judging or perceiving or imagining or wishing can have the same intentional quality but different matters and, vice versa, acts with different qualities may have the same matter.²⁵ However, quality and matter are only abstract element (“moments”, according to the terminology introduced in the third of the *Logische Untersuchungen*, which means “dependent parts”²⁶) of an act considered as intentional experience and from thus follows that it is impossible to think to an act characterized only by quality or only by material aspect. The unity of these two essential aspects constitutes the intentional essence of the acts (*intentionale Wesen des Aktes*).²⁷

The sixth of the *Logische Untersuchungen* introduces a further specification: while all acts are intentional and possess intentional essence, only objectifying acts are properly “bearers of meaning” (*Bedeutungsträger*).²⁸ To perform an act directed with an active focus to what is objective means assuming the specifically intentional modality and correspondingly a

²¹ See LU (V), p. 414.

²² See Bernet et al. 1993, p. 92.

²³ See LU II/I (V) §28.

²⁴ LU II/I (V), p. 413.

²⁵ See LU II/I (V), p. 413.

²⁶ See LU (III), §17.

²⁷ See LU (III), §21.

²⁸ See LU VI, I. §1.

theoretical attitude. This grasping way, as theoretical, is, in an actual sense, Objectifying.²⁹ The theoretical act is, therefore, the most peculiar form of expression of intentionality, which designate the manner how lived experiences are carried out in the function of Knowledge.

As cognitive and theoretical acts, objectifying acts have necessarily, in Husserl's perspective, an intuitive basis, whose role differs according to the kind of objectifying act. Depending on whether the act is purely symbolic or intuitive, based on mere imagination or realizing perception, the intuitive content serves as a mere sign or to fulfil a meaning intention. When the act is intuitive, the intentional object corresponds to what is being apprehended, the representing content or *Auffassungsinhalt*. In such cases, the relation between the matter and the representing content is closer, inner, essential; contrariwise, when the representation is symbolic or merely signitive, the same relation is external.³⁰

The unity of matter, quality and intuitive content corresponds to the epistemic essence (*erkenntnismäßiges Wesen*) and, as Mohanty has rightly pointed out, the attribution of an epistemic value to objectifying acts is far from been superfluous: "as the concept of intentional essence provides us with a concept of identity of acts in general, so the concept of epistemic essence enables us to speak of *the same* knowledge, howsoever this knowledge may otherwise differ."³¹

The function of the intuitive content assumes its relevance also in relation to the dialectic between intention and fulfilment (*Erfüllung*): when the intuitive content related to the corresponding intention is available there takes place a synthesis, through which the intention is fulfilled.³² This implies a distinction between intentions that can be fulfilled and merely signitive intentions, which remain "empty". Here what is at issue is the extent to which a subject has evidence of some sort for accepting the content of his intention. The necessary degree of evidence to support the intention of the act as fulfilled or unfulfilled consists in the genuinely presenting or not of a given object in just the way that the matter of the act suggests.

²⁹ See *Ideen* II, p. 4.

³⁰ See Mohanty 1970, p. 71.

³¹ Mohanty 1970, p. 107.

³² This conception can be thought of as another way in which the appeal to the given reappears in Husserl's theory, as a residue of positivism already met in relation to his notions of "representing content" and "hyletic datum". See Mohanty 1970, p. 110.

Intentionality, conceived as the directedness towards an object, constitutes in relation to fulfilment the dynamical phenomenological structure at the basis of the purposive aiming at satisfaction. But this satisfaction varies significantly in modality with regard to the sort of experience it would fulfil, assuming in some cases a meaning which is rather metaphorical than nearly literal (for example between an act of judging versus an act of perception). However, the tendency of an empty thinking towards getting filled with content could be considered the basic common pattern. The other generalized feature of this structure points out that all fulfilling experiences exhibit a dissatisfaction, since in our intention there is always a surplus over their fulfilment. In a certain sense, it can be said that our actual intentional life moves between two ideal limits: a complete empty intention and a completely fulfilled intuitive act. Actually, with the progress of Husserl's thought, this dialectic from static becomes more dynamical, aiming not anymore to an ideal coincidence but to a dynamic and gradual identification. Further, it should be not forgot, that there are intentions a priori incapable of fulfilment, like contradictions. Thus, although the intentional act demands actualisation, its "aiming at" can never be exhausted inside the limit of mundane experience.

In *Ideen I* the phenomenological description of the intentional acts is enlarged by the introduction of the correlation between the concepts of *noema* and *noesis*, which actually presupposes, in respect to the *Logische Untersuchungen*, a stricter sense of the notion of consciousness. Here it is identified with that part of intentional experience as meaning-bestowing the sensory component of the experience in general.³³ As the phenomenological *epochè* has already performed, the existence of the real world is suspended, set out of action, and therefore the *noema*, which corresponds to the object of every intentional act, appears within the consciousness in a special sense of "within", that is, as its intentional correlate.³⁴ Thus, *noema* is the intentional correlate, the sense of every act, while the intentional object is the reference of the act. Their relation can be expressed saying that different acts may have the same *noema*, and different *noemata* may refer to the same object. In relation to the acts, the *noema* is an identity, ideal and thus a-temporal; in relation to the noematic multiplicity, the

³³See *Ideen I*, II. 3, §55, p. 120-121: "Alle realen Einheiten sind «Einheit en des Sinnes». Sinneseinheiten setzen [...] sinngebendes Bewußtsein voraus, das seinerseits absolut und nicht selbst wieder durch Sinngebung ist. [...] Der Widersinn erwächst erst, wenn man philosophiert und, über den Sinn der Welt letzte Auskunft suchend, gar nicht merkt, daß die Welt selbst ihr ganzes Sein als einen gewissen «Sinn» hat, der absolutes Bewußtsein, als Feld der Sinngebung, voraussetzt."

³⁴ See *Ideen I*, III. 3, § 88.

intentional object is an identity of reference. Further, the noematic correlate shows a structure parallelly consistent with the corresponding intentional act, its noetic performance, that is *noesis*. Being a real component of the act, *noesis* is psychological; but, at the same time, due to its function of meaning-conferring, it is transcendental.³⁵

At this point, what remains at the ground as real component of the intentional experience is the *hyle*, the concept representing the purely non-intentional stratum at the basis of every intentional experience, to which the intentional act gives form and meaning. As Mohanty specifies, Husserl refuses to call *hyle* “sensory data”, since the adjective results misleading when used to qualify the real components of an experience in contrast to the sensible qualities belonging to the experienced object. For example, in perceiving a colour, *hyle* corresponds for Husserl “to the colour as constituent of the visual experience, [...] in which the noematic, objective colour «manifest itself in varying perspective»”.³⁶

Although the concept of *hyle* embraces in principle all non-intentional constituents of consciousness, Husserl, nevertheless, restricts his analysis in *Ideas I* to the level of the ‘sensuous’ contents such as color-, taste-, or sound data, which function as ‘representative contents’ for elementary apprehensions of individual objects. Another kind of hyletic *Erlebnisse* are, instead, sensuous sensations like pleasure, pain, or tickling, which are distinguished from the previous ones by the fact that they are not ‘representative’; lastly, there are also sensuous moments from the sphere of ‘drives’.³⁷ In addition to be not *intentional*, they all share the function “«synthetische Einheit» möglich zu machen.”³⁸

Questioning about the nature of acts and hyletic data leads Husserl to reflect on the central role of time consciousness, since the intentional structure described in *Logische Untersuchungen* (the so-called “hylo-morphic scheme”) did not take in consideration that acts and data are not only immanent objects but also temporal unities. The *Vorlesungen zur Phänomenologie des inneren Zeitbewusstseins* (1928) focuses precisely on the temporal constitution of pure sense-data but also on the self-constitution of phenomenological time,

³⁵See *Ideen I*, III. 4, 204: “Das «auf Grund» der stofflichen Erlebnisse «durch» die noetischen Funktionen «transzendental Konstituierte» ist zwar ein «Gegebenes» und, wenn wir in reiner Intuition das Erlebnis und sein noematisch Bewußtes treulich beschreiben, ein evident Gegebenes”.

³⁶ Mohanty 1970, p. 74 (quote LU. II. 261)

³⁷ See *Ideen I*, p. 192 (§85)

³⁸ *Ideen I*, p. 197.

which, as we shall see, constitutes the presupposition of the former.³⁹ In these lectures time consciousness reveals itself to be the fundamental premise of all structures and forms of consciousness and, in addition, these further analyses bring out levels of intentionality deeper than what had already been discovered, thanks to the examination of the inner relation between intentionality and the notion of the self-constitution of consciousness.

In fact, we will see that the just mentioned notion of constitution corresponds to the last formal stage of evolution of the concept of intentionality, evolution that had already determined the passage from a conception as self-transcending reference to the noetic-noematic correlation. The notion of constitution, anticipated in the *Ideen I* and in the lectures on time consciousness, receives much extension only in the later works and turns out to be a direct consequence of the deeply intertwining of the concept of time with that of intentionality.

Roughly speaking, the problem of time concerns three levels of description: the objective time to which transcendent objects belong, a sort of stable order of the before and after with respect to identifiable points of time⁴⁰; the present immanent time, perceived with respect to the constitution of the immanent unities; the stream of consciousness, which can be considered the ultimate basis of all forms of temporality and which for this reason cannot itself be said to be in time. These levels correspond to the other three levels of the problem of constitution and so also of the concept of intentionality: the constitution of the transcendental noema, constituted by the acts and hyletic data, the constitution of these same acts and data, conceived as immanent unities, and the constitution of the absolute flux of consciousness.⁴¹

On the first level, the problem dealing with transcendent objects consists in the problem of their constitution as enduring objects and as objects belonging to consciousness. Despite its mode of givenness, we can say, summarizing, that the temporal position of a transcendent object as enduring object can be identified with respect to the objective time through a temporal interval; but, at the same time, if we focus on its extra-temporal content (*noema*), its constitution

³⁹See HU X, p. 22: “Es ist ja evident, daß die Wahrnehmung eines zeitlichen Objektes selbst Zeitlichkeit hat, daß Wahrnehmung der Dauer selbst Dauer der Wahrnehmung voraussetzt, daß die Wahrnehmung einer beliebigen Zeitgestalt selbst ihre Zeitgestalt hat.”

⁴⁰See HUA X, p. 64: “Der Ton und jeder Zeitpunkt in der Einheit des dauernden Tones hat ja seine absolut feste Stelle in der «objektiven» (sei es auch die immanente) Zeit. Die Zeit ist starr, und doch fließt die Zeit. Im Zeitfluß, im stetigen Herabsinken in die Vergangenheit konstituiert sich eine nicht fließende, absolut feste, identische, objektive Zeit.”

⁴¹See Mohanty 1970, p. 82.

depends, according to Husserl, on reproductive acts of identification.⁴² However, reproduction entails, in a certain way, a “repetition” of the constitution of the immanent unities belonging to the pre-objective time.

Thus, first we need to illustrate how the constitution of immanent unities occurs. They are, Husserl says, temporally extended and each of their temporal phases provides for a reference to what has been and to what is yet to be: “Die immanenten Inhalte sind, was sie sind, nur sofern sie während ihrer «aktuellen» Dauer vorweisen auf ein Zukünftiges und zurückweisen auf ein Vergangenes.”⁴³ Husserl proposes the example of the apprehension of a melody, as a present temporal flow (*Ablauf*), which consists of three moments necessarily interconnected one to another: - the “primal impression” (*Urimpression*)⁴⁴, to which corresponds the sounding tone in its now-moment, or a series of these primordial sensations occurring in a “momentary simultaneity” (*Momentanzugleich*)⁴⁵; - the *retention*, “a continuity of primary memories” as consciousness that simultaneously holds back, to which corresponds the tone or tone-phase just sounded and faded away; - a last moment consisting in an expectation or *protention*, a projection in the immediately approaching of the moment just passed, as a note consistent with the melody.⁴⁶

These three combined moments form a *continuum* that constitutes the “original temporal field”⁴⁷, corresponding to the concrete presence. Together, they describe one of the many possible phases of apprehension of a temporal object that, in itself as process, continues to take place, producing a progressive flow of impressions, retentions and protentions. This conception of time constitution seems to reflect the dualistic schema “apprehension – content of the apprehension” but Husserl, first of all, points out that not every constitution follows such schema⁴⁸, then, he shows he want to go beyond it definitively, arguing that, thanks to retention, the temporal gradation concerns all contents from the beginning. In fact, when the new-now-primary impression transforms itself in a retention, then this same retention becomes a further modified retention and so on, producing a chain of iterate modifications; in this way, since the

⁴²See Mohanty 1970, p. 83.

⁴³VPZ, p. 84.

⁴⁴See HUA X, pp. 67, 100.

⁴⁵See HUA X, pp. 77, 325, 372.

⁴⁶See Bernet et al. 1993, p. 102.

⁴⁷See HUA X, p. 31.

⁴⁸See HUA X, p. 7 (note).

modification refers as such to that of which it is a modification, retention “[trägt in sich] in Form einer Abschattungsreihe das Erbe der ganzen vorangegangenen Entwicklung”.⁴⁹

This transformation, as iterate modification, of the original temporal field, which “ein originäres Jetzt in ein reproduziertes verwandelt”, is anyway directly perceived, in contraposition to objective time, which, as Husserl said, is instead the result of a reproductive act and precisely of a recollection (*Wiedererinnerung*): in the process of remembering a melody, notes resound as they were and in the same temporal progression, reproducing the chain of primordial impression, retention and protention. But this time, it is not directly perceived, rather it is a “presentiated presence” (*vergegenwärtigte Gegenwart*).⁵⁰ In recollecting, every instant represents an objective temporal point, ever again identifiable, and this allows the identification of temporal objects: “Identität von Zeitobjekten ist also ein konstitutives Einheitsprodukt gewisser möglicher Identifizierungsdeckungen von Wiedererinnerungen.”⁵¹

Both these forms of time are constituted by consciousness but this constitution is not in itself a temporal process. The theory of self-constitution of the stream of consciousness corresponds to the last level of analysis developed in the lectures on inner time-consciousness. Here Husserl affirms that consciousness is not a constituted unity, as an object enduring in time, but the original source of all time, objective or inner.⁵² Correlatively, every *Erlebnis*, insofar it belongs to time, has to be considered as a constituent of the stream of consciousness, before every reflective form of objectification. The flux in itself eludes every objectification and hence it alone is really self-given. What allows it to maintain a unity of coincidence with itself is a special kind of intentionality, called *Längs-intentionalität*.⁵³ This form of intentionality is

⁴⁹HUA X, p. 327.

⁵⁰See HUA X, p. 36: “Im Gegensatz dazu ist in der Wiedererinnerung die zeitliche Gegenwart erinnerte, vergegenwärtigte Gegenwart; und ebenso ist die Vergangenheit erinnerte, vergegenwärtigte, aber nicht wirklich gegenwärtige, nicht wahrgenommene, nicht primär gegebene und angeschaute Vergangenheit.”

⁵¹HUA X, p.108.

⁵²See HUA X, p. 333: “Der Fluß der Bewußtseinsmodi ist kein Vorgang, das Jetzt-Bewußtsein ist nicht selbst jetzt. Das mit dem Jetzt-Bewußtsein «zusammen» Seiende der Retention ist nicht «jetzt», ist nicht gleichzeitig mit dem Jetzt, was vielmehr keinen Sinn gibt. [...] Also Empfindung, wenn damit das Bewußtsein verstanden wird (nicht das immanente dauernde Rot, Ton etc., also das Empfundene), ebenso Retention, Wiedererinnerung, Wahrnehmung etc. ist unzeitlich, nämlich nichts in der immanenten Zeit.”

⁵³See HUA X, p. 81: “Im absoluten Übergehen, fließend, wandelt sich die erste Urempfindung in Retention von ihr, diese Retention in Retention von dieser Retention usw. Zugleich aber mit der ersten Retention ist ein neues «Jetzt», eine neue Urempfindung da, und mit jener Kontinuerlich-momentan

applied as a “now-retention-protention nexus”, it is its formal structure, without characterizing it as a process: Husserl also refers to it as timeless consciousness.⁵⁴ By virtue of its own intentional structure, it is given to itself as quasi-temporal (*quasizeitlich*) ordering of its phases, which means that this ordering is how the absolute non-temporal stream appears to itself.⁵⁵

In contrast to the notion of “longitudinal intentionality”, the intention implied in the constitution of the immanent temporal unities and thus directed to the temporal objects is defined “transverse intentionality”. Its role is linked also to the constitution of acts and hyletic data, which, as immanent objects, are possible objects of inner reflection and thus temporal unities. However, their analysis of constitution results quite problematic for several reasons⁵⁶; for example, as Mohanty has pointed out, acts cannot be considered as temporal extended in the same sense as enduring temporal objects. They may be temporally located but it cannot be said that they, as intentional acts, consist of temporal phases: the intention is compressed in a point, it is, as *Erlebnis*, immediately self-given and therefore it should be self-constitutive.⁵⁷

With regard to hyletic data, there is a similar problem that arises when an intentional structure is attributed to them. In fact, the sensory manifold of data is said to already been constituted prior to the act which is to animate it, thanks to a kind of synthesis which recollects the phases compounding the datum as a totality having a duration. Each of these phases, that are a sort of primal now-sensation, are formed into a total datum by virtue of their intentional horizon. As intentional structures, they have their own retentional and protentional horizon; however, they have not an object of reference, since only the intentional act provides the

verbunden, so dass die zweite Phase des Flusses Urempfindung des neuen Jetzt und Retention des früheren ist, die dritte Phase abermals neue Urempfindung mit Retention der zweiten Urempfindung und Retention von der Retention der ersten usw. hierbei ist mit in Rechnung zu ziehen, dass Retention von einer Retention nicht nur Intentionalität hat in Beziehung auf das unmittelbar Retinierte, sondern auch in Beziehung auf das im Retinieren Retinierte zweiter Stufe und zuletzt in Beziehung auf das Urdatum, das hier durchgehend objektiviert ist.”

⁵⁴HUA X, p. 112.

⁵⁵Mohanty underlines that there is a distinction between the lived experience and the living of it but this distinction reflects only the way with which lived experience appears to itself, accordingly with its intentional nature (See Mohanty 1970 note 55, p. 200).

⁵⁶See, for example, Sokolowski 1964, p. 92-3; p. 100.

⁵⁷Fink in “Vergegenwärtigung und Bild” (1930) draws a distinction between act-intentionalities and intentionalities which are not acts, for example retentions and horizon-intentionalities. They are said to be *unselbständige*, whereas act-intentionalities are *selbständig* experiences. As A. Gurwtisch wrote, the former kind of intentionalities “constitute the ‘condition of possibility’ of every objectivity: the temporal horizon, out of which something like an object as an identity which maintain itself through the flux of temporal phases could at all emerge” (Gurwtisch 1966, p. 138). See Mohanty 1970, p. 88.

reference to a transcendent object. Quoting Mohanty, it could be said that the “hyletic datum *qua* datum is intentional in a quite different sense, namely in the sense that it points beyond itself to the past and the present: its intentionality is simply its temporality.”⁵⁸

In summary, we have seen that the lectures on time consciousness had provided different variations of the concept of intentionality, which go beyond the notion of correlation: already within the period of the *Ideen I* Husserl has provided a transition from the concept of intentionality as the reference to an object to the conception of the noetic-noematic correlation; the last step was the conception of constitution. These passages can be described as phenomenological explications, without the necessity to abandon one conception in favour of another. However, it has become clear that the noematic intentionality cannot be meaningfully said applicable to the deeper intentionalities other than the acts. Constitution as meaning-bestowing or *Sinngebung* is valid just within a restricted perspective, since *hyle* and acts are considered no further analysable ultimates. The doctrine of *hyle* accounts for the facticity, the determinateness and the element of passivity in the consciousness. However, many scholars have found genuine difficulties to accord this doctrine with the basic phenomenological thesis that consciousness is wholly intentional and transparent to itself.

For example, according to Sartre, the non-intentional hyletic stratum to which *noesis* grasps intentional objectivities has to be conceived as transcendent in respect to the subjective consciousness.⁵⁹ On the other hand, the *hyle* may be regarded as the necessary presupposition of the fact that something is given at all. In the lectures on time consciousness Husserl decides to account for a modification of the thesis on the non-intentionality of consciousness developed in *Ideen I*, trying to make it compatible with the inclusion of *hyle*, of the impressional matter, in consciousness.

The problem does not entail the issue of the reference: the *hyle* is not the medium of reference, as the content in the theory of representative consciousness, because that is the role of *noema*. The passage from *hyle* towards objectivities is performed by the noetic component of the experience. Anyway, the issue is, as Gurwitsch has pointed out, the independency of *hyle*: posited as an assumption in respect to its self-giveness, it is impossible to account for

⁵⁸Mohanty 1970, p. 90. However, Sokolowski accuses Husserl that giving this formal analysis of time he fails to account for the quality of acts and especially for the material, the content aspect of the hyletic data.

⁵⁹See Sartre 1975, lix.

the changes of the sensuous appearance of hyletic data when different *noeses* operate upon them, maintaining the articulation between, on one hand, the meaning-bestowing acts and, on the other hand, the sensuous hyletic data. Just a shift of attention can alter such appearances, determining different properties. Thus, the hyletic datum is not independent from the manner of apprehension.⁶⁰ It follows that the phenomenological primal material is given as already articulated and structured and thus, according to Gurwitsch, hyletic data in a strict sense do not exist at all. *Noesis* has to be re-conceived as the entire experienced act of consciousness in correlation with the ideal, a-temporal and reiterable noema.⁶¹

Nevertheless, Mohanty underlines that these arguments against the doctrine of *hyle* by Gurwitsch (and also by Merleau-Ponty⁶²) are consistent only in reference with an atomistic sensualistic conception of *hyle*, which is the one accounted by Husserl in *Ideen I*. However, the thesis that there is some kind of impressional matter cannot be straightaway denied by any phenomenology of consciousness which wants to account for the concrete fullness of the content of the human conscious life.⁶³

The second volume of the *Ideen* contains the Husserl's first systematic phenomenology of body, which permits to realize that a large part of hyletic stratum is directly founded in the body, since it possesses both a material side and a psychic one. Thus, even if the supposed discrete sensation is just a product of theory and not a datum of consciousness, since "every sensation is already pregnant with a meaning"⁶⁴, a kind of opacity⁶⁵ remains to disentangle the assumption of the all-transparent consciousness, having at the same time a relevant influence on the concept of intentionality.

Further on, as we have already exposed, the lectures on time consciousness develop the topic of the intentional constitution of the hyletic stratum. But this time the concept of constitution is not the constitution as *Sinngebung*, related to the matter-form scheme and concerning act intentionalities. According to Mohanty, the constitution that Husserl applies to

⁶⁰See Gurwitsch 1966, p. 256.

⁶¹See Gurwitsch 1966, p. 257.

⁶²See Merleau-Ponty 1962, p. 243.

⁶³As Paul Ricoeur has shown, this doctrine becomes indispensable for taking more seriously the psycho-analytical concept of unconscious but especially the relation of the sensations to the body, as connecting link with the real world. See Ricoeur 1966, p. 373-409.

⁶⁴Merleau-Ponty 1962, p. 243.

⁶⁵See Sartre 1975, lix.

intentionalities other than act intentionalities is a constitution as transcendental production.⁶⁶ In order to be exposed and comprehend, this peculiar kind of constitution necessitates of an important host of new concepts belonging to Husserl's later phenomenology, as for example "passive synthesis", "genetic constitution", "horizontal and pre-predicative intentionality" and others.⁶⁷ They will be analyzed carefully one by one in the next paragraphs but for now it is possible to bring together these concepts under the notion of "operative intentionality".⁶⁸

In *Formale und transzendente Logik*, Husserl defines this kind of intentionality as the mode of the intentional life which remains unthematic and undisclosed.⁶⁹ It has a functional character (*fungierende*) which induce Husserl, in his later writings, to identify it with the world-experiencing-life (*Welterfahrende Leben*). This notion gathers together the thesis that intentionality constitutes objects and that not always constitution is active or conscious, that means there is a hidden, anonymous passive synthesis that constitutes transcendence.⁷⁰ These syntheses confer sense to the pre-given world, without emerging as acts or processes, since only their simplified achievement comes to the forefront. However, they provide the basis for all meaning and all constitution, i.e., the world-experiencing-life.

As Fink has suggested, this concept of functional intentionality underlines in general a broader feature of the phenomenological intentional analysis, that is, that what emerges thanks to this analysis is only the intentionality itself. It is not possible to fix on the "board of consciousness" the intentionalities as data in the same way with which empiricism could do with sensuous data. Reflection shows several *Erlebnisse*, which imply the purposing to aiming at, and they can be classified according to their intentional quality. Intentionality is just a property on the psychic level that can be grasped through reflection. According to Fink, Husserl's main understatement of the essence of intentionality is the fact that the apparently simple conscience-of is the result of a simplifying operation: a multiplicity of states of consciousness are compound in one act of conscience-of, which hides in itself effective and functional moments of meaning. The intentional analysis aims to disclose these secretly operating moments, revealing the *lebendige fungierende* role of consciousness, but this idea of an intentional analytic opens to a really wide field of investigation, since "(N)icht nur sollen

⁶⁶See Mohanty 1970, p. 111.

⁶⁷See Mohanty 1970, p. 114.

⁶⁸See Mohanty 1970, p. 114.

⁶⁹See HUA XVII, p. 208.

⁷⁰See Mohanty 1970, p. 123.

alle Weisen des menschlichen Wissen vom Seienden auf die sinngebend zugrundeliegenden originäre Modi zurückgeführt und von dort her verstanden werden, sondern diese Urmodi der selbstgebenen Bewußtsein sollen selber eine differenzierende Auslegung erfahren, die ganze Dimensionen des in ihnen verschlossenen intentionalen Sinnes an der Tag legt.”⁷¹ The noetic reflection is thus an essential moment of the phenomenological method: this kind of reflection does not only turn back towards the compact unity of the object – from the thing to the consciousness of the thing – but it addresses the object “im Wie seiner Gegebenheitsweisen”.⁷²

For example, it might focus on the identity of the object in spite of the different perceptual experiences (or memories or phantasies) of it or, in a more relevant sense, it might dwell on the implied horizons, belonging to former experiences, in which traces of the objectual meaning of it and specification of the subjective sense-operation might be found.

1.3 Phenomenological Perception

Both the synthesis of identification and the notion of horizon imply the idea of “passive synthesis”, which, in these forms, is already present in *Ideen I*. However, the general importance of “passive synthesis” reveals itself especially in the lectures of 1918-1926, *Analysen zur Passiven Synthesis*⁷³, and then in the *Formale und Transzendente Logik* and in the *Cartesianische Meditationen*.⁷⁴ Starting from the notions of “passivity”, “genesis”, “association” and “affection”, Husserl reformulates, in these works, the transcendental sense of phenomenology, modifying the articulation of the relationship between thought and experience.

The necessity to clarify in what sense thought needed experience emerged since the drafting of the *Logischen Untersuchungen*. However, in this first phase, the issue assumed a special interpretative orientation, aiming at explaining how intellectual items (concepts/categories) could be filled by intuition. The process of “fulfilment” is actually a synthesis of identification, made possible by the invariability of the material as the intentional mode changes. What was first given in itself, but only as thought or fantasized, results as

⁷¹ Fink 1966, p. 219.

⁷² *Ideen I*, p. 273.

⁷³ HUA XI, p. 196.

⁷⁴ (HUA I) *Cartesianische Meditationen und Pariser Vorträge*, hrsg. Von B. Strasser, Martinus Nijhoff, Den Haag, 1973.

“empty”, a mere signitive intention; then, when the object is given perceptively, fulfilment takes place. Fulfilment is therefore given through perception, which originally offers the thing in itself, and, moreover, it is strictly linked to Husserl’s notion of *Evidenz*, which, quoting Lohmar, “bezeichnet den ausgezeichneten Charakter einer Intention, die ihren Gegenstand erfüllt gibt, gegenüber einer anderen Intention auf denselben Gegenstand, die ihn nicht in gleichem Maße erfüllt gibt.”⁷⁵ In *Ideen I*, Husserl states that “jede originär gebende Anschauung eine Rechtsquelle der Erkenntnis sei, daß alles, was sich uns in der «Intuition» originär, (sozusagen in seiner leibhaften Wirklichkeit) darbietet, einfach hinzunehmen sei, als was es sich gibt, aber auch nur in den Schranken, in denen es sich da gibt”.⁷⁶

This principle of evidence is reformulated in the *Cartesianische Meditationen*⁷⁷ as the first methodological principle of phenomenology, whose normative value is bound to the epistemological fundamental assumption of the Husserl’s system: the commitment to pursue the goal of true science. In other words, Husserl requires that philosophical knowledge, willing to be considered “scientific”, must have an evident conceptual insight.⁷⁸

Husserl’s idea of philosophy is intimately connected with this paradigm of evidence, which is, in turn, linked to the performance of the phenomenological reduction. Therefore, one should not lend credence to the impression of “intuitionism” or “internalization”⁷⁹, since the reference to an originally intuitive level has to be framed within the context of phenomenological reduction: the “bodily” presence is not meant with the connotations of a “natural empirical attitude” and emphasis should be placed, instead, on the reference to those limits that determine the domain of phenomenological research as the field of pure givenness.

The phenomenological position-taking suspends every transcendence and replaces the empirical apperception with a special kind of reflection, called *phenomenological perception*, relating precisely to the pure phenomena obtained by reduction. In other words, the focus is on consciousness in its own essentiality, that is, transcendental subjectivity. The analysis of the essential structures of consciousness, started in *Logische Untersuchungen* and aimed to find the ultimate foundation of logic, widens in the direction of a transcendental perspective with the

⁷⁵ Lohmar 1998, p. 161.

⁷⁶ *Ideen I*, §24, p. 51.

⁷⁷ Cf., HUA I, p. 54.

⁷⁸ See Ströker 1997, p. 46.

⁷⁹ Ströker 1997, p. 46.

first Book of *Ideen*, where the inquiry about acts and their relations of foundation constitutes the central task of the so-called “static phenomenology”.

The approach was defined “static” because it enlightens only “concluded”, already fixed, constitutive systems, describing the flow of the intentional experiences according to essential laws. The style of this inquiry implies the assumption that we can recognize the essential structure of consciousness in every act, be it simple or complex, properly because the investigation points to essences. The eidetic method needs just a single act to allow the insight into the essential structures of consciousness, since the “experiential basis” of this a-priori analysis can be legitimately expanded only through eidetic variation⁸⁰: by focusing on essences and imagining a number of examples that can instantiate each of these essences, we can explore which features they have and how they relate to other essences.⁸¹

The eidetic reduction allows, therefore, the passage from a natural attitude, which entails the physical level, to the eidetic attitude, directed towards essences. However, the eidetic method evinces also the unnoticed but necessary presence of vague concepts rooted in experience, called *Typen*⁸², that are already at work in every perception: the eidetic variation remains oriented every time on given limits, determined by the *Typen* of the object that was constituted during experience. This dependency reflects itself on the regional eidetic laws, as, for example, the co-dependency of color and extension. Thereby, phenomenology cannot consider essences completely independent of all experiences, although “die Empirie [kann] nicht eine primäre Begründung einer transzendentalen Theorie der Erkenntnis sein.”⁸³ Knowledge has to be grounded on the transcendental eidetic analysis of the phenomena, that is the basic form of phenomenological empiricism.⁸⁴

Therefore, Husserl recovers the Kantian understanding of the transcendental inquiry, directed to the individuation of the conditions of possibility of knowledge, in order to “open” the underlying field of experience for eidetic examination. He introduces the transcendental reduction, which consists in a change of focus that leads from an object-directed attitude to an act-directed one: from the consciousness of the real (or possible) objects, which are always

⁸⁰ Lohmar 2017, p. 149-150.

⁸¹ Føllesdal 2006, p. 110.

⁸² See for a more detailed analysis of the notion of “Typus”: Lohmar, 2013, p. 236 ff. or Lohmar 2008, pp. 103-132.

⁸³ Lohmar 2008, p. 26.

⁸⁴ Lohmar 2008, p. 26.

already present, we are enabled to go back to the hyletic stratum and overall to the mental operations, which, in turn, have made possible the acquisition of the objects themselves. This process of “bracketing” leads us to examine solely the structure of the acts in which we experience objects, that is the act’s noesis, noema and hyle. The combination of the eidetic and the transcendental reduction leads us to study the noemata, noeses and hyle of acts directed toward essences: this procedure is precisely the *phenomenological reduction*, which sets the field of phenomenology and establishes its proper objects of study.⁸⁵

Using Husserl’s favourite example, the seeing of a dice, it is possible to illustrate more easily the peculiar procedure of the two kinds of reduction: when we perceive a dice, an object with six sides, some of these sides are directly visible and others are not; only if we twist the item, the hidden sides become manifest. However, at first glance, we say we see a dice, that is an object with six sides, because of our custom with the characteristics of this object. In other words, we employ a complete set of anticipations to “fill” the gaps of our perception in accordance with our previous experience of similar items. Usually this operation remains unnoticed but if, for example, we twist the dice and we discover that one of the previously hidden side presents a different colour, we may be surprised. The disturb, caused by the disappointment of our expectations, leads us to reflect on the structuring activity of our consciousness, which, in form of anticipations, pre-determines the structure of the experienced world. This reflective attitude corresponds to the attitude requested by the transcendental reduction. Therefore, every time we pass from a natural attitude, in which we believe to directly perceive the objects in the world, and we shift the focus on the structures of consciousness, we perform the transcendental reduction.⁸⁶

By the same way, a change of attitude is required in order to obtain the eidetic reduction: recovering the example of the dice, we can make abstraction from its physical characteristics, as, for instance, its weight, colour or possible signs of consumption, and we can focus our attention only on the shape, the cubic form that is typical to all dices in general. This shared feature is an example of essence and the shift of focus is a simple example of eidetic reduction. The analysis provided thanks to this modality, i.e., the eidetic method, concerns precisely essences. The combination of these two procedures allows us to perform a phenomenological

⁸⁵ See Føllesdal 2006, pp. 112-113.

⁸⁶ See Føllesdal 2006, pp. 106-107.

reduction: by directing our consciousness toward the cubic form of the dice, anticipations are provided, for example, concerning the expected number of corners (eight) or of the edges (twelve); these expected features are the same as in the case of a concrete particular dice but we could replace it with another one and the set of anticipations will not be violated. Obviously, this set has to be a subset with respect to the content of anticipations concerning the concrete item but precisely on this essential set our analysis has to be focused. The phenomenological analysis is directed to the transcendental components, i.e., the hyletic stratum, noemata and noesis, of acts directed to essences.⁸⁷

In general, the change of perspective underlying the phenomenological reduction influences the meaning with which the relationship between thought and experience must be articulated, giving priority to the analysis of categories and essences. The epistemological priority, linked to the transcendental approach, leads to treat experience as the conclusion of the knowing process: categories are based on perceptual objects whereby they are able to grasp those implicit articulations on which the ideal possibility of their objectification is grounded.

The condition of adequacy is the correspondence between the predicative and the pre-predicative layer but Husserl, unlike Kant, maintains that the categories should not be deduced but legitimized, showing the processes that from experience lead to logical statements. Already in the 6th of the *Logische Untersuchungen*, when the so-called *transcendental turn* was still not came in play, the focus on logical operations, as results of the spontaneous activity of thought, laid out that each significant intention that provides for a categorial form can only be filled in with a well-founded perception.⁸⁸ The necessity of this kind of perception, characterized as able to collect in a particular syntactic form what the founding acts present, demonstrates that the object as “bearer” of categorial forms has to be already given. In fact, Husserl wants to show that logical forms are already structured before judging in the proper sense and that experience is not “shaped” by categories that apply to it but, on the contrary, such categories are “prepared” in experience, that is, they are structured passively, before the active turning of subjectivity, so that they do not derive from an active application, but belong to the passive structuring of experience.

⁸⁷See Føllesdal 2006, p. 109.

⁸⁸See LU II (VI), p.146: “In solchen fundierten Akten liegt das Kategoriale des Anschauens und Erkennens, in ihnen findet das aussagende Denken, wo es als Ausdruck fungiert, seine Erfüllung: die Möglichkeit vollkommener Anmessung an solche Akte bestimmt die Wahrheit der Aussage als ihre Richtigkeit.”

1.4 Primary and Secondary Passivity

Already in *Ideen II*, Husserl raises the important issue of passivity but in this context the notion is directly linked to the characterization of consciousness as actual or in-actual and, more broadly, to its dimension of spontaneity and potentiality. In order to illustrate the difference between these modalities of act-performing and correlatively characterize the passive dimension of consciousness, it is necessary, however, introduce first the role of theoretical acts.

Acts with a theoretical attitude represent the most peculiar form of expression of intentionality and designate the manner how lived experiences are carried out in the function of Knowledge. To perform an act directed with an active focus to what is objective means assuming the specifically intentional modality and correspondingly a theoretical attitude. This grasping way, as theoretical, is, in an actual sense, Objectifying.⁸⁹

The objectivities, grasped and posited as beings by theoretical acts, had to be already consciously constituted prior to this special kind of “reflective turning back” and thus they are considered pre-givennesses. However, they can also be the results of an originally authentic/spontaneous theoretical act: “die einzelnen spontanen Aktschritte [wird] nach ihrem Vollzug im Bewußtsein retentional erhalten bleiben, und zwar in der modifizierten Form von *passiven* Zuständlichkeiten, und dass schliesslich am Ende des ganzen Denkprozesses ein einheitlich zuständliches Bewußtsein steht, dass analog wie eine schlichte Vorstellung als vorgebendes Bewußtsein fungieren und eine neue theoretische Blickrichtung auf sein einheitlich in ihm bewußtes Objekt aufnehmen kann.”⁹⁰

The same can be said about other kinds of spontaneous acts, belonging for example to the axiological attitude or the practical attitude, since this peculiar phenomenological modification inherits as a priori possibility to every act at all. The subject who lives through is directed, in an eminent sense, towards an objectivity, but accordingly to the basic character of the act, this objectivity is characterized in various ways, for example as an object of judgment, value or will; passing into a theoretical attitude, the object becomes an object of an actively performed positing of being. However, it is important to pay close attention to keep

⁸⁹See *Ideen II*, p. 4.

⁹⁰*Ideen II*, p. 6.

distinguished theoretical acts from the immanent reflection on the acts, in which objective predicates are relative to consciousness, especially in the case of predicates of feelings.⁹¹

The peculiarity of the theoretical attitude just discussed leads us to specify other essential phenomenological distinctions and especially the difference between the act performed spontaneously and the state of passivity in which it passes over. As we saw, the theoretical attitude provides that we live/perform acts directed to their objects in a privileged sense: this privilege is determined by the *Ich-kann* faculty of the subject, whose activity can be traced back to the related concepts of spontaneity, interest and motivation. This activity has in consciousness a correlative state of passivity, in which objectivities were in a confused state before the spontaneous act thematized them. This state of passivity, in which the activity passes, is characterized as a referring back, as a reactivation of the originally spontaneous and articulated performance. When the faculty of the *I-kann* convert this reference back into a new production, it comes to consciousness as a “repetition” of the same state.

There are different kinds of spontaneities, some more dominant with regard to their phenomenological dignity, actually the ones in which we prefer to live, and other with a more collateral/supporting function, which remain in the background: these acts can be performed as *acts of interest*, whose states has arisen to consciousness as a *secondary passivity*. The distinction depends on the actuality or in-actuality of the course of the act of spontaneity: for instance, living in an act of joyful feeling, we can intentionally turn toward the joy-object with a modality of affective interest. Then we can change our attitude into a theoretical one directing our interest on the theoretical subject of the act. In this way our feeling of joy remains in the background, as when we feel the joy for the beauty of the appearances which can occur in physical-optical research.⁹² To every change of theme corresponds the constitution of new objectivities, composed of strata which have thematic significance, depending on the attitude. The objectivities which belong instead to the sphere of passivity refer back to such connections in consciousness.⁹³

In general, these changes of attitude correspond to different qualities of intentional acts, according to which emerge, by virtue of attentional focusing, different “cogitationes”. This structure shows the essential dimension of potentiality which inherits to consciousness, that,

⁹¹*Ideen* II, p. 6 (note 1).

⁹²See *Ideen* II, p. 13.

⁹³See *Ideen* II, p. 13.

thanks to the attentional turning, can intentionally point to its noesis as well as its noema. For example, every perception has its perceptual foreground, the set of things that appears perceptually together with it, but this context can remain unthematized regarding its factual existence. The consciousness can potentially direct its attention on it, letting it emerge in the form of actual positing but this possibility is not a logical possibility but an eidetic one: “im Wesen der phänomenologischen Sachlagen gründet die ideale Möglichkeit, die in ihnen beschlossenen potentiellen Thesen zu aktualisieren.”⁹⁴ This context, this phenomenological situation, become, so to say, a unity of potential positions. The realisation of one position at the spite of another depends on the spontaneous activity of the subject, the so-called *Ich-kann*.

On the criterion of spontaneity lays also the distinction between categorial synthesis and sensuous synthesis: various objects can be actively synthesized, through a spontaneous act, becoming substrates for certain categorial syntheses; they can then enter in categorial formations with a higher degree, as collectives, disjunctives and state of affairs of every kind. In the case of sensuous synthesis, instead, what is connected are the ultimate sensuous features of the object⁹⁵ but this connection is not a spontaneous act in the same sense. The single apprehension of a thing or of its properly essential parts or sides contains in itself partial meanings in the form of “secondary passivities” which as such are determinative of sense and motivate the further course of perception: “so sind in der Auffassung der Gestalt eines Dinges von einer Seite kontinuierliche Verläufe anderer Seitenauffassung dieser selben Gestalt intentional mitbeschlossen.”⁹⁶ However, it is not always necessary that the reference would point to something that had already been apprehended for itself. In the apprehension could be brought into prominence also specific features that were not previously given as separated.

Aesthetic synthesis unifies also objectivities coming from different sphere of sense, as the visual one and the tactile one, and finally it arranges the correlation between the different moments of the appearance of the thing and its perceptual circumstances (that are, the

⁹⁴*Ideen I*, p.276.

⁹⁵Husserl points out in a note that there is a difference between a synthesis which binds former separated elements and a continuous synthesis as fusion. Actually, the last attains properly to sensuous features which then become the ultimate elements on which the aesthetic synthesis of the first kind operates. See *Ideen I*, note 1, p. 19.

⁹⁶*Ideen II*, p. 20.

positioning of the body and mostly of its sensuous organs), which are normally not grasped or properly co-intended.⁹⁷

In an apprehension we always focus on one feature at time but the object stands intentionally there as endowed with many other features, already present in the perceptual field, although un-grasped. With an attentional shift, we can produce an intention directed on other features or on sides of the thing which remain unseen. These features are grasped by these intentions in a determinate manner when they become intuitively present or in an indeterminate manner when they just remain in the intentional horizon of the thing. With this notion of “horizon”, we intend here in a very strict sense that past intended features related to the experience of the thing that remain confused, non-activated elements but that nevertheless contribute to the sense of apprehension. These elements can be reactivated or not, remaining possible or effective targets of other rays of intention. In this sense, it could be said that the phenomenological analysis is not properly a discovery of new elements characterizing the thing but, especially at the level of perceptual acts, an explication of what is latently implicated.

⁹⁷*Ideen* II, p. 44.

2nd Chapter

2.1 Genetic Theory of Perception

In Husserl's later works, the necessity to focus on the passive structuring of experience ushers a new phenomenological approach, which Husserl defines "genetic", since it focuses properly on the "genesis" of the constitution and, by extension, on the genesis of the involved objects.⁹⁸ What has to be reconstructed are the experiential roots of logical concepts, whose analysis does not concern the factual history of every single apprehension but the typical form of this achievement, considered by Husserl as an a-priori or an essence. This historical inquiry maintains, in fact, a transcendental perspective and for this reason it must not be confused with the historical-factual process of the subjective learning of certain logical notions.

Thus, the genetic method, which matures in these lectures on passive synthesis and, later, gives priority to the analysis of perceptual experience, demonstrates that the field of sensations is not a disorderly accumulation of data, on which a strict order must be imposed: experience already has an orderly structure and the unveiling of these passively articulated structures will make it possible to understand the very life of subjectivity in which each being manifests itself. At the same time, this work of "digging" will lead to a revision of the notion of transcendental subjectivity. If, on one hand, it is a matter of exhibiting the ontology of a possible world in general, on the other hand it is also necessary to describe the possible types of acts and the possible types of fulfilment of the different forms of apperception of subjectivity that this world of life sets up in itself. In this sense, the *Analysen zur Passiven Synthesis* are configured as a genealogy of transcendental subjectivity in which there is a radical recovery of the principle of manifestativeness: it is a matter of clarifying how it is possible that something we perceive is not only related to what we actually see of it, but also in relation to what is not authentically perceived of it. And therefore:

⁹⁸The commonly accepted view tends to identify the genetic turn of Husserl's phenomenology with his later works but, ultimately, some scholars support the presence of genetic motifs already in the first and in the fifth of the *Logische Untersuchungen*, with reference to the phenomenon of indication and to motivation, but in this context the genetic aspects are merely described. See Brudzińska, 2014, p. 91, note 1.

Wir machen uns klar – wrote Husserl – was zur *Möglichkeit eines Dinges überhaupt* wesensmäßig gehört, ohne was also ein Ding überhaupt nicht gedacht, ohne was es nicht wahrgenommen und im Erfahrungszusammenhang «ausgewiesen» werden kann.⁹⁹

Instead of directly observing things, it is a matter of thematizing the evolution of subjective modes of givenness and thus explaining the subjective structures that make the appearances of the object possible as something identical in the face of multiple modes of appearance. Perceiving is an extremely complex activity, which includes seeing, touching, smelling and others; all these different modes of givenness concur in constituting something identical to which all its perceived qualities can be ascribed. Besides, even within the same mode, for example that of seeing, we always capture different aspects of what is considered the same thing. As a unity of sense, the perceived thing is constituted subjectively through *syntheses*. The work of genetic phenomenology consists precisely in tracing these syntheses and making them explicit. Only then it will become clear that the experienced world is not a subjective representation, but the result of a universal synthesis that cannot be manipulated by subjectivity and is therefore objective.

2.1.1 The Field of Pre-givenness and the Original Forms of Syntheses

Husserl characterizes the process of perceiving as an “aktive Leistung des Ich”, which nevertheless presupposes a “Feld der Vorgegebenheit”, a structured field of sensuous data (*sinnliche Gegebenheiten*) which, in turn, are the passive product of constitutive syntheses.¹⁰⁰ Thus, this field of pre-givenness must not be reduced to a chaos of sensations but to a structure of pre-constituted elements, which through the objectifying operation of the Ego will become “objectivities” (*Gegenstandlichkeiten*).

The genetic analysis of the sphere of pre-givenness reaches its most articulated and significant form in *Erfahrung und Urteil. Untersuchungen zur Genealogie der Logik* (1939), a work in which Ludwig Landgrebe, Husserl’s assistant, gathers a large part of the material for

⁹⁹Ms. A VII 22/7a.

¹⁰⁰EU, p. 74-75.

the university course that Husserl held from the 1920s onwards. The intention of this work is to show the mode in which the predicative judgment finds its very conditions of possibility in perceptual experience or, better, in its building on pre-predicative operations.¹⁰¹

The domain of perception, which constitutes only a part of the total sphere of lived experiences, is composed of different structures, such as those of passive pre-givenness and active orientation of the ego, of interest, receptivity and spontaneity. Actually, these structures also characterize all the other spheres of consciousness and thus we can talk, for example, of an original passivity of feelings or of an active orientation in pleasure.¹⁰² But the priority given to the analysis of perception is motivated by its higher simplicity, since in the domain of the purely contemplative perception the objective self-evidences, as pre-predicative, are easily intuitable and syntheses acquire an exemplar character.¹⁰³

To recap, perception, as active performance of the ego, presupposes a field of pre-givenness, from which something, a particular, stands out, comes into prominence. Thus, perception implies receptivity, i.e., the capacity of the subject of being affected, which expresses the acceptance of the experience that is imposed on the ego as percipient. This capacity is considered the lowest level of activity, because it is still linked to a passive dimension.¹⁰⁴ At this juncture, it is, however, misleading to oppose activity against passivity, because, although a distinction is involved, degrees of participation of the ego are more nuanced than it could be imagined.

Considering a field of sensuous pre-given data, as for example, the visual field, stimuli stemming from the immanent sphere are structured into primitive unities. But, at a first glance, it is not possible to identify, for example, colours (in relation to the model of the visual field) directly as object of experience, since they are always perceived as belonging to a surface, to an object; in order to thematize colours as unities of sensuous data, we should abstract them from their co-implications, considering only the apperceptive stratum.

However, even after this operation, we recognize that sensuous data brought into prominence by abstraction are themselves already unities of identity, which can manifest in

¹⁰¹EU, §14.

¹⁰²EU, p. 73.

¹⁰³EU, p. 71-70.

¹⁰⁴See EU, p.83.

different manners and thus, they become thematic insofar as they are products of a constitutive synthesis.

The first of the two types of syntheses that are responsible for the constitution of unities in the pre-given field is the operation of synthesis in internal time consciousness, which bestows the data with “eine universale Ordnungsform der Sukzession und eine Form der Koexistenz aller immanenten Gegebenheiten”.¹⁰⁵ Nevertheless, although time-consciousness is the original seat of the constitution of the unity of identity in general, it is still not sufficient to draw unifying formations out of the given sensuous data. A second type of synthesis is requested, which, together with the temporal one, concurs in the constitution of unities within the immanent sphere, that is, the associative synthesis.

2.2 Association and Affection

Here, Husserl explicitly points out that “Das Phänomen der assoziativen Genesis ist es, das diese Sphäre der passiven Vorgegebenheit beherrscht, aufgestuft auf den Synthesen des inneren Zeitbewußtseins”.¹⁰⁶ Association is the law of the immanent genesis in relation to a paradigm of similarity that can be expressed with the formula “this recalls that”. It operates as a purely immanent connection with regard to the content and can be described phenomenologically as a genesis, where one of the elements is, in relation to consciousness, that which evokes while the other is that which is evoked.

Originally, association determines the most general synthesis of sensuous data connected in immanence: given an homogenous field, an individual datum raises into prominence since it contrasts with something else, for example, its background. But contrast goes hand in hand with similarity, producing the coming into prominence of the unlike from the basis of the common. Homogeneity and heterogeneity are the criteria according to which syntheses of identification are performed, differing in degrees until the limit-case of a complete likeness. Further, there is the case of repetition, which involves retention, since it is a kind of unification of the present content with a non-present (prior or subsequent) one: passing from

¹⁰⁵EU p. 76.

¹⁰⁶EU, p. 77.

likeness to likeness, the content of the new like comes to a perfect coincidence with that of the first, realizing what Husserl defines as blending (*Verschmelzung*).¹⁰⁷

Associative blending determines the unity of the field of sense, while association in general produces its order and its articulation in groups of likenesses. The effect of the association hits the structure of the field of sense but holds for any data, even for the more complex. In *Ideen II*, Husserl alludes to this form of self-organization of the data of sensations as the structuring of a field of “letzten primitiven Urgegenständen, die nicht mehr durch irgend welche Ich-aktivität konstituiert, sondern im prägnantesten Sinne Vorgegebenheiten für alle Ich-betätigung sind”.¹⁰⁸

This articulation through syntheses produces unities which have an “affective force” on the ego. For example, when a particular comes into prominence, standing out for contrast from a homogeneous background, it displays an “affektive Tendenz” toward the ego, which, by itself, can turn toward the stimulus or not. In this phase, the Ego is still a receptive pole, since we continue to be in a pre-operative moment of the perceptual process.

The prominent datum emerges in the sensuous sphere by contrast in respect to a multiplicity of co-present data, exercising on the Ego a stimulus more or less powerful. According to the intensity of the stimulus, qualitative discontinuities of various degrees elicit an *obtrusion*: the more intensive the degree of “coming-into-prominence” of the stimulus (*Reiz*), its “salience”, we might say, the more the chances of obtrusion it has on the Ego. Thence, we can distinguish in this affective tendency two moments (conceived as non-independent parts): - the attraction that data exercise on the Ego; - the being-attracted by data of the Ego itself (*Affektion*). Both these tendencies precede the involvement of the effective activity of the Ego. Only if the Ego addresses its interest toward the stimuli in an active doing (*Tun*)¹⁰⁹, perception as active experience can eventually come into being. The Ego has to turn itself toward the object in compliance with the tendency (*Ichzuwendung*). It performs an act which is intentionally directed to the object. This tendency has various degrees but in general its effectiveness depends also on other factors related to perceptual circumstances or on the ongoing activity of the subject. Husserl proposes the example in which a higher-impact sound affects us and yet we do not lose our focusing on the ongoing conversation with an important

¹⁰⁷EU, p. 78.

¹⁰⁸*Ideen II*, 214.

¹⁰⁹See EU, §19.

person.¹¹⁰ If, instead, the intensity or the urgency of the stimulus obtrudes itself to the Ego's attention, Husserl speaks of a state of being-awake of the Ego (*Wachsein des Ich*), in which it allows access to what is coming and takes it in.

This dimension of receptivity has not to be interpreted in contraposition with a dimension of egoic activity: the "simple apprehension", the simple having-in-consciousness of the original appearances in pure passivity, as we already said, is the lowest level of activity. With the awakening of the Ego the active phase of the perceptual process begins, operating as "explication" (*Explication*).¹¹¹ Both these egoic operations, the simple apprehension and explication, are defined by Husserl as levels of the "contemplative perception" (*betrachtende Wahrnehmung*).¹¹²

2.3 Attention and Interest

This characterization of perception as "contemplative", implying indirectly a certain degree of *attention* by the perceiving subject, leads to introduce the analysis of the pervasive notion of interest (*Interesse*), which is, indeed, deeply intertwined with the concept of attention. In fact, the common perspective of analysis of Husserl's notion of interest deals with the so-called "focused intentionality", i.e., attention.

As we have previously seen, the beginning of the turning-toward of the Ego activates a tendency directed to the perceived object, which can be assimilated to the one considered by Husserl as the most meaningful concept of intention, i.e., the *doxic* one, a kind of intention that, going far beyond the mere representation, corresponds to the intention of being. Also the turning-toward in itself is defined by Husserl as "doxic"¹¹³, since it constitutes the beginning of a continuing realizing directedness of the Ego toward the object. Both these concepts, attention as doxic intention and interest, are involved as fundamental pre-conditions within the general domain of objectifying experiences but their role is particularly significant for objectifying acts

¹¹⁰See EU, p. 82-83.

¹¹¹As we will see later, explication, in turn, is divided between explication of the inner horizon of the perceptual object and explication of its external horizon. Both types of ego operations, apprehension and explication, entail a specific form of the "keeping-a-hold-of" (*Im-Griff-Bleiben*) or "still-holding-in-grasp" (*Noch-im-Griff-behalten*) which plays a fundamental role in the process of habit formation.

¹¹²See EU, §22-24.

¹¹³See EU, p. 84.

of perception. Incidentally, Husserl argues that every act of perception has to be accompanied by an interest of some sort and precisely by a perceptual one.¹¹⁴

However, the notion of perceptual interest was originally referred to the act of “attending”, described by Husserl, using Carl Stumpf’s words, as *Lust am Bemerken*.¹¹⁵ In early manuscripts from 1898 on “Attention as Interest” (Hua XXXVIII), the introduction of the notion of *spezielle Meinung* (or *Sonderwahrnehmung*) describes the specificity of the act of singling out an object as the target from a general objective context. But this act corresponds to the formal condition of attention, whereas the full phenomenon must also involve a concrete interest, motivated by or referring to an intended object. This striving towards the perceived object expresses the core of the epistemic process in its concreteness and thus the core of intentionality itself, since the achievement of an adequate perception of the object demands for a certain tension involving the subject.

This tension provides a sort of genetic impulse that, at the very beginning, initiates the active process of perceiving and, then, lets it keep going towards further objectifying processes. As we have seen, this striving is not yet conceived as an active tendency to aims or voluntary actions but as an involvement of the subject, at least, as a pole of not completely neutral receptivity. The intensity of the involvement, of the interest, influences the process of noticing: the perceiving subject prefers one object or certain parts of it, structuring, unnoticed, the field of perception according to focus and horizon, foreground and background of consciousness. When the selection is explicit, for example when we are intentionally searching something, the preferring operates actively according to our will; but, in a state of normal perceptual engagement, interest operates in an implicit way, without thematizing the target, but structuring the experiential field in a completely passive, automatic way. Therefore, this structuring, totally unnoticed by the perceiving subject, takes place according to passive forms of differentiation, determined qualitatively by prominences in contrast to the homogenous perceptual field or by associations between similar contents.

The definition of thresholds and saliency criteria, with regard to which stimuli and things in our surrounding world are able to affect us at a given time, is the most original function (in a genetic perspective) of the notion of interest, especially in relation to its strict connection

¹¹⁴See HUA XXXVIII, p. 103.

¹¹⁵See HUA XXXVIII, p. 108.

with the concept of attention. In this sense, it can be considered the qualitative component that allows a selective sensitivity towards certain outer stimuli, which then affect us and motivate successive turning towards these same stimuli. But the notion of interest that accompanies that of attention is also characterized as a tendency to fulfilment (*vollziehend-Tendieren*), a striving toward realization of an adequate perception of the intentional object.

In this case, *kinaestheses* come into play. The tension between actual intentions and their potential fulfilment in ongoing perceptions can be described as a general perceptual drive, suggesting, for example, the inspection of different appearances of the same object from different perspectives.

2.4 Kinaestheses and Habitus

In an usual perceptual experience, in fact, spatial objects are never fully given in intuition with respect to all their sides and aspects: visual perception only grasps the front side of an object, whereas the backside and other parts of the item fall entirely outside of the visual field (*Abschattungen*).¹¹⁶ However, we always intend to see the entire thing and, also in reflection, the side properly seen refers to the as-yet-unseen sides and to the thing as a whole.¹¹⁷ Husserl defines “authentic (*eigentliche*) appearance” what is actually seen, whereas the apperceptive surplus, or the empty co-intention, he calls “inauthentic (*uneigentlich*) appearance”.¹¹⁸ Anthony J. Steinbock defines this way of givenness of the perceptual object as “paradoxical”, for it gives us itself in a natural disposition as a whole and its being in-itself is only constituted as a being in-itself-for-us.¹¹⁹ The authentic character of the perceptual act derives from its original self-givenness in intuition, “in its physical (*leibhaft*) presence” and not by means of an image or of a conventional sign representing the object. This intuitiveness comes from the complex of sensuous data interwoven with the apperceptive act.¹²⁰ The apperceptive surplus, instead, lacks sensuous data and the determination of its possible fulfilment depends, indeed, on the kinaesthetic course. Therefore, the partiality of the authentic

¹¹⁶See also Husserl, AZPS, Einleitung, §1 (Originalbewußtsein und perspektivische Abschattung der Raumgegenstände).

¹¹⁷Bernet et al. 1993, p. 116.

¹¹⁸Husserl 1973, §16 e passim.

¹¹⁹Steinbock 2001, p. XLIII.

¹²⁰Bernet et al. 1993, p. 117-118.

appearance implies the necessity of a supplement, thanks to which a dynamization of the constitution process through kinaestheses is produced, according to a co-implied horizon pointing to diverse possibilities.

In the *Ding und Raum Vorlesungen*, Husserl has described kinaestheses as phenomena belonging to pure consciousness: they are sensations of motion¹²¹, experienced as bodily-organic capabilities¹²² by virtue of the reciprocal and irreducible relationship of dependency between consciousness and body. The flowing of these sensations in consciousness assumes the form of a temporal continuum of succession and, since motion is defined by Husserl as the basic form of alteration, the flow of kinaesthetic sensations is a continuum of alteration.¹²³

Among the kinaesthetic sensations of motion, we can distinguish between the receptive sensations of the bodily organism and the sensations of the spontaneous “I can”. This notion is quite difficult to summarise, but at this level we will only mention it to underline the link with the dimension of practical possibility, i.e., the kinaesthetic consciousness corresponding to the claim: “I can move myself”.¹²⁴ This possibility, this “kinaesthetic freedom”¹²⁵, refers to a sort of tendency to produce those kinaesthetic circumstances which would permit the optimal conditions of givenness of the perceptual object. However, this involvement, this tension, is felt apparently not in the same way as a proper intentional feeling, like joy or sadness, which always presupposes an objectifying act. The notion of interest as general impulse to perceive, to intend, should be interpreted as an early form of dynamical cognitive drive. Thus, interest is not a mere effect in object perception, but should be understood as a *motivation* for concrete processes of perception and action.¹²⁶

In *Erfahrung und Urteil* the genetic analysis of perception starts with the given object exerting some “allure” on the Ego; then the interest leads to the possibility to better perceive the target, motivating a first involvement of the body, a bodily form of interest, which realizes itself as a proper active process of bodily turning towards that, through kinaesthesia, offers us new perceptual contents. However, at this stage, the awareness or the will of the ego is not necessary: kinaestheses are “Auswirkungen der Tendenzen der Wahrnehmung, in gewissem

¹²¹ Husserl 1973, pp. 154-163.

¹²² Merleau-Ponty 1962.

¹²³ Bernet et al. 1993, p. 133.

¹²⁴ Mohanty 1984, p. 27.

¹²⁵ Husserl 1921, Ms. D 13, p. 8a.

¹²⁶ Wehrle 2015, pp. 46-47.

Sinne «Tätigkeiten», obschon nicht willkürliche Handlungen. Ich vollziehe damit (im allgemeinen) keine willkürlichen Akte. Unwillkürlich bewege ich die Augen usw., ohne dabei «an die Augen zu denken».¹²⁷

Therefore, even with involuntary movements of the bodily organism, modifications of appearances may occur¹²⁸ and gradually these turn into habitual kinaesthetic processes, as familiar forms of free behaviour (also belonging to the “I can” practical dimension). This produces a layered structure with typical series of modifications, according to a hierarchical order, intrinsic to the various perceptual systems.

In respect to visual perception, for example, the aim is the progressive expansion of the visual field or the gradual construction of the spatial object.¹²⁹ Husserl correlates this gradual formation of ever more comprehensive kinaesthetic systems with the constitutional achievement of the perceived object. However, insofar as the intentional object is also co-constituted by the apprehension of sensational data representing it in its material determination, the constitution involves both kinaestheses with their progressive ordered systems and sensational data. With regard to the latter, the form of unification that allows to constitute the perceived thing as a unity of multiple appearances, is mainly the temporal form of the flow of consciousness, which is provided through syntheses of coexistence and succession. As we have seen, the continuous synthetic coordination of appearances with the same appearing object requires also a continuous synthesis of identification through association. The synthetic coordination of appearances through association is motivated, in turn, by the cognitive interest bearing on an object which, within the passive sphere, is directed toward an adequate knowledge of the thing (and not, at this level, towards any aesthetic enjoyment or practical-technical application).

The continuum of appearances is the realization of the possible further course of perception, as this course is implied in the horizon that belongs to inauthentic appearance.¹³⁰ Yet, not all these anticipated perceptual possibilities have the same motivational force, they don't push the same way for their actualization. On the one hand, this differentiation in the field

¹²⁷ EU, p. 89.

¹²⁸ See for example the notion of “body schema” in Shaun Gallagher (Gallagher, 1985) defined as a non-conscious performance of the body, according to which it appropriates, for example, certain habitual postures and movement in relation with its environment.

¹²⁹ Bernet et al. 1993, p. 133.

¹³⁰ HUA I, §§30-54.

of possibilities stands from the connection of the inauthentic appearance with the related authentic one and with the retained, elapsed past continuum of appearances. On the other hand, it results from the specific interest of the perceiving subject, which guides kinaesthetic paths. In this sense, “(t)he potentiality of the appearances, the being-able-to-let-them-take-their-course, as well as their way of playing within a certain scope, is a mediated potentiality and derives its sense from the immediate potentiality of the kinaesthesia”¹³¹. This means that kinaestheses indirectly motivate not only the various types of scope in which appearances play or the sensuous fields belonging to the various types of sensations; they also motivate the course of the appearances or images.

We could say with Steinbock, that “relations of motivation permeate all dimensions of intentional life”¹³²: at the level of the active sphere we recognize egoic motivations of interest, while, within the passive sphere, this same cognitive interest is directed toward an adequate knowledge of the thing. It expresses itself in terms of a fusion or connection of matters within a sense-field or in terms of kinaesthetic motivations. Therefore, also kinaesthetic paths depend on this specific interest, which actively motivates the kinaesthetic course and, correlatively, the further perceptual course. We will provide thereafter a more specific analysis of the Husserl’s concept of motivation, limiting ourselves, for the time being, to stress its importance only incidentally.

In the transition from the passive to the active sphere, typified in the advent of egoic awakening through an attentive turning toward, one instigated by some pre-givenness turned into givenness, the progressive satisfaction of a cognitive interest bearing on an object depends on the synthetic coordination of appearances. The unity that results from the arrangement of manifold appearances under a sensuous type is, therefore, an achievement of sensuous consciousness and it is a basis for the logical synthesis to produce the evident identity (Husserl, 1973, §44).

To a deeper look, this unity is not introduced from outside, but it is already essentially prefigured in the content of every single appearance. But, since the interest of the Ego is directed to the object as a unity, which includes its continuously changing modes of appearance, Husserl introduces the “modifizierte Aktivität des Noch-Im-Griff”¹³³, which describes the continuity of

¹³¹ Husserl 1931, Ms. D 12, 11b.

¹³² Steinbock 2001, p. XLVII.

¹³³ EU, p. 118.

the perceptual process at the noetic level. This activity of “holding-in-grasp” is characterized as a kind of “Passivität in der Aktivität”¹³⁴, which leads to retain the just elapsed perception of the object. It is important to underline that there is a clear-cut distinction between the activity of holding-in-grasp, which requires a certain degree of Ego’s participation, and the retentional intentionality which takes place without any accomplishment on the part of the Ego.¹³⁵

Husserl employs again the example of the apprehension of a continuous ringing of a sound: its unity of duration is passively pre-constituted at the level of temporal and associative synthesis and the apprehension of it is directed toward the sound as such a unity. In fact, albeit the apprehension endures continuously, it is not directed toward each phase actually sounding.¹³⁶ This still-in-grasp is defined as *impressional*, since it occurs when the object is actually given, but it may also be *non-impressional*, when, for example, the object is still retained in grasp although our gaze is turned toward a new one or when we remain focused on its retentional reverberation, after the givenness of this object has ceased.¹³⁷ Unlike the retention, the phenomenon of holding-in-grasp can be applicable to all objectivities of every possible mode of consciousness (impressional or retentional), as a form of activity modified; but this holds true only until such objectivities maintain Ego’s attention, because, if the Ego turns completely away from them, they remain as impressions or retentions (or other form of consciousness) only at a passive level in the field of consciousness.

Otherwise, retention constitutes “eine intentionale Modifikation im Rahmen der puren Passivität”¹³⁸, which develops itself according to the fixed laws of the original constitution of immanent temporality: when the impressional having-in-consciousness of a now is at an end, a concrete, flowing retentional past must be added, in the mode of “just-having-been-now”. The same holds for what is to come, the protentional extension of the future, since to every experience also belongs a horizon of original expectation, even if completely empty. Both the retentional extension of the past and the protentional extension of the future are at first purely passive.¹³⁹ This regularity concerns all phenomenological givenness, at a passive or at an active level, and also every egoic act, which in each of its phases is subjected to the law of retention

¹³⁴ EU, p. 119.

¹³⁵ See Cavallaro 2013, p. 49.

¹³⁶ EU, p. 116-117.

¹³⁷ EU, p. 121.

¹³⁸ EU, p. 122.

¹³⁹ EU, p. 122.

and protension. Even when the object is released from the holding-in-grasp state, the activity of the Ego is maintained in a passive way, in the form of retentions. In this case we have a modification of the activity but phases retentionally fading away still remain functional elements of the act; while, in the phenomenon of holding-in-grasp, the activity is a form of activity modified but with reference to objectivities not to act phases.¹⁴⁰

In addition to apprehension, the specific form of the “keeping-a-hold-of” (*Im-Griff-Bleiben*) concerns also explication, the further level of Ego’s activity, which is divided between explication of the inner horizon of the perceptual object and explication of its external horizon.¹⁴¹ In relation to the inner horizon of the object, explication operates by progressively characterizing the perceptual object in its subjective modes of givenness.

The keeping-in-grasp of the object during the course of explication allows to attribute it new determinations coming through contemplative inspection. The intentional object receives, thus, an enrichment of sense, in the form of new properties. This phenomenon leads to detect two important formations of sense, i.e., “the object as substrate” and “determination x” of the object, which are at the ground of the logical category of substrate and accident.¹⁴²

This determination of the substrate of perceptual experience in terms of its own properties is forced, in turn, to fall in retention but without being “forgotten”, since a “precipitate” (*Niederschlag*) of explication endures in experience as “habitual possession” (*habituelle Besitz*).¹⁴³

In other words, the pre-reflective and pre-predicative knowledge of an object, obtained by explication of its determinate properties, forms an “habitus”, an enduring possession by which the subject is conditioned for every new appearance of that object. If the subject wants to reactivate the past experience of the same object, a repetition occurs; but if a new apprehension/explication of the same object takes place, it will be experienced with a familiar horizon of “acquired cognitions”.¹⁴⁴ This pre-cognitions assume the form of determinate but empty intentions, a characterization which enables to maintain both the validity of the past

¹⁴⁰ EU, p. 123.

¹⁴¹ EU, p. 114f.

¹⁴² EU, p. 127.

¹⁴³ EU, p. 137.

¹⁴⁴ EU, p. 128.

experience and the openness to new contents, since, as Husserl has pointed out, the horizon of familiarity is “ständig im Bewegung”.¹⁴⁵

2.5 Horizon

This dimension of persistent change raises the issue linked to the character of “more or less vague indeterminacy”¹⁴⁶ of the notion of *horizon*. In fact, on one hand, the concept of horizon, as “horizon of familiarity”, linked to that of “habitus”, addresses here that past intended features, as confused co-intentionalities, related to the experience of the object, which contribute to the sense of apprehension or explication. As we have seen, these elements can either be reactivated, becoming possible and effective targets of intentions, or remain confused on the background.

On the other hand, the projection of sense implied in every horizontal configuration is subjected to modification due to the emergency of new types of objectivities or features in the course of experience. In this sense, Husserl writes that “Die Unbestimmtheit bedeutet ja notwendig *Bestimmbarkeit eines fest vorgeschriebenen Stils*.”¹⁴⁷ Therefore, although plasticity could be considered as a central feature of the notion of horizon¹⁴⁸, every *Erlebnis* can be experienced by consciousness only insofar as it is in position to project a new type of anticipatory horizon when confronted with new appearances.

In fact, horizon is a pervasive notion in the context of Husserl’s theory of perception and it could be said that, at the level of perceptual acts, the phenomenological analysis is more an explicating process of latently implicated elements than a proper discovery of new elements characterizing the thing. As Geniusas has clearly pointed out, the importance of the notion of horizon in phenomenology depends originally on a special feature of the phenomenological notion of *appearance*, which is at the ground of the entire phenomenological system: “While it belongs to the very sense of objectivity that it can *appear*, an appearance itself is possible *only within a system of appearances*, within which each mode of appearance refers to others.”¹⁴⁹

¹⁴⁵ EU, p. 136.

¹⁴⁶ HUA III/1, 91.

¹⁴⁷ HUA III/1, 91.

¹⁴⁸ Geniusas 2012, p. 103.

¹⁴⁹ Geniusas 2012, p. 27.

This thesis constitutes a precise phenomenological assumption, in relation to the fact that phenomena are deeply intertwined one with each other: the abovementioned system of appearances “is precisely what constitutes the horizontality of the horizon [...] due to which an actual appearance is an appearance of a particular objectivity.”¹⁵⁰ Put otherwise, every object given to consciousness must have a horizon as a general framework of sense, because it is essential for the self-giving of appearances as objectivities. However, this principle does not describe a peculiarity of experience but rather an essential structure of consciousness: only by absorbing appearances within a certain horizon, consciousness can co-intend what determines the sense of the appearing objectivities. Thus, if, in a certain sense, horizon belongs to appearances, it does not derive directly from them, since the emptiness of horizontal co-intentions, albeit unfulfilled yet, is, nevertheless, given as a peculiar self-giveness of consciousness.¹⁵¹

Despite the fact that these co-intentions evade phenomenality, they have, nevertheless, to be treated phenomenologically, precisely because they are implicated within each and every appearance or lived experience. The task to clarify these concealed accomplishments of consciousness actually realizes itself as a detour into the “history” of subjectivity.¹⁵²

The need to clarify such “empty” appearing, uncovering those dimensions of sense that remain concealed at first glance, calls into question the notion of intentional implication, since, if consciousness is considered as a storage of accomplishments, to thematize their progressive structuring means to reveal their mutual co-implication. In other words, a genetic analysis of the horizon, interpreted as a system of intentional implications, is required.¹⁵³

In §33 of *Erfahrung und Urteil* Husserl focuses on this specific theme, with reference to the analysis on the field of pre-giveness, since he retains that the notion of horizon “hat ja ihren Grund in passiven, assoziativen Gleichheits und Ähnlichkeitsbeziehungen, in ‘dunklen’ Erinnerungen an Ähnliches.”¹⁵⁴

Since every appearance must have a horizon in order to appear as such, also the rudimentary appearances of a prominence, arising from the homogenous sensuous field,

¹⁵⁰ Geniusas 2012, p. 27

¹⁵¹ Geniusas 2012, p. 7-8.

¹⁵² Geniusas 2012, p. 138.

¹⁵³ Geniusas 2012, p. 138.

¹⁵⁴ EU, p. 172.

possess a horizon of their own.¹⁵⁵ Each horizon is structured according to the original syntheses of homogeneity and heterogeneity, in relation to which associations by similarity or contrasts will occur. Thus, the same prominence in itself, determined by the contrast with the background, is the actualization of one of the potential modes of appearance implied in their horizons. This dimension of potentiality is given along with the actual one and is the condition of determination of sense: non-actual appearances determine the sense of the actual appearance as such.

Therefore, consciousness provides each appearance with an associative horizon delineated by original syntheses based on similarity and at every actualization of a particular appearance a trace is left upon consciousness, producing sedimentations. This dynamic occurs at every level of consciousness, both during the passive structuring of the field of pre-giveness up to the level of activity of the Ego. The analysis of pre-predicative experience according to the “horizon” paradigm becomes, thus, fundamental for the interpretation of Husserl’s transcendental aesthetics.

Actually, the notion of horizon had a central role before the “genetic turn”, already in *Ideen I* and *II*, where Husserl underlined that the perception of a physical thing essentially reveals a certain *inadequacy*: the physical thing is apprehended as “ein Kern von «wirklich Dargestelltem» auffassungsmäßig umgeben von einem Horizont uneigentlicher «Mitgegebenheit» und mehr oder minder vager Unbestimmtheit.”¹⁵⁶ Due primarily to the adumbrations, the correlation between the thing and its apprehension follows a legacy of progressive determination:

(S)ie deutet vor auf mögliche Wahrnehmungsmannigfaltigkeiten, die, kontinuierlich ineinandere übergehend, sich zur Einheit einer Wahrnehmung zusammenschließen, in welcher das kontinuierlich dauernde Ding in immer neuen Abschattungsreihen immer wieder neue (oder rückkehrend die alten) «Seite» zeigt.¹⁵⁷

However, although appearances of the object, which are grasped step-by-step throughout the perceptual process, become effective (*wirkliche*) given presentations, this

¹⁵⁵EU, § 16.

¹⁵⁶*Ideen II*, § 44.

¹⁵⁷*Ideen II*, p. 100.

correlation remains essentially characterized as in *infinitum* imperfect. Such inadequacy relates continuously to chains of possible perceptions, extending themselves limitlessly, albeit systematically following a regular legacy determined by their unity of sense.

Nevertheless, this law does not concern immanent experience or at least not in the same fashion as it paves the way to the horizon of determinable indeterminateness for transcendent perceptual objects. For example, a feeling cannot change its mode of appearance, it has no adumbrations. The experience of something immanent as feelings is a direct seeing, not a presentation. The same applies to sensuous contents inheriting to the perceived object: insofar as they belong to the stream of our consciousness and, since the stream flows constantly, they are imperfect because we can have consciousness of the phase just flown by only through retention or reflective recollection.

The essential flowing character of the stream of consciousness, as unity of immanent experiences, makes for another kind of imperfection, since it cannot be completely seized upon. The immanent experiences uphold, therefore, a degree of indeterminateness precisely about their temporal dimension, whereas, instead, experiences of transcendent objects vary as to indeterminateness both in relation with temporality and according to their spatial-material nature. Thus, the indeterminate though ever-determinable horizon of the experiential actuality determines the chance, crucial for the essence of the spatial thing, that something real but not-yet-experienced could always turn into a givenness.

We can say, then, that the phenomenological notion of horizon grounds on the essential possibility of a progressive determination, having as correlate this indeterminateness. At this level, horizon is defined by Husserl as “das Korrelat der an den Dingerfahrungen selbst wesensmäßig hängenden Unbestimmtheitskomponenten, [...] lassen – immer wesensmäßig - Erfüllungsmöglichkeiten offen, die keineswegs beliebige, sondern nach ihrem Wesenstypus vorgezeichnete, motivierte sind.”¹⁵⁸

This means that the legality according to which horizons are structured by consciousness is determined on the basis of a degree of probability built on motivated possibilities. Motivation is therefore the relation between acts whereby the content of one act makes some further

¹⁵⁸*Ideen II*, p. 112. (90) note: the possibility which plays its role in the theory of probabilities has motivated possibilities as correlates. A probability is never built out of unmotivated possibilities. See *Ideen II*, note 11, p. 293.

meaningful content probable. The dimension of potentiality which inherits to every appearance as horizon, cannot, in fact, be completely arbitrary or empty with respect to its contents, because it stems from those sedimentations of sense produced by previous similar manifestations. Once again, the associative principle in its passive account plays a crucial role, grounding motivations in support of some possibilities and in exclusion of others.

As Geniusas has underlined, this co-determination of appearances and horizon-consciousness seems, at a first glance, to land us in a vicious circle: “the need to recognize the horizontal framework as necessarily *antecedent* in relation to each and every appearance” seems to contradict “the need to admit that horizon-consciousness itself *emerges from* those sedimentations of sense that stem from appearances”.¹⁵⁹ Put otherwise, if “an appearance cannot be an appearance before being «schematized»”, in the same way “a horizon cannot be completely empty, i.e., a horizon without anything appearing «within» it.”¹⁶⁰ Actually, this apparent contradiction can be resolved keeping in mind that sedimentations that form the horizon of typical pre-acquaintance are founded on the fundamental associative syntheses of homogeneity and heterogeneity, which correspond to “further-reaching dimension of horizon-consciousness”.¹⁶¹

We can thus say that, from a formal point of view, the configuration of the concept of horizon can realize itself according to two dimensions of sense: reference and validity. A horizon of reference (*Verweisungshorizont*) consists of a system that encompasses all implications that each appearance draws in relation to other appearances; while, the implication of potentiality within actuality reveals the second sense that belongs to the concept of horizon as horizon of validity (*Geltungshorizont*).

These two dimensions of sense, *reference* and *validity*, are, in turn, bond on the two dimensions of manifestation, those of appearances and lived-experiences, since, as we have seen, appearances have a horizon both as system of references but also as system of validity, while the intending of these appearances is horizontal because the co-presence of potential experiences co-determines the sense of the actual ones. For example, to hear a sound that obtrudes upon me is already to experience the silence that precedes and follows it. In this regard, the intending of a sound is always already horizontal, motivating its endurance, and it is only by

¹⁵⁹ Geniusas 2012, p. 103.

¹⁶⁰ Geniusas 2012, p. 103.

¹⁶¹ Geniusas 2012, p. 103.

virtue of its enduring that I can grasp it as an appearing phenomenon. These horizons are of a temporal nature: each present “now” carries with it the horizon of past and future. Every act of consciousness can only retain its unity of sense by means of its reference to a system of retentions and protentions, since, without these references, it would have to be reduced to an infinite set of discrete, unbonded and overall meaningless acts. This system of reference as temporal horizon of every now-point of the stream of experience results a fundamental sense of the horizon of self-consciousness. Furthermore, if from acts of perception we shift on acts of remembering or expectations, the horizontal framework becomes coincident with none other than the entire transcendental life of the subject, since it could be said “the horizon of subjectivity reveals itself as the implication of the whole life of consciousness within each lived-experience”.¹⁶²

Another important distinction is that between “inner” and “outer” horizons: the tree I see out of my window is placed in the middle of a perceptual field, delimited, for example, by the borders of the window; it can be considered as in the middle of its background, through which my attention can shift on different details, but it has always also unseen sides, which remain out of my perceptual field. However, I can modify through kinaestheses my orientation and render them visible. In both these cases, givenness and co-givenness entail horizons of objectivities, as their *inner-horizons*. But even the implicit givenness of the objectivity in the past and future qualifies its inner-horizon: temporal objects, as for example a melody, are given to us in the now, but also in the past and in the future that we must now intend. In this sense, spatiality does not exhaust completely the sense of the object’s inner horizons but, nonetheless, it is deeply involved to qualify the constitution of the co-given dimensions of sense in relation to the other objectivities co-given beside the thematic one: for example, a book lies on the desk, the desk is in the room, the room is found in the building, and so on. The same considerations can be made about temporal objects, which emerge onto the field of consciousness in the temporal horizon in relation to a number of other objects. These co-given backgrounds correspond to Husserl’s notion of the object’s *outer horizon*.

Therefore, every appearance or lived-experience discloses itself in its inner- and outer-horizons, providing *inner* determinations or *relative* determinations. This disclosure is performed in the case of appearances through explication, which redirect the perceptual interest

¹⁶² Geniusas 2012, p. 120.

toward the object's particular qualities (for example: type, shape, color, etc.) or its relation with respect to other co-given objects (for example: position, dimension or distance). Such perceptual re-orientation, provided thanks to attentional shifts and, more broadly, to kinaesthetic processes, leads to the penetration of the inner- and outer-horizons of the thing.¹⁶³ In this sense, expectations outlined by horizons elicit the perceptual interest, which lets itself to be guided by the pre-outlined sense that the inner-horizon in its pre-givenness announces.

2.6 Motivation

Thus, horizon builds a constant and irreducible dimension of experience, essentially linked to the concept of perceptual interest and more broadly to the pervasive concept of “motivation”. Relations of motivation permeate all dimensions of intentional life, that is, broadly speaking, the active sphere in terms of egoic motivations of interest; the passive sphere, e.g., in terms of a fusion or connection of matters within a sense-field, or again, in terms of kinaesthetic motivations; and the transition from the passive to the active sphere, typified in the advent of egoic awakening through an attentive turning toward, one instigated by some pre-givenness transformed into givenness.

We will soon present a more detailed analysis of the concept of “motivation”, also in relation to its theoretical development in the Husserlian system, especially by focusing on the analysis of thing-perception; but we believe that it would be useful to underline right now, as a first step, the deep connection of the concept with those of interest and horizon, in order to pre-draw its wide dimension of meaning and, at the same time, to show its fitness within this same dimension.

As we have seen, interest is, in a larger sense, the motivating factor within perception, since no concrete perception is conceivable without “motives for preference”.¹⁶⁴ Thanks to its role of uncovering and realizing horizons of the given, hence motivating new perceptions and kinaesthesia, interest is not only related to the striving of the ego towards a specific thematic object but it also becomes a crucial element of the theory of intentionality, by virtue of its

¹⁶³ EU, p. 105.

¹⁶⁴ See HUA XXXVIII, *Wahrnehmung und Aufmerksamkeit*, p. 86; this impulse which accompanied intentionality points towards the later-developed concept of drive-intentionality.

involvement in the process of constitution of the intentional object itself. In other words, interest results to be a necessary component of every intentionality.

From a formal point of view, the structure of thematic intentionality, as the purely selective act of singling out, only guarantees that something has to be the object of attention, but it provides no gradation with respect to motivation and content. In Husserl's lectures on perception and attention from 1904/05, the latter is defined as a specific form of intentionality, as "etwas Auszeichnendes in Beziehung auf einen wahrgenommenen Gegenstand" which in the "jeweiligen Mannigfaltigkeit präsenter Objekte gewissen einen Vorzug zu erteilen."¹⁶⁵ This force operates according to criteria of interest, since it is interest that determines the quality or the intensity of every act of perception. Every act of attention is therefore accompanied by a feeling of interest, which in a process of intention and fulfilment strives to determine the concrete perceptual object more closely.

In general, every intentional act involves a certain motivation and intensity but the interest engaged especially in perceptual acts can be interpreted as a preliminary form of theoretical knowledge. Interest supports noticing and facilitates an all-sided and exhaustive inspection of things, integrating kinaesthesia and horizontal expectations, but at the same time it makes room to potential upcoming impressions, since actually the rate of interest increases exactly when something is missing rather than when something is well-known: "Sind die Wahrnehmungszusammenhänge öfters durchlaufen und uns jede Einzelheit vertraut geworden, so «verliert die Sache das Interesse», sie wird langweilig."¹⁶⁶

In relation to this dimension of habituality, interest takes a relevant role in determining the perceptual horizon, influencing further perceptions. In this sense, we can conceive the notion of horizon in relation not only with the criterium of reference and of validity, but also according to a more epistemological level of relevance: Husserl speaks of active stages of interest characterized through their "flexible horizon of relevance" (*bewegliche Relevanzhorizonte*).¹⁶⁷ The experienced world is therefore a world of interest, even though this operating interest can have different levels of relevance.¹⁶⁸ In this sense interest is not

¹⁶⁵ HUA XXXVIII, *Wahrnehmung und Aufmerksamkeit*, p. 86.

¹⁶⁶ HUA XXXVIII, *Wahrnehmung und Aufmerksamkeit*, p. 108.

¹⁶⁷ HUA XXXVIV, *Die Lebenswelt*, p. 596.

¹⁶⁸ See HUA XXXVIV, *Die Lebenswelt*, p. 597: "Die Welt, die jeweils für mich da ist, originaliter, selbst erscheinend, und in erster Originalität in der Weise des Wahrnehmungsfeldes, ist für mich da als Interessenwelt, und die Weise ihres Für-mich-Seins ist jeweils Weise, wie sie mich interessiert,

conceptually dependent on the perception of a specific object but instead seems to represent a *concrete* motivational force/necessity for perception or, in transcendental-phenomenological terms, it is not a formal but a concrete genetic condition of every (new) object constitution.

A similar distinction about conditions for a formal and a concrete constitution has been advanced by Steinbock¹⁶⁹, who argues that Husserl, in his later works, qualifies time consciousness as the abstract or formal condition for genetic constitution, whereas associative syntheses are the concrete ones. In this perspective, taking into account the role just described of the concept of interest and associative syntheses, the intertwining of both notions is evident. Association, as the principle of passive genesis, is responsible for the constitution of objectivities which, in turn, correspond to pre-givennesses for the activity of consciousness. We have seen that at the level of immanent genesis the formal condition of constitution is time-consciousness but also this “abstract” structuring implies a specific form of association, i.e., reproductive association.

In this case, the synthesis occurs between elements belonging to different temporal moments, whose similarity passively causes their mutual comparison without any active egoic reflection, resulting in a reproduction of the past appearance. Reproduction and association are performed because of the affective force and in their progressing are always and again determined by the influx of affective forces.¹⁷⁰

A similar form of association is the “antizipative Assoziation” or more generically “induction”¹⁷¹, an analogizing synthesis still dependent on reproduction. Reproductive association links the present experience with a similar one occurred in the past and this link motivates expectations about the future appearances of the same object:

[E]s wird das Fortwerden in Analogie mit dem bisherigen Werden, nach demselben kontinuierlichen Verlaufsstil erwartet: Ist es Unveränderung des und des qualitativen und gestalteten Gehalts, so Unveränderung eines gleichen Gehalts, und

Weise, wie sie von den aktuellen primären und sekundären Interessen aus bewusste ist und von daher Seinssinn schon hat oder Seinssinn aus der Aktivität annimmt.”

¹⁶⁹ Steinbock 2002, p. 246.

¹⁷⁰ AZPS, p. 182.

¹⁷¹ We refer here not to the high-order operation of deduction of a conclusion from premises but to a specific kind of phenomenological association.

ist es Veränderung, so wird eben Veränderung, dann aber desselben Veränderungsstils wie bisher, vorgezeichnet sein.¹⁷²

In *Analysen zur Passiven Synthesis*, inductive association is described by Husserl as a form of “Motivationskausalität”¹⁷³, valid both at the level of living present and at the level of already constituted objectivities: for example, in the case of a repetition of a succession of two appearances, the affective force of the associative relation constitutes a supplement of motivation for the connected expectations. Husserl comments on this point saying that: “Diese assoziative Erwartung setzt offenbar die Assoziation als weckende Rückbeziehung der «Erinnerung» voraus”.¹⁷⁴

It is important to underline that here Husserl speaks of an ordinary eidetic necessity, given with evidence (*Evidenz*):

Wir können hier direkt die Motivationskausalität als eine Notwendigkeit sehen; wir können in Evidenz sagen: Ich erwarte hier q', weil ich unter ähnlichen Umständen q erfahren habe, und dieses *Weil-so* ist evident gegeben. Korrelativ: Ich schließe “induktiv” in vollkommener Evidenz aus dem Gekommen-sein unter früheren, ähnlichen Umständen auf das nunmehrige ähnliche Kommen. (my italic)¹⁷⁵

We will discuss soon about this form of conditioning that can be traced back to the thematization of the issue of motivation in its passive account but, for now, another element needs to be emphasised: the habitual component at work in the theory of experiential induction.

In *Ideen II* Husserl describes inductive associations as “habitual apperception”, making reference to the definition of the concept of habitus as the functioning of the past in the present. The reappearance of previous experiences in the present by virtue of reproductive association influences expectations, since the affective force in terms of motivation grows with the repetition of similar instances.¹⁷⁶ The constitution of habitual formations, through the

¹⁷² AZPS, p. 186.

¹⁷³ AZPS, p. 188.

¹⁷⁴ AZPS, p. 187.

¹⁷⁵ AZPS, p. 188.

¹⁷⁶ AZPS, p. 188.

progressive repetition of inductive associations¹⁷⁷, increases the force of the apperceptive “Erwartung”. Induction can be therefore interpreted as the expression of the phenomenon of *habitus*.

In the stream of consciousness, every appearance passes continuously but at the same time leaves an imprint, generating habitualities that are retained as sedimented sense, which in their own turn influence every new similar apperception. Consciousness, condensing habitualities, becomes thereby a “store of lasting possessions”, thanks to which the world presents itself to us as a meaningful whole. Wherefore every actual appearance is accompanied by a configuration of sense that consciousness projects on each one as its “horizon”, and precisely as a horizon of validity. In this form the concept of horizon and of *habitus* are deeply intertwined and this connection is filed under “Geltungshabitualitäten”.¹⁷⁸ In a more general perspective, Husserl recognizes this state of things saying that “die reale Welt da ist, Geltung hat, mit allen ihren erfahrungsmäßigen Wirklichkeiten und auch mancherlei idealen Wirklichkeiten, die ich in meinem früheren Leben als seiend erkannt habe und die in meinem Reich von Erkenntnisbesitztüchern (habituellen Überzeugungen) unberührt erhalten bleiben.”¹⁷⁹

Summing up, the concept of horizon is loop-linked to the concepts of *habitus* and expectation, both of which depend on inductive association, which in turn is based on reproduction and, more generally, on association. The associative criteria determine and are simultaneously determined by the concept of perceptual interest, which is the motivating factor of every intentional act or kinaesthesia. Interest has also the function to realize horizons as “chains” of motivated possibilities and in this way the circle is closed. However, thanks to our previous exposition of the genetic constitution of pre-predictive experience, it is easy to understand that the intertwining of these concepts of association, motivation, *habitus* and horizon is rooted in passivity.

In the genetic analysis interest is generically described as the actual and practical “expression of the tendency of the Ego in experience”¹⁸⁰, but, as we have already pointed out, at the level of perceptual analysis, the Ego’s attitude is first and foremost essentially receptive.

¹⁷⁷ AZPS, p. 190.

¹⁷⁸ HUA VIII, p. 143. (*Erste Philosophie II*).

¹⁷⁹ HUA VIII, p. 143. (*Erste Philosophie II*).

¹⁸⁰ EU p. 81.

Therefore, its tendencies assume a passive characterization. Husserl's description of different levels of receptivity and perception, ranges from a stage of passive pre-giveness and mere tendencies of the ego to an active and explicit engagement. The different degrees of involvement of the Ego in the form of interest determine changes and fluid dynamics in terms of perception and attention. Thus, the notions of passivity and activity, as well as the notions of theme and focus, do not have rigid boundaries and instead directly depend on the intensity of the perceptive interest aroused.

With this idea of engagement is also deeply intertwined the concept of horizon, which, as we have previously analysed, is characterized by a noematic component, determining the inner and outer horizon of the perceived object, and a noetic component, consisting of the foreground and background experiences and their subjective (habitual) motivations. The noetic horizon is moulded as a subjective-habitual profile, which guides perception at its passive stage and motivates further perceptions. This habitual dimension works in terms of interest, influencing every subjective experience that selectively structures the field of pre-giveness into more or less significant parts. However, at a first stance, the interaction with the givenness takes the form of a "tendency as stimulus" which has to attract the ego: for example, in comparison with a simultaneous background content, a foreground content can have a more intense attractive force which catches interest. The field of pre-giveness includes, therefore, what is sensually given but also involves a feeling of interest coming along with it, which produces a sort of saliency making us sensitive toward certain sense-data.

Considering a bottom-up perspective, the perceptual striving in terms of interest is caused by the current perception and corresponds to the noematic component of the horizon; the noetic horizon, instead, unfolds itself as a habitual dimension of interest, influencing on a top-down axis the openness of affection and the focus of attention. Every act of attention and even every passive event of affection are thus preceded by interest as motivational factor, which, operating according to criteria of similarity and contrast, determines what, in a given moment, is able to affect me by virtue of its emerging from the background of former experience. These criteria are the same followed in passive synthesis of association, which are also defined "Urassoziationen".¹⁸¹

¹⁸¹ By E. Holenstein (Holenstein 1972, pp. 32-45).

They are the most original kind of association in the order of being, because they concern directly affection. The difference with respect to reproductive and inductive associations entails the temporal dimension of development, inasmuch as they occur between contents given in the living present, whereas the other two forms are directed toward the past or the future, linking intentional objects already constituted.

Meanwhile, affection deals with impressional data, each of them given in the stream of consciousness, with its threefold dimension of original impression, retention, and protention. The impressional now appears in function of a specific configuration defined by Husserl as “Verschmelzung unter Kontrast” or “Abhebung”¹⁸² and this means that it is identifiable as such only by virtue of the contrast with other contemporary data, with respect to which it exerts an allure that distinguishes it from the others, and at the same time, identifies it: “wirkliche Einheitsbildung setzt immer und notwendig affektive Kraft voraus, bzw. affektive Unterschiedenheit”.¹⁸³ Therefore, temporality is not the single criterium of individuation of immanent unities, since their determinability stems also from the contrast between already constituted unities.

The different objectivities, constituted from time to time, are in relationships of homogeneity and are chained by virtue of similarity, although they stand out and therefore distinguish themselves through contrast. From this comparison, connections emerge in relation to common characteristics, which imply the possibility of logical-conceptual predication: each object has in fact its own specific essence, which distinguishes it and at the same time places it in relations of *genus* and *species* with respect to other objects. Individuality constitutes the presupposition of all syntheses of homogeneity and of all comparisons based on this criterion. The ever new, synthetic and continuous identification of the changing content is necessarily maintained in the progressive constitution of immanence and at the same time forms the system of coexistence ordered according to a succession. The uniqueness of the temporal position is therefore none other than the correlate of the form of identification, hence consciousness can re-awaken the object and grasp it again as the same recognizable item.

The constitution of the object as identical is thus necessarily intertwined with the constitution of the temporal order and with the formation of homogeneity syntheses; in the same

¹⁸² See AZPS, p. 149: “Affektion setzt vor allem Abhebung voraus [...]. Abhebung war für uns also Abhebung durch inhaltliche Verschmelzung unter Kontrast”.

¹⁸³ AZPS, p. 172.

way, syntheses of coincidence that form identities and syntheses of coincidence that form non-identities remain different in principle but co-dependent on each other as well as identity and diversity in general.¹⁸⁴

In the field of consciousness even the most radical distinction is experienced as a distinction in a self-same field of experience. In other words, it is motivated. The concept of motivation plays a central role in the analysis of time consciousness and passive synthesis, since the “hanging together”¹⁸⁵ of data reflects the motivational character of experience and implies its subjective structure.

In fact, the most basic associative laws of genesis can be inferred but not directly found within the immanent data laid bare by reduction: contents are given as always-already belonging to preceding and subsequent contents or cohering with their temporally proximal ones. Their formal features are the consequence of the fact that apprehension “encompasses every self-giving”.¹⁸⁶ Put otherwise, there is an ontological correlation between consciousness as consciousness of something and consciousness as consciousness for someone:

Bedenken wir nun, daß jedes gegenwärtige Bewußtsein (jede Präsenzstrecke des Erlebnisstromes) nicht nur ist, sondern als jetzt gegenwärtig impressional bewußt ist, also “wahrgenommen” ist, so ist auch mitgesagt, daß in jedem gegenwärtigen Bewußtsein eine “Apperzeption” liegt.

It is precisely in this sense that Husserl can state:

Jede Motivation ist Apperzeption. Das Auftreten eines Erlebnisses A motiviert das eines B in der Einheit eines Bewußtseins; das Bewußtsein von A ist mit einer hinausweisenden, das Mitdasein “anzeigenden” Intention ausgestattet. Aber hier ist zu sagen: Jede unerfüllte Intention, jeder unerfüllte Horizont birgt Motivationen, Systeme von Motivationen in sich. Es ist eine Potentialität der Motivation. Wenn die Erfüllung eintritt, ist eine aktuelle Motivation da. Man kann auch sagen, daß

¹⁸⁴AZPS, p. 145.

¹⁸⁵Walsh 2017, p. 424.

¹⁸⁶AZPS, p. 625.

Apperzeption selbst eine Motivation <sei>, sie motiviere, was auch immer erfüllend eintreten mag, sie motiviere ins Leere hinaus.

On the basis of motivation, as a pervasive phenomenal character of experience, we infer genetic laws and the subjective structure of experience, theorizing the structural conditions of possibility for experience to manifest itself in such a manner. In other words, we assume a transcendental perspective.¹⁸⁷

This attitude leads to recognize first of all that experience has a horizon-structure, since it is impossible to isolate a “now-point” of the stream of consciousness that is not co-determined by the temporal succession and by associative links. The notion of horizon is by the way essential for Husserl’s theory of intentionality, since experience has intentional content only by virtue of its horizon. However, the dimension of potentiality, as set of possible experiences that constitute horizons, does not appear explicitly as a phenomenal character of experience, suggesting that intentionality does not manifest itself phenomenally. The appearing of an object as a substrate consists of actual appearing moments but also of indications of moments not appearing yet. These indications are at the same time indicative tendencies working as a system of rays that points towards non-actualized appearances, i.e., an intentional empty horizon.

Therefore, it is in this sense that the dimension of potentiality corresponds to the structure of horizons and precisely to its structuring according to relations of indication: “the horizon-structure of experience *as it is lived through* is ultimately a structure of indication relations.”¹⁸⁸

The issue of “indication relations” had already been addressed by Husserl in the first of the *Logischen Untersuchungen*, while he was discussing for the first time the theme of *motivation*. The importance of this concept in Husserl’s overall phenomenological project has been overlooked, since he passes over it rather quickly on his way to the analysis drawn in this work. With reference to indicative relations, Walsh proposes a preliminary characterization of the concept which goes as follows: “Roughly characterized, «motivation», for Husserl, denotes the phenomenal character constitutive of awareness of indication relations. [...] the phenomenal

¹⁸⁷ Walsh 2017, p. 429.

¹⁸⁸ Walsh 2017, p. 421.

character in question is an *affective* «felt-belonging» between discreet contents of experience that can be parsed upon reflection.”¹⁸⁹

Our awareness of indication relations is constituted by the subjective context (or phenomenal character) as motivation. The sight of the smoke *indicates* the presence of fire and thus smoke stands in a relation of indication to fire. Put otherwise, a visual perception of smoke motivates the belief that there is fire. The consistency of this relation rests upon the felt awareness of the immanent horizon belonging to any given experiential moment of a perceptual object. The profile actually given implies the ones immediately preceding and following it. However, the motivated horizon of possibilities seems to go beyond the explicit phenomenal content of the experience: it is only implicitly “contained in” it. Nevertheless, the horizon-structure regains its ability to indicate an essential property of experience when we recognize that the phenomenological reduction, at the ground of the whole analysis, prevents us from identifying the explicit content of any experience except through its abstraction from the lived reality of the stream of consciousness.

Therefore, also within the pure givenness of the phenomenological reduction, the motivated possibilities that constitute the horizon of every appearance, manifest themselves, are explicitly visually given, since the structure of expectations, the way in which experience “hangs together” its contents, is constitutive of the sense of experience and corresponds to a phenomenal feature.¹⁹⁰

Husserl’s conception of motivation meets an evolution throughout his thought, later coming to indicate a pervasive affective force that guides the flow of experience, showing ever more its affinities and the interconnection with the concept of interest. At the same time, even its role in passivity begins to assume a relevant thematization, especially in connection with association.

2.6.1 Associative Motivation

In §56 of *Ideen II*, Husserl notoriously introduced the concept of motivation, defining it as the specific law of spiritual life. This concept moves against the law of cause and effect

¹⁸⁹ Walsh 2017, p. 420-21.

¹⁹⁰ Walsh 2017, p. 422-23.

peculiar to the “naturalistic” attitude and especially in contrast to the dominant conception about association, inherited by the empiricist tradition (John Locke, David Hume and John Stewart Mill). The relation between the concepts of motivation and association is more complex than it might seem and, far from operating on two different levels, they are deeply intertwined.

The empirical tradition has emphasized the dependence of representations on impressions, underlying the causal, materialistic determinism of internal and external experience. At least since Kant, the reproductive character of associative synthesis has been the only one stressed out.¹⁹¹ Nevertheless, the sensualist interpretation is not the only way to think the principle of association. In fact, by the turn of the century, in the subject and experience theories based on humanities (like, among others, Wilhelm Dilthey’s hermeneutics or William James’s theory on the unity of the individual stream of consciousness), the sensualist-objectivist, purely reproductive concept of association is juxtaposed to a more descriptive, meaning-founded and productive one.¹⁹² This double concept of association seems to reflect the theoretical and methodological difference between those subjectivity theories oriented towards the natural sciences and humanities, which, indeed, respectively consider either causality or motivation.

Already since the *Logical Investigations*, Husserl was sharply critical about the first conception of association based on the empirical-inductive drawing out of increasingly higher generalities in the cognitive process, because of its epistemological implications. In fact, Husserl preferred to give a different understanding of the associative functions playing a pivotal role in the interpretation of the principle of unification within the subjective sphere: an understanding that concerns the principles of order, connection and design of the experiential context and which, as Jagna Brudzińska suggests, can be assumed as *horizontal* according to its performance structure.¹⁹³ This kind of association is grasped as a context motivated by content that is implicitly based on subjective history or subjective habitus and its development.

Husserl makes it clear that wherever certain circumstances appear as signs for other ones, i.e., refer to other ones, this function of reference is based on a previously established connection between subjective experiences or dispositions. Furthermore, rather than to (rational) insight, this - one might say habitual - motivational context of association of ideas is

¹⁹¹ Brudzińska 2019, p. 31.

¹⁹² Brudzińska 2019, p. 33.

¹⁹³ Brudzińska 2019, pp. 35-36.

attributed to the qualities of (intuitive) tangibility. The connection of parts and aspects of phenomenal units is not to be gained through logical insight, inductive reasoning or discursive discussion, but it is directly perceptible as a connection of references. The quality of the perceptible can best be interpreted as the competence of the cognitive intuition, which directly grasps the connections of the given.¹⁹⁴

In fact, although the concept of motivation is generally considered to deal with the sphere of position-taking (*Stellungnahme*), in which reasons are assumed to connect effective acts with other effective acts, Husserl adds here a crucial distinction between this form of motivation, called “Vernunftmotivation”, in which the Ego is actively involved connecting acts of positing, and a different type of motivation, a “passive” or “associative” one. It consists in a structure of organization at the level of sensibility and can be described as a tendency of creating associations between unities of the pre-egoic sphere of consciousness. In this case, the Ego does not play any role, neither as active nor as passive/receptive pole.

In other terms, Husserl acknowledges the existence of “motivated relations” within the immanent sphere of mental acts which do not necessarily call for an active participation of the Ego. The nexus of associations has the structure of a typical analogy (“the similar motivates the similar under similar circumstances”) in which the current appearance motivates the future appearance by virtue of the similar relation experienced in the past. It could be interpreted as the law of habit, but Husserl prefers to keep it distinct, since in the case of habits it is called into question the noetic quality of an act characterized as positing (*Setzung*): a habit is the tendency to repeat a belief or a particular act of positing in relation to a specific matter, whereas associations establish connections at the noematic level, that at the level of the objective correlates of acts.

In the unity of the consciousness of a thing, the internal legacy, performed as motivated association, is connected to the rational motivation at a deep ground but it is passive. Associations produce a kind of conditioning of the form “if-then” (*wenn-dann*), a relation in which motivating and motivated factors arrange themselves in a “motivated” succession:

If I turn my eyes in such a way, if I produce a series of optical experiences in a certain way, then I must see such and such, etc. And what I see presents itself as the

¹⁹⁴ Brudzińska 2019, p. 41.

unity of a thing with these or those parts, and the mode of givenness of one part supports that of the other. If they are to be together Objectively as such and such, and if the one appears in a certain way, then so must the other, in correlation, under the given experiential circumstances.¹⁹⁵

In fact, it is the appearance of a noematic correlate which motivates the appearance of other noematic correlates. Considering the co-appurtenance of them, we have an associative motivation of the form “in consequence of”. On the contrary, at the noetic level, when for example drawing of a conclusion is motivated by the judgment in the premises, the willing by seeing, hearing, evaluating, and so on, a different motivational relation occurs: in this case the relation takes the form of a “being-co-given” (*Mitgegebenheit*), which means that the positing of an element motivates the positing of the other.

The aforementioned case could be considered as a typical basic case of kinaesthesia, for the change of the lived experience due to kinaesthetic course maintains both that character of “arbitrariness”, typical of kinaestheses as “spontaneous” acts, and that dimension of pre-conditioning due to past experiences. This passive/associative motivation determines the development of kinaesthetic chains, as a form of succession inside the perceptual flow, but more generally it also determines the relation that, in the passage from static to dynamic “co-appurtenances”, motivates the correlation between kinaestheses and sensuous data.

But not always, Husserl claims, it assumes a necessary connotation: “We do not say that in the unit of the stream of my lived experiences each live experience is necessary, necessarily conditioned by the lived experiences which precede it and are co-lived”.¹⁹⁶ Sometimes motivated conditioning is just the expression of the form of the inner time-consciousness, that is, of a succession: “‘Now this is’ conditions the futural positing ‘Something will be’ [...]. Here we have a judgement motivated by another judgement, but prior to the judgment the temporal forms themselves motivate each other. In this sense we can say that even the pervasive unity of the stream of consciousness is a unity of motivation”.¹⁹⁷

¹⁹⁵ Husserl 1989, p. 238.

¹⁹⁶ Husserl 1989, p. 239.

¹⁹⁷ Husserl 1989, p. 239.

The concept of motivation is deepened in the *Analysen zur passiven Synthesis*¹⁹⁸ with respect to *Ideen II* particularly in relation to the context of modalizations of being and belief: among the various possible modalizations of evidence that can occur (doubt, annulment, repression and superimposition, disappointment, negation, affirmation), it is possibility that stands out as one of the most significant to the issue of motivation.

Husserl distinguishes between open and enticing possibilities: the first one is putatively a possibility that can be fulfilled in an indefinite scope of determinations, where nothing special is requested. On the other hand, an enticing possibility will exercise a demand for a specific determination. Some possibilities will have more “weight” than others, some will speak in favour of or against a possible sense.

From Husserl’s explication of enticing possibilities, we can glean the noetic and noematic components of motivation. Noematically speaking, motivations stemming from the objective vector of the intentional relation can be understood as a “propensity to be”; noetically speaking they can be understood as a propensity or enticement to believe and “to turn toward” attentively. It is at this point that we can see a transition from the passive sphere of givenness to the attentive turning toward in the lowest active level, namely, “receptivity.”

Husserl speaks of the demand of the enticing possibility as an “affective force” that is “in relief” or “prominent”, of the weight as being “strongly affective” and, noetically, of the fact that we are motivated not only when the thing exerts an affection or enticement on the Ego, but when we yield to the affection either passively without egoic attentiveness, or actively in an attentive turning toward.

Thus, every transcendent perception predefines a horizon of possible but motivated transcendent perceptions; that is, every transcendent perception implies a motivational structure. In such a structure, however, it can be noted that the motivation between the kinaesthetic modification and its manifestation is explicit, while between the succession of kinaesthetic modification and the change of image that arises with the passage from a kinaesthetic modification to another it is implicit. This means that the implication is not necessary, but it makes for a “if-then” legacy that indicates an empirical duty *a posteriori*. It follows that the perceptual horizon has a relative indeterminacy or a generic determination,

¹⁹⁸ HUA XI, chapters 1– 4.

since the possibilities of concordance (*Übereinstimmung*) or conflict (*Streit*) between appearances and expectations, even in the case of unreality, are all “open” motivated possibilities.

3rd Chapter

3.1 Introduction – The Distinction Between Perception and Cognition

Although perception is generally considered the most immediate and direct source of knowledge, different forms of skepticism about the value of its truth, its objectivity, find expression at different levels, raising questions about its grounding role in the general architecture of a theory of knowledge. One of the most discussed concerns around this topic deals with the involvement of a conceptual side of knowledge in the representation of the world, which is allegedly believed to condition our perceptual experiences by the means of concepts, beliefs or past experiences.

This issue about the cognitive or conceptual involvement in perceptual experience could be traced back to the classic debate around the very Kantian thesis. Kant's famous claim that "Gedanken ohne Inhalt sind leer, Anschauungen ohne Begriffe sind blind"¹⁹⁹ supports the position according to which perceptual experiences always involve a complex interaction between concepts and sensory inputs. Without advancing any precise exegetical pretense about the wide tradition around this Kantian topic, we can claim that the transcendental perspective disclosed by Kant surely pointed to underline the value of an interpenetration of perception and cognition and this could be considered one of the main reasons why some analytic philosophers of mind and cognitive scientists have adopted Kant as the "godfather of cognitive science", despite his general anti-empiricism transcendental approach²⁰⁰.

Obviously nowadays the largest part of the theories of mind and of mental phenomena is committed to some weak or strong form of naturalism, supported by relevant discoveries in neurosciences and other forms of empirical investigation. However, many specific claims about features of the mind discovered by Kant in his work (and, we would like to add, also by Husserl's phenomenological approach, which inherits to a certain degree some of the motives

¹⁹⁹ Kant 1911, A51/B75.

²⁰⁰ In order to explore this topic, see Schlicht and Newen 2015.

in Kant²⁰¹) still deserve to be discussed and taken into account as a source of inspiration for modern ideas and maybe for some modifications of contemporary theories.

For example, Andrew Brook considers the Kantian-inspired transcendental argument, according to which the world we perceive may be intelligible to us because the constraints of intelligibility play a role in determining its form, as a thesis of intimate connection between percepts and concepts.²⁰² In fact, this thesis has been taken up by classical cognitive science together with other Kant's central claims about consciousness, mental contents and functions of mind. Some of them have been received and reformulated, especially in terms of functionalism.²⁰³

Keeping the focus on the relation between perception and cognition, Kant's position is generally considered a form of "conceptualism", since it involves a complex interaction between the spontaneous application of concepts and passively received sensual inputs. This is the predominant interpretation of Kant's theory of perception proposed not long ago by McDowell and others²⁰⁴, reframed with terms belonging to the well-known debate on non-conceptual contents. McDowell argued that, according to Kant, perception has to be conceptual in order to justify our judgments and thus non-conceptual perceptual contents do not exist.²⁰⁵

Over the years this important debate around non-conceptual contents has caught the interest of many scholars, who have developed theories and arguments both for and against the main claim. For example, Dretske defended the view according to which the perceptual experience does not provide for a conceptual participation, except in the judging phase.²⁰⁶

²⁰¹ There are many examples of studies about Kant's influence on Husserl, but we would like to quote here an article by Julia Jansen, which focuses on the topic of transcendentalism (Jansen 2014, pp. 79-92).

²⁰² See Brook 1994, p. 12: the Kantian thesis is defined the attempt to "reveal the conditions necessary for some phenomenon to occur".

²⁰³ This functionalist interpretation of Kant's philosophy of mind was supported, for example, by Sellars (Sellars 1974, pp. 341–362) and by Meerbote (Meerbote 1989), as well as by Brook (Brook 1994): put very briefly, they read Kant's indifference about the physical substrate of mind in terms of modern functionalism, according to which mental phenomena, since they are exhaustively explained by their causal role or function, can be considered wholly independent on any physical commitments. Another element is Kant's emphasis of the unity of consciousness, on which philosophers and cognitive neuroscientists like Bayne (Bayne 2010) have insisted.

²⁰⁴ See McDowell 1994. This reading is obviously not unanimous, so much that there are those who support a different interpretation, according to which Kant can be held responsible also for the contrary position, 'non-conceptualism'; see Hanna 2005.

²⁰⁵ See McDowell 1994.

²⁰⁶ See Dretske 1981.

Bermudez goes beyond this argument by claiming that the explanatory/justifying role of mental states does not depend on the conceptual dimension, but rather on the representative one²⁰⁷. We would have liked to devote more space to the discussion about the most relevant points concerning this topic and its paradigms. However, it is particularly interesting for us, at this juncture, to introduce the thesis put forward by Christopher Mole, according to which the same Kant's position about concepts and perceptual experiences, adopted by McDowell in the aforementioned debate on non-conceptual contents, can be translated into another (more recent) debate: according to Kant, what we think literally affects how we see the world, and this is actually the core idea discussed into the debate on "Cognitive Penetrability".²⁰⁸

Incidentally, our purpose is not that of putting under the scope the fitness or the limits of such interpretations of Kant's position, but rather to underline the continuity that such references to his theory of perception suggest: on one hand, there is the compatibility of the issues bond to both debates; on the other hand, the chance to trace back the questions faced in both occasions to the order of a more general problem, which can be summed up in the interrelation between perception and cognition. All of that, bearing the need to keep in mind the different epistemological perspective at stake and, at the same time, with the intention of exploring the modalities of a hypothesis of mutual influence.

For this purpose, we could anticipate that, at a certain point, the controversy of Dretske versus Kant-McDowell has met an impasse, mostly due to the limiting use of a-priori arguments and with a consequent proliferation of theoric derivations. With the introduction of the "Cognitive penetration" thesis, one of the lines of discussion has taken a further step, by the reshaping of the issues linked to the perception/cognition relationship in a new conceptual framework.

The core questions at the heart of the debate, namely "how a perceptual experience takes place and how reliable is it in epistemological terms?", remain; but the attempt to grasp the general functioning of perception in relation with cognition has been reformulated into new research questions: how can different types of cognitive influence on perception be distinguished? Which are the mechanisms underlying them?²⁰⁹ In addition, much work has been done on how cognitive penetrability affects the outcomes of the precedent philosophical debate,

²⁰⁷ See Bermudez 1995.

²⁰⁸ See Mole 2015, p. 225.

²⁰⁹ See Vetter and Newen 2014, p. 73.

especially concerning perceptual warrant, issues linked to awareness, consciousness and action, the role of attention, different forms of realism and representationalism, as well as non-conceptual contents.²¹⁰

Despite the plural and varied nature of these discussions, there is a point of agreement in relation to the widespread belief that the dependence of perceptual experience on conceptual states does not damage perceptual justification: cognitive penetrability does not diminish the overall reliability of perception and does not imply a loss of warrant in terms of truth or objectivity.²¹¹ Perception remains the most direct source of knowledge and the anchoring in the sensory input coming from the world persists. On the contrary, the awareness about the phenomenon of cognitive penetration in all its varieties lead to be, for example, more sensitive for theory-driven interpretation of data, since, although the most of experimental research focuses on everyday knowledge, scientific inquiry is not considered immune to this kind of influences. Therefore, by accepting the cognitive penetration's thesis, actually there remains a large margin of speculation about the notions of reality and truth, which holds from falling into a radical scepticism albeit without appealing to the myth of the datum²¹² or adopting a metaphysical realism.²¹³

In fact, the notion of “Cognitive Penetration” (CP) frames the topic about the relationship between cognition and perception in a specific perspective. In this perspective it is discussed, both theoretically and epistemologically, the role and the legitimacy of what could be defined a super structural cognitive interference on a mental substratum of an eminently perceptual nature, which, considered in itself, would more easily lend in its own to attempts of physicalist reduction. According to this hypothesis, cognitive states such as beliefs, desires and other kinds of states can influence the process of perception, determining significantly our perceptual contents or experiences.

It is important to underline that the debate, especially in its early stages, focused principally on visual perception, since the visual system was the most investigated and discussed sensory apparatus. Still nowadays, a large part of the dedicated literature proposes

²¹⁰ See Raftopoulos and Zeimbekis 2015, p. 7.

²¹¹ A way to deal with potential threats to perceptual warrant from cognitive penetration was proposed by S. Siegel (Siegel 2012) and J.C. Lyons (Lyons 2015, pp. 103-122).

²¹² See Sellars 1956, pp. 127–197.

²¹³ See Putnam 1987.

definitions of “cognitive penetration” primarily involving the so-called “early-visual processes”, but there is no lack of studies including other perceptual channels, above all the auditory and tactile ones. Within the debate, visual perception is generally assumed as the organization of visual inputs coming from the external environment, resulting into a visual conscious percept. At the opposite end, cognition is defined as a process of transformation and elaboration of these visual percepts through psychological functions, such as learning, imagination, anticipation, memory, linguistic expression and so on.

These definitions are based on a precise model of the mind, which has now become a classic and has been assumed as the basic theoretical framework from neurosciences in the late 90s: the so-called “sandwich model”.²¹⁴ In such frame, cognition is considered the “middle layer” between perceptual experiences and rational actions and its role of mediation presupposes, programmatically, the pre-existence of a clear distinction between perception and cognition. Perception has to be considered as an independent process and a presupposition for cognition and both lead to initiate actions. However, this model was radically questioned for several reasons²¹⁵, opening the way to more dynamical modelling hypotheses that provide for a strong interconnection between the poles mentioned above. The validity of the first model compared to the others depends, among the many reasons, on the way we conceive the relation between perception and cognition, which is precisely the issue questioned within the “cognitive penetration” debate. Actually, attempts to employ examples of cognitive penetration in order to deny the perception/cognition distinction are rare nowadays or, at least, they do not rely on this strategy.²¹⁶ Many studies on cases of cognitive penetration describe the dynamic as effects of one system on another, maintaining the distinction between them as *relata*.²¹⁷ Each system tends, therefore, to be defined by the criteria of isolability, unitariness and specialization, preserving the division between information-processing structures.²¹⁸

Nevertheless, it cannot be denied that the thematization about the influence of cognition on perceptual experience argues in favour of a permeation between the two poles, undermining the ground assumption of the “sandwich model”. Still in the 1940s, the discovery in the psychological field of evidences supporting what is now called “cognitive penetration” were

²¹⁴ See Hurley 1998.

²¹⁵ See O’Regan and Noë 2001.

²¹⁶ See Raftopoulos and Zeimbekis 2015, p. 23.

²¹⁷ See Hansen et al. 2006.

²¹⁸ See Lyons 2015, pp. 103-123.

considered as cases suggesting the wiping out of the perception-cognition distinction. For example, the classical experiment by Bruner and Goodman in 1949 sustained a view of the mind in which “values and needs” determine how we perceive the world, with relevant potential implications for the epistemology of science.²¹⁹ This trend, which can be ascribed to the ‘New Look in perception’ movement in psychology²²⁰, interpreted perceptual experience as the result of a process of categorization, a process “in which organisms move inferentially from cues to category identity” and so it is claimed that “the perceptual effect of a stimulus is necessarily dependent upon the set or expectancy of the organism”.²²¹

These first studies of cognitive effects on perception and their theoretical approach were developed in the absence of any direct reference to the terminology linked to “cognitive penetration” but the reactions that followed the definition of such accounts of perception could be considered responsible for the shift in how penetrability claims were later formulated.²²²

In fact, the notion of “cognitive penetration” was introduced for the first time in the context of the computationalist theory of mind by Zenon Pylyshyn²²³ and Jerry Fodor²²⁴, but appeared under its opposite account, i.e., “cognitive impenetrability”. In that framework the concept was used to define the limits of how the mind depicts and alters the contents of propositional attitudes, with the intention to undermine the continuity of cognition and perception. Pylyshyn, in particular, introduced the first empirical thesis of “cognitive impenetrability” describing a set of perceptual processes isolated from thought and, in general, discreet within the hierarchical cognitive architecture²²⁵. Making use of studies on visual agnosia²²⁶, he showed that a specific “late” visual recognitional process, the template matching, has to be separated from early visual computation and semantic information. In accordance with Marr’s hierarchic conception of vision²²⁷, Pylyshyn assumed a distinction between “early vision” and “late vision”, claiming that only the early stage of vision is impenetrable.²²⁸

²¹⁹ Bruner and Goodman 1947.

²²⁰ For a more detailed overview on the “New Look Movement” see: Gregory 1970; Gregory 1974; Rock 1983.

²²¹ Bruner and Goodman 1947, p. 207.

²²² See Raftopoulos and Zeimbekis 2015, p. 24.

²²³ See Pylyshyn 1980, also Pylyshyn 1984.

²²⁴ See Fodor 1983.

²²⁵ See Pylyshyn 1999, 2003.

²²⁶ See Humphreys and Riddoch 1987.

²²⁷ See Marr 1982.

²²⁸ See Pylyshyn 1999, 2003.

Pylyshyn's denial of penetrability was closely related with Fodor's conception of modular perception, according to which there are perceptual modules, i.e., brain mechanisms of information processing, performing partial tasks on a limited range of perceptual inputs. On such a model, outputs are yielded in an opportune format for cognition by drawing exclusively on perceptual resources but this also implies that no informational exchange between systems may occur.²²⁹ Perception, therefore, turns out as informationally unreceptive with respect to cognitive computations, resulting, for this reason, impenetrable.

In general, if a system is considered impenetrable it is implied that it works autonomously and can be defined independently from other systems, but impenetrability cannot be assumed as the argument for the sake of the distinction between perception and cognition: as argued by Raftopoulos, "if anything has chances of being primitive in the debate, it is the status of some processes as perceptual and others as cognitive"²³⁰, since impenetrability cannot give any explanation about why a system deserves to be called perceptual or cognitive.

Evidences coming from neurology²³¹ were generally used to set on functional grounds the independence from semantic information of the information-processing of sensory modalities, supporting the idea that also cognitive science works with a hypothesis about how to distinguish perception from cognition. Moreover, supporters of cognitive penetration concur in proposing a model configured in a cascade of levels of elaboration that are partially independent one from each other but that, at the same time, make cases of cognitive penetration possible.²³²

Therefore, whether a position for or against the cognitive penetration is supported, the underlying conceptual distinction between perception and cognition should be maintained and considered at the basis of questioning penetrability or impenetrability.²³³

²²⁹ See Fodor 2001, p. 63. For critics on this implication between cognitive impenetrability of a perceptual module and informational encapsulation see, for example, Burnston and Cohen 2014.

²³⁰ Raftopoulos and Zeimbekis 2015, p. 24.

²³¹ See Mahon and Wu 2015. Another example is the work on left/right parietal lesions of Warrington and Taylor (Warrington and Taylor 1973, 1978), used by Marr (Marr 1982) to show that processes which precede viewer-centred brain representations of visual scenes are dissociable from the processes that assist object recognition with semantic feedback.

²³⁴ Vetter and Newen 2014, p. 64. The characteristics of this model will emerge later, also thanks to the description of the dynamics of the CP.

²³³ See Raftopoulos and Zeimbekis 2015, p. 24.

3.2 Definitions - The notion of “Cognitive Penetration” (CP)

According to the definition provided by Newen and Vetter, the so-called *Cognitive Penetrability* (CP) occurs when high-level cognitive phenomena (mental states, events or processes), such as beliefs, desires, intentions or concepts, exert a direct influence on perceptual experience of the subject. In other words: when what we see, hear and so on, is altered by what we believe, desire or intend.²³⁴

More precisely, such cognitive interference, which expresses itself as influence or alteration of perceptual experience, derives from an activation by cognitive contents and not from neuronal activation caused by the cognitive processes themselves. These cognitive processes (or states, or events) are considered high-level emblematic phenomena with a semantic content, like contextual expectations or contents stored in memory, like beliefs, desires, expectations, knowledge, past experiences or mental images. Furthermore, it is important to specify that in order to have a CP case in the narrow sense, the effects must concern the perceptual system specifically and not the memory or the judgement: an influence produced by activating a cultural or a memory content, which modulates judgement, has no effect on visual system or perception in general and thus it could not be considered a true case of CP.²³⁵

In order for there to be a detectable case of CP what has to be penetrated is the percept, i.e., the features of our experience, produced by the perceptual content, within a subject-object relation in which an object in a situation produces a perceptual experience in a subject.²³⁶ Furthermore, the perceptual pole of experience must comply with certain necessary (and therefore sufficient) conditions. Macpherson²³⁷ points out four of these conditions, specifically

²³⁴ See Vetter and Newen 2016, p. 26.

²³⁵ Pylyshyn adds another possible interpretation of such kind of influences, introducing within his modular theory of perception the concept of “intrapreceptual modulation”: assuming the idea of perceptual modules, the interaction of two visual inputs, processed in the same module and simultaneously, could explain cases of CP (See Pylyshyn, 1999, p. 343). However, the theory of perceptual modules has met many critics, for example by Paul Churchland (Churchland 1988) who made relevant points against that theory: the existence of top-down neural pathways linking higher cognitive centres to the circuits of low-level vision and in general evidence supporting a prevalent perceptual plasticity of the brain.

²³⁶ However, at the level of the percept, two elements can be distinguished: the content of the percept and the awareness (or not) of the perceptual act (see Vosgerau et al. 2008) but for the moment we will not take into account the problem linked to “awareness”.

²³⁷ See Macpherson 2012, p. 44.

related to the visual input: - the content or the scenario of the visual input has to be held constant; - perceptual conditions have to remain constant; - it is necessary to presuppose the normal functioning of the sense organs involved; - there must be no spatial attentional shifts.

In order to make such conditions explicit, we will report the example described by Siegel²³⁸, in which the scenario foresees a subject looking to a pine tree but hypothesis is made that he has never seen a pine tree before. At a first glance, he is not able to recognize the tree as a special one but just as a tree in general. After he has gained the recognitional ability to identify pine trees, which plausibly implies that his cognitive system has gained beliefs about how pine trees look like, his visual experience changes, although he is still looking at the same tree from the same position, under the same lighting conditions and – as we shall suppose – his eyes are still working at their best. The second visual experience is different because it represents the presence of a pine tree, while the first does not: commenting the example, Macpherson wrote that “the difference in content is manifested in the different phenomenal characters of the experience [...] (h)ence, cognitive penetration has taken place.”²³⁹

Concerning the condition linked to attentional shifts, another example could be even more enlightening: the case of the ambiguous images, like the Necker cube (Fig. 2) or the well-known “double” image of the rabbit/duck picture (Fig. 1).

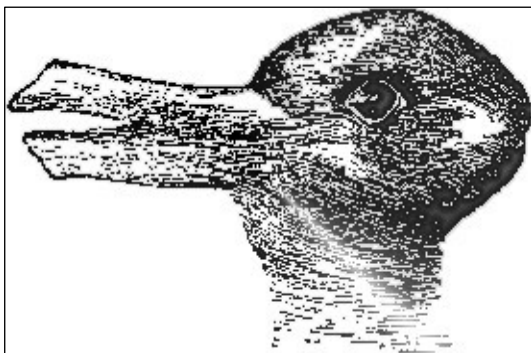


Figure 1: cc-by-sa Jastrow, J. (1899). *The mind's eye*. *Popular Science Monthly*, 54, 299-312.

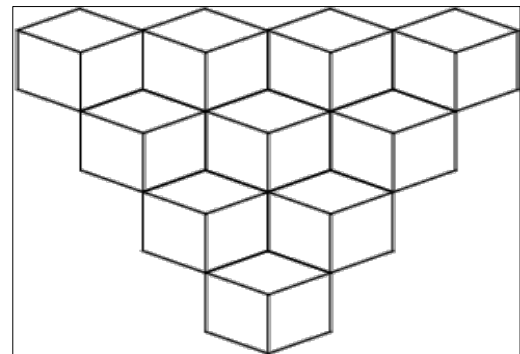


Figure 2: cc-by-sa https://encrypted-tbn0.gstatic.com/images?q=tbn%3AANd9GcRkGSIjsGOZ6jKMo4k7aWn_ksflJRWo04QtWQandusqp=C

²³⁸ See Siegel 2005.

²³⁹ Macpherson 2012, p. 44.

These kinds of figures involve the possibility of having two different experiences of vision corresponding to two different ways of seeing them. With practise, one can arbitrarily choose to switch from one to the other, focusing on the details which suggest the appearing of one figure rather than the other. The possibility to make a choice about which experience one wants to have has been described, for example by Churchland, as an influence by “higher cognitive assumptions on the visual contents” of perceptual experience.²⁴⁰ Furthermore, these images are often used for testing which experience one has or is most likely to have first.²⁴¹

However, these cases are usually traced back to changes in spatial attention, since the shift in focus is considered to be the cause of the alteration of phenomenal experience; these different perceptual outcomes, even when these attentional shifts are considered to be produced by a cognitive state, are not classified as narrow cases of cognitive penetration. Moreover, the cognitive states involved in these cases are generally regarded as judgements of what the figure is a picture of, and thus the affection produced is considered even less an example of CP.²⁴² In the same way, even in the previous case of the pine tree someone could argue that the recognition capacity necessary to identify pine trees may depend on knowing where to focus one’s attention, such as the specific shape of the leaves or other typical characteristics. In this sense, the duplicity of the ambiguous images would not depend on the different phenomenal characters but on the judgements on the perceptual experiences.

In general, the concept of attention has been a central point of discussion in the debate on cognitive penetrability, ever since Fodor argued against Churchland’s idea of concept application in cases of visual ambiguity. Fodor argued that the attention, focusing each time on a different part of the visual object, highlights those visual characteristics that then lead to the different outputs of visual processing, without any direct contribution from concepts. Similarly,

²⁴⁰ See Churchland 1988, p. 171.

²⁴¹ Another element that can be emphasized is the propensity to perceive one of the two images in relation to some specific characteristics of the percipient subject, such as age: in the case of another particular ambiguous image, which represents a naked couple and at the same time a group of jumping dolphins, it is often claimed that children typically perceive dolphins, while adults usually have the visual experience of naked figures. In reality this preference is associated with age because children are supposed to have different thoughts and expectations than adults. See Macpherson 2012, p. 36.

²⁴² Macpherson takes into account a third possible interpretation, according to which in the case of ambiguous figures “the early visual system can autonomously process some inputs in two distinct ways yielding two distinct experiences, but (...) these different ways of processing are unaffected by the cognitive system.” (Macpherson 2012, p. 37) This explanation agrees with the impenetrability claim and therefore we will refute it in the progress of the work.

Pylyshyn allocates to attention a special role, since modifications produced by attention before the actual operativity of early visual processes are one of the two types of influences from cognitive contents that he is willing to acknowledge. As we have seen, he assumes Fodor's theory of modules, which are inborn, domain specific and informationally encapsulated. The visual cortex is one of these modules, which receives attentionally modulated inputs from the eye and yields early visual features as shapes, sizes and colours. These outputs are not influenced by cognition because, according to Pylyshyn, early visual processes are functionally encapsulated and, as such, cognitively impenetrable.²⁴³ Attention has a greater influence on the later recognitional capacity, for example on the recognition of memorized patterns, especially when the visual scene is ambiguous or needs some effort to be framed.²⁴⁴ This influence is recognized as a real intervention of cognition in determining the nature of perception and, therefore, Pylyshyn's position accounts for a weak impenetrability claim. Raftopoulos would further extend the inquiry, distinguishing several forms of attention and amending the classical impenetrabilist view by re-including attentional dealing in early visual processing.²⁴⁵

However, according to Macpherson and in line with the definition of CP offered by Vetter and Newen, one of the conditions for a narrow case of CP was precisely the absence of spatial attentional shifts.²⁴⁶ Thus, we would like to describe, here, a study which makes for a persuasive example of cognitive penetration in a narrow sense as conceived by its authors. The experiment, published in 1965 by Delk and Fillenbaum²⁴⁷, aims to show how subjects' beliefs about the typical colour of objects influence the actual colour experienced: shapes of various objects were cut out from a sheet of paper of a uniform orange colour; some of these shapes represented objects typically associated with the red colour, such as a heart or a pair of lips, while others were shapes of non-typically red objects, such as a circle or a bell. The participant's task was to balance the colour of the background on which the images were placed, deciding from time to time whether to increase or decrease the yellow or red component until the orange shade became the same and the cut-out shapes could no longer be distinguished from the

²⁴³ See Pylyshyn 1999, p. 344.

²⁴⁴ See Pylyshyn 2003, p. 90.

²⁴⁵ See Raftopoulos 2009. Also see Mole, 2015.

²⁴⁶ As pointed out by Newen and Vetter, this does not imply that "some cognitive contents penetrating perception might be inherently more attention grabbing than others (in terms of object-based or content based attention) and thus some forms of cognitive penetration may be caused by top-down attention." (Newen and Vetter 2014, p. 64, note 1).

²⁴⁷ See Delk and Fillenbaum 1965.

background. The experimenters observed that in the case of the love-heart shape, the background colour selected tended to be redder than in the case, for example, of the circle. The trend showed that subject's sensitivity to colour nuances was influenced by the typical colour of the object.²⁴⁸ In other words, colour perceptual experience was affected by the typical chromatic content of that object, stored in memory through standardized associations, and this can be considered a narrow case of CP.

About this experiment detractors argued that the alleged interference has taken place more at the judgemental level than at the stage of perceptual recognition, since the task involves a comparison exercise. But it is actually a very elementary task of colour comparison, carried out under typical perceptual conditions, without ambiguous stimuli or the need to refer to unknown or unusual cognitive contents. Studies on such topic have demonstrated that the fine-grained colour comparison does not involve concepts or judgements; on the contrary, it is usually taken as the most significant example of a “non-conceptual ability”, in so far as it does not involve the ability to re-identify the fine-grained differences of colour shades.²⁴⁹

A similar, but more recent, study performed by Levin and Banaji in 2006 tested the degree to which expectations about the relative skin tone associated with faces of varying races affect the perceived lightness of those faces: the task was to manipulate the colour of the image of a face, with clear racial connotations, in order to have a match with the colour of another reference face through luminance adjustments. Results have shown that faces with Caucasian features were consistently judged to be lighter than the ones with African lineaments, even for racially ambiguous faces that were disambiguated by labels.²⁵⁰

²⁴⁸ A modern version of the same experiment with some adjustments about time constraints was proposed by Hansen et al. 2006. With this study were investigated also the so-called functional evidences for cognitive penetration, since it has been observed that the influence of object identity on colour perception, even if objects are displayed achromatically, has a neural correlate in primary visual cortex (V1). A similar result was obtained by Bannert and Bartels, who showed that, even if participants are seeing a grey banana and therefore the colour information from the visual system is achromatic grey, the typically associated colour information of an object, the typical yellow colour of a banana, is communicated all the way down the visual earliest cortical processing level (Bannert and Bartels 2013).

²⁴⁹ See Raffman 1995. This definition excludes the involvement of concepts but also that one of judgements, since judgements presuppose conceptual representations. See Newen and Vetter 2014, p. 65.

²⁵⁰ See Levin and Banaji 2006.

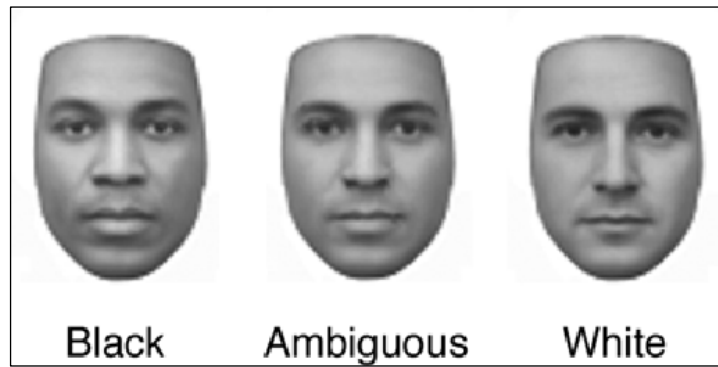


Figure 3: Levin, D. T., and Banaji, M. R. (2006), p. 505 (*The ambiguous faces*)

In this case, expectations concerning face-colour associations linked to racial categories have penetrated the visual experience, influencing the perceived lightness. This is considered a narrow case of cognitive penetration, supported also by neurophysiological evidences linking the primary visual cortex, responsible of the low-level perception, to higher cognitive areas.²⁵¹ Further, the interactivity of early visual processing is suggested by physiological studies on the temporal sequence, which indicate an intercortical interaction in the computation of visual stimuli.²⁵²

Beside these arguments, there is another reason to support the plausibility of these cases as CP examples: attempts to deny the role of CP in these cases imply strategies with unacceptable costs. They have been clarified by Macpherson²⁵³ and we are just reporting their highlights here.

The first one was the necessity to postulate a systematic error on the part of a subject in judging colours, despite the accuracy of the perceptual experiences. The colours are perceptually different but they are judged identical and thus the misjudgement concerns both how the world actually is and the nature of the experience in itself. This is not the same kind of error occurring in the case of illusions, when it is the perceptual experience to be misleading; they are not even errors due to the subject's erroneous categorization of the colour tone; they are errors of judgement and we should assume, according to this strategy, that the subject is

²⁵¹ Salin and Bullier have demonstrated that there are much more feedback connections to primary visual cortex from higher cognitive areas than feedforward connections to higher cognitive areas. See Salin and Bullier 1995.

²⁵² See Lee and Nguyen 2001.

²⁵³ See Macpherson 2012, section 3.

making such errors so frequently, as the experiment shows, despite his perception tells him otherwise. Accepting this explanation is a heavy cost for a theory, especially if the proposed solution does not say anything about why this is happening. To postulate these systematic errors on the part of the subject just in order to save an impenetrability paradigm seems, therefore, unjustified and, anyway, there is still the need to explain why, in the absence of other independent evidence, subject's experiences are judged differently from how they are.²⁵⁴

The second strategy to explain the difference in the cognitive states of the subject involves the aforementioned concept of attentional shifts. However, changes in spatial attention might be relevant in the case of ambiguous figures, when for example the part or the side of the figure on which one's attention is focussed, could determine which one of the two figures appears²⁵⁵; but in the case of colour there are no left- or right-handed sides, since the colour is uniform all over the surface and thus a change in attention would not plausibly yield a change in the experience of colour. Nevertheless, one could argue that another form of focussing could be taken into account, directing the subject's attention to one of the colour components, for instance the redness of the cut-out shapes of the precedent experiment: if, when one sees the cut-out shapes of objects that are characteristically red, one pays attention to the redness within the orange colour of the paper at the expense of the yellowness, this change in attention might alter colour perception.²⁵⁶

Unfortunately, this kind of attention cannot be easily construed as not being a form of CP and the only way to reconcile it with the impenetrability claim is to suppose that it acts before the perceptual processing. Therefore, attention to the redness should be considered a pre-perceptual phenomenon, a condition that determines what will be perceived in advance of any perceptual processing.²⁵⁷

However, it is difficult to imagine that the attention to a feature of the colour (the redness) would be detected before the subject's brain has recognized the colour in itself (the

²⁵⁴ See Macpherson 2012, p. 41.

²⁵⁵ For example, considering the duck/rabbit ambiguous figure, one will see the figure as a duck if attention is focused on the left-handed side of the figure, while it looks like a rabbit if one focuses attention on the right-handed side; anyway, as Macpherson points out, this explanation undermines the need to consider a whole set of patterns of spatial attention in order to clear up the case and similar others. See Macpherson 2012, p. 43.

²⁵⁶ See Macpherson 2012, p. 44.

²⁵⁷ This topic has been discussed both by Raftopoulos (Raftopoulos 2005) and by Rowlands (Rowlands 2005).

orange colour) or if the subject is not aware of experiencing the surface colour. Spatial attention can be directed to a special location before the visual experience occurs, altering for example the perspective of vision, but the allocation of attention on some quality features of the colour cannot be separated from the registration of the colour stimulus. We should therefore consider it possible to have forms of attention other than spatial attention, which for example make for the emergence of one property of the object rather than another. This salient effect produced by attentional shift is blatantly induced by a cognitive state. In Macpherson's word: "If such a shift were driven by cognition in the right way, then it is tempting to consider such a change in experience a case of cognitive penetration because a kind of bias could creep into perception."²⁵⁸

Therefore, if in relation to certain types of attentional shifts the perceptual effects produced can be - without particular objections - counted among the cases of CP, the same cannot be admitted with regard to the involvement of spatial attention. Recently, however, an argument put forward by Cecchi²⁵⁹ seems to have questioned the last claim: the author, commenting the results of an experiment conducted by Schwartz, Manquet, and Frith (2002)²⁶⁰, has stated that "structural modulations occurring in the visual system due to cognitively guided attention are the result of synchronic architectural cognitive penetration".²⁶¹ That this is the kind of attention involving spatial location is made clear by the final aim of the aforementioned experiment, which envisaged the improvement of subjects' performance in the detection of the orientation of peripheral lines.

In the experiment, subjects were looking at a screen on which a homogenous background of horizontal bars was displayed: in the centre, an "L" or "T" was presented with random rotations for 16 ms; at the same time, three lines appeared randomly somewhere within the upper-left quadrant in the periphery of subjects' visual field. The task was twofold: to identify which of the two letters appeared and to detect the orientation of the three lines. But there was a restriction: subjects were forced to stare at the central letter and thus the second task

²⁵⁸ Macpherson 2017, p. 8. Macpherson reports, further, that a deeper discussion on how to classify these cases involving such special forms of attention as cases of cognitive penetration can be found in D. Stokes (Stokes 2015).

²⁵⁹ See Cecchi 2014.

²⁶⁰ See Schwartz et al. 2002.

²⁶¹ Cecchi 2014, p. 90.

necessarily required the allocation of spatial attention.²⁶² According to Cecchi, this “voluntary covert spatial attention” must be guided by cognitive states in order for the subject to be able to select orientation as the characteristic to be processed; moreover, top-down signals to the cortex, which have been discovered to be necessary for the task to be carried out successfully, have been detected by the fMRI. This way, Cecchi could argue that this is a case of cognitive penetration that involves attention and, in addition, he defines this type of penetration as “architectural”, since he retains that in this case the cognitive system influences the entire structure of the perceptual system. Cognitive states have, in fact, an effect both on early vision, because the detected changes on visual cortex occur very early (around 60 ms after stimulus presentation, considering that early vision is temporarily defined as activity within the first 100 ms), and on the content of the perceptual experience in general, since attention has induced changes in the content of visual experience allowing the representation of the orientation of the lines presented in the periphery of the visual field.²⁶³

Therefore, although changes in perceptual experience due to shifts of spatial attention are usually not held as cases of CP, there are some cases as the last ones here presented which call the issue into question.²⁶⁴ Nevertheless, the cases of colour comparison previously described, in particular the experiment carried out by Levin and Banaji on luminance, can be considered better straightforward candidates to illustrate CP’s hypothesis. They are particularly relevant, as they not only have provided an example of colour matching in accordance with CP, demonstrating that the subjects had two different colour experiences, but also provided evidence to counter another thesis against CP, which emerged previously in reference to the experiment by Delk and Fillenbaum. According to this thesis, the cognitive system does not penetrate the visual system, because the effects on perceived colour can be explained in relation to a past prolonged exposure of the subject to certain forms having always a certain colour. Because of the constancy of this colour-shape association, the early visual system should be

²⁶² For the sake of truth, the dynamic of the experiment is even more complex, since it provides a phase of monocular training and the monitoring of the progressive changes in neural behaviour. For a more complete and accurate description, please refer to the aforementioned paper by Schwartz et al. 2002 or to the depiction provided by Fiona Macpherson in Macpherson 2017, p. 8.

²⁶³ See Cecchi 2014, p. 63.

²⁶⁴ Macpherson would like to add that the interpretation of the results of the experiment analysed by Cecchi is not without possible objections: for example, it is not clear whether the selection process driven by attention can be considered as an authentic form of cognitive penetration. See Macpherson, 2017, p. 9.

able to autonomously alter colour experiences, without the involvement of beliefs or other cognitive elements.²⁶⁵

Actually, this explanation could be valid in some cases when, for example, it is plausible that the visual system might easily recognize a heart-shape and thus make it look redder than it actually is, according to a recurrent shape-colour matching; in other cases, though, the recognition of figures does not depend only on simple features, as the shape, to which the visual system is especially responsive: for example, an apple image can be confused with images of other kind of fruits having similar shapes.²⁶⁶ In this case, low-level vision needs the support of the cognitive system, by the form of beliefs, concepts and so on, in order to properly identify the image and, thus, the classificatory task is much more important insofar as the occurring of the effect depends on how the categorization has been done. Hypothetically, if the figure of the apple were classified as that of a jujube, the expectations on its colour would be different, influencing the effects, potentially explainable by cognitive penetration, on the perception of colour.

Consequently, the relevance of the classification of objects by the cognitive system is even clearer in relation to the experiment of Levin and Banaji²⁶⁷, where the elements to be recognized are the somatic features of various faces. These features are too complicated to suppose that faces can be classified autonomously by the visual system according to the race and, in fact, the experiment has demonstrated that the categorization of the object is necessary for the different experiences of luminance to be had.²⁶⁸

A further evidence that the categorisation is clearly done at the cognitive level was presented with the labelling of the racially ambiguous faces: when the face presented was racially ambiguous but a label allowed to know if it was a black or a white person's face, the effect on subject's choosing of lightness was clearly detectable.²⁶⁹

²⁶⁵ See Macpherson 2012, p. 46. The reference to associative links of this kind has probably to be framed here in a psychological framework, conceived as epistemologically distinct from the naturalistic one underlying the discussion on CP. But even if this was the case, it is difficult to understand why this type of associations are not considered consistent with the CP thesis, since they are associations that produce certain expectations and expectations have been included as factors determining an influence on perceptual experience.

²⁶⁶ See Macpherson 2012, p. 47.

²⁶⁷ See Levin and Banaji 2006.

²⁶⁸ See Macpherson 2012, p. 48.

²⁶⁹ See Macpherson 2012, p. 48.

Given these evidences, this face-race study and the previous one on colour matching are taken to be cases of cognitive penetration in the narrow sense. The direct role of cognition through categorization is also testified by experiments involving linguistic elements: there was a large and rapidly increasing number of findings showing that cross-linguistic differences in colour vocabularies can cause differences in colour categorization (with concomitant effects on colour memory and, indeed, colour perception). For example, Winawer et al. (2007) presented an experiment based on different ways of categorizing shades of “blue” in English and Russian: Russian speakers, unlike English speakers, lexicalize the category blue with two basic-level terms, “siniy” for darker blues and “goluboy” for lighter blues; while the English have just one basic-level term “blue”. After presenting colour swatches of different shades of blue, the experimenters noted that Russian speakers (but not English speakers) had faster reaction time on between-category trials (light blue versus dark blue).²⁷⁰

A similar experiment has been conducted by Thierry et al. (2009), which, using brain potentials, established an implicit effect of language-specific terminology on human color perception.²⁷¹ Respectively, native English and Greek speakers were tested on a task in which they have to detect the presence of a different shape (a square) in a sequence of briefly presented colored circles. In Greek exists, as in Russian, two colour terms for “blue”: “ghalazio” and “ble”- distinguishing light and dark blue. All participants watched a series of blue circles (in the experiment condition) on the lookout for an occasional blue square or watched a series of green circles (in the control condition) on the lookout for a green square. In the specific condition, the blue circles were either mostly light blue, with an occasional dark blue one inserted into the sequence or were mostly dark blue with an occasional light blue circle. The visual mismatch negativity, an index of automatic and pre-attentive change detection, was similar for blue and green deviant stimuli in English participants, but it was significantly larger for blue than green deviant stimuli in native speakers of Greek.

At a first glance, these results would seem to be explainable in terms of a gradual perceptual warping caused by learning: subjects learn to categorize the colour spectrum using typical labels (belonging to their mother tongue), which model perceptual representations of colours. Using different labelling patterns would produce, therefore, discrimination boundaries

²⁷⁰ See Winawer et al. 2007.

²⁷¹ See Thierry et al. 2009.

across the colour spectrum. This interpretation of the dynamics in play reflects the classic thesis of “perceptual learning”, already mentioned in relation to the experiment by Delk and Fillenbaum as constancy in colour-shape associations. The impairment, in the cases involving linguistic labels, occurs between these same labels and the perceptual representations of colour, but, in both cases, perceptual learning corresponds to a long-term modification of the perceptual processing system due to thousands of interactions with typically content associations. According to this argument, the influence of cognition on perceptual processing should be considered only a long-term influence, in form of abstract groupings or conceptualizations.

However, we have just pointed out that this mechanism does not fit all the cases, since some recognitional tasks involve levels of categorization which cannot be ascribed only to the perceptual processing. Regarding the case of these studies about the effects of language on colour discrimination, Lupyan has clearly pointed out that the explanation involving perceptual learning is not conclusive, since, for example, it does not explain why verbal interference can eliminate cross-linguistic differences on behavioural measures of categorical colour perception. He proposed an alternative explanation, consistent with CP hypothesis, according to which viewing colours automatically activates their names that warp on-going perceptual representations. The effect of the influence would be thus “not a permanent change in bottom-up processing”, but rather “a sustained top-down modulation possibly induced by activation of the colour names during the task.”²⁷²

Moreover, there are many other examples coming from the psychological and scientific literature that testify the influence on early visual processes by expectations, by cognitive factors linked to the context (both spatial and cultural) and by emotional and social semantic information.

For example, cognitive penetration explains the effects produced on basic visual features in perception produced by many forms of visual illusion. An emblematic case is the phenomenon of the apparent motion, an illusion induced by two stationary stimuli that blink on and off alternately, giving rise to an illusory object moving between the two points. In this case the expectations regarding the incoming sensory information determined by the context affect perceptual processing and realize the illusion of the movement.²⁷³ This also happens mixing the

²⁷² Lupyan 2012, p. 7.

²⁷³ See Newen and Vetter, 2014, p. 66. For a more specific neurophysiological analysis, see Vetter et al. 2012 and also see Vetter et al. 2015.

sensory levels, as in the case where a single brief visual flash, accompanied by two auditory bleeps, is frequently perceived incorrectly as two flashes.²⁷⁴

Illusions generally involve expectations from our sensory environment, which seem at a first glance more directly linked to visual processing, but also more high-level cognitive contents obtain to influence visual perception: a study by Kitayama, Duffy, Kawamura and Larsen in 2003 has inquired the influence of the cultural background on the faculty of judge the length of lines, which is considered a typical early vision process.²⁷⁵ Distinguishing between Westerners and Asian people, and therefore supposing two different cultural paradigms, an individualistic one and an holistic one, the experimenters have observed that the line length judgements were performed better or worse in relation to the presence or absence of contextual information: Westerners obtained better results when the judgment was made ignoring the perceptual context, whereas Asians shown opposite results.²⁷⁶

Other kinds of cultural features coming from the social background can bias the perceptual contents, such as the moral judgement due to previously apprehended “gossip”: in two experiments, carried out by Anderson, Siegel, Bliss-Moreau, and Feldmann Barrett in 2011²⁷⁷, neutral faces were paired with negative, positive, or neutral gossip, under conditions of binocular rivalry (faces were presented to one eye, houses to the other). The findings demonstrate that faces previously paired with negative gossip dominated longer in visual consciousness than the positive or neutral ones. As a potent form of social affective learning, gossip is thus able to influence vision in a completely top-down manner, independent of the basic structural features of a face.

In this example, the subjects of the experiment were directly aware of the semantic information at stake, but there is also an extensive literature on subliminal priming, which reports many cases where the influence on visual perception was determined through unconsciously presented stimuli. It has been shown that the semantic content or the emotional meaning of these kinds of stimuli, masked so as to remain below the threshold of detection of the subject, influence the perceptual experience of the related stimuli that follow them (stimuli,

²⁷⁴ See Watkins et al. 2007; Watkins et al. 2006.

²⁷⁵ See Kitayama 2003.

²⁷⁶ The results of this study are supported also by neuroimaging evidence provided by other two studies: Gutchess et al. 2006 and Jenkins 2010.

²⁷⁷ See Anderson et al. 2011.

the latter of which the subject is aware).²⁷⁸ For example, a set of studies have shown that emotional information, subliminally presented as angry and happy faces, influence different perceptual activities, even when they are unrelated, as the judgement of Chinese characters. A similar presentation of an emotional face can, further, increase the subject's contrast sensitivity, a typical dimension of early vision. The experimenters manipulated the emotional valence and the attentional distribution of cues preceding a target stimulus and asked observers to judge the orientation of the target as contrast varied.²⁷⁹ Other studies extended the research to the effect of desires and of emotions on sensitivity to orientation or on the judgements about distance.

Actually, these cases of emotional influence are generally recollectored under the label of “affective penetration”, a category which is not completely comparable with CP. In fact, emotions can be classified both as perceptual²⁸⁰ and as cognitive, in relation to the way in which they are conceptualized²⁸¹, and thus their influence should be considered a separate case, without this distinction having direct consequences on the plausibility of CP. However, it can be argued, following Newen et al. (2015), that the recognition of emotions can be compared to the recognition of objects, since both are based on the same type of pattern recognition, involving, therefore, essentially the same processes but just dealing with different inputs.²⁸²

Regardless of the re-inclusion of this kind of cases or not, all the previous examples support, as we have seen, the thesis that visual perception is substantially influenced by several factors of cognitive nature and, at the same time, they invalidate the notion of functionally encapsulated visual processing module, the core thesis of most supporters of impenetrability. In order to offer a more complete overview of the debate in question, in the next section we will recapitulate some of the arguments proposed by the detractors of the CP, trying to follow their development but, anyway, also highlighting their shortcomings.

²⁷⁸ See for example Kouider and Dehaene 2007.

²⁷⁹ See Phelps et al. 2006.

²⁸⁰ For example, J.A. Deonna (see Deonna 2006) proposed a conception of emotion as perception, suggesting that, just as perception depends directly on the perspective of the perceiver on his own environment, in the same way emotion, in this sense also essentially perspective, bears very well the comparison with perception. This perspective component of emotions would be configured as long-standing evaluative trends of agents and as character traits.

²⁸¹ See Solomon 1993.

²⁸² This account of emotion recognition is based on the metaphysical claim that emotions are individuated as patterns of characteristic features and it allows to distinguish two forms of directly perceiving emotions, one in the (near) absence of any top-down processes, another which instead involves some top-down processes (including expectations and background knowledge). See Newen et al. 2015.

3.3 The Impenetrability Claims

As we have seen, the question of whether cognition can influence perception has long been matter of debate in philosophy and neuroscience. Over the years, different theorists have offered several and apparently inconsistent definitions of CP, adding to the usual problem of counterexamples the challenge linked to the conflicting answers to the question: “Is this a genuine case of cognitive penetration?”²⁸³; also the basic idea has often been transformed and reconfigured in relation to changes of mind models and to neurological progresses.

Actually, as we have pointed out in the previous section, the notion of CP has originally been introduced in its opposite meaning, the so-called impenetrability claim, but even among the opponents, there was no plain consensus: Pylyshyn sustained that cognitive impenetrability applies only to the so-called “early visual processes” but without specifying exactly the threshold of determination of such processes;²⁸⁴ a more radical position was, instead, assumed by Firestone and Scholl, who claimed that the influences from higher cognitive processes only occur prior to any kind of visual processes and after the completion of a visual percept, as the visual processing module is completely cognitively impenetrable: “We have argued that there is a joint between perception and cognition to be carved by cognitive science, and that the nature of this joint is such that perception proceeds without any direct, unmediated influence from cognition.”²⁸⁵ They offered a new standard for empirical proof of CP and conclude: “Until this high bar is met, it will remain eminently plausible that there are no top-down effects of cognition on perception.”²⁸⁶

There were, thereby, different versions of the impenetrability claim, some providing a more rigid position and other proposing a weaker account, but at the basis of these stances some conditions, the same mentioned in the general definition of CP, were, eventually, shared: the

²⁸³ See Stokes 2015.

²⁸⁴ More recently, Raftopoulos has argued that the early visual processing module can be identified with those areas that are involved in the first 100 milliseconds after visual stimulation. See Raftopoulos 2014.

²⁸⁵ Firestone and Scholl 2015, p. 17.

²⁸⁶ Firestone and Scholl 2015, p. 18.

visual input, the focussed attention, the normal functioning of sensory organs and the external perceptual conditions should remain constant.²⁸⁷

At the beginning, the argument mainly used to expose the legitimacy of a radical claim of impenetrability was the one related to the persistence of visual illusions: for example, in the case of an illusion like that of Müller-Lyer, although the observers are aware that the lines are of equal length, they still perceive one as shorter than the other. In this scenario, the awareness of the illusionary status of the experience does not change the perceptual impression, not even after the proofs obtained through the measurement of the lines.

Someone argues that these cases of illusion are an opportunity to evince some construction principles of perception that remain unnoticed, albeit active, in everyday perception.²⁸⁸ However, even admitting the existence of such principles and their active role determining the special perceptual circumstances of visual illusions, it certainly does not mean that this is always the case. It would be an inappropriate generalisation to elect the cases of illusions as the standard of perceptual experience, when the opposite seems quite evident. Illusions consist of simple and impoverished visual stimuli that do not tax the visual system very much. Considering, instead, the complexity of the perceptual environment that surrounds us, starting from illusions down to describing the functioning of the entire visual system, means to significantly underestimate the system itself and providing a model that is not functional at all in a broader perspective.²⁸⁹

Further, as we have previously shown, the argument of visual illusion has been overturned by supporters of CP, who interpreted visual illusions as cases showing the influence of learned visual patterns on primary perceptual data: in the case of Müller-Lyer's illusion, a consolidated knowledge of the proportions between lines that fit together at certain angles gives rise to an automatic representation in relation to the canons of perspective. The perception of the length is influenced by this representation, even though it is a datum afferent to the first

²⁸⁷ See Newen and Vetter 2017, p. 27.

²⁸⁸ See, for example, Kanizsa's reference to autonomous principles of organization inherent to the visual system, which do not involve any reasoning but that simply works. (Kanizsa and Gerbino 1982, p. 33); further, the most methodologically rigorous studies have shown that perceptual organisation follows Gestalt principles (e.g., good continuation and good form) and this is already clearly evident in the visual behaviour of 9-month-olds (Quinn and Bhatt 2005).

²⁸⁹ See Newen and Vetter, 2017, p. 28.

perceptive phase.²⁹⁰ It has also been proposed another possible explanation based on the *gestalt* configuration of certain lines or parallel figures, which would have centres-of-masses that influence the perception of length.²⁹¹ However, in both cases the configuration activates in memory certain patterns that produce the illusion and the result can be read as a case of CP, in contrast to its use as an argument in favour of the thesis on impenetrability.

The second main argument supporting cognitive impenetrability is based on the functional specialization of the visual brain areas: a lesion on a certain area of the brain leads to a specific perceptual damage. However, the fact that specific types of information are adequately processed only by specific areas of the brain, does not imply some areas are impenetrable to other types of information. Fodor's classical modules required to be domain-specific, innate and impenetrable, but the functional specialization of brain areas, supported nowadays by many empirical evidences, does not presume cognitive impenetrability. On the contrary, recent empirical discoveries argue in favour of a heavily interconnected brain structure: the main cortical brain areas are deeply interconnected with their neighbouring areas; additionally, the brain has, in general, a hierarchical structure which provides a cascade of interconnections across different processing levels.²⁹² This configuration is an evolutionary result which, far from being exclusively epiphenomenal, has many important functions, among which the last one is to make an encapsulated conception of the visual module implausible.²⁹³

Therefore, although the subdivision of the brain in functionally specific macro-areas (among which the visual area) is accepted and shared, this does not prevent these areas from

²⁹⁰ See McCauley Hemrich 2006.

²⁹¹ See Bulatov et al. 2011.

²⁹² See for example, Markov et al. 2013; see also Gilbert and Li 2013. Actually, the considerable amount of empirical evidences discovered in recent years on the "plasticity of the brain" was unknown or ignored at the time Firestone and Scholl or Pylyshyn wrote their articles. However, the large number of empirical evidences support, nowadays, a structural model of the brain in which each area is highly interconnected, both by direct connections between nearby areas and by the receiving of inputs descending from a top-down cascade of intermediate brain areas. Vision, in particular, involves a bidirectional structure of feedforward and feedback connections, which are necessary for the perceptual processing of complex visual stimuli (see Lamme and Roelfsema 2000. In everyday life, we are confronted with a complex and confused environment, which requires to segment objects in the foreground from a cluttered background, and thus the recurrent processing between many visual brain areas is mandatory in order to properly approach naturalistic vision (see Hupé et al. 1998; Scholte et al. 2008). Feedback connections to the visual cortex and their role in exerting top-down influences have, therefore, a structural and functional role, widely accepted, which makes extremely implausible the conception of an impenetrable and encapsulated module.

²⁹³ See Newen and Vetter, 2017, p. 29.

dealing with other kinds of information. Furthermore, drawing a boundary of inaccessibility for specific areas, be it smaller or larger, in order to support an impenetrability claim, does not resolve the impasse, since it still remains to be explained why these areas should be considered impenetrable.²⁹⁴

Another argument against CP takes into account the temporal factor: the immediacy of the so-called “early visual processes” would leave literally not enough time for an interference of the cognitive areas, with the result that the flow of information might only be unidirectional (bottom-up). As already mentioned, the original distinction between early and late vision has its roots in Marr’s theory of vision,²⁹⁵ from which Pylyshyn derives his own account: in a nutshell, the visual system receives, at first, data about an object in a scene from light reflection and, through a set of specific processes, constructs a spatial representation of the object. This sketch, called by Marr “2½ visual sketch”, is restricted to the visible surface and to a viewer-centred perspective but – and this is what we are interested in – it does not involve any semantic interpretation. The necessary processes for the construction of this sketch are labelled by Marr as “early vision” and characterized by Pylyshyn as impenetrable. In a second time, the non-visible parts of the object are integrated by the so-called “3D model”, a phase identified precisely as “late vision”, which implies the matching of the visual sketch with memorized object representations.

The underlying idea consists of a distinction between “perceptual” and “recognitional” processes, since the perceptual representations should depend solely on stimulus information, without any interference by contextual knowledge. This thesis was supported especially by studies on visual agnosia, which substantially showed that there can be deficit in object recognition despite the preservation of both memory and visual computation.²⁹⁶

²⁹⁴ See Newen and Vetter, 2017, p. 28.

²⁹⁵ See Marr 1982.

²⁹⁶ See for example Humphreys and Riddoch 1987, p. 104. To support the main distinction between early and late vision, Pylyshyn exploits several strategies, among which the clinical evidence of functional dissociations of visual and cognitive functions, the persistence of visual illusions, the independence of principles of visual organization from principles of inference (e.g. in Kanizsa’s visual completions) and psychophysical evidence of the attenuation and gating of visual signals. (See Raftopoulos and Zeimbekis 2015, p. 25).

However, recent neuroscientific studies²⁹⁷ on the timing of neural processes in the visual system suggest a more complex structure of the vision process, arranged in three phases: a first one, called “feedforward sweep”²⁹⁸ and considered immune to feedback from areas further downstream, corresponds to the signal transmission from the retina through the visual areas of the brain up to the inferior temporal cortex and lasts for about 100 ms after the stimulus’ onset; a second step, consisting of feedback (‘local recurrent’) connections and lateral connections between neurons at about 120 ms; and, at the end, a phase (at 150–200 ms) in which signals from frontal and prefrontal areas and mnemonic circuits begin to intervene and modulate perceptual processing in the visual cortex.²⁹⁹

Only this last stage is considered cognitively penetrable by the activation of information stored in long-term memory, whereas the visual processing until this point comprises only bottom-up processes, lateral connections, and local top-down effects from one visual area to another. Thus, the second phase does not involve signals from cognitive centres, limiting itself to form representation with “primitive” features, like colour, texture, spatial-temporal properties etc.

In such picture, Raftopoulos indicates the first two phases as corresponding to the Pylyshyn’s “early visual processes”, leaving the last one to consist with “late vision”. Consequently, the feedforward sweep and local recurrent processing are impenetrable insofar as they do not interact with signals coming from cognitive centres or, at least, these signals do not have a semantically relevant component.³⁰⁰

Raftopoulos’s position is in line with the weak version of the impenetrability claim (the strong version, in fact, accepts no interference at any time of the process) and is based on a temporal criterion. However, we suspect that the element of discussion here should be more the nature of the contents that are supposed to be involved in cognitive penetration than a dispute on the timeline.

Raftopoulos underlines that the feedforward sweep is a bottom-up form of signal transmission and especially that it is unconscious, indirectly claiming that any information we

²⁹⁷ See Lamme 2000; 2003; 2005. Lamme and Roelfsema 2000. Also see Roelfsema et al. 2000 and Roelfsema 2005.

²⁹⁸ See Lamme and Roelfsema 2000, p. 572.

²⁹⁹ See Raftopoulos and Zeimbekis 2015, pp. 12-13.

³⁰⁰ See Raftopoulos 2009.

could plausibly count as cognitive, should be available to introspection. Processes involved in perception are instead for the most part not under the perceiver's control and this should explain why the constraints, the assumption and the principles which drive the visual processing cannot be substituted even when the subject knows that they lead to errors, as in the case of illusion.³⁰¹ At the basis of this position there is a conception of vision which functions according to physiological visual mechanisms which implement a set of rules and principles in order to be able to construct perceptual representations of distal objects. Such domain-specific principles guide or constrain visual processing in order to resolve underdetermination of the retinal images. According to Spelke³⁰², the constraints involve attention and a certain number of predispositions, which determine the computation of visual inputs, producing from partial data a set of rule-based extensions of object representations. This operation is described by Spelke as inferential and akin to thinking.³⁰³ However, those principles implemented by operational constraints are not conceptually encoded and function outside the "realm of consciousness".³⁰⁴

Obviously, there is a disagreement on the definition of cognitive contents/effects, since the criterion of awareness or "consciousness" and the assimilation of these contents to a sort of theoretical commitments are clearly unshared by supporters of CP. A crucial reason to classify, instead, Raftopoulos' "operational constraints" as properly cognitive influences emerges in many experiments on CP, which demonstrate not only generical top-down influences but the affection of the visual cortex precisely by category-specific information, which are an high-level kind of semantic information.

For example, a study conducted by Vetter, Smith and Muckli³⁰⁵ on the decoding of sound and imagery content has showed that in a complex perceptual scene, stimuli recognition is driven by a categorial criterion such that, if we were exposed, for example, to a series of environmental noises, the belonging of all these sounds to a semantic category would be reported as information to be transferred to the early visual cortex, omitting instead the specific information attributable to the characteristics of the single sound example. Therefore, the information transmitted is not random or irrelevant but linked to the specific semantic and categorial content.

³⁰¹ See the already mentioned argument of the persistence of illusions (see this work, p. 90).

³⁰² See Spelke 1990.

³⁰³ See Spelke 1990.

³⁰⁴ See Raftopoulos and Zeimbekis 2015, p. 15.

³⁰⁵ See Vetter et al. 2014.

Another study by Pearson, Naselaris, Holmes, and Kosslyn³⁰⁶ has, then, excluded that these categorial and semantic information do merely stem from a reactivated mental image, similar to a representation induced by retinal feedforward stimulation. This reactivation could be part of the perceptual module but the strong abstract and categorial nature of the informative content speaks in favour of a higher-level origin and excludes a low-level provenance coming from mental imagery.³⁰⁷

Furthermore, it has been demonstrated that top-down signals, transmitted from a frontal region to earlier visual areas, are also task-specific: in a task of face recognition, signals coming from the frontal eye fields, a higher level area in frontal cortex involved in motor planning of eye movements, are sent to face-sensitive regions; conversely, when the task demands for motor discrimination, signal are sent to motion area (V5).³⁰⁸ Given the specificity of these signals, they have to be described as high-level cognitive information, which often have relevant consequences on perception.³⁰⁹

Moreover, the transmission of these task-specific signals occurs within a time frame of 20-40 ms after the activity of the frontal eye fields.³¹⁰ This argues in favour of a very early affection of the visual cortex by higher level areas, much earlier than previously thought. In fact, willing to readdress the previous argument by the supporters of the weak impenetrability claim on the time criterion, many time-resolving electrophysiological evidence have shown that the notion of “early” and “late” vision need to be reconsidered in this context: according, for example, to Foxe and Simpson³¹¹, the visual cortex is activated within 50 ms and pre-frontal areas within 80 ms after the visual stimulus presentation and, thus, there is more than enough time for the interaction between the frontal and parietal areas with the occipital one. In this way, a iterative top-down processing between cognitive and sensory areas can take place within the first 100-200 ms (the best guess of the time that a given visual stimulus is detected in the

³⁰⁶ See Pearson et al. 2015.

³⁰⁷ The influence concerns only the early visual cortex and for this reason we cannot speak of effects on visual perception *per se*, although on the behavioural level priming cross-modal studies demonstrated that, for example, semantically congruent sounds improve sensitivity of picture identification (Chen and Spence 2011a; Chen and Spence 2011b) and facilitate conscious access to a matching image (Chen et al. 2011).

³⁰⁸ See Morishima et al. 2009.

³⁰⁹ See Newen and Vetter, 2017, p. 30.

³¹⁰ See again Morishima et al. 2009.

³¹¹ See Foxe and Simpson 2002.

observer's brain is $\sim 150\text{--}250\text{ ms}$ ³¹²), influencing visual perception very early.³¹³ Anyway, these studies do not exclude the possibility that a very early visual module, extremely restricted in temporal processing, might be isolated and conceived as impenetrable, but, with these conditions, this supposed very small module would hardly be able to account for the functional range of perception as a whole.

Another study, carried out by Drewes et al.³¹⁴, on object shape recognition,³¹⁵ supports the occurrence of the exchange of cognitive information at a very early stage of visual processing, demonstrating the presence of a recurrent circuit (a “round-trip” processing) with a time constant (feedforward + feedback) of 60 ms involved in the processing underlying the rapid perceptual organization of shape.

Therefore, given the evidence we have already presented, it would be reasonable to conclude that visual processes are affected at an early stage by top-down influences through feedback and feedforward processes. Furtherly, these processes should not be conceived as working in a serial manner, but rather in parallel, since, according to Hupé et al., “the cortico-cortical connection in the visual cortex must be conceptualized as a network of interacting areas responding with near-simultaneity, rather than as a pipeline-type architecture.”³¹⁶

3.4 Varieties of CP and the Hierarchical Four-stages Model of Perception

In fact, once the CP notion is accepted, it is important to show how the concept functionally interacts with the perceptual models at play and how penetration is realized in the

³¹² See Amano et al. 2006.

³¹³ Noticeable evidences testify the occurring of fast top-down processing between motion area and the primary visual cortex already within the first 50 ms (see Vetter et al. 2015) but sometimes even earlier, before 10 ms, as pointed out by Hupé (Hupé et al. 2001). Another example is the involvement of the frontal eye fields (FEF), a higher-level area in frontal cortex, in motor planning of eye movements, which exerts its influence within 30 ms (see Silvanto et al. 2006).

³¹⁴ See Drewes et al. 2016.

³¹⁵ Newen and Vetter underline that the classification of the object shape recognition as a purely cognitive process is a matter of debate and that this issue is directly linked with the entire discussion on CP. See Newen and Vetter, 2017, p. 30. However, we would like to add that this issue is precisely linked to the discussion on the nature of cognitive contents that we have mentioned earlier (which obviously have, anyway, direct implications on the entire topic of CP), since the perception/recognition distinction and the involvement of the “operational constraints” introduced by Raftopoulos are directly involved in the definition of the object shape recognition as a cognitive process or not.

³¹⁶ Hupé et al. 2001, p. 144.

functional machinery of the brain. In this respect, given that there are cases of cognitive penetration but not perceptual modules in the strict sense, it is possible to support a new perspective on the analysis of perception: our visual perception is no longer the result of a modular bottom-up encapsulated process, but the outcome of an “embodied perception–expectation–action loop which is implemented for a cognitive system by a highly flexible multiple integration of bottom-up and top-down processes.”³¹⁷ Following Newen and Vetter, cognitive penetration is not a binary but a profoundly multi-faceted phenomenon and the different types of influences that can be instantiated depend essentially on the level from which the penetration occurs and on which level the penetrating influence comes from. In other words, it is possible to distinguish several varieties of cognitive penetration.³¹⁸

According to the two authors, this variability can be described adopting a perceptual model that provides four different hierarchical levels of processing, which can be traced, in broad lines, to four different areas of the brain (early visual cortex, perceptual area, memory and cognitive area). This model is similar to many other ones based on neuroscientific evidence but, in this case, levels represent dynamical functional units rather than functionally encapsulated modules in the brain. Therefore, this subdivision is merely illustrative, given that the functional boundaries between units of processing remain highly permeable and their relative independence does not affect the dynamicity and the principle of integration of the entire system. In addition, the application of a hierarchical structure is simply functional to support the concept of bi-directionality, since interactions between levels can programmatically assume either a top-down or a bottom-up path.³¹⁹

Let start by presenting the model from the bottom. At the first stage, basic features of a visual percept are detected through preliminary bottom-up processes according to standard psychological construction principles: early visual cortex processes basic visual data, such as contrast, luminance, spatial frequency, contours and edges. This level also provides motion and colour detection and includes the subcortical visual processing.³²⁰

³¹⁷ Vetter and Newen 2014, p. 64.

³¹⁸ See Vetter and Newen 2014, p. 68.

³¹⁹ See Vetter and Newen 2014, p. 68 note Fig. 1.

³²⁰ This stage corresponds to the previously described “feedforward sweep” postulated by Lamme and Roelfsema: “After the presentation of an image, the successive hierarchical levels of the visual cortex are rapidly activated through the cascade of feedforward connections. This is what we call the feedforward sweep of information processing. Activation spreads from low-level to high-level areas of the visual cortical hierarchy. Anatomically, V1 is the lowest visual area, in which information has

With the second phase, the multimodal integration of the previously found basic characteristics takes place and an estimate percept is created. Constant feed-forward and feedback loops between this phase and the previous one lead the percept to develop itself. For example, phenomena belonging to a low visual level as colour and contrast constancy and adaptation effects emerge at this point.³²¹ Initially, the percept is unstable because the information coming from the first level is incomplete but it tends to stabilize itself within the dynamics inherent in this phase.³²² In the meantime, learned visual patterns of scenes and objects are activated and matched against it: this is the third stage dedicated to templates/pattern recognition, which implies a high-level categorization, for example the categorization of faces, objects or entire perceptual scenes.³²³ The percept is, therefore, compared with perceptual patterns encoded in short-term memory or with categorical templates or invariant representations, coming from past experience of the subject. However, in this phase it might happen that the estimate percept remains within the loop of first and second levels because it does not match with any learned template, for example in the case of a wholly new, never specifically seen or perceived object. In relation to these cases, Newen and Vetter argue that the percept stabilizes anyway, despite the lack of learned models to associate with, but we

to cross at least two populations of synapses (in layers 4C and 2–4B) before it can reach higher areas. The stream of information bifurcates into a dorsal and a ventral stream. In the ventral stream, areas of the temporal lobe are thought to be at the top of the visual cortical hierarchy. In the dorsal stream, the top is more difficult to accurately define. The hierarchy that is based on corticocortical connections fits well with hierarchies that are based on physiological criteria, such as the increase in receptive-field size and the complexity of tuning properties in higher visual areas. A more direct way of characterizing the feedforward sweep is by an analysis of the latency of visual responses in the cortical areas. This yields a somewhat different picture than that expected on purely anatomical grounds. For example, cells in area MT and the frontal eye fields (FEF) areas are activated almost as rapidly as cells in area V1. There are several reasons for the non-correspondence between this temporal and the anatomical hierarchy [...]" (Lamme and Roelfsema 2000)

³²¹ See Vetter and Newen 2014, p. 70.

³²² Assuming and identifying this phase of integration is important, because it is at this stage that the percept acquires its most complete characterization. This is evidenced by the fact that, in case of lesions in this area, there may be perceptual deficiencies as in the case of achromatopsia, in relation to which the object is perceived only in shades of grey, or akinetopsia, which precludes the perception of movement. See Vetter and Newen 2014, p. 69.

³²³ Authors add that conscious perception is supposed to arise at this point (although they programmatically do not intend to investigate such issue in their paper). See Vetter and Newen 2014, p. 70. We will discuss in the last chapter how this underlying notion of consciousness can be re-framed in an Husserlian perspective, considering the distinctions between intentionality, motivation and passive syntheses.

believe that a sort of matching should take place in any case, at least one involving “abstract or generalized” models, leading back to typical forms or profiles.³²⁴

At this point, the fourth stage, a direct link to semantic knowledge can be established: visual input is associated with semantic content, abstract concepts or complex beliefs and the loop between stage 3 and 4 leads to put the recognized patterns into the context of stored semantic knowledge. The relative independence of this last stage from the others, and especially from the last one, is testified, for example, by the cases of associative agnosia, in which the subject is perfectly able to describe (or even draw) the perceptual features of the object in question, without, however, being able to associate the name or the corresponding function with it. In these cases, semantic identification is missing and this leads to a cognitive deficit, although there are no errors in the perceptual processing.³²⁵

Along these four stages, we have described the typical arising steps of the visual percept starting from the low levels of perceptual processing. However, the purpose of this bottom-up description was to allow us to illustrate also and especially the opposite path, which leads from the fourth level to the lower one and which expressly corresponds to varieties of CP.³²⁶

We consider useful to do this by associating the aforementioned CP case examples to the various steps. The most paradigmatic example is the influence by semantic contents and thus the influence coming from the highest level on the processes occurring on the first one, where the early visual processes takes place, as in the case of penetration of object or face shape onto colour perception previously discussed by Macpherson: we have seen how the shape of an object or the racial connotations of a face co-activate associated (skin-) colours.³²⁷

In order to better support this point, namely the occurring of CP between the fourth and the first stage, we would like to add the description of a recent and illuminating experiment on

³²⁴ Actually, Vetter and Newen admit the existence of such kind of templates (see Vetter and Newen 2014, p. 69), but probably they not consider this type of associations as a clearly example of “recognition”. This issue is, indeed, extremely problematic and calls into question both the topic on conceptual/non-conceptual contents and the theme of abstraction. Attempting to summarise here the complexity associated with both these issues would risk being misleading.

³²⁵ See for example Capitani et al. 2003.

³²⁶ See the schematic diagram reported by Vetter and Newen 2014, Fig. 1, p. 68. They include also the actions performed by controlled attention from the 4th level both to the 3rd and to the 1st; and the uncontrolled activation of judgement from the 2nd or the 3rd level to the 4th.

³²⁷ See the already quoted experiments realized by Bannert and Bartels 2013, Delk and Fillenbaum 1965 and Levin and Banaji 2006.

the dissociations and associations between shape and category representations, conducted by Bracci and de Beeck (2016), which suggests that object shape representations in high-level visual cortex might be influenced by the interaction with object semantic knowledge and vice versa.³²⁸ The study was arranged in order to dissociate shape from category and investigate independent contributions and interactions of these two dimensions, resulted in the end highly correlated:

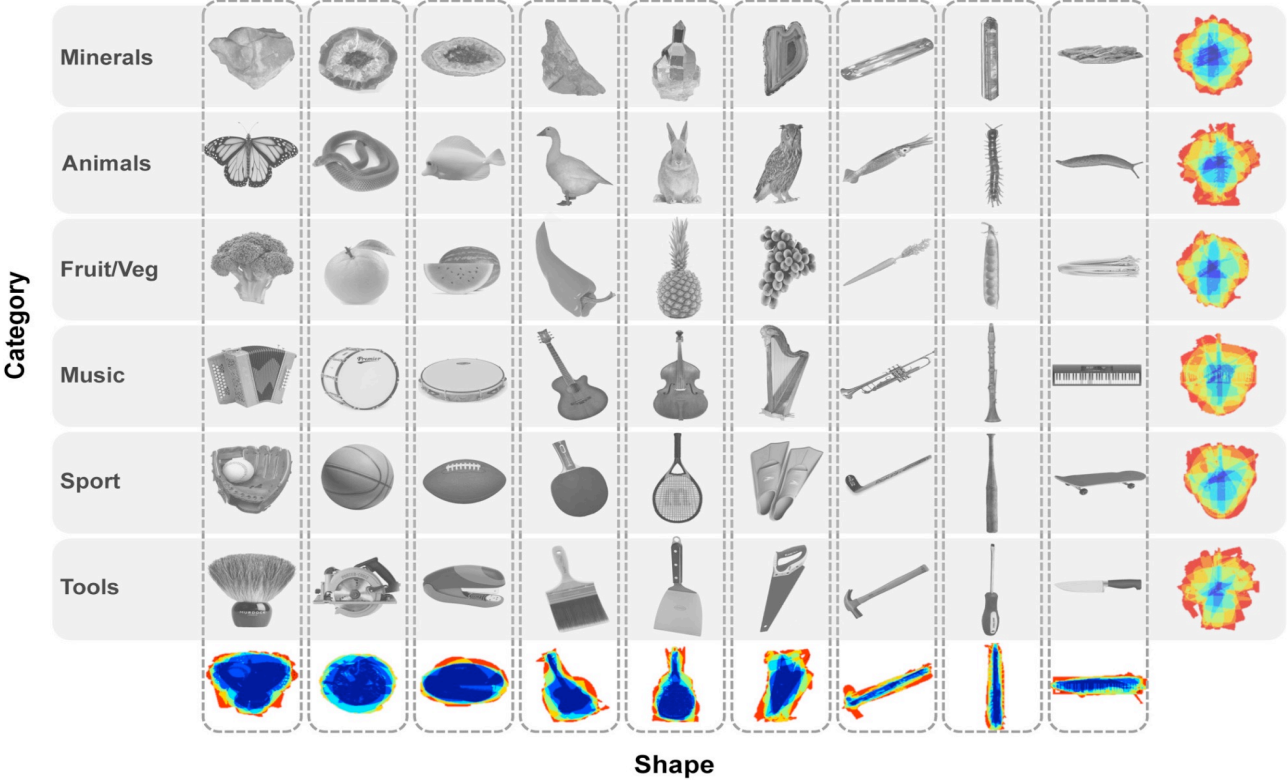


Figure 4: from Bracci and de Beeck 2016, p. 435.

As we can see from Fig. 5, the stimulus set provided during the experiment consisted of 54 images, arranged in 6 object categories and 9 shape types: each row included object images with different shapes and each column consisted of images of object having the same shape but belonging to different categories. In the last row and column, respectively, the pixel-based overlap obtained by the sum of all the images from each shape type and each object category are shown, revealing how strongly the measure of dissimilarity is dominated by shape (we can see relevant differences between stimuli from the same object category and small differences confronting stimuli from the same shape type). This means that shape information is not relevant for the identification of the object category. Usually, instead, shape is considered to be

³²⁸ See Bracci and de Beeck 2016.

a reliable cue to recognize, identify, and categorize an object. However, during the research, authors have manipulated orthogonally the two factors, shape and category, allowing to assess the separate contribution of each factor and investigate the potential relations between them. Despite the relatively artificial dissociation in the stimulus set, authors has discovered that “category-related information is present, even when shape similarity is orthogonal to category membership and goes against it so that stimuli with high shape similarity belong to different categories.”³²⁹ Thus, the study has demonstrated that shape perception has a close relation with semantic category sensitivity: “In sum, even though we have shown that semantic category selectivity cannot be reduced to shape selectivity, nor vice versa, we observed a close association between the two dimensions so that shape representations include more high-level shape properties in more category-sensitive regions.”³³⁰

These results can be easily associated with CP thesis about the interrelation between high-level contents and early visual processes, describing one of the cases of cognitive influence which extends itself from the higher level until the lower one. Instead, an example of cognitive penetration involving level 1 and 2 and thus serving as an extreme low-level case of CP is “apparent motion”, in which, as we have seen, we are induced to state the illusion of an object moving: a process of re-weighting of early detected stimuli (and of their dynamics of appearance) leads to infer motion. However, the percept remains unstable because there is not a bottom-up signal from a moving token and therefore the illusion breaks down after long exposure.³³¹

The most part of visual illusions, included the Müller-Lyer illusion, concerns the interaction of the first three levels. Learned patterns of level 3 can, in fact, influence the construction principles acting on the creation of the estimate percept (level 2) and can modify the analysis of its basic features (level 1). Therefore, especially Müller-Lyer’s illusion constitutes a CP case of the third phase on the previous ones and not of abstract knowledge on perception (as argued by supporters of the impenetrability claim), since our awareness of the sameness of the two lines does not change our perception of inequality.

Put otherwise, it is possible, in general, to recognize the effects of a long-term pre-selection through stored images which conditionate the information processing. This change

³²⁹ See Bracci and de Beeck 2016, p. 435.

³³⁰ See Bracci and de Beeck 2016, p. 441.

³³¹ See Anstis et al. 1985 and Muckli et al. 2005.

could be read as a kind of cultural influence on the perceptual system, as shown by the already mentioned intercultural studies supporting the thesis that Asians are more sensitive to contextual features than Westerners.³³²

This type of cognitive penetration, as the ones discussed until now, is a kind of influence acting on basic feature perception; but, moving up to higher processing levels, a qualitatively different type of penetration can be taken into account, namely the influence of the semantic knowledge on pattern recognition.

This special kind of influence is different because it is exercised on the stage of perceptual recognition and does not directly involve the low-level visual features or the estimate percept. High-level penetration occurs from level 4 onto level 3, determining the association of different types of abstract knowledge to specific memory patterns. It may require plasticity and a phase of previous learning, as when, for example, a name is associated to a face in order to ease recognition. In this way, the spelling of the name should activate the face representation and vice versa, since the association between them produces a memory pattern that permits a faster pre-selection process of stored images (in order to perform the recognition).

Although it might seem similar, this dynamic is completely different from that happening at the third level of the perceptual model, namely the matching of the percept with learned visual templates. In order to clarify this point, we shall refer to the well-known experiment of the “Dalmatian dog”: it is provided an impoverished black and white image, which seems to consist of randomly distributed dots, until we are asked to look out for the profile of a Dalmatian dog. Once we have recognized the profile, we cannot come back to perceive just randomly displaced dots. Through the activation of the concept “Dalmatian dog”, to which a prototypical visual template is associated, our perception suddenly changes. Actually, what happens in this case is a process of cognitive integration, which leads from spatially ordered black and white dots to the image of the dog. This integration takes place after the detection of the stimuli but before the estimate percept becomes stable and it is instantiated by the recurrent feed-forward and feedback processing loops already mentioned.

This example, as others involving impoverished stimuli³³³, is considered a typical case of CP, since the effects of the involvement of templates associated to concepts can be seen

³³² See p. 87 of this work.

³³³ See for example the study by Frith and Dolan 1997.

directly on the early visual processes. Otherwise, the association between the name and the face considered in the previous example improves just the perceptual recognition and, further, requires an effort of voluntary learning. Actually, also the constitution of visual templates and of invariant representations as such require a sort of “long-term learning”: prototypes and recurrent associations belonging to the subject’s experience and memory consolidate over time through repetitions. The resultant familiarity with these contents has induced impenetrability proponents to interpret cases as that of “the dalmatian dog” with the argument of perceptual learning.

As we have already said, this argument constitutes a defence strategy against CP, since it claims that the change of the perceptual processing corresponds to the result of a recursive learning on an associative basis, happening completely within the perceptual module. Considering the previous example, the perceptual system should have coded a standard image of the Dalmatian dog, whose features recall typical templates. Supporters of this argument sustain that the activation of these templates does not involve cognition, since the modification of the perceptual processes happens between sensory input and perceptual experience, through long-term changes within the perceptual module provoked by associative learning.

Once again, the point of disagreement concerns the definition of the status of these templates or visual memories, acquired by the subject during his past experience: on one hand, some sustain that they are the result of a infra-perceptual sedimentation of recurrent perceptual associations and, thus, their influence on the estimation of the percept is clearly non-cognitive³³⁴; on the other hand, CP supporters argue that such templates, as rich contents, categorically characterized, even if open to prototypical variations, are unlikely to be created solely by early visual processes.

All agree on visual templates affecting the way subjects perceive the world, especially on the fact that perceptual tasks involving object classification, identification and categorization, but CP supporters defend their deeply intertwining with concepts and cognitive processing and, for these reasons, consider the hypothesis that perceptual learning could substitute CP as rather unreasonable.³³⁵

³³⁴ See Raftopoulos and Zeimbekis 2015, p. 16.

³³⁵ See Newen and Marchi 2016.

Additional evidence has been provided in this sense by studies that have shown the possibility of an influence on perceptual system deriving from concepts implemented on a short-term time scale, in turn of concepts acquired through long-term learning, be it cognitive or not. Especially, a study proposed by Cohen Kadosh, Henik, Catena, Walsh, and Fuentes, who used hypnotic suggestion in order to implement abstract concepts and visual template on a short time scale.³³⁶ The experiment dealt with a typical conceptual process, the recognition of numbers, and demonstrated that the semantic content of a short-term and reversible posthypnotic suggestion produced a change of actual perceptual experience of participants performing a simple perceptual detection task. Here the argument linked to perceptual learning has to be completely excluded, since it is supposed to be a long-term process.³³⁷

Similarly, the penetration by high-level semantic world knowledge on all levels of perceptual processing also occurs in cases involving subliminal priming: a fast feed-forward sweep produced by an unconscious prime can activate learned memory patterns or higher semantic connotations, which in turn influence low-level perceptual processing. For example, an experiment conducted by Bahrami et al (2010), has shown that the perception of numerosity (considered a low-level perceptual feature) in a small set of items can be influenced by subliminally presented primes of Arabic numerals or number sets.³³⁸

However, the activation of semantic concepts and memory patterns comes in just as frequently as when the stimulus is anything but hidden: identifying what Newen and Vetter call “the gist of a scene” allows to distinguish and quickly categorize objects belonging to that scene on the basis of contextual information: “Similar to priming, the gist of a scene can be quickly categorized via feed-forward sweeps and activates related semantic concepts and memory patterns. Via feed-back, these patterns can help identifying an object depending on the context. For example, within the context of a bathroom scene, an angled L-shaped object can be identified quickly as a hairdryer rather than as a gun.”³³⁹

This is a relevant characteristic of the perceptual processing in general and results particularly useful in case of ambiguous or not-refined sensory scenes.³⁴⁰ Furthermore, the

³³⁶ See Cohen Kadosh et al. 2009.

³³⁷ See Newen and Vetter 2017, p. 34.

³³⁸ See Bahrami et al. 2010.

³³⁹ Vetter and Newen, 2014, p. 71.

³⁴⁰ See Merleau-Ponty’s notion of “milieu” in Merleau-Ponty 1962.

activation of memory patterns can happen also cross-modally, for example when characteristic sounds of a scene elicit a mental image of that scene even in the absence of any visual inputs. The information is then sent via feed-back connection to the early visual areas, activating memory patterns associated with that scene.³⁴¹

In addition, neuroscientific literature testifies that there are feed-forward and feedback connections between all the levels and associated brain areas, within and through the different sensory modalities. Further, mutual influence does not occur only between adjacent and contiguous areas but also between areas further apart, through wide-ranging connections. The effects produced by controlled and voluntary attention belong to this category of influences, which circumvent some of the intermediated stage in order to directly affect that basic features, which are attended to in the percept.³⁴²

Moreover, as well as we talk about “cognitive penetration” because of the influence exerted by cognitive factors on sensory inputs, it is possible to use the label “sensory penetration” for the reverse case, occurring when processes of elaboration of cognitive contents are influenced by sensory information. For example, when irrelevant sensory inputs interfere and distract us against our will and, in general, when basic visual features processed by level 1 involuntary activate a judgement on higher levels.³⁴³

However, it is important to underline that, beyond labels, most processes take place at the intermediate levels, where information is received and sent in both directions at different degrees of abstraction, without the need to refer to criteria of belonging to cognitive or sensory categories. In this sense, the difference between perceptive and cognitive processes, conceived in any case in gradual terms, becomes even more relative, supporting the thesis about the existence of different varieties of “cognitive penetration”.³⁴⁴

The same happens for the perceptual content, which, as created through recurrent interactions across many perceptual levels, testifies of a broadly cooperation between perception and cognition. In this sense, cognitive penetration is a valid argument against the

³⁴¹ See Vetter et al. 2014.

³⁴² In search tasks, for example, the detection of specific features may be facilitated by attentional feedback. See Hochstein and Ahissar 2002.

³⁴³ See also the experiments with blindsight patients by Milner and Goodale 1995 and by Weiskrantz 1996.

³⁴⁴ See Vetter and Newen, 2014, p. 71.

prejudice which considers perception as a mere “passive” registration process and that, at the same time, considers the contribution of cognition the only “active counterpart” of the process. Accepting multiple types of CP implies the assumption of a mental model consisting of many levels of perceptual processing, across which information travels via feed-back connections influencing all the levels.

A similar model has been proposed by Friston³⁴⁵ and Clark³⁴⁶, which, however, have inserted it into a special framework, i.e., the predictive coding. In this framework the brain produces continuously a model of the outer world according to Bayesian principles and, thanks to that, it should be able to predict the content of every new incoming sensory information. In this perspective, the predictive component is a very relevant element of the model, since it is the answer to the needs of efficiency and speed. Considering the vast amount of informations we are always dealing with, reducing the processing effort and optimizing resources allows to improve the functioning of the entire system. This predictive models consists of many levels of perceptual processing, across which many top-down influences carry informational contents on how the sensory data are likely to be composed.³⁴⁷ With the predictive coding constantly at work, the visual percept becomes the product, a sort of stable intermediate compromise, of a process of integration between the preliminary characteristics found and the probabilistically predictable traits that can be applied to it.

The synthesis occurs at a low level of processing, where the predictive information meets the incoming sensory inputs but, if expectations do not match with the new data, the error is feed-forwarded to the high levels of processing, where the predictive model is corrected and upgraded. In the end, the new informational content is sent again via recurrent loops to the sensory input layer and there it is ready to exercise its influence on new incoming data.

As we can see, this model provides a deep interconnection between levels and requires a constant exchange of information in both directions. It also implies that perception plays an active and constructive role, when it promotes the interaction between expectations, contextual cues, multi-modal influences and the incoming sensory information.

³⁴⁵ See Friston 2010.

³⁴⁶ See Clark 2013.

³⁴⁷ See Vetter and Newen, 2014, p. 72.

This conclusion is in line with the presuppositions concerning the CP paradigm, since both models go in the direction of an overcoming of the distinction between perception and cognition. However, the elasticity of a model like this one should not turn into indeterminacy, as Clark seems to argue by saying that is necessary to abandon any distinction in favour of a framework of “predictive coding”.

It is still clearly possible, in fact, to distinguish perceptual judgments, considered as cases of pure cognition, and experiences of mere daily perception, even when the latter have semantically rich contents. Nevertheless, most perceptual phenomena have a rich perceptual content, which places them halfway between perception and pure cognition, on a common ground, and which can be traced back to both cognitive learning and CP.

4th Chapter

4.1. The Status of the Relationship Between Perception and Cognition as CP

According to Siegel, Cognitive Penetration is a kind of *causal* influence on visual experience: when a cognitive content influences a percept, the two are causally connected.³⁴⁸ Therefore, in the dyadic relationship between perception and cognition, the content producing the penetration is considered a relevant causal factor.³⁴⁹

Nevertheless, in the early days of the debate on CP, one of its main participants, Pylyshyn, presented CP as a kind of *rational* relation between the content of higher cognitive states and percepts. To quote Pylyshyn's statement on this point, cognitive penetration, "is an influence that is coherent or quasi-rational when the meaning of the representation is taken into account."³⁵⁰ The distinctive element that immediately stands out in this definition is the necessity of determining the semantics of cognitive contents (Pylyshyn uses the term "beliefs" in the text that follows the quotation): that is, what they refer to. Highlighting this aspect, the author characterizes the processes involving CP as dependent on a rational/logical criterion and, on such a basis, equates them with heuristic reasoning or strategies of decision-making.³⁵¹ In Pylyshyn's opinion, the common feature, namely the subjugation to a rational criterion, is relevant insofar as it prevents the transformation of representations in a semantically arbitrary way, anchoring, instead, the occurrence of the process to the conveyed meaning each time.³⁵²

Pylyshyn uses the term "rational" or "quasi-rational" with the explicit intention of entailing the paradigm of the logical inference - which, notoriously, involves semantic properties as truth. In other words, Pylyshyn believes that, in general, when CP takes place (namely, beyond the threshold of the "early visual processes"), the content of a higher cognitive state rationally implies the content of the percept.

³⁴⁸ See Siegel 2012, p. 204.

³⁴⁹ See Siegel 2005.

³⁵⁰ See Pylyshyn 1999, p. 365, note 3.

³⁵¹ It is important to keep in mind, however, that Pylyshyn supported a *weak* impenetrabilistic position in the context of the initial debate and for this reason his CP account is considered to have resonance at a less "advanced" level in the hierarchy with respect to high-level processes.

³⁵² See Pylyshyn 1999, p. 343.

As we pointed out in the previous chapter, Pylyshyn's position accounts for a weak impenetrability claim, thus leaving room for CP to act in the form of logical inferences only at a stage of "late" vision. A similar, broader inferential paradigm about the nature of the influence of cognition on perception was also indirectly assumed by Firestone and Scholl, despite their more radical position regarding impenetrability.

In fact, despite having rejected any occurrence of CP at any level of visual processing, Firestone and Scholl report the idea according to which visual processing is sometimes considered to involve "unconscious inference"³⁵³ or "problem solving"³⁵⁴, for example in cases of complex processing, as in research on the perception of causality or animacy. This account of vision implies a special paradigm of inference that should operate unnoticed at a certain level of visual processing. Suddenly, though, Firestone and Scholl apply this paradigm to lightness illusions, maintaining that the latter are based on these "unconscious inferences" and, for this reason, persist in the face of countervailing knowledge.³⁵⁵

This is the aforementioned, ambiguous argument regarding the persistence of visual illusions, similar to that involving the Müller-Lyer illusion, generally assumed by opponents of CP in order to invalidate the thesis. We have already seen, however, this type of argument being overturned by supporters of CP aiming at the opposite result. In a case, Firestone and Scholl argue that there are "natural constraints" in the visual module that explain, in themselves, those aspects of processing that seem to imply a cognitive contribution.³⁵⁶ These "natural constraints" refer to the Gestalt principles (e.g., good continuation and good form) and to Kanizsa's principles of organization, inherent to the visual system, that merely function without involving any reasoning.³⁵⁷ Even when – they add – such visual processing involves context effects (for example, when the perception of an object might be influenced by the properties of other objects nearby, as in the case of several visual illusions), no top-down effects of cognition on perception can be admitted.

³⁵³ See Gregory 1980 (in Firestone and Scholl 2015, p. 4).

³⁵⁴ See Rock 1983 (in Firestone and Scholl 2015, p. 4).

³⁵⁵ See Firestone and Scholl 2015, p. 4.

³⁵⁶ See Firestone and Scholl 2015, p. 4.

³⁵⁷ See Kanizsa and Gerbino 1982, p. 33.

Despite a partial incoherence in their reasoning³⁵⁸, it seems clear that Firestone and Scholl defend their position against CP by assuming that vision can be “smart” in ways that do not imply cognitive penetrability, precisely by virtue of the above mentioned “natural constraints”. Consequently, they consider the alleged top-down effects on perception (by motivation, action, emotion, categorization, and language³⁵⁹) to be explicable solely by the fact that they are “merely” effects of attention, memory, or categorization/recognition.

Yet, attention, memory and so forth, are cleanly separated from “pure” perception.³⁶⁰ Moreover, given this overtly restricted conception of the “perceptual module”, it is quite evident that any kind of activity, implying any sort of cognitive contribution, is at least limited to a post-perceptual stage. This means that even a simple recognitional task, although usually considered to involve perceptual processes, implies cognitive inferences.

We can infer, therefore, that outside the boundaries of “pure” perception, Firestone and Scholl accept the application of the notions of “unconscious inference” and “problem-solving”, notions that substantially cover the range of all kinds of cognitive influence on perception. In particular, the notion of “unconscious inference”, along with the underlying paradigm that constitutes the sense of the problem-solving strategies, shares with Pylyshyn’s paradigm of logical inference the core-conception of cognitive influences as *rational* relations. Even Firestone and Scholl’s qualification of vision as “smart” implies the need to suppose a logical/rational principle driving any process pointing to knowledge (including the pure perceptual one).

Actually, the labelling of cognitive inferences as “unconscious” seems particularly ambiguous, for it seems to call into question the aspect of consciousness, an aspect usually set to one side in these forms of discussion. We suppose, however, that with this addition, the

³⁵⁸ Firestone and Scholl would say that these labels of “unconscious inference” and “problem-solving strategies” should be applied only to high-level processes, which do not include lightness illusions, given that the latter correspond to low-level visual processes.

³⁵⁹ In their article of 2015, Firestone and Scholl draw up a long list of studies and experiments (including some which we have referenced in the previous chapter on CP), which they view as supporting a return to the previously “fashionable” New Look understanding of perception; this is a tendency that they interpret as a dismissal of the robust division between perceptual and cognitive processing. The list includes a class of studies regarding top-down effects vis-à-vis the influence of motivation (e.g., desires, needs, values etc.), action-based influences, top-down effects involving affective and emotional states and, finally, a class of contemporary top-down effects concerning categories and linguistic labels (see Firestone and Scholl 2015, §§ 3.1-3.4).

³⁶⁰ See Lupyan 2016.

authors would like to underline only a certain dimension of “passivity” as a form of autonomy, or as an independence of cognitive influences from any active will or awareness.

In any case, both these characterizations (by Pylyshyn and by Firestone and Scholl) were judged by Newen and Vetter to be quite incompatible with the CP account.³⁶¹ As we have seen, their definition also includes the penetration of early vision, with respect to which the coherence between the meaning of cognitive content and the effects on perceptual experience cannot be translated – so they claim – in terms of a logical inference. The supportive argument they report is a case outlined by Ishii, Tsukasaki and Kitayama, easily counted as a CP case according to their own definition. It describes the influence of cultural background on the actual perception of a picture: in such circumstances, they affirm that the content of the cultural specificities cannot be considered as logically related to the characteristics of the perception.³⁶² Thus, Newen and Vetter would rather support Siegel on this issue, claiming that causality is a sufficient paradigm for describing the relation between cognition and perception in terms of CP.³⁶³

In 2012, Siegel provided a definition of CP that ran as follows: “If visual experience is cognitively penetrable, then it is nomologically possible for two subjects (or for one subject in different counterfactual circumstances, or at different times) to have visual experiences with different contents while seeing *and attending to* the same distal stimuli under the same external conditions, as a result of differences in other cognitive (including affective) states.”³⁶⁴ This definition comprises all the conditions that should supposedly be met to identify a narrow case of CP. The conditions here highlighted coincide with those Macpherson included in the list proposed in 2012 (i.e., the list we analysed earlier³⁶⁵). Nonetheless, in her subsequent work of 2017, the author considered it appropriate to add a further characterization, indeed quite a significant one: “[I]n order for cognitive penetration to occur, a semantic or intelligible link is necessary between the content of the cognitive state doing the penetrating and the content of the perceptual experience, or the content of early vision, that is penetrated.”³⁶⁶

³⁶¹ Explicitly, they only oppose Pylyshyn’s position (see Newen and Vetter 2014, p. 64) but we believe that they would have rejected Firestone and Scholl’s position for similar, if not more relevant reasons.

³⁶² See Ishii et al. 2009.

³⁶³ See Vetter and Newen 2014, p. 64.

³⁶⁴ See Siegel 2012, p. 6 (author’s italics).

³⁶⁵ See Chapter 3 of this work, p. 68.

³⁶⁶ See Macpherson 2017, p. 9.

According to Macpherson, this addition was necessary to clarify the difference between narrow CP cases and other examples of interaction that, despite falling under the definition of CP, cannot intuitively be accounted as such. The example discussed by Macpherson to elucidate this difference is described as follows: a subject believes he has an exam the next day and the stress connected to it causes a migraine; as a result, the subject experiences flashing lights in his visual field.³⁶⁷

Formally, in this case the chain of events leading from the belief (having an exam) to the subsequent visual experience (flashing lights) seems to instantiate an effect upon the subject's visual experience by the cognitive content of which the belief consists. Nonetheless, even intuitively, this would hardly be considered a CP case, as it may rather be classified as a case of migraine caused by belief-triggered stress. In fact, the flashing lights are clearly a physiological symptom of the migraine, without any content-related link to the initial belief. The state of stress must also be considered a physiological condition, thereby lacking any semantic content.³⁶⁸ Hence, there is a physiological causal connection between the state of stress, the migraine and the experience of flashing lights but no semantic link between the content of the initial belief and the content of the final perceptual experience.

For this reason, Macpherson points out that, in CP, the presence of a causal, semantic link between each of the steps leading from the belief to the subsequent perceptual experience has to be taken as necessary. The discussion of a second example, similar to the previous one, however, will complicate the issue. Let us suppose that the subject's initial belief is: aliens might land on Earth. The popular shared imagery of an alien landing somehow includes spaceships, equipped with flashing lights. At first glance, it seems that a semantic link between the belief and the final visual perception would be detectable. In any case, it is immediately clear to anyone that this connection is purely accidental, since the causal chain that involves the intermediate steps is released from any direct connection.

This is the reason why Macpherson highlights the importance of the presence of a strengthened causal, semantic link at each stage of the process in order for CP to occur: “[The mechanism] was one in which a belief caused some imaginative state or imaginative processing

³⁶⁷ See Macpherson 2017, p. 9.

³⁶⁸ Even if one considers that semantic content can be attributed to a state of stress, in terms of “something is going to happen” or content linked to the source of stress, the migraine that the stress has provoked, surely, has no semantic meaning. See Macpherson 2017, p. 10.

to come into existence, which in turn causally interacts with one's experience yielding an experience that has content influenced both by perception and imagination."³⁶⁹

Therefore, Macpherson combines, in a certain sense, the two positions by Siegel and Pylyshyn that we previously examined, specifying the nature of the causal nexus stated by the former and reassessing the value of Pylyshyn's suggestion about the relevance of the semantic level. CP should be viewed as a process whereby, at each stage of the interaction, a causal, semantic link can be individuated. The author adds, however, that causal, semantic processes can also be described in non-semantic terms, namely by a low-level physical vocabulary. As information processing, this can be described by means of a mechanism that consists of a particular neuron firing at a certain rate.³⁷⁰ Besides, if we wished to keep these two levels of description separate, then the concept of causality should also be subdivided: on the one hand, the causal link between the two underlying physical correlates, and on the other, the link between the content of the belief and the content of the final perceptual experience, which must respect a coherence with regard to the meaning.

If one recollect the last example, the causal link between the migraine and the experience of flashing lights belongs to a physical dimension of description. Nevertheless, can we claim that the same kind of causal link exists between the content of the belief and the state of stress? In some ways, the instantiation of the state of stress depends on the content of the belief and on the expectations linked to it.³⁷¹ Should we, then, consider there is a semantic link, in this case? As we stated above, stress has no "content", and even if we believed that content *could* be attributed to the state of stress, the migraine certainly has no content, and the problem rises again.³⁷² Conversely, the perceptual experience provoked by the migraine has a content, i.e., the flashing lights, but no semantic link can be individuated, first, with respect to the migraine and, second – but no less evidently – with respect to the content of the belief. This concerns the first version of the example. The second seemed to provide a meaningful

³⁶⁹ See Macpherson 2017, p. 9.

³⁷⁰ See Macpherson 2017, p. 10.

³⁷¹ We use the term "expectations", here, to indicate the "imaginative states or imaginative processing" to which Macpherson refers within the aforementioned quotation (See Macpherson 2017, p. 9).

³⁷² In order to clarify this point, we argue that if, by hypothesis, we decided to attribute a form of content to the state of stress, the link with the belief would be a link between two contents and thus it could be considered a semantic link. Nevertheless, the previous problem reappears in the same terms at the next step, because, since it is not possible to attribute a content to migraine, then it is not possible to establish a semantic link between the supposed content of the state of stress and the migraine itself.

connection between the two forms of content, but we have seen that this is merely accidental, because it did not respect the causal chain.

In other words, we should distinguish between: a dimension of physical causality, to which physiological states such as migraine or stress are subject; a semantic dimension, dealing with content-related connections; and a combined causal-semantic dimension, in which the causal chain is subjected to a semantic coherence. Neither of the examples just presented are considered CP cases, primarily because they do not meet the requirement of causal and semantic linkage. Probably, Macpherson's aim in discussing such examples was simply to highlight the difference between a causal, semantic link and a formal causal nexus and, in this way, to underline the relevance of committing CP to semantics. Following her suggestion, the example quoted against Pylyshyn's thesis, i.e., the case of CP in which cultural background influences the perception of a picture³⁷³, should definitely not be read as implying a logical inference. Rather, at least, it should be seen as involving a principle that must be content-related.

Nonetheless, the discussion of these examples still leaves unspecified the nature of the causal link between states to which a semantic content can be attributed (on the one hand), and purely physiological states. After all, such a link must exist if one assumes Macpherson's thesis that sustains the necessity of an internal coherence to the whole causal chain. This issue is associated, in our opinion, with the problems linked to the separation of the two levels of descriptions: the physical and the semantic. Nonetheless, this difficulty may be put aside for the time being, and as far as CP thematization is concerned, by pointing out that, according to the definition of narrow cases of CP, as it has been outlined so far by the authors mentioned above, no intermediate steps involving physiological states should be taken into account.

4.2. Transition From a Causal to a Motivational Associative Link

The necessity of introducing a semantic dimension into the framework of CP accounts – according to Macpherson – for the general need of precisely to establish the features of cases of CP, drawing a distinction between the authentic cases and those falling under the same definition, but which cannot be accounted as such, - even by intuition.³⁷⁴ In other words, the

³⁷³ See Ishii *et al.* 2009.

³⁷⁴ See Macpherson 2017, p. 9.

“causal chain” criterion ensures that the sense of the content of the effect that has been provoked is consistent with (and therefore directly *motivated* by) the sense of the content of what produced it.

The importance of this new condition emerges even more clearly when the framework of the relationship between cognition and perception involves elements such as expectations and prediction models, as in the already cited case of the predictive coding account of perception. As we have seen, this account involves a processing that, following Bayesian rules, aims at reducing errors and, therefore, at improving the efficiency and speed of the system.

A prediction is based on expectations and expectations depend, at least, on reiterative associations. The recurrence of the association between certain contents *motivates* an expectation and, in turn, a set of expectations constitutes a prediction (as representation of the world). Subsequently, the prediction might be confirmed or refuted by new incoming data but, in case of disagreement, the new information produces new associations, and consequently new expectations. The aim in this regard is to improve the predictive capacity of the system and, subsequently, its efficiency.

In general, the predictive coding account entails CP³⁷⁵, since it is the mechanism that allows the model to realize itself. On this subject, Lupyan wrote that, “penetrability should be expected whenever constraining lower-level processes by higher-level knowledge minimizes global prediction error.”³⁷⁶ Moreover, Clark also seems to support the thesis that predictive coding entails cognitive penetration (although he has never been explicit on this point).³⁷⁷

Thus, the same associative mechanism can also be applied to typical cases of CP, when, for example, the shape of an object or the racial connotations of a face co-activate associated

³⁷⁵ Macpherson specifies that the relationship between the predictive coding account of perception and cognitive penetration is dependent on both the specific form of the predictive coding account and the specific form of cognitive penetration; but, those forms of predictive coding that entail the non-occurrence of cognitive penetration, do so because they give a radically different account of the mind compared to the standard conception of it. This is the case, for example, when it is argued that early vision does not exist (see Macpherson 2017, p. 15).

³⁷⁶ See Lupyan 2015, p. 547.

³⁷⁷ For example, Clark wrote that: “In place of any real distinction between perception and belief we now get variable differences in the mixture of top-down and bottom-up influence [...] To perceive the world is just to use what you know to explain away the sensory signal across multiple spatial and temporal scales. The process of perception is thus inseparable from rational (broadly Bayesian) processes of belief fixation, and context (top-down) effects are felt at every intermediate level of processing.” (See Clark 2013, p. 10)

(skin-) colours³⁷⁸: a perceptual content activates a cognitive one, i.e., a template, with which it is associated by virtue of a long series of precedent associations, and the informational content of the template influences the constitution of the percept. Even the template as such is the result of a long series of precedent associations. Associations involved in this process cannot be, therefore, just successions or juxtapositions of contents: they have to be consistent one after another with regard to content. This applies both to associations of continuity and similarity: in order to recall a *first* content that presents perceptive similarities, the *second* must be modelled in such a way as to support this similarity/continuity.³⁷⁹

Consequently, association does not act in this framework as an autonomous force that induces a reaction in the form of a cause, out of necessity. Rather, it acts by making a reproduction of the same relations between contents probable, or attractive, in light of past experiences. In other words, association is effective only to the extent that it is able to anticipate, and to predict new incoming relations between contents, which have to be consistent with past and present associative relations. This means that associations between contents are inserted into a meaningful articulation, since they are motivated by previous associations and, at the same time, they motivate other successive associations, creating, in this way, a structure that follows an internal content-related consistency.

The fact that what is motivated occurs for the sake of the motive (that is to say, that motive and motivated are each sensitive to the meaning or significance of the other) creates a form of reciprocity on which the associative structure is grounded. A causal account would not be able to capture this form of reciprocity, not even via the fact that these relations are already inserted in a meaningful pre-existing articulation when the association occurs.

Phenomenologically, this structure corresponds to a horizon of sense that each association, as motivated, inherits. This is the semantic dimension we were referring to, since, in this context, having a meaning implies being part of a semantic horizon, thus contributing to confirming or extending it, through inductive associations or expectations.

It is important to note that the semantic dimension connected to the motivational articulation does not need to be understood, at this level, in terms of linguistic meaning:

³⁷⁸ See the cases, already referenced above, of CP as described by experiments conducted by Levin and Banaji in 2006 and by Bannert and Bartels in 2013.

³⁷⁹ See Merleau-Ponty 1962, p. 21.

characterizing motivational relations as an “arising” of one content from the other, for the sake of the other³⁸⁰, allows one to extend the notion of motivation beyond states related to propositions.

Since any linguistic articulation is necessary, this characterization of motivational associations cannot be reconducted to a network of rational relations. In fact, rational relations must be available to thought and must be propositionally articulated, whereas motivational ones often function tacitly, being non-thetic or non-explicitly experienced. They constitute a whole sedimentary history, a large accumulation of contributions from past and present experiences, which in turn determine the genesis and the significance of the thought, but are not available for use in inference and justification, other than as assumptions.

In general, this horizon of sense constitutes a dimension of familiarity with the world that represents the condition of our ability to see things as they are - hence, of our ability to reason and, consequently, act.

This is why it seems legitimate to introduce a kind of semantic linkage in the relationships between perception and cognition. In fact, beyond the labels that can be attributed to such phenomena of interactions (cognitive penetration, predictive coding or “natural constraints”), and beyond the necessity of attributing their origin to a cognitive module or not, it is necessary to attest to the coherence between the sense of the content of that which produces the influence, and the sense attributable to the effect that is provoked.³⁸¹

Coherently, we believe that at the base of the entire debate on CP and beyond, there is exactly this general necessity of comprehension of when and how (and until what point) the cognitive contribution - which entails high-level processes as involving semantic meaning - interacts with data provided by perception.

Incidentally, interactions are not under discussion at this point. Influences on perception, and especially influences that subjects are not aware of, but that are coherent with expectations,

³⁸⁰ As from Edith Stein herself: “an *arising* of the one *from* the other, an effecting or being effected of one *on the basis* of the other, *for the sake* of the other.” Quoted in Wrathall 2005, p. 116, italics by the author.

³⁸¹ Even if it could be sustained that the sense, the coherence, could be attributed to these kinds of relation *a posteriori*, the impulse producing such dynamics must answer to some kind of principle and every principle implies a semantic dimension.

beliefs, templates, cultural background and so on, are present: they belong to experience and have been reported by many studies and experiments. Problems arise when one has to determine where they come from, or whether (and to what extent) they are the result of attention, memory or cognition. Further, given the frequent lack of general consensus about the nature of discussed content or about the definition of the “actors” at play (i.e., attention, memory, cognition and so on), the debate gets even more complicated.

Nevertheless, we have already emphasised that the entire discussion rests on the assumption of a separation between cognition and perception. Indeed, a hypothesis such as that of cognitive penetration is theoretically played out on this very precondition. Nevertheless, the validation of the CP hypothesis supports precisely the opposite thesis, i.e., that of a gradual overcoming of a rigid, dogmatic distinction between cognition and perception, insofar as efforts are made to highlight the interpenetration that exists between the two “poles”.

Originally, in fact, the general/classical picture of perception and cognition distinguished between “pure cognition” (accounting for forms of content with inferential and logical connections, as beliefs and judgements) and “pure” perception, concerning adaptive features. An alternative general picture provided three levels: propositional cognition at the top, an intermediate level in which perception and cognition should be intertwined and, at the bottom, adaptive perception. Within the mid-level, one might even draw a distinction between minimal cognition and high-level perception.

Incidentally, with the introduction and acceptance of the varieties of CP, there is no longer any junction between perception and cognition, since the dichotomy becomes a heuristic, theoretical simplification of a complex hierarchical processing that the brain operates. Thus, according to Newen and Vetter, perception and cognition can be distinguished paradigmatically only as the endpoints of this hierarchy.³⁸²

The blurring of the distinction is, therefore, the result of interpenetration, and it goes hand in hand with the need to recognise the widening of the range of cognition: the cognitive contribution is no longer limited only to higher cognitive processes, but rather, it interacts directly with perceptual data, in a mutual process of influence. This implies that these interactions, as CP, amplify the scope of the semantic dimension. This is true, since they follow

³⁸² See Newen and Vetter 2014, p. 68-69.

a principle of internal consistency with regard to contents, insofar as they are based on motivated associations.

The dependence on the semantic dimension translates into the necessity of substituting the causal nexus with a genetic-motivational one - a kind of legacy that operates associatively by virtue of the meaning acquired in the context of former experiences and, contemporarily, suggesting a recourse to those experiences for new associations. The semantic link proposed by Macpherson becomes, therefore, a motivational associative link.

4.3. The Causal Paradigm

As we have seen, relations established by a motivational associative link are not relations that obtain between events in themselves, but rather between contents, through which an antecedent predisposes a subsequent, in coherence with former experiences and its horizon of sense. This means that the manner in which the relationship is described cannot be random or indifferent, since such a description is necessary in order to grasp its significance. For this reason, the aforementioned characteristic of motivational relations, i.e., their reciprocity, gives them another special feature, which is typical of intentional relationships: that is to say, a lack of extensionality.

In order to explain this point, we may observe that causal relations are, by contrast, extensional, which means that they exist between the *relata* independently of the mode by which *relata* are presented. For example, if we substitute co-referring singular terms in a sentence that describes a causal relation, the sentence maintains its true value. In a sentence like, “the stimulation of hair cells in the cochlea *caused* the firing of neurons in the auditory cortex”, the true value is preserved even if we replace predicates with other coextensive ones (for instance, “the stimulation of hair cells in the cochlea” with “the sounding of the trumpet”, and “the firing of neurons in my auditory cortex” with “the hearing the trumpet”): “The sounding of the trumpet *caused* my hearing of the trumpet”.³⁸³

Both sentences are true, and the substitution of terms demonstrates that no particular description is needed in order to state the validity of causal connections. This occurs because

³⁸³ See Wrathall 2005.

the validity of causal links is assured by their nomological dimension, namely, by the fact that such connections, corresponding to causal relations, have to be subsumed under a law. In other words, their validity is expressed in abstract and universal terms and, therefore, it is independent on the singularity of the terms involved in the relationship. The nomological dimension of causal relations has, thus, their extensionality as a consequence, since the possibility of replacing *relata* with co-referring terms rests on the assumption that causal relations obtain independently of the description, better or worse, of the law governing them.

These specificities mark a difference with respect to relations based on the motivational paradigm, which are instead linked, as we have seen, to semantic and contextual constraints. In particular, the nomological aspect of causal relations, which constitutes the essential defining feature of causal relations, excludes any reference to the specificity of the contents placed in relation. Rather, it asserts the necessity of its own constraint exclusively by virtue of the postulated laws. This aspect deserves to be illustrated in closer detail, as it allows us to reconstruct, albeit briefly, the difficulties that have arisen following the application of the causal paradigm to the context of the investigation of mental phenomena.

According to Kim³⁸⁴, who provides a summarized presentation of a modernized version of the nomological analysis of causation, traceable to 18th century empiricism, a causal relation is defined as a relation between the instantiations of two properties, such that the instantiation of the first is followed by the instantiation of the second. Only instantiations, therefore, are causally efficacious, in the sense that the fact that one follows the other can be turned into a law (i.e., a nomic fact). Conversely, properties are not themselves causally efficacious, but they are said to be such only *improprio sensu*, in the sense of being relevant to the formulation of causal laws. In other words, according to the nomological approach, a causal relation is a form of connection traceable to a succession, and nothing more, although this succession has to be subsumable under a law. The principle embodying this structure is the logical deduction, such that the central form of a causal explanation provides that the explanandum is a logical consequence of a causal law.³⁸⁵

Obviously, the whole evolutionary history of the concept of cause and its role within the corpus of scientific theories cannot be summarized here. Therefore, let it be sufficient, to

³⁸⁴ See Kim 1993.

³⁸⁵ See Roy, 2010, p. 35.

the extent of our discussion, to say that the conception of causality, generally adopted in scientific investigations, can be identified with the notion of *efficient* causality: a specific kind of efficacy that, paradigmatically, unfolds in an (ideally) measurable way between (ideally) measurable events. This conception of causality can be described in contrast to the well-known Humean account. In brief, and without delving into complex issues around Humean exegesis, the analysis of causality proposed in the *Treatise* had basically shown how the idea of cause was phenomenally founded in a series of independent factors; the latter included contiguity, succession and constancy. According to Hume, this meant that the elements that allowed the attribution of causality between events were merely contiguity, succession and similarity with established connections. Hume stated that no specific factor presented itself to bind two events considered in a causal relationship, and thus, any implicit pretence of causality as a form of necessary connection was ungrounded.

The “scientific” concept of efficient causality inherits from Hume both the description of events as spatio-temporally determined (and thus disjointed) and the opinion that nothing on the physical level embodies causality.³⁸⁶ Yet, this conception trades the Humean subjective nexus, reliant on the criterion of regularity based on similarity/habits, for the institution of an objective constraint, i.e., natural laws.³⁸⁷ In other words, the scientific model of efficient causality implies that there are events that are determinable in space (contiguous) and in time (successive), such that the antecedent is *normatively* bound to produce the consequent.

This approach embraces, therefore, the nomological paradigm and combines it with a naturalistic ontology, providing a uniform quantitative view regarding relations of ontological efficacy.³⁸⁸ This implies, however, that only one form of causation is admitted by science, namely: the efficient causality, directly linked to the material dimension of experience.³⁸⁹

³⁸⁶ In this sense, physics considers that it can legitimately exclude the concept of cause from the formulas expressing natural laws, since what they describe corresponds to mere correlations of events. Nonetheless, an assumption of the existence of laws that “constrain” nature to behave as it does, reintroduces through the window, so to speak, all the ordinary interpretations in causal terms that had been thrown out through the door. This is because physics does not, like Hume, maintain itself on a “descriptive” level, but instead postulates rules for the unfolding of natural events. See Zhok 2011, p. 126.

³⁸⁷ See Davidson 1995.

³⁸⁸ According to Zhok (see Zhok 2011, p. 127), this view has been seized upon in philosophical terms by theories of conserved quantity, according to which causal relations are reduced to ones of energy-momentum transference. For example, see Fair 1979, and Dowe 2007.

³⁸⁹ See Zhok 2011, pp. 126-127.

All scientific theories usually have recourse to this causal paradigm and, since they consider it the only admissible one, they apply it to all dimensions of reality, including the mental. The use of the principle of causality as paradigm of psychological efficacy, however, has raised a number of issues, the description of which may, perhaps, better highlight the advantages of the motivational account.

4.4. The “Exclusion Problem”

It should be clear, by the way the depiction of the problem has been dealt with above, that the (implicit) assumption constituting the framework of this discussion is the endorsement of scientific naturalism and, especially in this case, of cognitive naturalism.

This premise deserves to be specified in terms of its generic guidelines: scientific naturalism is a precise form of monistic theory that, emblematically, only recognizes natural properties as relevant; correlatively, cognitive naturalism endorses this principle regarding the scientific investigation of cognitive phenomena. In other words, only the category of natural properties is accepted in this framework and, thus, any other kind of property must be reconducted towards the natural.

This operation corresponds to a reduction which, in this context, provides that every mental property has to be reduced to a natural one by means of a conceptual substitution, as warranted by co-extensionality.³⁹⁰ The problem of finding a way to conform with this tenet, i.e., the recognition of natural properties as uniquely ontologically relevant, is the problem of naturalizing a theory of cognition.

³⁹⁰ The reductionist technique is a classical approach of naturalization, in the traditional sense of a logical integration of two theories into a unitary *one*, by means of the derivation of the concepts of the first on the basis of the concepts of the second. Its first application can be traced back to the invention of the notion of the deductive system through the constitution of Euclidean geometry, but it has played a particularly relevant role in the field of the formal and natural sciences (clarifying the relations between microscopic statistical physics and macroscopic thermodynamical physics). At the end of the nineteenth century, with the progress of logic and the revival of the notion of an axiomatic system, it began to be applied to the relations between the sciences of the mind and the sciences of nature, forming the core of two important programmes of naturalization: logical behaviourism and the central identity theory, both of which aimed to avoid the “gap” represented by phenomenological data (although the notion was understood in the restricted sense of qualia). See Roy *et al.* 1999, pp. 64-65.

The notion of naturalization, as it is generally used in the context of the science of cognition, is often so vague that one could doubt it corresponds to a sufficiently well-articulated project. Nevertheless, it has a history, the origin of which may be traced back to the question of the unity of scientific knowledge.³⁹¹

Since the last quarter of the 19th century, this problem has nourished an important and well-known controversy about the relations between the sciences of natural phenomena and those of human phenomena: on one side, there were those who thought that natural sciences essentially endorse processes of explanation that should be extended to human sciences, regardless of differences of content or methodology. Conversely, others rejected the application of the scientific explicatory process to human affairs, by virtue of epistemological differences. Instead, these individuals asserted the necessity of applying, in such contexts, only processes that involved understanding.³⁹²

The programme for naturalizing a theory of cognition is one of many attempts at refuting this classical paradigm of splitting, with the purpose of discovering a way adequately to account for the mental dimension of cognitive phenomena by adopting the experimental methodology, and the form of explanation, typical of natural investigations. This is the epistemological issue at the core of the project, but, as we have seen, it implies an ontological tenet, consisting of the transformation of mental cognitive properties into natural ones. Briefly, the properties used in the characterization of the theory itself as a knowledge process must only be natural ones.³⁹³

In the contemporary context of the sciences of cognition, problems connected to this “transformation” are seen as the most difficult and complex. Beyond the discussions regarding

³⁹¹ This important discussion began in the last quarter of the 19th century with the counterclaim, originating in the hermeneutical tradition pioneered by F. Schleiermacher, of authors such as James Droysen and Wilhelm Dilthey.

³⁹² The history and the analysis of this topic has been the subject of many studies, especially by K. Otto Apel (See Apel 1979). In opposition to the previous thesis proposed by J. S. Mill, Dilthey argued in favour of a programmatic distinction between *Geisteswissenschaften*, sciences that investigate mental or more generically non-material entities as cultural formations (corresponding in general to *humanities*), and *Naturwissenschaften*, which focus on material entities. This separation was based on assumptions concerning differences of domain and methodology. Such debates can be considered the direct antecedents of the following discussions regarding naturalization of the sciences of cognition.

³⁹³ As we have seen through the previous discussion, the notion of natural properties in this context refers principally to neurobiological properties; and yet, in the general framework of the discussion about naturalization, their characterization should be taken in a broader sense, as designating a whole set of properties postulated by all sciences of nature.

the logical priority that should or should not be given to epistemology, the ontological side of the problem has been the one to require major efforts. These efforts entailed, first, identifying a concept of basic natural properties in face of many possible philosophical interpretations; and second, discovering a principle according to which one might perform this transformation.³⁹⁴

There are several strategies of naturalization, but it should be clear that any form of eliminativism cannot achieve the required scope, because such an attitude amounts to no more than a form of naturalist dogmatism, which can, further, reintroduce the mistakes of vitalism.³⁹⁵ In fact, the withdrawal of the mental level of explanation leaves open the possibility of research into a principle of naturalization, given that a mere elaboration of a neurobiological counterpart does not permit a mutual integration but, rather, merely the “piling” up of two parallel levels of explanation. The real difficulty is to integrate, into a single explanatory framework, both the mental explanation and the natural one.

One of the strategies of naturalization, similar to that adopted by classical reductionism, involves functionalism. In the context of the philosophy of mind, this approach indicates a general form of psychological explanation, the basic idea of which consists of introducing a relation of co-extensionality between mental properties and natural properties of a functional kind. This means, specifically, a type of property that does not specify what an entity is made of, but rather what it does - the function it fulfils. In other words, mental properties are transformed into functional properties, which are abstract properties attributed to natural properties of a substantial kind.

³⁹⁴ According to Roy, such a principle must observe three conditions: -an attribution constraint, according to which a property to which this principle applies must be considered as belonging to a natural entity, namely an entity with natural properties; -an ontological constraint, which provides that the same property depends ontologically on the natural properties, so much so that the instantiation of natural properties is the necessary and sufficient condition for the instantiation of the property; -an explanatory constraint, which requires that the ontological dependency would be rationally explained, providing a principle of explanation for the fact that those natural properties are necessary and sufficient conditions of the instantiation of the property. See Roy 2010.

³⁹⁵ In brief, vitalism is a position historically associated with a series of debates popular among 18th- and 19th-century biologists. The general claim is that the explanation of living phenomena is not compatible with (or is not exhausted by) the principles of basic sciences such as physics and chemistry. Therefore, although living organisms are considered natural entities in a physico-chemical sense, biological phenomena can be accounted for only by referring to properties that are irreducible to physical and chemical ones. Unfortunately, no satisfactory explanation for the possession of these specific properties has been offered by vitalism. Scientists and philosophers actively continued to address vitalism - mostly in order to reject it - until the second half of the 20th century, in connection with classic concepts such as mechanism, reductionism, emergence, and also in association with approaches such as information theory and cybernetics. See Driesch 1914.

Functionalism originally developed as a reaction against logical behaviourism and identity theory but in its computational and causal version, it has played an important role in the development of the contemporary cognitive sciences. Although it has been put at the service of the naturalization of the mental explanatory model, it should not be considered naturalist *per se*. Furthermore, considering that a functional property can be shared by different natural (substantial) properties, functionalism constitutes a solution for certain other issues concerning reductionist theories. Forms of non-reductivist cognitive naturalism have been formulated, and functionalism was, specifically, one of them. Functionalism is based on the concept of an irreducible abstract property corresponding to a functional one, and this property has, as a necessary and sufficient condition for its instantiation, the instantiation of another property with which (nonetheless) it cannot be identified. In fact, there is another example of non-reductionist naturalism, i.e., *token physicalism*, which identifies psychological properties with disjunctive natural properties.³⁹⁶ Nevertheless, functionalism is considered a more authentic anti-reductionist theory, since it is the only one of the two to ensure the irreducibility of mental properties.

According to this position, mental properties are identified with functional properties, which in turn depend on natural properties without being the “same thing”. Actually, this relation of dependence is not a form of reduction, but rather a relation of implementation, realization or supervenience.³⁹⁷

In terms of the origin of the causal power of such properties, function is considered to depend on structure, and therefore, the fact that psychological properties belong to an entity by virtue of its natural properties is explained by its assimilation with the supposedly unproblematic fact that the causal properties of a natural entity are ontologically dependent on its natural properties.

³⁹⁶ See Roy 2010, p. 33; Roy provides a definition of *token physicalism* in its simplest form, according to which, it conceives of a type of psychological property as being identical with a *disjunctive* type of natural property, so that in each of its instantiations, or “tokenings”, a psychological property of a specific type *PI* is identical with a natural property *N*, although not always of the same type (e.g., it might be of type *N1* or *N2* or *N3*, etc.).

³⁹⁷ A basic definition of supervenience, in the formulation proposed by Roy, claims that a set of properties such as properties *P*, supervenes on another set of properties, such as properties *N*, if the instantiation of properties *P* is fixed once the instantiation of properties *N* is fixed, but not vice versa. (So, two natural entities cannot have different psychological properties if they have identical natural properties, but they may have different natural properties if they have identical psychological properties.) See Roy 2010, p. 33.

When the nomological theory of causality and causal explanation is combined with the realist and functionalist analysis of psychological efficacy, which is the common scientific perspective, psychological causality takes the form of a functional causality, in the sense that the causal efficacy attributed to psychological properties is *de facto* transferred to functional properties.³⁹⁸ Nevertheless, this passage of attribution - of the efficacy of psychological properties to functional ones - also implies a further step of translation: by virtue of their status as abstract irreducible properties, functional properties cannot be instantiated without the co-instantiation of natural properties (in this case physical or neurobiological).³⁹⁹

This means that these physical/neurobiological properties are endowed with a causal efficacy identical to that of the functional properties. Therefore, adopting a causal perspective at the psychological level implies a reduction in the effectiveness of psychological processes to that of physical or neurological processes, since psychological properties are traced to functional ones, which in turn depend on natural properties. In other words, psychological causality, in this framework, becomes merely an abstract way of describing physical causality, since the effectiveness of psychological properties is, on balance, merely apparent.

The resulting conclusion is, thus, that only physical/neurobiological properties are properly (ontologically) causally efficacious: the instantiation of a physical/neurobiological property must be regarded as nomologically followed by the instantiation of another property.⁴⁰⁰ Therefore, any causal efficacy that psychological properties might have is a causal

³⁹⁸ In other words, saying that the instantiation of a psychological property *P1* causes the instantiation of a psychological property *P2*, must be interpreted as saying that the instantiation of a functional property *F1* causes the instantiation of a functional property *F2*. See Roy 2010, p. 35.

³⁹⁹ For example, to say that, “self-doubt causes envy” corresponds to saying that a psychological state, which implies a neurobiological state by means of its functional property, produces another psychological state, actually completely reduced to its corresponding neurobiological state. The nature of the latter is also left undetermined, except for the fact that it possesses an irreducible abstract property, i.e.: the corresponding functional property. See Roy 2010, p. 35.

⁴⁰⁰ Roy also describes the case of psycho-physical causation, i.e., when an instantiation of a psychological property causes the instantiation of a neurological property: according to the nomological theory of causality, each instantiation of a psychological property implies the co-instantiation of a neurological one, and this is a necessary condition for one to say that the psychological property has “caused” the neurological one; therefore, only the co-instantiated neurological property is considered causally efficacious. In other words, if each instantiation of a neurological property is not nomologically followed by an instantiation of another neurological property, the psychological property cannot be said to cause the neurological property. See Roy 2010, p. 37.

efficacy that physical/neurological properties do, in fact, have; and this means that there is no causal efficacy other than that attributable to physical/neurological properties.

It follows that the effectiveness attributed to functional properties is redundant and, as such, would appear useless, to the point of being reasonably excluded. Conversely, accepting the redundancy of causal effectiveness means accepting a principle of over-determination, which is not without difficulties.⁴⁰¹

In general, this problem of the loss of causal efficacy of psychological properties is labelled as “the exclusion problem”, and it involves, above all, the notion of epiphenomenalism, understood precisely as the lack of attribution of causal power to psychological properties, and in particular to intentional ones, when these are integrated into a naturalistic framework. The difficulty raised depends essentially on the way the notion of naturalized, psychological causal explanation is articulated.

In other words, natural properties, such as neurobiological properties, on which psychological properties must depend in order to be properly naturalized, seem necessarily to exclude their causal effectiveness. This is one of the main difficulties of the scientific investigation of cognitive phenomena in terms of endorsing the paradigm of causal explanation, at least while the general epistemological picture corresponds to the naturalist one.

The threat of epiphenomenalism to naturalism assumes various forms, but the “problem of exclusion” comprises its most harmful and resistant consequence. Moreover, the “problem of exclusion” is particularly complex because it involves many variables, giving rise to different possible versions of the problem itself. In the literature, this problem has essentially been formulated with reference to the work of Davidson and Fodor.⁴⁰²

This explains why a functionally construed explanation of psychological causality is ultimately impossible to obtain, in the event that the properties considered causally effective are exclusively the natural ones.

⁴⁰¹ For example, the principle of overdetermination clashes with the so-called principle of the causal closure of the physical world, which is the cornerstone of physicalistic ontology. See Kim 1998, p. 45: “The overdetermination approach says that in such a world, the mental cause causes a physical event – namely, that the principle of causal closure of the physical no longer holds.”

⁴⁰² See Davidson 1980 and Fodor 1968. Nonetheless, one will also find interesting attempts to abstract from any specific doctrine. Chief - among those - are a series of articles by J. Kim (see Kim 1993), on the one hand, and F. Jackson and P. Pettit (See Jackson and Pettit 1988, 1990a, 1990b, 1992) on the other.

Since the concept of cause can be applied only to instantiations of contents, and not to the contents themselves, it produces relationships merely between events or state of affairs.

4.5 Some Issues Linked to Naturalization

The exclusion problem previously mentioned is tied both to the adoption of functionalism (although it might be considered to be extended to other kinds of non-reductionism) and the adoption of a nomological conception of causality and causal explanation.⁴⁰³

We have already seen that the functionalist approach to psychological causality is committed to stating that a functional property cannot be instantiated without a neurobiological property, likewise, being instantiated. This is true, despite the fact that it is the instantiation of the functional property itself that generates causal efficacy by virtue of its status of “abstract irreducible property”. From here, it is reasonable to conclude that only this co-instantiated neurobiological property is truly causally efficacious.

Therefore, one way to resolve the difficulties posed by the exclusion problem would be to replace functional properties with other forms of irreducible abstract property. These might be, for example, emergent properties. With regard to the construction of a causal explanation, another approach would be to find arguments that support the relevance of properties without causal efficacy, as in the case of functional properties. For example, one could relinquish the idea that a causally relevant property should provide a *direct* (as opposed to an *indirect*) specification of the *nature*, versus the mere existence, of the causally efficacious properties. Yet, both these solutions meet obstacles, leaving the way open to a more radical approach, namely: to dismiss the causal interpretation of psychological efficacy altogether.

Dropping the causal explanation seems the most tempting solution, in terms of evading the epiphenomenalist threat connected to the “exclusion problem”. This means renouncing the idea that psychological properties are causal properties and also, accordingly, the notion that psychological explanations are causal explanations. At the same time, the proposal – here - is

⁴⁰³ A legitimate question would be whether the “exclusion problem” may also affect functionalist interpretations of psychological efficacy that adopt alternative analyses of causality, but it is reasonable to focus on those that adhere to the nomological conception, because of its paradigmatic role.

that of reopening the case in favour of the motivational perspective on psychological efficacy, thereby translating the causal explanation into a motivational one.

Moreover, while on the one hand, the assumption of the motivational conception should facilitate the avoidance of the exclusion problem, it does not ensure (on the other hand) that an ontologically naturalist account of the efficacy of psychological properties can be maintained.

The exclusion problem arises precisely in relation to the naturalist hypothesis, and thus the only solution seems to be the abandonment of the naturalistic presuppositions. A similar conclusion has been drawn with reference to the well-known “hard problem of consciousness”, which has already led to a number of meaningful renunciations of naturalism within the cognitive community.

Nonetheless, if reductive naturalism can be dismissed without significant regret, considering the difficulties that it entails, the proposal for a motivational interpretation of psychological efficacy should remain compatible with a non-reductive naturalistic framework.

Another problem rests on the conception of psychological properties: if, in this new framework, they are still conceived as abstract, irreducible properties, there is a clear possibility that they will be as much deprived of motivational efficacy as they have been of causal efficacy, by properties they depend upon for their instantiations.

In other words, the replacement of the notion of causality with that of motivation does not ensure the elimination of the exclusion problem, since, in the end, it seems to depend more on the definition of the status of psychological properties as abstract irreducible properties than on the assumption of the naturalistic hypothesis.

In conclusion, the notion of motivation should make it possible to overcome the conception of abstract irreducible properties, in order to avoid the exclusion effect that impacts efficacy, as analysed in causal terms. In short, non-reductionist naturalism should exclude causal but not motivational efficacy. This is because the loss of efficacy suffered by a psychological property, since it is conceived as an abstract irreducible property, can be compensated for by motivational efficacy.

In this perspective, the core thesis is that the notion of motivation can provide a more adequate characterization of psychological and intentional efficacy than the concept of causality. The Husserlian notion of *motivation* is called into question for this purpose. This

notwithstanding, the most fundamental difficulty entails the placing of the motivational approach at the service of a naturalist theory of psychological efficacy. The issue arises because, by and large, this approach is historically associated with anti-naturalism, not only in the epistemological sense, but also in the ontological one.

Thus, the question becomes whether it is possible to transpose a notion that is part and parcel of an anti-naturalist framework (i.e., the phenomenological) to a context grounded on contrary assumptions, without losing precisely what makes it theoretically interesting.

A motivational characterization of mental processes, however, seems to be more at odds with the general conception of natural processes than a causal one. A reflection on the possible limits of a mutual integration is clearly in order, insofar as Husserlian phenomenology is not only a non-naturalistic kind of inquiry, but also an antinaturalistic position.

One of the most salient features of Husserl's phenomenology is, in fact, its divergence from natural sciences, inasmuch as phenomenology investigates a field of being, or a dimension of the mental, that "escapes" natural sciences - since it is composed of essences of pure lived experience that require a specific kind of "scientific" investigation. One could say that the crucial point of Husserl's enterprise is to claim the priority of this dimension over those of the psychological and physical spheres. In addition, the method of phenomenological investigation is paradigmatically descriptive: a methodological form at odds with the axiomatic one performed by natural sciences.

In *Philosophie als strenge Wissenschaft*, the work by Husserl most overtly dedicated to issues of methodology, he explicitly writes in order to combat the naturalization of consciousness and philosophical naturalism in general.⁴⁰⁴ Husserl describes this doctrine, which he saw as dominant in his time, as epistemologically and ontologically grounded exclusively on transcendent intuitions, thereby refuting any entity which would not be spatio-temporally individuated, as well as any non-individual entity. In Husserl's eyes, the tenacity with which this position has spread depends on its continuity with common sense, since it is the natural attitude transformed into a dogma. Against such a position, Husserl defends the admission, in the domain of phenomenological investigation, of both essences and pure lived experiences; further, he asserts the necessity of introducing the operation of transcendental reduction, with

⁴⁰⁴ See HUA XXV, p. 12.

the aim of suspending all presuppositions linked to the natural attitude. For these reasons, his theoretical system is considered as a direct anti-naturalist position.⁴⁰⁵

Husserl's position is also grounded in his conviction that natural science cannot offer any reconstruction of phenomenality: mathematics, and the form of theoretical physics originating with Galileo, were not up to the task of offering a mathematical physics of pure lived experience. Such a mathematical physics should account for the noematic correlates of external perception and, consequently, for the corresponding qualitative manifestations of the sensible world that are perceptually apprehended. Sensible qualities across which phenomena are concretely given, however, are impossible to mathematize, and Husserl thought that this obstacle was insurmountable.⁴⁰⁶

Husserl was deeply convinced of the incompatibility between phenomenology and natural science because of the impossibility of any integration involving phenomenological data and the axiomatic nature of mathematization.⁴⁰⁷ From this derive both his strong rejection of any form of naturalism and his statements regarding the heterogeneity of and between phenomenological and natural properties.

⁴⁰⁵ There are two other important issues regarding Husserl's assumption of an anti-naturalistic position: the first is his sharp critique of the idea that the only way for empirical psychology to be "scientific" is for it to become an extrinsic model of natural science (see HUA XXV, pp. 25-26); the second is his attack on logical anti-psychologism, which, in brief, rests on the fundamental confusion between judgement as a psychological event and judgement as a propositional content. According to Husserl, this implies the reduction of logical laws to psychological ones, considered as special forms of natural law. By contrast, he claimed that propositional contents are ideal entities, provided by eidetic intuition. Regarding this topic, which we have merely adumbrated here, see (especially) the first book of *Logische Untersuchungen* (HUA XIX/I).

⁴⁰⁶ The essential reasons for this impossibility have to do, in Husserl's eyes, with the fundamental characteristic of physico-mathematical science, namely its axiomatic nature: axiomatization enables one to anticipate in a systematic way the eidetic intuition of the properties of the essences belonging to a certain ontological region. This possibility is, however, rooted in the replacement of exact and fixed ideal essences by inexact and abstract ones. For example, geometry, as a science of forms, has to be torn out of the flux of sensible real morphologies, excluding all those inexact proto-geometrical forms akin to perception. In the same way, physics tried to axiomatize material reality, but the result was the exclusion of all secondary qualities. See HUA VI, §§ 8-9.

⁴⁰⁷ Some scholars have emphasized that Husserl's position on this point, namely the opposition between mathematics and phenomenological investigations, also depends on his conviction that certain contingent limitations of mathematical and material science, particular to his time, were insuperable. Scientific progress, however, has made this belief obsolete, putting in question some of Husserl's antinaturalistic positions - for example, his claim of the impossibility of a physics of phenomenality: recent discoveries have facilitated new physical theories of qualitative manifestation, representing the first step for a qualitative physics of phenomenal morphologies. For an introduction, and a detailed bibliography concerning these topics, see Petitot 1995.

This same concern affects attempts within contemporary theories of cognition, advanced by cognitive science to account for phenomenological data. The exclusion of sensible properties from the field of physico-mathematical science has brought about their reduction to mere subjective and relative elements of a psychological kind, creating a clear dualism between physical beings and their manifestations. The result has been the institution of a “fundamental gap” between physical reality and phenomenal properties. Put otherwise, the problem was that the most general tenets of cognitive science do not apply to a certain range of mental phenomena, thereby failing to provide a complete theory of cognition because of the emergence of an “explanatory gap”.⁴⁰⁸

Historically, this problem has evinced broad resonance and has generated varied and complex articulations. Classically, it can be traced back to Thomas Nagel’s well-known article of 1970, “What Is It Like to Be a Bat?”, which paved the way for a whole series of connected investigations on qualia, consciousness and experience.⁴⁰⁹ The topic is, and has been, crucial within the Anglo-Saxon philosophy of cognitive science, especially between the late 1980s and the early ‘90s, when many important authors devoted a great deal of time to the analysis and treatment of this problem in relation to consciousness.⁴¹⁰ In more recent times, the influence of this discussion has also played an important role in the work of cognitive scientists from different disciplines. On the one hand, it helped in eliciting new efforts, especially on the part of neuroscience, while on the other, it nourished a popular criticism of the general picture of the cognitive mind.

Our goal is not to offer, here, a fine-grained analysis of this very complex discussion, but rather to illustrate merely the main consequences that the “explanatory gap” argument has had for the theories of cognition proposed by the cognitive sciences. The most relevant of these, in relation to the analysis we have carried out so far, is the assumption by these same theories of a functionalist interpretation of mental properties.

Cognitive science makes the basic assumption that what goes on inside an organism with cognitive capacities is an information-processing activity, which can in turn be explained

⁴⁰⁸ See Levine 1983.

⁴⁰⁹ See Nagel 1974. Without any pretension of completeness, let us refer to some of the most well-known contributors to this topic. See, therefore: Block 1978; Jackson 1986; Levine 1983; Lycan 1990; McGinn 1983.

⁴¹⁰ To mention but a few, see Jackendoff 1987; Dennet 1991; Searle 1992; Chalmers 1996.

at different levels. Its concrete dimension depends on a biological level of explanation, whereas at a more abstract level, these information processes are reconducted to a functional level of explanation. These processes are characterized in terms of abstract entities and are functionally defined; one is able, in this way, to assimilate them with psychological and mental properties. Consequently, since they are purely functional in character, mental properties do not have to be considered as ontologically different from the biological ones postulated at the lower level.

In other words, cognitive science endorses functionalism, in order to naturalize the mental dimension. Nonetheless, as we have previously seen, the functionalist strategy is non-reductionist, in the sense that it views any type of mental property as irreducible to a neurobiological one. In fact, functional properties are abstract irreducible properties, understood as properties that have, as a necessary and sufficient condition for their instantiation, the instantiation of other properties with which they cannot be identified.

As against eliminativism/reductionism, cognitive science holds that a functional explanation of information-processing activity (responsible for the cognitive behaviour of an organism) corresponds to an explanation of this same behaviour in mental terms. Actually, it is precisely by virtue of this translation that the theories of cognition proposed by cognitive science can be considered theories of the mind.

Obviously, different approaches within this field of investigation still coexist in contemporary research. Nevertheless, however successful any of these proposed approaches may appear, all measure mental phenomena in terms of the explanation and prediction of cognitive behavioural data. Consequently, the mental dimension is conceived only theoretically, as if it were a dimension of which one cannot have direct/immediate experience. In other words, cognitive science remains faithful to behaviourism, thereby failing to account for mental phenomena “properly speaking”; that is to say, as they appear to us subjectively.

To this excluded subjective dimension there has been applied the problematic label of “consciousness” (although it can be argued that the two experiences do not coincide). In fact, however, this is the realm of phenomenological data, conceived of as the content of consciousness and experience. The disregarding of this dimension of the mental by cognitive science demonstrates that the problem highlighted by the explanatory-gap argument is still present.

Further, the endorsement of functionalism, combined with the nomological theory of causality, brought about the emergence of the aforementioned “exclusion problem”, namely the loss of efficacy of psychological causality. As a consequence, the whole mental dimension becomes epiphenomenal and loses any explanatory legitimacy.

This “consciousness inessentialism”⁴¹¹, that is, the assumption that consciousness is limited and unreliable, is a further reason for claiming that a theory of cognition need not be a theory of phenomenological data. Still, it appears more and more arguable that this assumption (which is more of an implicit assumption than an explicit doctrine endorsed by cognitive science) needs serious qualification. Indeed, it meets ever increasing criticism from various authors, who assert that a theory of human cognition cannot be complete unless it accounts for the phenomenological data related to cognitive processes.

In particular, many studies have argued in favour of surprising similarities between results obtained at a neurological level of inquiry, and those derived from phenomenological investigations.

Our proposal has moved in this direction, in trying to emphasize that the conceptual apparatus of Husserlian phenomenology can provide relevant inputs to the analyses advanced by cognitive science. In particular, the topic that we have addressed in this respect was the complex problem concerning the interconnection between perception and cognition, framed within the label of “Cognitive Penetration”.

⁴¹¹ See Flanagan 1992, p. 5: “*Conscious inessentialism* is the view that for any intelligent activity *i*, performed in any cognitive domain *d*, even if *we* do *i* with conscious accompaniments, *i* can in principle be done without these conscious accompaniments.”

Concluding Remarks

At the beginning of the last chapter, we showed how the definition of an authentic/narrow case of Cognitive Penetration depends, according to Macpherson, on the presence of a strengthened “causal”, semantic link at each stage of the process of influence. We, subsequently, argued that, in order to account for a semantic consistency that must be content-related in nature, the link must be reconducted to a motivational-associative legacy, instead of a causal one.

The dismissal of the causal paradigm in favour of the motivational one is, therefore, the solution in providing a form of legacy able to account for a consistency between contents. We would like to stress, once again, that this condition is required by the definition of Cognitive Penetration since, without it, the phenomenon of CP ultimately becomes incomprehensible.

Nevertheless, the inquiry into CP, as it has so far been carried out by the main exponents of the debate, is configured within a naturalistic perspective pertaining to cognitive science. This framework, as we have seen, endorses functionalism and the nomological theory of causality, as the result of the requirements of any naturalist perspective. Thus, in general, the relations of influence corresponding to CP have been characterized as causal relations.

Nevertheless, given that, *de facto*, any causal efficacy can be attributed to mental properties in the naturalistic context (since their causal power is completely reconducted to that belonging to neurobiological properties), it also seems necessary that the relations of influence designed as CP should depend on it. Yet, if causality can explain the nature of the relations between instantiations of neurobiological properties, how can it then account for coherence between mental contents? The answer is that it cannot.

The problem could be solved, however, if we consider that the particular causal correlations occurring in the brain, which correspond to neurobiological properties (as, for example, the activation of receptors of dopamine or the like), do *not* correspond to the causal powers of the brain as a whole. The activity of the brain in its entirety cannot be revealed via an analysis restricted to physical causality. The brain as a whole, as a living system, manifests itself only as a mind. Therefore, it follows that there is no identity between physical and mental causal powers.

The dismissal of the characterization of CP as a causal relation is necessary because, as we have seen, the principle of causality does not explain the internal coherence between associations of contents. Causality is a kind of relation that can only be established between instantiations of contents. As we have observed, within the framework of cognitive science, this leads to the “exclusion problem”.

The motivational legacy circumvents the “exclusion problem” because it is a type of legacy that, thanks to its transversal nature (*horizontal*, one might say), does not reflect the causal relations between particular instantiations of properties, which in turn correspond to neurobiological correlations. (The latter, from an ontological point of view, occur in the brain, as the material/real/natural substrate.) Rather, it expresses the “causal power” of mental properties that depend on the whole articulation of the system: the brain as a whole, namely the mind.

The specificity of Husserl’s notion of *Motivation* provides the best and most adequate characterization of mental efficacy, and it is called upon for this purpose: going beyond the old empiricist notion of association, it displays the true nature of mental states. These imply each other; they are synthesised with each other, and thus constitute a unity, both at the formal level and at the content level, not by mechanical association, nor by logical entailment, but by motivating, anticipating and fulfilling each other. To understand a mental state in this sense would require following up all its intentional implications, unravelling its motivations, etc.⁴¹²

As we have illustrated in our first two chapters, the conceptual network in which Husserl’s notion of motivation is involved, in its passive account, testifies to its relevance, especially within his theory of perception: the deep intertwining of the concept of motivation with those of association, attention, interest, and horizon, all central notions of Husserl’s genetic theory of perception, facilitates the emergence of the relevance of the concept for the phenomenological perspective, and of its epistemic power with respect to the principle of causality.

As we have seen, motivation is first deeply connected to association, which is the law of the immanent genesis. It operates as a purely immanent connection regarding content, in relation to a paradigm of similarity, and can be described phenomenologically as a genesis. At

⁴¹² See Mohanty 1970, p. 103.

the lower level of perception, association determines the most general synthesis of sensuous data connected in immanence. Homogeneity and heterogeneity are the criteria according to which syntheses of identification are performed.

This articulation through passive syntheses produces unities that evince an affective tendency by virtue of qualitative discontinuities. The concept of interest, strictly linked to that of motivation, corresponds to the qualitative component that allows a selective sensitivity towards certain stimuli, which then affect the subject and motivate a successive turning towards to the same stimuli. Husserl argues that every act of perception must be accompanied by an interest of some sort, and (specifically) by a perceptual one.

Interest supports the act of noticing, and it facilitates an all-sided and exhaustive inspection of things, integrating kinaesthesia and horizontal expectations. In fact, interest takes on a relevant role in determining the perceptual horizon, thus influencing further perceptions. The concept of horizon is linked to the concepts of habitus and expectation, both of which depend on inductive association, which in turn is based on reproduction and, more generally, on association. The associative criteria determine, and are simultaneously determined by, the concept of perceptual interest, which is the motivating factor of every intentional act or kinaesthesia. Finally, interest also has the function of realizing horizons as “chains” of motivated possibilities.

The conceptual network that Husserl presented, in order to describe and explicate all the forms of process that occur at every level of his theory of perception, is extremely “tied”. In our opinion, this articulation is irreplaceable if one wishes to account for the complexity associated with the analyses involved. We believe that the paradigm structuring this system can also be fruitfully applied in the context of CP, with the aim of providing an alternative to the causal principle and to the problems arising from it. At the same time, it would lend itself very effectively to account for the semantic dimension that inevitably interacts with the mind-brain system as a whole.

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Abv. : The citation of each volume in the footnotes corresponds to the abbreviation “HUA” or “HU”, followed by the number of the corresponding volume. Of the texts examined, only those most frequently cited have been sometimes abbreviated as follows: LU = *Logische Untersuchungen*; Ideen (I/II) = *Ideen zur einer reinen Phänomenologie und phänomenologischen Philosophie*; EU = *Erfahrung und Urteil*; AZPS = *Analysen zur passive Synthesis*; Krisis = *Die Krisis der europäischen Wissenschaften und die transzendente Phänomenologie*; EP = *Erste Philosophie I*; IP = *Die Idee der Phänomenologie*; VPZ = *Vorlesungen zur Phänomenologie des inneren Zeitbewusstseins*.

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