At first sight, the concept of intentionality – explicit in Husserl and implicit in Whitehead – seems
foreign to the mathematical universe from which both authors arise. How are we to understand the
attraction his concept exercised in both authors?

A. The dispute Husserl / Brentano

Brentano has been Husserl’s teacher in Vienna from 1884 to 1886. Husserl valued Brentano’s concept
of intentionality, but at the same time, he refused, unlike Brentano, to distinguish between psychic and
physical phenomena: according to Husserl, only one activity of apperception exists, without any
duality between phenomena, because the physical phenomenon can be reduced to the other one, as
what is constituted by the intentional aim. Certainly, Husserl as a mathematician never contended that mathematical "objects", nor physical "objects", could be reduced to products of human mind. However, his position consists in showing how these "objects" only exist in and by an essential intentional activity.

Husserl’s question reads: what is the status of an object relative to the knowledge that we have of it?
In the case of physical, as well as in the case of psychic phenomena, the same essential operation aims
at positing the object, not as a reality which is independent from the constituent subject, but as a
"noêma" constituted by an act of "noêsis". The noêin, being indeed common to these two concepts
assures their connection.

Now, this point is exactly what the dispute with Brentano is about. To understand it, let us consider the
same question in terms of Brentano's philosophy.

For Brentano, the distinction between physical and psychic phenomena is essential, even if in both
cases the phenomenon is appearing to a subject: psychic phenomena are characterized by the fact that
they aim at a content which only exists in and by the act of aiming, while physical phenomena are
given as realities in themselves. Consequently, intentionality, being the act of aiming at its "object",
will be different, depending on whether this object shows itself in the consciousness as existing, or as
a simple operation involving only itself.

Hence, the question of dispute between Husserl and Brentano could be formulated as follows: are we
to consider that the main part of the content of a physical phenomenon is "given" in the world, or can
that content be constituted in and by the sheer activity of a conscious subject? Depending on the
answer to this question, two different definition of intentionality arise: either (following Brentano)
intentionalty is an act of aiming at a reality at first intuitively given in accordance with the sensory
forms of space and time, or (following Husserl) intentionality is an act of constituting this very reality,
based on data which appear as such by bracketing the external phenomena.

As we can see, given their different conceptions of intentionality, it is clear that, in order to define the
essence of the phenomenon, bracketing is impossible for Brentano, while necessary for Husserl.

For Brentano, a physical phenomenon aims at a content "x", given at once as coming from outside,
and without which it could not even exist. On the other hand, for Husserl, the phenomenological
investigation, referring to the constituent activity of a conscious subject, gives intentionality a kind of
"ontological status": ontology is moving from an object world towards the subjective activity by which


\[\text{We could object that hyletic data mentioned in Formal and transcendental Logic can "make sign" towards an inaccessible reality whose they are the material. But exactly they would not be considered as such if we limit ourselves to the analysis of the "lived". They are then just the limit of the thinkable, being itself as unknown as the thing-in-itself of the phenomena according to Kant.}\]
those objects can receive a recognizable shape. Hence, the question of the existence of "objects" does not arise independently from the question of how they manifest themselves in and by an intentional aim.

Let's now see how the "purification" of the philosophical discourse by the founder of phenomenology led him to radically redefine the concept of intentionality.

### B. Husserl's evolution, about the meaning of an original intentionality

In fact, the concept of intentionality is gradually shifting in Husserl's phenomenology towards the concepts of temporality and intersubjectivity, involving otherness.

It is advisable to look at Husserl's *Logical Investigations* – prior to *Ideen* – to capture the real meaning of Husserl's intentionality. The very title of volume II of the LI contains the term *phenomenology: Research for the phenomenology and the theory of knowledge*. The point of this volume is to show how propositional truth has to be rooted in an intentional act that precisely enables to grasp the link between the truth and the aiming at it. This is clear from § 9 of volume II-1, which is entitled *The phenomenological distinctions between the physical phenomenon of the expression, the act of giving it some meaning, and the act of filling this very meaning:*

... If we adopt the process of pure description, the concrete phenomenon of the animated expression of a meaning (sinnbelebten) articulates, on one hand in the physical phenomenon where the expression is based on its physical aspect, and, on the other hand, in the act which gives this expression its meaning, and, possibly, its intuitive plenitude, and where its reference to an expressed objectivity is constituted.

Only if we limit ourselves to a pure description (of the phenomenological type), a duality – which consequently is not original – between a physical phenomenon and an aimed objectivity arises. Thus, the aimed objectivity itself is related to a *physical phenomenon* by means of the act of "aiming at". It is exactly this act of "aiming at" which appears as the essential truth. In as much as this very act is taken itself as an object, it allows the discovery of a dimension which I would call *existential*. This is the outcome of the *Lessons for a phenomenology of the intimate consciousness of time* of 1905. In this work, Husserl shifts from a *Phenomenology of knowledge* (*Logical Investigations*) to a *Phenomenology of consciousness*, particularly a phenomenology of the original temporality which is the basis of the development of knowledge.

Husserl’s analysis of temporality in those lessons involves the concepts of *retention* of the past and *protention* towards the expected future, illustrated by the example of an enduring sound. I skip all details of this analysis.

On the other hand, the temporality constituted while hearing a sound is only the expression of another reality, itself unspeakable, a kind of sensory presence without which one would not hear a thing. This presence belongs to a quite different register than the reality of hearing a sound. According to Husserl's expression, it is important to pass from a psychological apperception (only describing "contents" as lived by *psychophysical subjects* and their mode of connection), to a transcendental apperception, highlighting how these contents are *aimed at* in some constitutive act, which ontologically grounds the perception of the sound.

No doubt this is the reason why Husserl’s lessons of 1905 were introduced by a *preliminary remark* of Heidegger, who saw them as a fundamental point of departure for his own phenomenology of time. Now, this intentionality of a primary consciousness, beyond that of meaning, will appear in the *Cartesian Meditations* as an *intersubjectively* shared intentionality. What is perceived is co-perceived, what is thought in and by language always appears to be co-thought.

It is exactly this intersubjectivity which characterizes, according to Husserl, the objectivity of one world, which is at the basis of the possibility of the sciences which he calls *empirical*.

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The consequent justification of the world of the objective experience implies a consequent justification of the existence of the other monads. Conversely, I shall not know how to imagine a plurality of monads otherwise than as being explicitly or implicitly in communication, that is as a society which establishes in and by itself an objective world and which spatializes, temporalizes, comes true itself in this world under the form of living beings, and, in particular, of human beings.

Finally we eventually get the restoration of a new ontology and the blooming of an universal Logos for any possible being. This ontology includes all the regional possibilities of existence, according to all the correlations which they imply.

This ontological base allows to define the common "world":

There can only exist (...) one objective world, one objective time, one objective space, one Nature; and this unique Nature has to exist, if it is true that I contain the structures which imply the coexistence of the other monads.

Again, it is on the basis of this common world that what he calls the "empirical" sciences – concerned with “Nature” – can work.

More generally, the whole of human history can be summed up by the intentionality of consciousness and by intersubjectivity.

Let me just remind you here that the relationship to others, profoundly engraved in the most intimate life of consciousness, will subsequently authorize Husserl to see the philosophical act as a social, even political act. A famous definition characterizes the philosopher as the civil servant of humanity: the watchful consciousness reminds each human being of his most intimate reality, the one which gives him the sacred character of an inalienable person.

C. Whitehead’s own philosophical path

The consciousness of "humanity" as mentioned by Husserl in the Krisis of 1935 can also be identified in an almost contemporary book: Whitehead’s Adventures of Ideas of 1933. Husserl, focusing on the intentional aim, was led to a reflection about the duty of humanity while Adventures of Ideas, according to me, draws the same conclusions, but from another conception of intentionality. So let’s try and understand Whitehead’s specific path.

In order to evaluate the difference, let’s focus on the concept of Nature, a particularly relevant concept for both Husserl and Whitehead. As stated above, in the phenomenology of Husserl’s Cartesian Meditations, the concept of Nature is an essential locus of intersubjectivity, open to the universality of humanity. The same concept occupies an important place throughout the whole of Whitehead’s works, at least from The Concept of Nature to Modes of Thought, where it reappears in the last chapter, entitled Nature Alive.

The only difference is that Whitehead defines the concept of Nature upfront, instead of discovering it at the end of his philosophical pilgrimage, as did Husserl. But both men consider the concept of Nature as a means to abolish the Cartesian "bifurcation" between the interiority of a subject and the externality of objective reality. The concept of Nature allows both philosophers to overcome this Cartesian dualism.

Actually, the term “intentionality” is not common in Whitehead’s work, but the concept is operative in terms of Whitehead’s notions of subjective aim and ofprehension. Looking beyond specific words, we

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9 On this subject, cf. Y.Thierry, Conscience et Humanité selon Husserl - Essai sur le sujet politique (Consciousness and Humanity according to Husserl - An essay about the political subject), PUF, on 1995.
can say that Whitehead was profoundly interested in what I would call *cosmological intentionality*. Understanding this notion is a key to understand the whole of Whitehead’s oeuvre. Cosmological intentionality consists in making present to consciousness the ultimate structures of the reality, according to an aim which reproduces that commanding the development of the world, at the different levels of being which are evoked in *Nature Alive*\(^1\). More generally, *Modes of Thought* can be considered as the book which integrates at best this cosmological intentionality into the whole of all occurrences of life on earth\(^1\). It is, so to speak, the last intentionality, that which allows to embrace all the others in the same universal vision.

Consequently, according to Whitehead, we can consider the whole of reality, and especially human reality, as a fitting of ends, proceeding from the subjective aim (non-intentional in Husserl's meaning of that term!) of the physical prehension up to the macroscopic ends corresponding to the "intentional aims" in Husserl's terminology. Here we encounter artistic, religious, and even scientific expression, all of three creating the objects at which they are aiming. In all those complex productions, the human body plays an essential role as a mediating element between elementary subjective aims and conscious intentions.

Such an articulation between what is most limited, the human body feeling the world, and what is universal, had found its justification in Whitehead's previous work, *Process and Reality*. The body is described there as what accompanies any perception, on the basis of two opposite principles, that of its limitation in space and time, and that of an opening towards a spatio-temporality perceived as characterizing all being, human or not. The *withness of the body* is certainly not, considered in itself, the intentional aiming at a given. However, it accompanies such aiming.

Thus, the *withness of the body* could be considered as the equivalent of Husserl's *Horizon of the world*, already present in the *Cartesian Meditations*. But this world, presented by Husserl as a phenomenological datum obtained after "transcendental reduction", is conceived by Whitehead as a cosmological concept, making possible the harmonization of the unconscious elementary data of the human body with those referring to conceptual feelings at the level of clear consciousness.

However different they are, both philosophical systems stress the importance of this "primary world" in order to understand the very meaning of any propositional calculus.

Consequently, when the meaning of a proposition is at stake, we can consider the position of Husserl or Whitehead as opposed to the position of Frege or Russell. To formalize the fundamental structures of a proposition amounts to putting the intentionality which created them between brackets, while the whole metaphysical effort of Whitehead intended to elucidate this intentionality as an irreplaceable aspect of reality.

Confronted with the same analytical thought\(^1\), the efforts of Husserl and Whitehead are converging. Indeed, according to Husserl:

> The knowledge is not separated from its objects; it constitutes a presentation of them. Furthermore, to live the cognitive presentation of a thing, is to understand the "how" of such a knowledge\(^1\).

Consequently, the key issue of phenomenology is not to define the extensional relations between objects, but to seize, through those objects, the indication of their "how". Husserl, like Whitehead, holds together the extensional validity of a statement and its intensional production of meaning. This particular relationship is our next topic of comparison between Husserl and Whitehead.

### D. Conclusion - The last convergence of a certain reference to Plato.

It is then on the status of an "eidos" of Platonic fashion that both philosophies can meet.

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\(^1\) MT, 214-215 [ 175-176 ].

\(^1\) That is why Whitehead defines the philosopher as the one who *is always assaulting the finitude*, to try to understand it Cf. MT, 234 [ 190 ].

\(^1\) On this matter, cf. the very interesting book of R.Cobb-Stevens, *Husserl et la philosophie analytique (Husserl and the analytical philosophy)*, Vrin, on 1998, particularly pp. 195-216, on *Le tournant transcendantal de Husserl (The transcendental bond of Husserl).*

As explained, Husserl’s view can be positioned between the psychologism he denounces as much as did Frege, and the positivism he rejected in the name of the phenomenological truth, enabled by the transcendental reduction. Husserl’s already mentioned shift –between The Logical Investigations and the Lessons... – from a phenomenology of knowledge to a phenomenology of consciousness, implies a return to the founding act at the basis of the existence of contents of knowledge. Thanks to the reduction, these contents open the way to the concept of intentional experience. Taken as a whole, the data resulting from the transcendental reduction point to a reality which transcends them, the reality of primary consciousness. Certainly, this consciousness is not purely a cognitive one. But on the whole it is indeed a philosophy as rigorous science which is considered, capturing the constitutional data of a concrete world, neither physical, nor psychical:

... It would be necessary to return to the concrete lifeworld, where what is physical and what is psychic are not yet idealized and differentiated, but enjoy an original unity, where their structures are given prior to idealizing logification, and can be seized by a conceptuality corresponding to these structures.  

Husserl’s search for the original unity implied a new ontology, not based upon preestablished concepts, but upon an original "world" which gives them life: what was at first unnoticed because of the importance of the data, then appears to consciousness as its original activity, without which no life of concepts would even be possible.

This analysis by Husserl could have been taken over by Whitehead: Whitehead also wanted to return to this concrete lifeworld, particularly in MT. However, some features are different, due to different practices of philosophical analysis. In fact, regarding the soul, Whitehead's position is close to that of Brentano which Husserl firmly opposed: the human soul forms a unity, which Whitehead calls a reality in itself in AI, and this reality includes all conscious experiences. Consciousness itself, according to Brentano, is constituted by a set of acts without which there would be no objective reality. On the whole, the mathematical practice, common to Husserl and Whitehead, leads both of them to the conviction that "objects" aimed at by consciousness follow structural rules and appropriate interrelations, of which the spatio-temporality remains the common basis. This explains Whitehead’s attachment, particularly in The Aims of Education, to the algebraic language: the function of algebraic language is precisely to bring to light these "objective" interrelations. It also explains his attachment to "eternal objects", double-sided as they are, subjective and objective. Regarding Husserl, we can also point to the example of The origin of the geometry, and hold that a mathematical object cannot exist without intentionality (no Euclidean geometry without Euclidean consciousness), but that this intentionality cannot constitute this object otherwise than it does (once a geometry has been created, it cannot be displayed otherwise than the first time). We thus find Husserl and Whitehead agreeing on the need to consider subjective acts in order to elicit the essence of reality. Given the fact that Husserl began his philosophical career with a Philosophie der Arithmetik (1891) and Whitehead with a reflection on a Universal Algebra (1898), their convergence upon the platonic eidê aimed at is no surprise.