

# ORTEGA AND HUSSERL ON THE CRISIS OF EUROPEAN SCIENCE

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## Abstract

Galileo and Descartes are two historical representatives of the modern way of looking to the world and the place of man in it. But while for Husserl they were the heirs of ancient rationalism (and tried to foster the movement to self-emancipation of reason that began in ancient Greece), they were, for Ortega y Gasset, the initiators of a new attitude. Similarly, for Husserl, Einstein's theory of relativity – and in general modern physics – prolonged that initial trend of thought, while for Ortega he was the sign of the downfall of modern times. It is also interesting to note the way both thinkers look at the developments of formal mathematics and to what has been known as the *Grundlagenkrise*. While in Husserl's mature thought it was a crisis to be overcome by a new understanding of the intentional acts that were at the origin of the process of "idealization", for Ortega it was a crisis of some fundamental tenets of modern reason, namely, infinity and continuity. (Regarding this issue, one could mention the way Ortega evaluates the achievements of Brouwer and Weyl.)

In my paper I will try to explain how these topics account for the differences between these two thinkers regarding a historical and cultural European situation they both acknowledge to be characterized by a crisis. For Husserl, it was urgent that European humanity succeeded in overcoming a misconducted rationalism that ended in the opposition of scientific reason and life; for Ortega, it was this same rationalism that had to be overcome by a new philosophical attitude that looked at individual life as the radical reality in which philosophical reflection must be anchored.

## 1. Symptoms

How do we know that an epoch is coming to an end or that a culture is going through a period of crisis? Are there some symptoms of these events, like one says that fever is the symptom of a disease? To look at historical epochs, or cultures, as living organisms, subjected to similar processes of growing, maturity and decay – although tempting, at least in some cases – is to take the wrong stand. It means that we ignore subjective achievements and see human activity as a natural process. On the contrary, to be human means to live under the direction of a driving force of a spiritual kind and to find satisfaction both in its enlargement to increasingly great spheres of humanity and in its progressive accomplishment (Husserl, 1989, 3).

In any case we can always argue that just like the birth of a child is an event that always introduces some novelty in human affairs, since no human being is equal to another human being, the birth of a new form of culture or the renewal of an ancient cultural ideal introduce some novelty in the history of humanity. Especially in times of crisis, like

Husserl stresses at the beginning of his first paper to the Japanese journal *Kaizo*, something like a new beginning is expected to happen in us and through our actions (Husserl, 1989, 4). Some cultures have even been able to introduce radical changes in history. That's what happened with the emergence of classical Greek civilization. But the novelty of Greek culture was not only a novelty in relation to the time of its emergence. As is well known, Husserl used to speak of the teleological character of Greek civilization. The emergence of philosophy – and we can perhaps add, of Greek tragedy and of democracy – meant a new and unprecedented way of looking to man and its worldly existence. It meant (at least for Husserl) the emergence of a long-lasting historical antagonism between a life according to reason and a life according to tradition, between self-imposing norms and mere facts, between autonomy and heteronomy. What gave Greek civilization not only its distinctive characteristics regarding, for instance, Asian cultures, but above all a teleological character may be stated as follows:

1. Since then, men – or at least the rational part of humanity – considered that any form of life that was not guided by reason was deprived of real value.
2. The supremacy of reason (namely, over tradition or any form of mysticism) was regarded as a permanent task, never as a sheer reality or a historical conquest, so that humanity should live in order to keep that supremacy.

Of course, teleology is not historical necessity. In the famous last Appendix to § 73 of the *Crisis* book, in the volume VI of the *Husserliana*, Husserl acknowledges a weakening in the immanent teleology of European culture. The dream of philosophy as a rigorous science, he says, as a science of the roots of all scientific endeavors of humanity, no more is dreamt (Husserl, 1954, 508). The sharp oppositions between science and life, between scientific reason and religious beliefs, or between the knowledge of the totality of finite being and of its metaphysical transcendent grounds, that philosophical thought tried to overcome and for which phenomenology sought a solution in intentional analysis (Husserl, 1968, 300), have come again to the foreground. If we look to European history from the outside, as Husserl says (and I think he means by that looking at it as if we Europeans were not committed to its immanent teleology), European history is a failure. These Husserlian statements may seem, or at least they seem to me, too much Kantian. (I agree with them anyway.) We all remember the Kantian words in the *Critique of Pure Reason* about the «age of the critique of reason», and how every authority, be it political, philosophical or theological, immediately raises the defiance of everybody if it doesn't allow itself to be submitted to the critique, that is, to a careful examination of its

legitimacy to state what it states and to say it the way it does. For Kant, there were symptoms of the emergence of that new epoch that for Husserl was coming to the end: the main symptom was the universal demand of being founded in reason, a demand that even reason itself laid claims to.

Four years before Husserl wrote the first of his *Kaizo* papers, in 1923, urging the renewal of the European spirit, Oswald Spengler had proclaimed, in a well-known book, the decay of western civilization. In the same *Kaizo* paper I just mentioned Husserl reacts to this diagnosis. His brief argument is twofold: in the first place, he argues, we could only look to the decay of a civilization as a natural and irreversible process if we looked passively at it as something beyond our power; but, in the second place, that passive look is impossible from the point of view of mankind, and even those who proclaim such a decay cannot embrace it. His Vienna Conference of 1935 is even clearer about this issue (Husserl, 1954, 315). If we speak of “decay” (Husserl anyway prefers the word “weakening”), we are not speaking of a crisis in the medical sense of the term. This decay is a kind of intentional activity and can only be understood by a second kind of intentional activity, capable of tracing back the origin and the motives of the first.

This weakening has deep roots in the structure of intentional consciousness. In a way it is even natural and necessary for a consciousness living in the world, with its horizons of retention and protention and its indispensable processes of sedimentation. Objects and states of affairs permanently come and go, and the most efficacious way of dealing with them implies a certain oblivion of the way they were originally given. Our lifeworld relations between intending and fulfillment must be based in processes of sedimentation; otherwise our lifeworld horizon of expectations would be impossible. To borrow from Ortega one of his famous expressions, I would say that we are, for a great part of our lives, heirs and not founders or conquerors. I will come back to this issue later, when I will address more directly Ortega’s theory of culture. But in Husserl’s manuscripts we can also find hundreds of pages about these issues, namely, in the manuscripts we can now read in volume XXIX of the *Husserliana*, published as an *Ergänzungsband* to the *Crisis* book (Husserl, 1993), albeit the focus of Husserl’s analysis is, most of the time, perception. But it would be an error – or better, what I would label the Heideggerian misinterpretation of Husserl’s phenomenology – to think that Husserl’s concerns were above all of a theoretical nature, in a very narrow sense of the term; or that Husserl was mainly (or perhaps exclusively) concerned with what Heidegger called “the recognized knowledge” (Heidegger, 1994, 57). When Husserl addresses the intentional acts that

constituted science, even in so technical an issue as the foundation of mathematics, he is in the first place trying to grasp the kind of humanity that the accomplishment of those acts represents. In *The Origin of Geometry*, after mentioning the “originarily founding” acts of Geometry as a science, in ancient Greece, Husserl writes:

“Our human existence moves within innumerable traditions. The whole cultural world, in all its forms, exists through tradition. These forms have arisen as such not merely causally: we also know already that tradition is precisely tradition, having arisen within our human space through human activity, i.e., spiritually, even though we generally know nothing, or as good as nothing, of the particular provenance or of the spiritual source that brought it about. And yet there lies in this lack of knowledge, everywhere and essentially, an implicit knowledge, which can thus also be made explicit, a knowledge of unassailable self-evidence.” (Husserl, 1954, 366)

The world to which the Ego comes again and again, where he recognizes the objects as familiar and trustworthy, where – to speak a little more technically – the noemata are always qualified in a certain way, according to a more or less vague structure of typification, is our cultural world. This world is constituted by means of an activity of which, as Husserl says, we generally know nothing about. It is also a world containing its own horizons of practical possibilities (Husserl, 1993, 256). Some practical possibilities may be restricted to the narrow horizon of everyday life and affairs; according to Ortega that’s what happens when we don’t live in the radical reality of our lives. But other possibilities – Husserl calls them beings of a higher meaningful and ontological order (Husserl, 1993, 256) – open up for the actual world new purposes and new horizons of experience. The whole of human experience is reorganized or reconfigured by such purposes.

A crisis means also that the possibilities open for human existence, whose characteristics have been established by the transcendental analysis of the achievements of the Ego, have been considerably narrowed. Human existence has been reduced to the empirical existence of men in the given social and historical circumstances of the present. Men have become men of facts and the sciences have become sciences of facts, as Husserl says in the § 2 of the *Crisis* book (Husserl, 1954, 4), even if sciences have become highly specialized in the methodological processes of dealing with them.

## 2. Crisis and scientific progress

As is well known, for Husserl the crisis of European culture – and the crisis of science as one of the distinctive features of Europe – does not mean a crisis in scientific knowledge in the sense that scientists would no more believe in what they are doing as specialized technicians of a narrow field of knowledge, or have become skeptics about the cognitive value of their specialized achievements. But these achievements already contained a danger, because they were obtained through the use of limit concepts, which deprived the world of its everyday meaning. Exact measures of physical phenomena are only possible if they are taken, not as we experience them in the lifeworld, but as the outcome of a process of idealization (Husserl, 1954, 32).

Ortega shares the same opinion. In one of his most important writings, the unfinished book *The Idea of Principle in Leibniz*, published posthumously, he comments the views of Hermann Weyl about the relation between physical statements and reality. Each statement, in isolation – he argues, following Weyl – has no direct or immediate connection with physical reality. But physics is not just a bundle of statements but a *corpus*; and the statements of that *corpus* allow us to predict certain events that take place in the reality as we know it (Ortega, 2009c, 945). Roughly speaking, we could say that the *corpus* of physics is like an area delimited by a sinuous line and reality is a straight line. Some extremities of the sinuous line touch some points of the straight line and when this happens we have the contact between physics and reality. Physical experiments are the proof of this contact. But for the other points inside the area delimited by the sinuous line there is no contact with reality as we know it (Ortega, 2009c, 945). Ortega offers a very nice example of this situation:

«In the wardrobe of a theater they give us numbered plates when we deliver our coats. A plate does not look like an overcoat; but to the series of plates corresponds the series of the overcoats, so that each individual plate corresponds to a particular overcoat. Imagine that the wardrobe clerk was blind by birth and knew by touch the relief of the numbers on the plates. He would be able to distinguish them, or, what is the same, he would know them. After having touched a plate, he would run the series of overcoats in order, and find the one that corresponds to the plate, even though he has never seen an overcoat. The physicist is this clerk of the wardrobe of the material universe.» (Ortega, 2009c, 946)

In this comparison, the numbered plates correspond to the statements of a physical theory and the places where the overcoats stand correspond to the objects as the physicist sees them in his experiments. Regarding the origins and the historical development, since the early XVII<sup>th</sup> Century, of the situation Ortega describes in the text I have just quoted, Husserl makes the following three remarks:

1. Galileo, the founder of modern science, was, at the same time, an innovator and an heir (Husserl, 1954, 26). His fundamental innovation was the systematic application of procedures of measure to physical phenomena; or, more exactly, the systematic measure of variables (like space and time) whose changing relations originate physical phenomena in the scientific meaning of the term. (Not phenomena as we see them in our lifeworld experience; or the overcoat,s in Ortega's example, that we use to protect us from cold weather.) Galileo's heritage was the Greek geometry – itself an idealization from the lifeworld experience of the art of surveying – and the notion of space as a geometrical magnitude, able to be measured.
2. The development of science allowed the quantification of all the sensible qualities of phenomena, even those qualities that seemed to depend on a subjective reaction from the observer. (The so-called “second qualities”.) For instance, for modern physics colors may also be subjected to a process of idealization. Although their form is not a part of the universal form of the world as a spatial-temporal extension, they can be subjected to an indirect process of mathematization, (Husserl, 1954, 33) and considered wave-lengths of a certain magnitude. These waves as such don't “touch” – in the sense of Hermann Weyl – our everyday reality, but they help us to understand our everyday experience of colours.
3. Science is able to overcome its own internal crises, like the ones opened by Einstein's theory of relativity regarding the relation between space and time, or by the notions of set and infinity in pure mathematics. So, physics internal crisis, on the one hand – or rather physics internal problems (Orth, 1999, 51), inside the same ideal of an exact science, from Galileo and Newton to Einstein and Planck (Husserl, 1954, 2) –, and, on the other hand, cultural crisis, like the one Husserl's *Crisis* book aims to describe and to evaluate, are two distinct notions.

What makes contemporary crisis of science such a difficult issue to handle, even in phenomenological terms, is the fact that some of science's regional concepts have become doubtful, and not only insufficiently grounded, instead of what happened, for instance,

with the concept of inertial reference frame in the early XVII<sup>th</sup> Century physics, or with the concept of infinity in the XVIII<sup>th</sup> Century mathematics. For Husserl there seems to be no special difference between classical and contemporary physical concepts, since contemporary physics only retrieves the ideal of exactitude that arose in the XVII<sup>th</sup> Century. That's why he writes in 1925, in the Lecture about *Phenomenological Psychology*:

«Before any question about the particular empirical forms of a physical thing, one thing obtains: that it is a thing, that in all its transformations it retains an ideal norm, a form, which we call its mathematical essence. In every experience, insofar as a thing can be unanimously and intersubjectively identified as the same thing, it is time-lasting, spatially extended material.» (Husserl, 1968, 17)

Perhaps things are a bit more complex. Like the usual space-time relations have lost their validity in relativistic mechanics, also the concept of "thing" has lost his validity in quantum mechanics. If this is the case, it is highly improbable for modern physics to keep any relationship with lifeworld experience, where the concept of "thing" is not only still valid but probably will always be indispensable? What happens when what is relatively intelligible at the lower levels of experience has become obscure at the higher levels of scientific thought (Schütz, 1975, 48)?

I think that's an important question and it will help us to understand and circumscribe Husserl's concept of crisis. When I said a few moments ago that Galileo, Newton, Einstein and Planck shared the same ideal of an exact science, I was quoting from § 1 of the *Crisis* book. But anyone could argue that the evolution of physics from the XVII<sup>th</sup> Century onwards is characterized by a crisis in the accepted notions of space, movement, substance and matter, among many others. However, a bit surprisingly, Husserl claims in his *Encyclopedia Britannica* article that, from an *a priori* point of view, there are no crisis in science, not even foundational ones (Husserl, 1968, 297). What I think he means is the following: when scientific achievements are brought back to the intentional acts that constituted them we see no crisis, but only an evolution according to a path that was opened by an original decision. Science however is only a part of the overall human activities, or human culture, and each part has the kind of intentional achievements that is appropriate to it. A crisis, in the Husserlian sense of the term, only arises when one of

these parts, namely, mathematical physics, becomes meaningless to the others. Only phenomenology can bring those parts together according to the teleology that is proper to mankind's transcendental life (Husserl, 1968, 299).

This disagreement between two different sectors of man's intentional activity were not easily perceptible from the beginning. It has to do with the characteristics of modern physics in its Galilean beginnings. As Ortega stresses, although the objects for which mathematical reasoning obtains are not real objects – Husserl used to speak about its atemporal existence –, the first applications of mathematics to physical reality produced a surprising consequence: knowledge gained through rigorous deductive procedures seemed to be confirmed by observation (Ortega, 2008a, 123). We have already seen that it was not exactly the case. The coincidence between the deductive conclusions of rational physics and the sensible observations of physical experience is only fairly accurate, but things could go on almost unnoticed as long as the gap between the two was not too big and did not put in danger the overall scientific progress.

### **3. Ortega's first diagnosis: science, life and authenticity**

If we now turn the focus of our attention again to what Ortega has to say about the fate of modern science, we will find, besides a diagnosis similar to Husserl's, also some interesting differences. Ortega stresses the fact that humanity faces a general crisis, i.e. a general feeling of the loss of meaning of its most ancient and most venerable institutions, beginning with politics and ending with science. In his 1940 Argentinian Lectures about *Historical Reason* he argues that no one knows any more what to do in political matters, but also in scientific matters. Like the political ideas inherited from the XIX<sup>th</sup> Century have become questionable, so the scientific ideas inherited from Galilean and Newtonian physics. And he mentions what was then happening in mathematical logic, with the work of the Dutch mathematician Luitzen Brouwer (Ortega, 2009a, 479). Later in the same Lectures he speaks about the metaphorical character of scientific concepts, like the concept of wave in Broglie's quantum mechanics (Ortega, 2009a, 495), which is only a symptom of the crisis of the modern idea according to which language and contents of thought can easily overlap. Brouwer's claims that mathematical thought is independent of mathematical language is, for Ortega, just another symptom. But even in common perception we can find the same symptoms. The color of a particular orange is richer in intuitive content than the concept "orange color"; a color actually seen always – or intuited – has gradations that the concept cannot determine (Ortega, 2008b, 301). And so



we come to what Ortega calls an “earthquake of reason”. In order to understand and evaluate its effects the Spanish philosopher, as I shall now explain, asks for the help of Husserl’s phenomenological analysis.

In the Third Lesson of *Historical Reason* (a series of Lectures held in Lisbon in 1944, where he recovers some of the ideas of the old Argentinian Lectures) Ortega quotes at length the Preface to *Formal and Transcendental Logic* (Ortega, 2009b, 664). I think we can specify the three main ideas of this text as follows; 1) Sciences have lost the faith in themselves and in their own achievements; 2) Sciences are no more considered the self-objectivation of human spirit, i.e. they no more perform the functions for which they existed for centuries; 3) In a world historically fashioned by scientific progress, at least since the beginnings of Modern Times, but that has become increasingly incomprehensible, human reason and human will now raise the following questions: «what for?» and «where to?»

However, although Ortega quotes Husserl and his overall position regarding the crisis of European science is very similar to Husserl’s, I think there is also an important difference. It has to do with what Ortega calls the problem of authenticity. And I am not thinking about what Heidegger says in *Being and Time* about authenticity, regardless the influence the reading of *Being and Time* may have had in Ortega. Authenticity, broadly speaking, means that the kind of life one lives and the prospects one makes regarding the future are in accordance with his or her basic beliefs. For instance, I may, in my personal life take profit of the technological advances that scientific progress has put at my disposal and, in line with this, even if I am not a professional scientist and have only rudimentary notions of physics, mathematics or biology, be committed, in my own limited sphere of action, with the search of truth. That’s what Husserl calls a life according to reason. Or I may not care about it, or proclaim that there is no truth and reason is only an effective means to ensure the survival of the species (which it certainly is), or even deplore the scientific progress of which I take advantage in my daily life.

Like Husserl, Ortega has also read Spengler’s book but his stance towards it is much more nuanced. Like Husserl, Ortega acknowledges the fact that Greek civilization meant a long-lasting trend of though whose main characteristics are clarity, rationality and logical coherence (Ortega, 2009b, 645). But Ortega also stresses the fact that this new form of life emerged from an older form of life characterized by two different but complementary attitudes: on the one hand, the primacy of belief over reason, on the other hand, the

primacy of phantasy over the sense of reality. I won't address directly these issues in this paper, and will only remark that we have some difficulties here.

1. Regarding the first topic, the opposition of reason and belief, perhaps it cannot be addressed exactly as Ortega does and we could defend that there are also reasonable beliefs in man's lifeworld experience, with its own so to speak epistemic justification. Husserl wrote some very nice pages about this, especially in the *Crisis* book. I am thinking namely about what he labels the "universal invariant style" of the lifeworld (Husserl, 1954, 29). I can only understand by this a set of rational beliefs that originate a horizon of expectations that are for the most part fulfilled. Perhaps, in spite of Ortega's conversion to phenomenology around 1912, some tenets of the neo-Kantian theory of culture – in which he was trained in Marburg – never completely disappeared from his mature thought. That's a bit strange, as I will show in a moment, since the critique of neo-Kantianism played an important role in his philosophical evolution. As late as 1947, in his unfinished book *The Idea of Principle in Leibniz*, he maintained an opposition between beliefs and ideas (Ortega, 2009c, 1131).
2. Moreover, Ortega seems, sometimes, to look at the opposition between belief and reason as a kind of permanent struggle, in which epochs of reason succeed to epochs of belief, before being overthrown by new epochs of belief, in a kind of cyclical process. This is particularly evident in a series of Lessons from 1948 about Arnold Toynbee's *A Study of History* (Ortega, 2009d, 1201). This seems to me to be a quite unphenomenological way of addressing history, because no reference is made to consciousness' intentional achievements in this process, or to what Ortega preferred to call "my life as radical reality". This struggle is a kind objective process, that can be contemplated when an epoch is coming to its end. (That's what, according to Ortega, Greeks and Romans did, from the times of Plato's *Republic* and Aristotle's *Politics* to the times of Cicero's *Republic*.)

Now, regarding the second of the two Ortega's topics I mentioned above, the relations between phantasy and the awareness to what really exists in the world – in other words, the sense of reality that prevails either in lifeworld experience or in scientific research –, his position is not entirely coherent. It would be easy to show that Ortega sometimes admits that beliefs have their own sense of reality, their own kind of certitude, no less than allegedly scientific and solid knowledge; and also that phantasy is the necessary condition for ideas that are free from practical concerns and offer us only hypothetical

knowledge. «Science is pure exact phantasy», says Ortega in 1947 (Ortega, 2009c, 1133). In other words, when he addresses the intentional achievements of consciousness, he sometimes stresses the fact that lifeworld experiences consist of thetical acts (regardless their naivety), i.e. perceptions accompanied by belief; other times, he says they are mainly phantasies destined to be surmounted by other phantasies or other historical beliefs, or even definitively removed by scientific or philosophical knowledge.

In the 1920's and 30's, especially since the publication of *El Tema de Nuestro Tiempo*, in 1923, Ortega uses frequently a vitalistic jargon that can endanger a correct understanding of his thought, albeit his warnings against the temptation of understanding man like just one more zoological species and culture as a natural process. One has to know that Ortega was trying to avoid in the first place the danger of opposing the higher forms of culture (especially science and philosophy) and the historical and social milieu in which they arise, an opposition of which he accused – at least since 1911 and the papers he wrote about the Spanish painter Ignacio Zuloaga (San Martín, 1994, 27) – the Philosophy of Culture of the neo-Kantian School of Marburg. But Ortega's overall view of the fate of western culture in the XXth Century is very close to Husserl's. That's why, in *Historical Reason*, he quotes, as I said above, from the initial pages of Husserl's *Formal and Transcendental Logic*. His final conclusions are similar to Husserl's: European science – and that means, reason in its higher and most sophisticated form – has lost all confidence in itself (Ortega, 2009b, 665). What is at stake in our epoch, as Ortega stresses, is not what the common man thinks or believes about the value of science for the practical purposes of life. The crisis affects science in its very foundations. Concepts like matter, causality, logical consistency, among others, became questionable, with quantum mechanics and intuitionistic mathematics, for instance. Perhaps we may call this crisis a crisis from above; but to this crisis is added a crisis from below, I mean, a crisis in the way science is understood and its achievements are evaluated in the lifeworld. Together, they make the one big crisis of western culture. That's what we will see in the last section of my paper.

#### **4. Levels of culture**

Differences in culture are, for Ortega, first of all, differences in level. Now, what does this word “level” mean? As far as I know, Ortega never gives us a definition of “level”, but I think it is possible to grasp his general idea: when we speak of the level of an epoch we mean the set of possibilities open for the men that live in it. That's why Ortega can

say in his well-known book *The Rebellion of the Masses* that the level of our times is the highest level that humanity has ever attained. The appearance of the masses in places where previously they were absent – on the coffee shops, the theaters, the beach – is one of the main characteristic of modern times. Places that were traditionally almost empty are now full of people. There is nothing wrong with that. The only danger lies in the fact that most of the people don't feel themselves as heirs of something they must struggle to preserve and to enlarge. That's a kind of mentality that Ortega labels, in Spanish, the *señorito satisfecho* (Ortega, 2009c, 1141). I don't know any good translation of this expression and even the Portuguese translation doesn't sound good to me; but perhaps I could hazard the expression "satisfied gentleman", if we are allowed to add to the notion of "gentleman" the idea of a contempt for the past and the cynicism when dealing with current affairs.

The *señorito satisfecho* only looks to science through its technical achievements, i.e. through what has contributed to raise the level of his life, above all from a material point of view. Ortega has some interesting passages about the increase in speed due to the automobiles and the airplanes, which allowed long-distance voyages that were impossible in the past. Of course, if we don't read Ortega as a phenomenologist we will miss the real importance of the description of the behavior of the *señorito satisfecho*. It will be reduced to a psychological type (which it also is, anyway) and the kind of intentional achievements it produces and the danger inherent to those achievements will remain unnoticed.

The intentional achievements of the *señorito satisfecho* are very different, not only from those of scientific thought but also from those of a man who takes seriously his lifeworld existence and the drama inherent to it. The scientific achievements of modern physics have a peculiar danger. Husserl calls them a "substruction" in the original lifeworld experience. The Latin prefix "sub-" must be taken literally. A substruction is something we put beneath another thing, preventing it to appear as it really is. That's why the lifeworld's original spatialization and temporalization becomes unrecognizable in the idealized concepts of space and time in modern physics. On the other hand, existence is a drama: we have to perform it and its outcome is always unknown. That's why it gives rise to questions about the ultimate ends of life and of the universe; questions that begin where science ends its own work, like we add the piece of line that is missing when seeing the broken line of a circumference (Ortega, 2008a, 130). Seeing where the sciences end, man is bound to enter in himself, i.e. to discover the ultimate reality his own life. If the philosopher is different from other men it is only because he does it more radically and

systematically, so to speak, in a professional way. Like Husserl puts it, at the beginning of the *Cartesian Meditations*:

«[...] anyone who seriously intends to become a philosopher must “once in his life” withdraw into himself and attempt, within himself, to overthrow and build anew all the sciences that, up to then, he has been accepting. Philosophy – wisdom (*sagesse*) – is the philosopher’s quite personal affair. It must arise as *his* wisdom, as his self-acquired knowledge tending toward universality, a knowledge for which he can answer from the beginning, and at each step, by virtue of his own absolute insights.» (Husserl, 1950, 44)

That’s what the *señorito* is unable to do. He thinks that things will go on forever as they are, perhaps with some improvements where imperfections are still felt. What phenomenology teaches us is that things cannot go on forever, because they are the outcome of subjective achievements. They have an historical character. But, in our epoch (Ortega speaks in 1930, and we should look carefully around us to see if it is still valid what he says), when science obtains its highest achievements in the theoretical fields and its application in industry has produced great benefits to mankind, the enthusiasm with science has decreased. Laboratories have some difficulties in finding new researchers. The problem is: civilized man sees culture as if it was nature. He cannot live without the former, but looks at it as if it could reproduce itself like the latter. Modern man is again a *Naturmensch* (Ortega, 2007, 91).

Now, phenomenology has taught us that parts, even the independent parts, only have meaning in relation to a whole. Just like the unity of meaning we call “a house” only has meaning, i.e. is really a house, if its front side refers to the back side that cannot be perceived at the same time as the front and, in a certain way, is invisible. I won’t deal with the more technical aspects of this issue (you can read Husserl’s 3<sup>d</sup> Logical Investigation), but I would like to stress its importance for a correct understanding of culture and of the problem of the crisis of science. What Husserl and Ortega have in mind is that we cannot benefit from a part of our civilized world without wanting its other parts and the totality of the intentional achievements that made them possible. We cannot, for instance, benefit from the security technology offers us without wanting the scientific mentality that made it possible and praising the historical endeavors that kept it alive. That’s why, near the end of his life, Husserl exclaimed that when the future is threatened

– because the present has become meaningless – our investigations must be thoroughly historical (Husserl, 1954, 510). What he means is perhaps very simple and I would put it this way (to finish my talk): without understanding the nature of the present disdain for reason – a disdain born from the distance between a misconducted rationalism and the radical reality of men’s lives – we will never be able to overcome it.

## REFERENCES

HEIDEGGER, Martin (1994). *Einführung in die phänomenologische Forschung. Gesamtausgabe*, Band 17. Frankfurt: Vittorio Klostermann.

HUSSERL, Edmund (1950). *Cartesianische Meditationen – Husserliana I*. Den Haag: Martinus Nijhoff.

HUSSERL, Edmund (1954). *Die Krisis der europäischen Wissenschaften und die transzendente Phänomenologie – Husserliana VI*. Den Haag: Martinus Nijhoff.

HUSSERL, Edmund (1968). *Phänomenologische Psychologie – Husserliana IX*. Den Haag: Martinus Nijhoff.

HUSSERL, Edmund (1989). «Erneuerung. Ihr Problem und Ihre Methode». *Aufsätze und Vorträge (1922-1937) - Husserliana XXVII*. Dordrecht: Kluwer Academic Publishers, pp. 3-13.

HUSSERL, Edmund (1993). *Die Krisis der europäischen Wissenschaften und die transzendente Phänomenologie, Ergänzungsband – Husserliana XXIX*. Dordrecht / Boston / London: Kluwer Academic Publishers.

ORTEGA Y GASSET, José (2007). *A Rebelião das Massas*. Lisboa: Relógio d’Água.

ORTEGA Y GASSET, José (2008a). *¿Qué es la Ciencia, Qué la Filosofía?. Obras Completas Tomo VIII*. Madrid: Taurus, pp. 115-170.

ORTEGA Y GASSET, José (2008b). *¿Qué es Filosofía?. Obras Completas Tomo VIII*. Madrid: Taurus, pp. 235-374.

ORTEGA Y GASSET, José (2009a). *La Razón Histórica. Curso de 1940. Obras Completas Tomo IX*. Madrid: Taurus, pp. 475-558.

ORTEGA Y GASSET, José (2009b). *La Razón Histórica. Curso de 1944. Obras Completas Tomo IX*. Madrid: Taurus, pp. 623-700.

ORTEGA Y GASSET, José (2009c). *La Idea de Principio en Leibniz y la Evolución de la Teoría Deductiva. Obras Completas Tomo IX*. Madrid: Taurus, pp. 931-1163.

ORTEGA Y GASSET, José (2009d). *Sobre una Nueva Interpretación de la Historia Universal. Obras Completas Tomo IX*. Madrid: Taurus, pp. 1185-1408.

ORTH, Ernst Wolfgang (1999). *Edmund Husserl’s >Krisis der europäischen Wissenschaften und die transzendente Phänomenologie<*. Darmstadt: Wissenschaftliche Buchgesellschaft.

SAN MARTÍN, Javier (1994). «La fenomenología de José Ortega y Gasset: de la crítica de la razón moderna a la razón histórica». *Ensayos sobre Ortega*. Madrid: UNED, pp. 17-60.

SCHÜTZ, Alfred (1975). «Phenomenology and the foundations of social sciences». *Collected Papers III*. The Hague: Martinus Nijhoff, pp. 40-50.