

Can we trust others in our pursuit  
of knowledge? Anthropological and  
theological reflections on belief and  
the neurosciences

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## Abstract

*The brain-mind debate is a field where interdisciplinary research is needed more than ever. Indeed, it behooves us to ask the question: "Is it possible that non-conscious parts of matter produce consciousness?" The answer to this question is of great importance to both the personal and social spheres of living. When entering this debate, issues of trust and belief arise within scientific reflection and this, consequently, leads also to the ethical dimension of the scientific disciplines that seek to study the brain and its relation to mind and language. As a point of departure we state some fundamental criteria about the nature of the scientific theories, and about a proper understanding of human reason. In this way it will be possible that interdisciplinary debate contribute to a humanism open to the unity of knowledge.*

*We provide a brief summary of the history of the epistemological nature of trust and belief. In fact this debate has accompanied epistemology in both the Anglo-Saxon and Continental traditions. The roots of this debate are already present in the great classical tradition with its questions about the nature of true knowledge. More recently, the debate has been enriched precisely because of its connection with the different conceptions of the relationship between mind and brain. Our contribution – anthropological and theological in nature – wants to hold that a strict causal relationship does not necessarily follow from brain phenomena to mental phenomena (including belief), although we recognise a clear correlation between these two phenomena. We insist that recent researches show what Jürgen Habermas calls the insurmountable character (Nicht hintergebarkeit) of the duality of both perspectives, which arises from a deeper unity. In the final analysis, this "dual unity" remains an open question.*

*Situated in this context we examine the phenomenon of trust and belief as common ground for interdisciplinary reflection. Particularly we suggest that an examination of the area of interpersonal relationships as a basic human experience has crucial implications for the ethical and epistemological questions that can ultimately serve to a better understanding of human reality in all its dimensions. We conclude by showing how the anthropology of the imago Dei, typical of Judeo-Christian revelation is able to understand this mysterious dual unity of man and contribute to the public debate about the interrelationship between mind, brain and language.*

## 1. Introduction

In a forum such as this one, dedicated to the natural as well as the social sciences, my own contribution could seem alien to the perspectives of the majority of the forum's presenters. After all, my presentation is a reflection of a philosophical and theological sort, founded upon some fundamental premises of Christian revelation.

My point of view is based on the Judeo-Christian idea of man as *imago Dei*, gathered from the biblical narrative (Gn 1, 26-27; 2, 18-25), and interpreted in the light of the New Testament (Col 1, 15-20; 1 Cor 15, 45ss; 2 Cor 4, 4). Starting from these scriptural premises, theology has developed the notion of a "dramatic anthropology", to use a phrase coined by Hans Urs von Balthasar. The Swiss theologian saw that the biblical conception of man as *imago Dei* could be translated into a "dramatic anthropology." With this formulation, von Balthasar points out a tension between unity and difference both in itself and as it manifests itself in three "polarities", or tensions, which are constitutive of the human being. These polarities do not annul the unity of the 'I', of the singular person who asks himself about himself, but they show that the person bears an inevitably "dramatic" character. When man observes himself in action he recognizes in himself a triple polarity or tension which is not reducible to either of the two poles: 'soul-body', 'man-woman', 'individual-community'. [1, 2, 3]. The human person therefore cannot be explained within a purely monistic or dualistic conception, rather the person experiences his own self as a mysterious "dual unity" within each of these polarities. If one were to explain each of these polarities, as well as the deep connection between the three of them, one would be describing, in my judgment, that "mystery of the unity of the self" which gives the title to our Symposium.

I will return to these questions at the end of my presentation. First it is necessary to clear the path of possible objections which could imply a preliminary exclusion of a presentation of this sort. Is it possible, instead, to find a common ground and a common task between the perspective that I am proposing and that perspective proper to a conference where the prevailing participation is that of specialists in the various scientific disciplines dealing with the problem of the mind, the brain, and language?

My conviction is that it is possible to find such a space of common interest, if we respect the two rules that Jürgen Habermas has been proposing for some time. The German philosopher is concerned that all the participants of pluralistic societies may offer their best contribution to political debate, so that the profound ethical and social challenges affecting Western democracies may be approached in an adequate way. This is why he asks, on the one hand, for what he calls the cognitive translation of the content of religious traditions into terms which are universally comprehensible and, on the other hand, for an overcoming of what he calls secular narrowness [29, 5]. Habermas thinks that, when both of these conditions are respected, the cultural, social, and moral debate would benefit from all of the cognitive

resources present in our society, without prior exclusion of anyone. The seriousness of the challenges that we have before us do not allow us to reject any reasonable contribution to society. In the end, we should be able to verify whether this Symposium has been able to fulfill Habermas' aspiration, around questions so fundamental for the adequate understanding of the person and social life as those which deal with the brain, the mind, and language.

## 2. The sciences and trust

In order to approach our task it would be useful to remember the words of David Baltimore, given in the Whitehead Institute a few years ago. This Nobel laureate maintained that trust is a foundational element in academic life and that from it opens up an interdisciplinary horizon of greater interest, precisely for the task of understanding more deeply the significance of trust in academic and scientific life as well as in social life<sup>1</sup>. His words are an example that shows how the scientific world is able to assume the importance of trust between people as a decisive factor for the progress of rational knowledge. We have then a point of encounter in the category of trust because trust turns out to be decisive for scientific knowledge as well as for the philosophical (and theological) understanding of knowledge. According to Baltimore, the neurosciences are called to a deeper understanding of this human experience from their own point of view, while also assuming an interdisciplinary perspective which would allow for the establishment of better relations between knowledge and trust. Wittgenstein himself has already made a claim about the primordial and original role which trust plays in the search for knowledge [6].

If this is so, then nothing impedes the extension of our reflection to also cover belief, which is closely related to trust. In this sense, one may value all the legitimate manifestations of belief, which come from a primarily intersubjective meaning, from the sense of trust which some men place in others within many different dimensions of social life<sup>2</sup>, until it reaches religious meaning, as a phenomenon typical of human societies, and then finally becomes a trust which is specifically Christian (the theological virtue of faith as we understand it). It is in one of those areas where the twofold condition formulated by Habermas (cognitive translation of religious traditions and the overcoming of secular narrowness) could yield greater fruit.

But there is still one more point of encounter between the world of experimental science and the world of philosophy and theology. I am referring to the numerous voices who from the world of the neurosciences are asking strictly ethical questions, which are also very much related to trust and with belief in other people. Indeed, a few years ago, the term "neuroethics" was coined in order to highlight the fact that scientists themselves feel the need

<sup>1</sup>See the transcript of this conference at: [www.wi.mit.edu/news/archives/2002/db-0219.html](http://www.wi.mit.edu/news/archives/2002/db-0219.html)

<sup>2</sup>In the field of sociology today we can find interesting studies on basic trust and trust in complex systems. Cf. [9].

to reflect about the moral implications of their techno-scientific discoveries<sup>3</sup>. In this way, together with the question about trust and belief, we find ourselves also with the question about the ethical dimension of science and technology. If the first question is epistemological in nature, concerning itself with the relationship between trust and knowledge, the second orients itself directly toward the anthropological and moral perspective. On both questions it appears legitimate to assert that the scientific discussion does not preventively close itself off before an interdisciplinary reflection about trust/belief, which carries with it the dimension of intersubjectivity. On the contrary, one rather comes to the conclusion that these are open questions in the world of science, about which a deeper understanding is desired.

It is possible then to discover a space for an encounter between different epistemological perspectives, when the time comes for us to approach the main question of this Symposium, which we could formulate thus: Is it possible for consciousness to arise from non-conscious matter? This is quite a problem, that of explaining consciousness, and for many researchers it “is the most complicated problem on the table for science<sup>4</sup>” [8].

Because I am not a specialist in any of the experimental sciences, I will quickly clarify that I will avoid entering into the technical questions within those fields in which many of those present here are world-renowned experts. Rather, working off the information available to a person of average intelligence in our Western world, I will try — as indicated from the start — offer my theological and philosophical perspective, illuminated by Christian revelation.

### 3. A few principles concerning the use of reason and the sciences

Before entering into theological questions, I think it is necessary to remember a few principles which govern the conversation between the scientific point of view and the philosophical-theological point of view. I am referring in particular to three questions which are closely related to each other: *Interdisciplinarity*, the necessary *difference and connection* between scientific and philosophical knowledge, and the inevitable demand for a *unitary point of view* with regard to the human person.

<sup>3</sup>About the birth and status of *neuroethics*, see: [www.unav.es/cryf/neuroetica.html](http://www.unav.es/cryf/neuroetica.html)

<sup>4</sup>This difficulty is recognized by many scientists and philosophers. These words from Ph. Clayton serve as a good example: “Nobody has the slightest idea how anything material could be conscious. Nobody even knows what it would be like to have the slightest idea about how anything material could be conscious. So much for the philosophy of consciousness. Given the difficulty of the transition from brain states to consciousness, one might worry with Colin McGinn that we face here an irresolvable mystery” [10]. Also J. Searle: “How, for example, can it be the case that the world contains nothing but unconscious physical particles, and yet it also contains consciousness? How can a mechanical universe contain intentionalistic human beings – that is, that human beings can represent the world to themselves? How, in short, can an essentially meaningless world contain meanings?” [12]. Concerning Searle’s position see the critical approach of R. Tallis [13]. D. Chalmers maintains that when investigating consciousness, one must point out the “easy problems”: questions which deal with the functioning of memory, of learning and others referred to the question of how the cognitive function is realized, and the “hard problem” of knowledge: how do physical processes give rise to consciousness? [14].

### 3.1 *Interdisciplinarity*

We can affirm without controversy, as a statement of fact, that *interdisciplinarity* lies at the very origin of the neurosciences, from its first steps up to its establishment as a discipline towards the end of the twentieth century [11]. Today, neuroscience is “the experimental science which has searched the most for a relationship with other disciplines, finding itself with questions which cannot be resolved exclusively with its own experimental methodology.” [11]. The attempt to offer clear answers to the question about the global operation of the brain and its role in the complete life of the human person drives many scientists to look for such a collaboration, just as we see in the very hopeful activity of many university departments.

In this interdisciplinary effort, we should be conscious of the fact that the progress of understanding in these matters is a slow and limited, but reliable assemblage of new models which allow us to advance in response to very complicated questions. It is not an easy task or one that can be finished comprehensively. In his study of the reality of the “I”, Antonio Millán Puelles maintains that “to be intelligible is not the same thing as to be easily intelligible, nor is it the same thing as being completely intelligible<sup>5</sup>” [15].

On the other hand, this interdisciplinary opening is very interesting because “the context of a possible positivism could condition the actual development” [11] of the neurosciences. Instead, the fact of interdisciplinarity could effectively help to correct the danger of this positivism, of which some authors warn us when we enter into the realm of neuroethics: “The good news about neuroethics was that experimental science had become conscious of its limits and appealed to a dialogue with other disciplines, even the philosophical ones. The bad news, on the other hand, is the fact that researchers in neuroscience have later on opted not for dialogue, but rather for a unilateral scientific explication of moral questions. Here is the great ambiguity that comes when one tries to evaluate the rise of neuroethics<sup>6</sup>.” It seems necessary, remembering Habermas’s thesis, to incorporate interdisciplinary criteria into our discussion if we desire that the great anthropological and ethical questions which have been raised by neuroscience be not diminished nor reduced.

### 3.2 *Scientific knowledge within the matrix of human knowledge*

As you will expect, I do not pretend to explain to scientists what their work consists of. My intention is rather to point to a problem which is complex but decisive for our objectives,

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<sup>5</sup>S.L. Jaki also appreciates this notion of the slow conquest of man’s knowledge over man. “Unlike an angel who needs no conquest, and unlike an ape uninterested in them, man thrives on conquests which are the fruit of a mysterious union in him of matter and mind”[17].

<sup>6</sup>S. Sánchez-Migallón, “*La ambigüedad de la neuroética*” in: [www.bioeticacs.org/?dst=neuroetica](http://www.bioeticacs.org/?dst=neuroetica).

namely the place that scientific knowledge occupies within the matrix of knowledge which, as human beings, we are able to acquire about reality. From such a large question, I will limit myself to recalling a few basic affirmations.

It is well known that the excesses of philosophical idealism had the effect of favoring the appearance of positivism which, as a reaction to such idealism, reclaimed a necessary autonomy for the experimental sciences. However, that positivism swung the pendulum toward the opposite extreme of philosophical excess, according to which the scope of knowledge was reduced to what could be verified through empirical experimentation. This is the viewpoint which we can call “scientism.” For Habermas, “‘scientism’ means the faith in science as such, or to put it differently, the conviction that we can no longer understand science as one possible form of knowledge, but rather that we should identify knowledge with science.” [16]. Scientism is therefore that epistemological position in which experimental reason is the only proper mode of the exercise of reason, ignoring that human reason can be exercised in other modes which are irreducible to the purely experimental mode. There is no want of authors who warn us that a positivistic epistemology carries out an illegitimate reduction of the integral nature of human knowledge. John C. Polkinghorne wrote that “[...] there are questions which arise from science and which insistently demand an answer, but which by their very character transcend that of which science itself is competent to speak. There is a widespread feeling among practicing scientists, particularly those of us who have worked in fundamental physics that there is more to the physical world than has met the scientific eye.” [18]. Ludwig Wittgenstein makes a similar warning: “We feel that even if all possible scientific questions be answered, the problems of life have still not been touched at all.” [19].

The explanation of the process which took place within positivism would require time and competence which I lack, but it suffices to recall the well-known Vienna Circle manifesto (1929) which epitomizes the positivistic point of view and its materialistic consequences<sup>7</sup>. For our purposes we must point out that positivism illegitimately censors questions which are proper to human reason. As George Steiner puts it, “The positivistic postulate, according to which an adult conscience would only ask the ‘How?’ and never the ‘Why?’ of the world and of existence, is an act of censorship of the most obscurantist sort. It muzzles the voice which lies beneath the voices that are within us.” [20]. But there is also the fact that positivism cannot help but fall into the contradiction that is rationally impossible to identify experimental knowledge with knowledge *tout court*, excluding other forms of knowledge. The contradiction becomes clear once one declares, without empirical verification, that a proposition is meaningful only when it can be the object of empirical verification<sup>8</sup>.

Looked at in a different way, what this contradiction brings to light is the reflexive capacity of human intelligence, which always exceeds merely experimental activity. When one

<sup>7</sup>About the birth of the Vienna Circle and its scientific and ideological principles, see [23].

<sup>8</sup>L. Kolakowski defines the scientistic mentality as “the irrationality of positivist rationalism” [24].

commits this positivistic reduction, which we call scientism, one makes the claim that only the scientific method is rational. The consequence, in that case, is that scientific knowledge could not be limited by any other knowledge outside the scientific theories themselves and would be purely self-referential [21, 22]. Therefore, the scope of reality itself would be reduced, because there could not be, or would not be, a reality outside of that which is known through experimental methods. The result is what Herbert Marcuse has called a “synthetically impoverished world<sup>9</sup>.” If this reduction always goes against the reasonable exercise of reason itself in any area of reality, its prejudices would be even more grave when we are dealing with — as is the case in neuroscience — a reality specific to human consciousness. For this reason, in both the epistemological order and the ontological order, in the plane of knowledge and in the plane of the extension and depth of reality, experimental science *must* enter into an interdisciplinary dialogue with other forms of knowledge like philosophy and theology, which provide knowledge from other perspectives which are just as legitimate and irreducible as the scientific perspective<sup>10</sup>.

In the twentieth century, many philosophers have claimed the irreducible character of different areas of knowledge, as well as the necessity of mutual collaboration between them. It is enough to remember the names of Husserl, Habermas, Gadamer, Merleau-Ponty, and Ricoeur as examples of thinkers who have made the effort to rethink the irreducible character of everyday knowledge and that knowledge which today we group under the term, “sciences of the spirit<sup>11</sup>.” Both such levels of knowledge are in some way presupposed in the exercise of scientific knowledge<sup>12</sup>. In particular it is philosophical reasoning which asks

<sup>9</sup>“El descuido de la dimensión filosófica específica ha llevado al positivismo contemporáneo a moverse en un mundo sintéticamente empobrecido [...] y a crear más problemas ilusorios de los que ha destruido [...] Una falsa conciencia mutilada es colocada como la verdadera conciencia que decide sobre el sentido y la expresión de aquello que es. El resto es denunciado — y endosado — como ficción o mitología” [25].

<sup>10</sup>R. Spaemann reminds us, ironically, that several sciences have had the pretension of erecting a total explanation of reality and that, today, looking back, these claims have turned out to be absurd. He warns that what has happened to psychology and sociology in the last century could happen to the neurosciences today [30].

<sup>11</sup>Let us not forget that the philosophical work of E. Husserl begins with the overcoming of a purely “psychologistic” (today we could say “naturalistic”) understanding of logic. He demonstrates the irreducibility of essences or ideas to the material processes which support them. Cf. [31]. Spaemann employs Husserl’s work in order to defend his claim that meanings will never be located in neurons: “*Intentionale Gehalte haben keinen Entsprechung im Gehirn. Sonst müssten wir die Infinitesimalrechnung ebenso in einem Gehirn ablesen können, wie ein Streichquartett von Mozart oder Michelangelos Pietà Rondanini. Die Hirnforschung wäre die Integrationswissenschaft für alle Natur- und Geisteswissenschaften. Und ein Fehler in einem mathematischen Beweis wäre genau so ein positiver Hirnzustand wie die Korrektur dieses Fehlers, ein Zustand, der letzten Endes aufgrund physikalischer Gesetze in einem anderen übergeht. Man muss diese Dinge nur beim Namen nennen, um ihre Absurdität zu erkennen*” [30]. See also [13].

<sup>12</sup>For M. Merleau-Ponty scientific knowledge about the human person must be related to his lived experience of the world, because scientific knowledge is relevant only insofar as it is situated in a wider scope: “*Je ne suis pas le résultat ou l’entrecroisement des multiples causalités qui déterminent mon corps ou mon ‘psychisme’, je ne puis pas me penser comme une partie du monde, comme le simple objet de la biologie, de la psychologie et de la sociologie, ni fermer sur moi l’univers de la science. Tout ce que je sais du monde, même par science je le sais à partir d’une vue mienne ou d’une expérience du monde sans laquelle les symboles de la science ne voudraient rien dire. Tout l’univers de la science est construit sur le monde vécu et si nous voulons penser la science elle-même avec rigueur, en apprécier exactement le sens et la portée, il nous faut réveiller d’abord cette expérience du monde dont elle est l’expression seconde. La science n’a pas et n’aura jamais le même sens d’être que le monde perçu pour la simple*

about the place of science within the matrix of human knowledge, as well as the presupposed conditions for the possibility of an experimental science which offers a trustworthy understanding of reality. Let us consider, for example, the essential importance of notions like *demonstration, certainty, truth, coherence, nature, rationality*, etc., which are part of a philosophical theory of knowledge and without which experimental knowledge would be impossible. We can classify these assumptions under three categories: *anthropological* assumptions, which refer to science as a human activity; *epistemological* assumptions, which situate science within the context of rationality with its logical and gnoseological resources; and *ontological* assumptions which give order to natural reality within which science develops its great contributions [26, 27, 28, 61].

When, in the name of experimental science, the attempt is made to negate or ignore these assumptions, and with that, to deny that human reason is wider in scope than strictly scientific reasoning, or that reality is greater than the particular field on which an experiment is concentrated, then we find ourselves, properly speaking, not before a scientific theory, but before a (bad) philosophy of science, which Habermas calls “scientism<sup>13</sup>.” And the reason for this is the same that we argued about positivism: it is an attempt that is not empirically verifiable to exclude all knowledge which is not empirically verifiable, such as meta-scientific knowledge.

### 3.3 *The inevitable need for a unitary view of reality*

What becomes manifest in this attempt to exclude non-scientific knowledge from the realm of real knowledge? If we think about it, we see that the existence of scientistic discourse is due to the fact that the scientist cannot help but to elaborate a comprehensive theory of knowledge, which exceeds the scope of his scientific discoveries, precisely by virtue of a need proper to his rational condition. In this sense, scientism is, in spite of itself, a testament to the existence of a rational attitude and an inclination toward truth within every thinker. If the scientistic argument exists it is because of the admirable fecundity of scientific knowledge, which projects itself beyond experimental data and the theories which explain that data, so as to become open to the need that the human person has to comprehensively interpret his own existence. This need is also related to the need that reason has to open itself up to the totality of the real. In this sense, scientism and all positivistic claims contradict themselves when they become rational theories—not scientific theories—going against their own fundamental claim, which is the reduction of knowledge to purely experimental knowledge.

*raison qu'elle en est une détermination ou une explication*” [32]. Indeed, a scientist always, whether he knows it or not, thinks from within a worldview (*Weltanschauung*), as Popper, Kuhn, Lakatos and Toulmin have all argued, just to cite a few. Put differently, “*toda actividad científica incluye necesariamente una comprensión no justificable científicamente*” [33].

<sup>13</sup>“*Der szientistische Glaube an eine Wissenschaft, die eines Tages das personale Selbstverständnis durch eine objektivierende Selbstbeschreibung nicht nur ergänzt, sondern ablöst, ist nicht Wissenschaft, sondern schlechte Philosophie*” [35].

But there are more than just, let us call them “negative” theories. The history of scientific reflection in the twentieth century offers many splendid examples of thinkers who have attempted to reconcile experimental knowledge with a unitary conception of man and reality. We can think, from the point of view of physics, of the well-known and very interesting discussions about the relationship between science, ethics, and religious faith which took place in the late 1920s between Dirac and Pauli, or Planck and Einstein, as they are recollected by Heisenberg<sup>14</sup>.

We can also remember the great effort made in the same interwar period by thinkers like Gehlen, Plessner, or Scheler in anthropobiology and philosophical anthropology. Through the study of biology and animal ethology, they began to understand the specificity of human corporeality, which is linked to the human person’s opening towards reality<sup>15</sup>. Max Scheler’s distinction between the *Umwelt* (environment) proper to animals and the *Welt* (world) proper to the human person makes it possible for the latter not to be enclosed within the strict chain of needs and satisfactions [34]. The human person can take a distance from himself and can and should understand himself, in a manner which reaches a conception of himself, of what he is and what he should become. This path of inquiry has been taken by more than a few phenomenologists who have known how to describe the properly human condition of corporeality. Arnold Gehlen claims that the biological indeterminacy of the human person—his corporeal expressiveness—corresponds to the human intelligence’s constitutive opening towards the totality of the real [39]. As we have already seen, by the 1920s, experimental investigations were already able to claim that human corporeality is specifically human, correlated with an intelligence and consciousness open to the totality of the real and an adequate knowledge of itself.

Our thesis is that the need to know one’s self, which is alluded in the title of this Symposium, is the point of encounter between ordinary knowledge, scientific knowledge, philosophical knowledge, as well as artistic and cultural and even the ethical and religious dimensions upon which we build our lives. Helmuth Plessner defines this state of affairs unique to the human person among the other animals as an “eccentric” position by virtue of which the human person does not only have a *surrounding world*, but a *world*, strictly speaking [40]. The human person sees water as a response to thirst, but also knows how to see it as H<sub>2</sub>O, and knows how to see its beauty when it runs through rapidly or falls in a waterfall, knows how to see it as a symbol of moral and religious purification, etc. Put in another way, the human person is able to recognize the truth of a mathematical formula or the coherence of a scientific explanation, is capable of leaving himself and reaching out towards reality itself and, thanks to the uniqueness of its own corporeal constitution, is capable of possessing himself when he goes out in search of another. This is a way of describing that immense

<sup>14</sup>See the presentation on this topic by W. Heisenberg [36]. Cited and commented by J. Ratzinger [37].

<sup>15</sup>For a study of this problem, which we cannot deal with in this paper, see [38].

depth which we are referring to when we speak of self-consciousness, a subject about which contemporary neuroscience has greatly contributed to our understanding. When one renounces the convergence of these perspectives, that is, when one renounces the world, for a scientific reduction, the human spirit finds itself confined to a narrowness which does not correspond to its demands, to the point in which it finds itself in anguish. The human person needs — above all reductionisms — a unitary vision of the world and of himself which frees himself from existential anguish [41, 28, 15]. Given that the person goes beyond the environment (*Umwelt*) and opens himself up to the world (*Welt*), it is necessary to understand consciousness itself in a way which does justice to that multidimensional scope to which we have alluded. Habermas has referred to the variety of modes of knowledge (“biological” and “social” in type) and has with respect to them recalled the “human need of a unitary vision of the world.” [5].

When the sciences, philosophy, and theology share a unitary perspective it will be possible that all of us contribute to the decisive task of developing a humanism which accepts the possibility of a unity of knowledge, decisive for university life and for the social life of our western democracies<sup>16</sup>. In particular, philosophy and theology will fulfill the important social task of helping scientific knowledge not to fall into the reductionisms that I described.

It is within this context that all of the reflections which we would like to offer about trust and belief find their significance. It does not seem difficult to concede that trust is essentially related to a being whose position is naturally eccentric, whose intelligence is open to the totality of the real and whose consciousness is capable of taking a distance with respect to itself. It is precisely in a being with these characteristics that the trust in another is not only possible but also strictly necessary. For this reason, we think it is legitimate to proceed with our investigation about the relationship between trust and certainty/faith.

#### 4. The debate about knowledge and trust in the history of philosophy

The problem of the influence (positive or negative) of belief over knowledge is not limited to the sciences but also forms a part of the history of western thought. We can recall briefly a few of the most significant episodes in that history.

The need to establish the conditions for true knowledge, its difference from apparent knowledge, and the distinction between *episteme* and *doxa* finds its roots in Greek philosophy.

<sup>16</sup>There is no shortage of voices that rise up against any effort to recuperate a unitary vision of knowledge. This rejection usually occurs when such an effort is identified with one of the forms of European idealism of the 19<sup>th</sup> century (usually, Hegel), whose political and social consequences were tragic in the 20<sup>th</sup> century. Indeed, any effort to construct a rational system in which the human person absolutizes himself cannot but have terrible, dehumanizing consequences. From there it will be decisive to think about the unity of knowledge while respecting the creaturely condition of the person and, moreover, his double characteristic of finitude and openness to the infinite.

From there it passes through the great authors of Christian antiquity, like Augustine, and enters into the Middle Ages (Thomas Aquinas). The classical world offers us a proper distinction between knowledge and belief which we should keep.

At the beginning of modernity, this distinction entered into a new phase characterized by a strong contraposition between knowledge and belief. The dominant currents of modern thought (Descartes-Kant in the continent and Locke-Hume in the Anglo-Saxon world, to cite the key authors) chose to relegate that type of knowledge dependent on trust in another (belief) to an inferior rank, never comparable to the true knowledge which comes from an immediate perception of itself (Descartes' *cogito*) or the direct experience of directly observable properties (empiricism). For both ways of thinking, the intervention of trust reduced — or eliminated — the epistemological value of knowledge. With a formula which came to be very widespread, "That which is known is not believed, and that which is believed is not known." We find the most radical version of this profound separation in positivism, which we have already spoken about, which delegitimizes any knowledge which is not strictly verifiable by experimental methods. A fortiori, trust and belief would be left out of the nucleus of knowledge and form part of the emotive or sentimental dimension of the human person.

However, in the twentieth century, the doors of the debate about forms of knowledge were re-opened, precisely because science went deeper into the human condition. The human person's social constitution is rediscovered, as it is reflected in language and in the social dimension of knowledge. When one goes through the literature concerning "witness" — which is a form of knowledge supported by trust in another — one often finds critiques of the dominant forms of knowledge in western thought. The accusations are epistemological in nature, and, as such, they critique subjectivism or naturalism for the risk that they may identify a person's knowledge with an object's knowledge. What justifies such denunciations is that one may consider those to be unacceptable defects for reaching a complete vision of the human person, respectable of his dignity. If subjectivism and naturalism deserve reproach, it is because it is judged that they are insufficient for reaching the heights of the human condition.

There are more than a few authors who justify knowledge-by-witness while critiquing modern epistemology. Tony Coady warns that forms of knowledge dominant in the West are individualistic<sup>17</sup>. On his part, Claude Bruaire critiques the autosufficiency of a thought which has desired to conquer the world while betting everything on scientific and technical reason<sup>18</sup>. Giuseppe Angelini denounces subjectivism, both ancient and modern, as well as naturalism, and criticizes the "reciprocal estrangement" between men in the Hegelian thesis

<sup>17</sup>"In the post-Renaissance Western world the dominance of an individualist ideology has had a lot to do with the feeling that testimony has little or no epistemic importance" [43]. See also recently J. Lackey [44].

<sup>18</sup>"*L'humanisme et sa volonté d'autosuffisance a voulu conquérir notre monde et se saisir de notre destin en misant tout sur la puissance d'une raison scientifique, capable de la plus grande efficacité technique*" [45].

that civil society is a system of needs<sup>19</sup>.

Beyond denouncing the “individualistic” reductions, literature also picks up on “relational” or “communitarian” forms of knowledge. Throughout the twentieth century, there have been philosophical trends which have sought to recuperate the relational or dialogical dimension in the definition of the human person [43, 7]. The social character of knowledge is developed both by the rise of philosophy of language in Anglo-Saxon thought, and by continental thought<sup>20</sup>.

As we can see, there are many trends which today insist on conceding importance to the social and communitarian dimension of knowledge. A thinker who adopts this perspective, such as Habermas, rejects biological naturalism and attempts to overcome its reductionism precisely by appealing to the social condition of the human person<sup>21</sup>. His thought shows us that the problem of trust and the problem of neuroscience are not as far apart as it would seem at first glance. On the contrary, from within the debate about the relationship between the mind and brain — with all the different possible explanations — the need arises to relate this relationship with the relationship between individual consciousness and social consciousness. Both questions deal with two of the constitutive polarities which we spoke about above: “soul-body,” and “individual-community.” To approach these both separately and as related to one another are the decisive tasks for entering into questions of ethics and religion. Let us first see the problem concerning the relationship between mind and brain, and after that we return to the problem of trust.

## 5. Philosophy of mind and the relationship between mental and brain processes

Concerning the relationship between mind and brain, we will limit ourselves in this paper to affirm that the correlation between judgments and theoretical and practical decisions (i.e., mental processes) on the one hand, and neurobiological process on the other, do not necessarily imply a complete causal relationship of the latter on the former. *Post hoc* is not the

<sup>19</sup>*La difficoltà dipende dalla pressione esercitata dai luoghi comuni della cultura corrente. Mi riferisco in particolare, a un preciso luogo comune, che appare assai tenacemente iscritto in tutta la cultura dell'Occidente: mi riferisco ad una rappresentazione incautamente soggettivistica del soggetto* [47, 48].

<sup>20</sup>*“La socialización de la cognición [es] característica del espíritu humano”* [5], and also [42, 49, 50, 34].

<sup>21</sup>The German philosopher rejects the naturalistic reduction of knowledge and freedom, posed from the point of view of neuroscience, and reclaims the irreducible character of knowledge regarding its biological infrastructure, as well as its “spiritual” condition. His argument consists precisely in pitting against biologism an evolutionary understanding of knowledge which is intersubjective and social in nature. He argues that a “mentalistic” vocabulary cannot be completely translated into a “biologistic” one without losing some certain aspects of the human person. One must add, however, that his final proposal does not seem to be sufficient, because even if he does not argue that the “I” is reducible to a pure social construction, practically speaking he identifies it with a linguistic structure which makes social action possible. That “I” is nothing more than an integral part of a system of pronouns without any privileged position. Cf. Habermas [5].

same *as propter hoc*<sup>22</sup> [2]. The recent literature, of interdisciplinary scope, highlights this fact, as we shall see in this brief summary of the main theories.

### 5.1 Main theories about the relationship between mind and body

From the middle of the twentieth century, philosophy of mind has concerned itself with the relationship between the mind (soul) and brain (body)<sup>23</sup> [51]. This new philosophical discipline assumes the task of reflecting on the formal nature of mental phenomena, overcoming unilateral positions and taking into account the contributions made by the cognitive sciences<sup>24</sup>. As Pascual Martinez-Freire says, it is necessary that “philosophy of knowledge develop taking into account the theses of the cognitive sciences” [52], among them, those of psychology, neurophysiology, linguistics, artificial intelligence, etc.

What we are proposing then is a complementary view to those we have been examining. We said before that scientific reflection cannot avoid orienting itself towards a unitary view of knowledge, and thus to open itself to philosophical and theological horizons. We add now that philosophical and theological knowledge cannot progress if it does not take into account the contributions of cognitive science. It is another reason for supporting the interdisciplinary bond between the themes of our Symposium.

While it might sound a bit simplistic, it could be enough to classify all theories about the relationship between the mind and the brain into three main groups<sup>25</sup>. The first we can call *materialist*, and within this group we can include theories like that of physicalist identity or monism<sup>26</sup>, epiphenomenalism<sup>27</sup>, and emergent monism<sup>28</sup>. In this type of theory, what

<sup>22</sup>Cf. Scola, *'Anima e neuroscienze'*. Other contributions can be found in the following interdisciplinary studies [53, 42, 30, 54].

<sup>23</sup>Philosophy of mind is a recuperation and updating of the philosophical-theological problem of the relationship between the soul and the body. We say “recuperation” because it has been a question dealt with in the West by the Greeks and later by the Christian tradition, but it lost relevance to philosophy—though not to theology—after the 18th century. We say “updating” because its reflections on the nature of the mental take into account findings made by cognitive science.

<sup>24</sup>Cf. C. Beorlegui, *'Filosofía de la mente. Visión panorámica y situación actual'* in: [www.uca.edu.sv/facultad/chn/c1170/Filosofia%20de%20la%20mente.pdf](http://www.uca.edu.sv/facultad/chn/c1170/Filosofia%20de%20la%20mente.pdf), 1-3.

<sup>25</sup>Information about these theories can be found in [33].

<sup>26</sup>A representative of this current of thought is H. Feigl. His central thesis can be summarized in this way: a) The mind and mental states are objective realities; b) The mind is the brain; c) The brain is, upon final analysis, a physical reality. Cf. [57, 58].

<sup>27</sup>This form of materialism “*sostiene que los fenómenos mentales existen, pero no son causalmente efectivos. Las propiedades mentales acompañan a los sucesos neuronales, pero no influyen sobre ellos. [...] La conexión causal existe sólo en una dirección, la que lleva de los sucesos físicos a los mentales (o a otros sucesos físicos), nunca desde éstos a aquéllos*” [16].

<sup>28</sup>M. Bunge defends a form of emergent monism (as a fruit of evolution) or a systematic theory of the brain, consistent with a monistic understanding of substances (a physical-chemical brain) and a dualism of properties (the brain possess physical realities, but also mental ones). But this emergentism results in being a materialism because for Bunge there is nothing spiritual in the material and in the mental; all mental activities are always and only properties of the physical chemical brain. Cf. his work [59]. Ruiz de la Peña [58] contains a critique of Bunge's view.

we call mental processes and mental states are considered to be more or less sophisticated processes and states within the complex physical system of the human brain. If we were to summarize this type of theory in one maxim, it would be the phrase used by Francis Crick: “You are nothing more than a pack of neurons”<sup>29</sup> [55].

The second group, on the contrary, stands for a dualism whose roots one could find in Descartes. Within this group we can name, for example, the interactionist dualism of Karl Popper and John Eccles<sup>30</sup>: for these authors, mental states constitute a specific type of natural phenomenon which is essentially non-physical. Among the neuroscientists who defend mind-brain dualism we can also name Wilder Penfield, who claims the existence of a center of mental decision-making, distinct from the cerebral-neuronal framework, in the way that a “telephone operator controls a switchboard” [56]. We should also say that the dualist thesis is today rejected by the majority of philosophers and scientists. Effectively, dualism attempts to highlight an ontological, ethical, and spiritual peculiarity proper to the human being, but it juxtaposes two planes of reality without avoiding the grave risk of turning each into independent entities.

On top of these clearly monistic or dualistic theories, there exists something we can call the third way, in which we find philosophical and scientific theories as diverse as functionalism<sup>31</sup>, emergentism<sup>32</sup>, and dynamic structurism<sup>33</sup>, to name a few. Despite important differences among them, they generally coincide with referring to the human person as a unitary reality essentially constituted by two inseparable moments: the mind (for some, the soul), and the body. They differ among themselves in the way of explaining this “dual unity” of the person.

<sup>29</sup>He claims that in a not-too-distant future we will be able to explain the pseudo-phenomenon of consciousness by appealing only to neuronal correlates. In the Spanish scene, a neuroscientific defender of the theory of identity is F. Mora, who affirms that “*la actividad cerebral son los procesos mentales*” [60].

<sup>30</sup>They explain their theory in [18]. In it, Eccles argues that “*la mente autoconsciente es una entidad independiente que se halla activamente entregada a interpretar la multitud de centros activos de los módulos de las áreas de relación del hemisferio cerebral dominante*” [18]. An explanation and critique of this theory is offered by [57, 58]. These writers consider Popper to be more of an emergent than a dualist. They are partly correct, because Popper was more moderate than Eccles in his stance, given that he defends the idea of consciousness-brain interaction, wherein mental phenomena exercise causal influence over the brain. Eccles explicitly defends the view that the soul is created directly by God in [62].

<sup>31</sup>Functionalism is born with the attempt to overcome Cartesian dualism as well as its opponents, behaviorism and the monistic theory of identity. It was first formulated by [64, 65]. In this way of thinking, one thing is the real physical support of thought, and another thing is the mental states themselves, which could be reduced to the brain. According to functionalism, what defines a mental state is the complex of causal relations that are maintained with 1) the environmental effects on the body and 2) other types of mental states, and 3) the body’s conduct. For a synthetic exposition of the limits of functionalism, cf. [4].

<sup>32</sup>Emergentism takes many forms. Its central thesis is that the mind emerges from the brain; what the different forms disagree on is the different ways of explaining how that emergence happens, as well as the relation between mind and brain. One notable defender of neuropsychological emergentism is P. Sperry. He claims that mental states are emergent properties (of a higher rank) which come from the brain. Without falling into a dualism, he affirms that mental states do not happen independently of physical events, and defends that those mental states and those physical events are two distinct type of realities: “*las cualidades subjetivas son [...] de índole muy distinta a la de las neuronas, moléculas y otros componentes materiales que les sirven de base*” [79]. More recently, emergentism has been defined as a claim (called “non reductive physicalism” or “monism with a dual aspect”) by the neuropsychologists M. Jeeves and W. S. Brown, in their work [66].

<sup>33</sup>This is the position proposed by [67].

They admit that there is a certain rupture of continuity between the mind and the brain: although they do not do away with matter, they assert that the mental is something more than material. As we have already said, to explain the ultimate reason for this mysterious but real unity — that is, the relationship (partially causal or not causal) between mind and brain (or between cerebral mechanisms and mental processes) — is a very complex issue<sup>34</sup>.

Whatever the case may be, and always having in mind that the diversity of theories within this third group, it is possible to prudently affirm that this third way between monism and dualism is the most compatible with the Aristotelian-Thomistic idea of the *anima forma corporis* or *anima forma materiae primae*, though with a complexity derived from the incorporation of data from the cognitive sciences. About this we will deal with below.

### 5.2 *Philosophy of mind before the reality of free self-consciousness and its spiritual nature*

The root and, at the same time, most mysterious problem of the human condition is the fact of free self-consciousness. We can only approach this problem from an interdisciplinary perspective, which would be capable of taking into account neuroscientific data and at the same time be open philosophically and theologically to what is essential about subjectivity. Gunter Rager affirms the need for this interdisciplinary approach when he considers it necessary to equally value the understanding of consciousness that comes from the sciences as well as that which comes from “the world of life” (*Lebenswelt*) [54].

From its perspective, neuroscience can establish that, for example, when a man falls in love, a zone in the brain is activated which is different from the zone that is activated when he is having ice cream. It could also establish that, when one thinks introspectively, some neurons are activated, and some are not — just as, in a similar way, the toes on the feet do not move while he is in the process of introspection. But neuroscience cannot describe what self-consciousness formally consists of, nor can it localize consciousness, because consciousness does not occupy a place, even though it may emerge — necessarily, but not only — from the brain<sup>35</sup>. Francisco Varela has conceived of a useful formula when he argues that the synchronicity of the brain and its dynamic operation are the “conditions of possibility” for the appearance of consciousness. But they are not sufficient conditions<sup>36</sup> [68].

<sup>34</sup>W. Penfield maintained that, as a neurophysiologist, it would never be possible to explain mental processes through the action of neurons in the brain. This is why he spoke about the brain as a mysterious thing.

<sup>35</sup>M. Kurthen summarizes in this way what neuroscience can (and wants) to do with regard to self-consciousness (*Selbst*) in relation with philosophy of mind: to propose to other scientific disciplines, or to common psychology, a concept of self-consciousness; to determine the relation between existential aspects of self-consciousness and their cerebral correlates; to clarify and value their premises in philosophy and theory of science; to judge whether self-consciousness can be explained neurologically [69].

<sup>36</sup>“*Las sincronías cerebrales son esenciales, son una condición de posibilidad sine qua non [para el aparecer de la conciencia ...]. Sólo una vez que hemos cumplido esta condición de posibilidad que permite que puedan establecerse los ciclos de acoplamiento del cerebro con el cuerpo, del organismo con el mundo y del organismo con sus partes, puede emerger la conciencia. [...] Esto es, por cierto, un ejemplo notable de lo que se conoce como 'fenómenos emergentes' de la teoría de sistemas dinámicos: tenemos una serie de elementos locales (neuronas, cerebro, cuerpo, mundo físico)*”

From this affirmation we can explore philosophically what neuroscience calls the “first-person perspective.” This is only possible if we overcome the scientific prejudice which considers that which is subjective to be relative and non-scientific. A neuroscientist like Varela defends the subjective realm, the “first person<sup>37</sup>”, in this way: “Traditionally, first-person data (‘I feel that...’) has been labeled as non-trustworthy; it is subjective, and subjective is always synonymous with arbitrary and capricious. This is an absurd taboo, because lived experience, the subjective, is part of nature, and if it is, then it can be expressed, studied, and validated” [68]. It is true that the experimental sciences can know and explain the “how” of something, but not its ultimate reason, its ultimate “why.” Instead, this is the task of philosophy, which is equipped to adequately study “first person” data, as well as theology.

When we enter into the strictly philosophical realm we find ourselves with the reality of “consciousness,” or the reality of the “I.” Within this reality we have to distinguish at least two levels: the consciousness-of, or the state of being conscious of something (which we call intentionality), as well as the consciousness-of-oneself (which can be given as a consciousness concomitant with an intentional act or as pure reflection). Above all else, with this last form of consciousness we maintain that its nature is non-material, or spiritual<sup>38</sup>.

Concerning what exactly the spiritual character of consciousness consists of, the opinions vary. Many philosophers accept the definition of spirituality as the constitutive opening of the “I” to all other things that are also an “I”, and in general to reality as such. It is the dimension of the human person which includes intelligence, freedom, affectivity, morality, etc. One interesting account of all this, from philosophy of mind, is the explanation proposed by Martinez-Freire [52]. For this author, there are three types of mental processes: mental-cerebral processes (physical) which are proper to all animals (including human beings) with greater or lesser degree of complexity; mental-physical processes (non-cerebral) which occur in some machines; and finally, non-physical mental processes, which occur only in human beings, and which are defined as spiritual. With respect to the first two types, we can speak of a certain “emergence” because, in the first case, mental processes emerge from brain neurons, and in the second, they emerge from the physical process of computation. In contrast, with respect to the third process “one can defend the strongest dualist stance, because it [the process] appears independently of neuronal processes and at the same time utilizes neuronal processes.” And he concludes: “the notion of spirit refers to spiritual pro-

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*que cuando se acoplan, cuando entran en relación, dan origen a un fenómeno que no es la mera suma de partes, sino una globalidad, distinta y unitaria, y que modifica el funcionar de los elementos sin ser reducible a ellos. Por mucho que busquemos este fenómeno global, no lo podremos encontrar en ninguna de las partes en particular, ya que justamente emerge de la interacción de todas ellas”, pp. 249.*

<sup>37</sup>Varela defends a “neuro-phenomenology” that is, an epistemological path which unites the third person and the first person perspectives. That is, a science which combines both neurology and the phenomenology of consciousness: the lived experiences of a subject, and his vital and witnessed experiences [68]. Habermas also considers it necessary to complement the third person perspective with that of the first person [5].

<sup>38</sup>A detailed account of the dynamisms of consciousness can be found in [70].

cesses, which ought to be extended as processes which imply a non-physical causation, which employ neuronal resources but exceed those same resources" [52]. Among these spiritual processes, we can count self-consciousness, free will or freedom, the search for the common good, or the search for a personal life-project, to give a few examples<sup>39</sup>. Because of this, this philosopher concludes that freedom constitutes a quality exclusively within human beings, more particular to them even than intelligence<sup>40</sup>.

## 6. Tendencies in philosophy of mind which reinforce the role of trust in knowledge

Given that our theme is the role of trust in others in the pursuit of knowledge, it is not enough merely to have claimed an interpretation of the mind-brain relationship which allows us to claim a "spiritual" character about the mind. No doubt that this was a preliminary and necessary step, because if the mind could be reduced completely to the brain, we would lack the motivation to keep questing about the significance of trust. Rather, trust would be another effect caused by cerebral activity<sup>41</sup>. If, as we have seen, there is room for an interdisciplinary take on the matter that is not reductive, neither monistic nor dualistic, and we recognize the reality of "non-physical mental processes," then we may explore more in-depth the importance of trust in knowledge, as Baltimore has asked that we do, and Wittgenstein with him.

We can also affirm that in contemporary philosophy of mind, there are many currents of thought which are of interest to our objective. We will refer to them briefly, keeping in mind what I have already said in section 4.

In the first place, we must recall how philosophy has recuperated the social or communitarian dimension of human experience. We have already mentioned this. Both Anglo-American and continental philosophy have been able to overcome an individualistic conception of the human person, and of his way of knowing. In the continent, phenomenology made the first steps from the beginnings of the twentieth century. For example. Millán Puelles is able to take some of Husserl's work and convincingly show that the concept of subjectivity always includes a transcendent impulse towards another being<sup>42</sup> [70]. For this

<sup>39</sup>Martínez Freire distinguishes free volitions and simple volitions. These latter ones are determined by stimuli or conditions under which they are normally situated: for example, the desire to eat at three o'clock. Free volitions, on the other hand, are an act of freedom, for example when a man chooses to go on a hunger strike or to accept martyrdom.

<sup>40</sup>This is why he affirms the existence of animal intelligence and mechanical intelligence, but not animal freedom nor mechanical freedom. Cf. [52].

<sup>41</sup>About the aporia which arises with the negation of the sense of reason by reducing it to a pure biological fact, see my paper [71].

<sup>42</sup>He considers it anti-philosophical to ignore or deny this evidence. He finds support for this in E. Husserl, who reflects on this problem in the fifth *Cartesian Meditation*, and whom he considers the philosopher who has been able to give the best account of the *alter ego* starting precisely from the experience of the *ego*.

reason, any treatment of the “I” cannot be done without including what the author calls “the plural of the I.” [15]. Evidently, we are not arguing against the unity of the “I”, because this is always an individual “I”, alone and unique, that adds itself to others. Rather, we are speaking of “the evidence that the ego finds itself within its own life as an alter ego precisely of the same quality as the other I.” [15]. If this is so, philosophy of mind will be in the condition to enrich the understanding of selfhood which we have considered as the point of encounter of science, philosophy, and theology. Along with the “first person” or subjective perspective (of phenomenology), and the “third person” or objective perspective (of neuroscience), philosophy of mind begins to consider as necessary the “second person” or intersubjective perspective of social interaction<sup>43</sup>. This anthropological and epistemological perspective offers a foundation from which to consider knowledge in which trust in another — as in, for example, knowledge-through-witness — has full legitimacy both in the scientific realm as well as in the judicial, moral, and religious realms.

This relationship, typical of the human person, and which opens it up to other subjects, is already affirmed by the philosophical currents which emphasize the constitutive corporeality of the human person. We have already seen how, in the twentieth century, anthropobiological studies like those of Plessner and Gehlen have brought to light the singular corporeal condition of the human person, which makes him out to be an “eccentric,” turned away from himself, open to others and in need of a mental or spiritual dimension, radically distinct from the corporeality of other animals. The findings of those studies are in harmony with those of more recent philosophical research, as in the work of Martinez-Freire, who defends the need to take into account the corporeality of the subject. He considers the “incorporation” of the subject to be as evident a fact as that of the existence of mental processes<sup>44</sup>, without seeing the need to equate or reduce the spirit and mind, and the mind and brain [52]. The neurologist Antonio Damasio categorically affirms that without a body, there can be no mind, taking a firm distance from any Cartesian way of seeing things<sup>45</sup> [75]. We find here an objective nexus between the polarity of “soul-body” and “individual-community”: the opening of the spirit to the real which comes from a singular corporeality of the human person which is united to the intersubjective or communitarian dimension, which makes the person not only an irreducible individual, but also, at the same time, a social being.

The corporeal and intersubjective dimensions of the person, which decisively influence all modes of knowing, are reflected in another area of current interest, that of emotion and affection. With respect to this topic, it could be enough to point out that cognitive science does not claim that the emotions are irrational in nature, but rather that they play a sig-

<sup>43</sup>The dialogical nature of the human person has been recuperated, starting from the precedent of L. Feuerbach, by modern philosophers like M. Buber [72], P. Ricoeur [73], or X. Zubiri [74].

<sup>44</sup>“*No sólo mis procesos mentales (sensaciones, percepciones, creencias, inferencias, recuerdos, sentimientos y voliciones) me son evidentes, sino que también me resulta evidente que soy un sujeto incorporado*” [52].

<sup>45</sup>Concerning Damasio’s position, see [80].

nificant role in the workings of intelligence, with a clear cognitive function<sup>46</sup>. Today, what is called “affective neuroscience<sup>47</sup>” enjoys wide interest. In this field, which began in the 1980s, two well-known neuroscientists, Michael Gazzaniga [76, 77] and Damasio, defend the thesis that feeling is a moment within, or an integral component of, reason<sup>48</sup>. As we have pointed out continuously in this paper, this appreciation of affectivity and its role in knowledge is not an exclusive finding of neuroscience, but rather “the rigorous and serious dialogue between neuroscience and philosophy which is the only valid path with which we can avoid falling into triviality or mutual disqualification.” [78].

## 7. The dual unity of soul-body and individual-community according to the anthropology of the *imago dei*

As we enter into the final part of our presentation, we should recall the question which gives our paper its title: *Can we trust others in our pursuit of knowledge?* In response to this question we have tried to offer epistemological criteria that would legitimize an interdisciplinary approach to the problem of knowledge and the human person’s ability to know about himself and reality. Our claim here is that the demand for self-knowledge is the realm in which neuroscience, philosophy, and theology can find each other. We have also claimed the need to maintain unity among two dimensions: the corporeal or biological (i.e., the brain), and the mental and spiritual (i.e., the soul), pointing out distinct responses to the complex question of *how* these unities are able to subsist. We have also contended that man is not only an individual but is also, always and simultaneously, a social animal. From there we have maintained that human knowledge and understanding is a reality with an organic basis and, at the same time, a spiritual character, and that human knowledge is a reality that is both social and individual.

From the beginning of this exposition we have said that our point of view is born out of a Judeo-Christian anthropology, in which the human person is considered as an image of God. And we delayed until the very end an evaluation of that anthropology with respect to the problems we have dealt with. Now, finally, we can offer a few brief theological considerations which would complete our task, though obviously we have had, from the very beginning, a theological motivation.

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<sup>46</sup>See the observations made by the neurologist J.E. Ledoux [81, 82].

<sup>47</sup>As this neurologist already wrote years ago [63].

<sup>48</sup>Let us consider the successful divulgation of D. Goleman [83, 84]. For a historical and appreciative account of the role of the emotions in cognitive science, see [78, 52, 87].

### 7.1 *The common good and humanism*

Before we begin, we should note that our reflections here do not aim primarily to make some sort of dialectic between “theistic” and “atheistic” positions. We have already seen that Habermas asked those participants in public debate to overcome a narrow secularism so that the religious perspective could be able to make the effort to translate itself into public speech. In that spirit, our goal in this presentation has been to claim, with reasoning accessible to everyone, that humanism favors the common good. So the true adversary to our position is *anti-humanism*.

With respect to the question about the relationship between mind and body, the three positions we outlined could really be reduced to two, because strict dualism is rejected by the majority of philosophers and scientists. Therefore we find ourselves with two alternative positions: materialistic physicalism (monism), and the “dual unity” which affirms the unity of the person in the duality of essential or intrinsic dimensions: the mental, or ensouled, and the corporeal, or cerebral.

In our judgment, materialistic monism, as a philosophical theory — leaving aside the objective value of scientific findings — runs the grave risk of developing a theoretical anti-humanism. Indeed, it reduces the person to a mere organic machine, or a simple animal, fruit of a random evolution which is only quantitatively (but not essentially) superior to inferior animals, or — to be more explicit — to a mere “pack of neurons.” We use the term “anti-humanism” precisely to signify that this position rejects the uniqueness of the human being, claims that his dignity and his personal values are relative and not absolute and, in final instance, rejects the human person’s ultimate, mysterious meaning. This position considers categories such as “person,” “I,” “freedom”, or “transcendence” as concepts which are empty because they are not scientific<sup>49</sup>. Nietzsche’s words had anticipated one hundred years ago the consequences of today’s naturalistic determinism: we abolish all human responsibility because free will does not exist<sup>50</sup>.

The other position still in play, that of a dual unity, posits a theoretical humanism, which from the interdisciplinary point of view opens itself up to scientific as well as philosophical and religious knowledge. From it we can derive certain ethical consequences: theoretical respect for the uniqueness of the person and for the human in general, for his essential particularity, for his absolute value, and for his ultimate mystery. This position humbly affirms that there is a limit to the scientific understanding of that mysterious relation between mind

<sup>49</sup>C.S. Lewis’ book on the risk of the of abolition of man is still relevant here [88]. See also [92, 89].

<sup>50</sup>“Nun entdeckte man schließlich, daß auch dieses Wesen nicht verantwortlich sein kann, insofern es ganz und gar notwendige Folge ist und aus den Elementen und Einflüssen vergangener und gegenwärtiger Dinge konkretisiert: also daß der Mensch für nichts verantwortlich zu machen ist, weder für sein Wesen, noch seine Motive, noch seine Handlungen, noch seine Wirkungen. Damit ist man zur Erkenntnis gelangt, daß die Geschichte der moralischen Empfindungen die Geschichte eines Irrtums, des Irrtums von der Verantwortlichkeit ist, als welcher auf dem Irrtum von der Freiheit des Willens ruht” [90].

and brain.

If we wish to understand the concrete importance of our Symposium, we must recall that between a wrong theory and its practical consequences there is a fine line which can be easily crossed. History is full of tragic examples. If we start by rejecting the person on account of a theory based on ‘scientific facts’, we can end up destroying the radical sense of that term, with the help of a practical ideology of anti-humanism. It is not difficult to find examples such as unchecked genetic manipulation, etc. For this reason, the dialogue between the neurosciences, philosophy, and theology has one point of verification in the capacity to incorporate the ethical criteria necessary for human life in this planet to continue to grow, serving the common good. The dialogue which Heisenberg records between the greatest physicists of the twentieth century can be seen as a beautiful example of a humanist position [36].

Obviously, the dialogue between science, philosophy, and religion serves in the same way to also purify philosophy of its excesses — which have been committed in its theoretical reflection as well as its practical applications — as well as those of religion. Religion is obligated to understand what Benedict XVI has said: “not to act in accordance with reason is contrary to God’s nature.” Religious belief and Christian faith in particular need a continuous confrontation with truly human reason. And if this affirmation is valid for other realms of theological reflection, it is also valid for the particular mode which we have dealt with in this Symposium, where the advances of the neurosciences provide a continuous stimulus for the progress of philosophical-theological comprehension of man as such, in his consciousness and freedom<sup>51</sup>.

### 7.2 *The unity of the soul-body duality as an expression of the imago dei*

Christian theology rejects materialistic monism and defends “dual unity.” In this way, it situates itself in a humanist perspective<sup>52</sup>. Its point of departure is the revealed doctrine in both the New and the Old Testaments concerning man as the image of God. The biblical tradition also affirms that man has been created in “the image and likeness of God.” This is the “base of all Christian anthropology.” [91]. Such a conception of the human person does not resolve the soul-body polarity either in the materialist or spiritualist pole, and also avoids the danger of a dualistic interpretation. In the Bible we find a vision of man as a psychosomatic unity (to use scientific terminology), as an animated flesh or as an incarnate soul (to use theological and philosophical terminology). The fundamental implication of Christian revelation is that the human person is what he is through his body, that the human person

<sup>51</sup> “*Es bleibt ein langer und spannender, aber beileibe nicht aussichtsloser Weg, diesen Kulturhistorischen Bestand mit jener Empirie zu vermitteln, die Erfahrungen mit diesem Selbst aus aktuellen neuronalen Prozessen zu erklären versucht*” [92].

<sup>52</sup> It is impossible to present here the biblical, patristic, and magisterial reflection on man as the image of God; see [94, 58, 3].

recognizes that he is inserted into the cosmos and participates in the laws of nature through his sensibility and intelligence. Moreover, thanks to his spirit he can, through his theoretical and ethical-practical faculties, transcend the cosmos and participate in a spiritual dimension that brings him together with other men and women<sup>53</sup>.

If we wish to summarize the greatest teaching of the Church on this topic, we can do it with the following affirmations: that man, created as image of God, is a unity constituted by soul and body<sup>54</sup> [95]; that the soul is for itself and essentially the form of the body<sup>55</sup>; that the soul is spiritual<sup>56</sup> and immortal<sup>57</sup>.

Theology coined the formulation *anima forma corporis* to express this mysterious dual unity of soul and body that is characteristic of man as a creature of God. It means that the human person is a substantial unity of mind and body. It was Thomas Aquinas who especially explored its contents. The dominican theologian asserts that the soul is the body's unique form. In this way he defends the notion that the human person is not constituted by a mere juxtaposition of two realities complete in and of themselves, which in some way or another are predestined to be united and which unite themselves extrinsically. Instead, soul and body are two principles by virtue of which the human person exists in his original unity<sup>58</sup>.

The sense of the unity of the human person starting from the affirmation of the soul as *unica forma corporis* comes with the adoption of the Aristotelian formula: "*anima quodammodo omnia*"<sup>59</sup> in Thomas Aquinas<sup>60</sup>. In this perspective we can also read some other phrases: "*anima enim est in corpore ut continens, et non ut contenta*"<sup>61</sup>; "*non enim anima continetur a corpore, sed potius continet corpus*"<sup>62</sup>. For this reason, for Thomas, the clear result is that, without a dual unity of soul and body, the human being could not be the image of God<sup>63</sup>. As is well known, in the thirteenth century the debate about these questions was often incendiary and Thomas found more than a little opposition to his view<sup>64</sup>. He took as his starting point

<sup>53</sup>The first traditions in Christian theology, between the second and third centuries A.D., proposed different interpretations of revealed truths. Among them, the Asian school stands out (Justin Martyr, Irenaeus, Tertullian) due to its accurate appreciation of the unity and distinction between soul and body. On the other hand, the Alexandrian school (Origen) tended to emphasize the importance of the soul to the detriment of the value of the body, in order to express the *imago Dei*. A few centuries later, Augustine would also reflect in his thought a tension between the originality of biblical data and the influence of Neoplatonic thought [3].

<sup>54</sup>Cf. H. Denzinger, P. Hünermann, *El Magisterio de la Iglesia* (Herder: Barcelona) 22000 (DH) 800; 1440; 3002.

<sup>55</sup>DH 902.

<sup>56</sup>DH 372; 1440; 2812.

<sup>57</sup>DH 1440; 2766.

<sup>58</sup>1SN, d. 5, a. 3; 1ST, q. 75, q. 76 aa. 1-3; cfr. [96]

<sup>59</sup>*De anima*, 8, 1, 431b 21.

<sup>60</sup>*In libro de Anima*, III, l. 13, n. 787; also 1ST, q. 16, a. 3, co, q. 80, 1, co; q. 84, a. 2, ra 2um

<sup>61</sup>1ST, q. 52, a. 1, co

<sup>62</sup>4ST, q. 62, a. 3, ag 3.

<sup>63</sup>*"Anima corpori unita plus assimilatur Deo quam a corpore separata, quia perfectius habet suam naturam"* (QDP, q. 5, a. 10, ra 5um).

<sup>64</sup>A presentation of the debate can be found in [93].

Aristotelian anthropology but he had to reinterpret it. The advantage of Aristotelianism is that it affirms the substantial unity of these two constitutive components of the person, but his thought ran the risk of placing into doubt the immortality of the soul, because if death decomposed the unity of the two principles, neither of the two could survive on their own<sup>65</sup>. The response which Avicenna gave was unsatisfactory, because it conformed itself with defending only the accidental union between soul and body, both being substantially independent. In contrast, Thomas defends the thesis that the soul is the substantial form of man by providing a new understanding of an idea from Pseudo-Dionysus<sup>66</sup>. Thomas affirms that the intellectual soul is the only form of the human composite, and reunites within it all the forms which are necessary for the constitution of man<sup>67</sup>. Recently, Tobias Kläden has compared Thomas's theological theses with the main contemporary ideas concerning the mind-brain problem, arguing that the formula *anima forma corporis* cannot be explained either in a dualistic or a physicalist way. He concludes that Thomas' point of view can serve to advance contemporary debates [7].

Thomas's doctrine is not limited to the use of the terms soul and body according to the Aristotelian notion of hylemorphism. Thomas overcomes this Greek horizon and gives us a fundamental affirmation for anthropology: the irreducibility of the dual unity of mind and body. We should not say, therefore, that man *has* a soul and body but rather that he *is* an inseparable soul and body. Precisely because of this, man can only reach knowledge about himself and reality if he moves starting from a fact which precedes him. Indeed, if man would want to dispense with his sensibility — which is intimately tied with his corporeality — he could not have any experience of reality nor of alterity. The body is thus the first level in which the human person discovers that he can access alterity, as we saw above. For theological reflection this fact is very valuable because it tells us that if the human person examines the soul-body dual unity, he can discover that he is not at the origin of himself. If, on the other hand, one attempts to explain that dual unity in a monistic or dualistic way, one closes himself off from the possibility of accessing his origin and starting point, given that one is censoring the duality by the means with which one has entered into it.

Together with this theory, which underscores the mysterious unity of man within the duality of his dimensions, Church doctrine also maintains that the specific features of the human soul are spirituality and immortality. The spiritual character of the soul should not be explained in a generic sense but rather as the spirit of a body, just as — on the other hand — “matter” is highly metaphysical and at all “unspiritual” in itself [30]. We can understand that spirituality does not mean only that the soul cannot be reduced to a corporeal dimension

<sup>65</sup>Aristotle resolves the problem with a distinction between man's psyche and nous, and conceived of the latter as separate from the soul, as something general. This separation was unacceptable to Christian thought, because it compromised the individual character of man's nous. Cf. DH 1440.

<sup>66</sup>Cfr. E. H. Weber, *Dialogue et discussion entre S. Bonaventure et S. Thomas d'Aquin à Paris (1252-1273)*, Vrin, Paris 1974[93].

<sup>67</sup>The Council of Vienne (1312) would seize on this line of reasoning and teach the doctrine of “*animam intellectivam seu rationalem, ipsum corpus vere per se et essentialiter informantem*”: DH 900.

but rather indicates the presence in man of a determining factor by virtue of which he is distinguished from God but at the same time participates in His spiritual nature. Moreover, given that the soul is the form of the body and is dependent on God, it shows us that the ultimate unity of man and his objective individual consistency are found in his relation to the Creator. As we can see, this conception of spirituality enriches those facts which philosophy of mind has been able to offer us. The soul is the singular and individuating principle of the body, it is not a spiritual universal which every individual participates in (which could be an Aristotelian conclusion) but rather it constitutes every single person and is unrepeatable in each case. This is another way of saying that the soul is the unrepeatable, personal form of eternal relationship with God in every human being<sup>68</sup>.

### 7.3 *The “dual unity” individual-community as an expression of the imago dei*

We conclude our presentation by returning to the anthropological foundation of trust. The dramatic anthropology proper to the image of God bears the irreducible and relational character of the subject. To illustrate this, Balthasar uses the example of the child and his mother, a relationship which implies a father, a “third party”, and is therefore not binary but takes on the shape of a community [98, 99]. The Swiss theologian argues that the dynamism which awakens self-consciousness within the child as a unique spiritual subject occurs through the initiative of the mother, who calls for the child in an embrace of love, communicating her own self in order to inspire a trusting response. Through this encounter the child and his mother discover in an existential way the properties of reality. This is the path through which concrete realities (people and things) are able to manifest the objectivity of reality as a whole. It is not a casual fact that this example of mother and child situates us within the realm of parentage and implies a calling or vocation from another. The awakening and maturing of the knowing subject happens through the intimate relation with an other (first the mother and father, then other human beings) who is constitutive of the being and knowledge of the child. This understanding of the person turns us in favor of a conception of knowledge which does justice to the immediacy of self-consciousness and at the same time to a constitutive alterity. Wittgenstein had consequently insisted on the necessarily communal nature of all language and reason.

In the encounter between the child and his mother, the polarity “individual-community” is manifested existentially, a polarity that is a proper part of all human experience. This key allows us to overcome the contraposition between theories centered unilaterally on the pole of the individual or on the community. What becomes clear in this polarity is the affirmation that the original social nature of the human person does not come at inverse proportion to his individuality, but on the contrary, that it brings about and fulfills this individuality. By virtue of this condition of “dual unity”, we can claim a correlation between both poles in which we can defend the value of the subject and its decisive importance (just as the

<sup>68</sup>DH 1440.



main currents of modern philosophy have already done in the past) as well as, at the same time, claim that a relational-social dimension is constitutive of the individual (which has been claimed by many philosophical/theological camps).

If the human person is described in these terms, one can see how human understanding can encompass both strictly individual dimensions — those that come with direct experimentation or evidence reached by the subject — as well as those that come from trust, placed reasonably, on others. It will be this kind of human beings which will be able to respond to the ideal of the scientific research which Baltimore was referring to in his conference at the Whitehead Institute: “The push toward interdisciplinary science is evident everywhere, especially in biology,” as he put it.

*The sequencing of the human genome and the subsequent mining of this information are perfect examples. (...) These large collaborative efforts are generating a tidal wave of data that has required the development of powerful new tools to manage, compile, and manipulate the massive amount of information. As a result, trust is more important than ever.*

He adds, “Of course, along with trust, there must be stringent testing and quality control.”<sup>69</sup>

## 8. Conclusion

We started our presentation citing a Nobel laureate in medicine, which opened up our horizons toward trust. We would like to end by citing another Nobel laureate, this one in literature, in order to open our horizon towards eternal meaning and its significance for our personal lives. The poem is titled “Meaning,” and the writer is the Polish poet, Czesław Miłosz<sup>70</sup>:

*When I die, I will see the lining of the world.  
The other side, beyond bird, mountain, sunset.  
The true meaning, ready to be decoded.  
What never added up will add up,  
What was incomprehensible will be comprehended.  
And if there is no lining to the world?  
If a thrush on a branch is not a sign,  
But just a thrush on the branch? If night and day  
Make no sense following each other?  
And on this earth there is nothing except this earth?  
Even if that is so, there will remain  
A word wakened by lips that perish,  
A tireless messenger who runs and runs  
Through interstellar fields, through the revolving galaxies,  
And calls out, protests, screams.*

[Translated by Santiago Ramos]

<sup>69</sup>Cf. supra nota 1.

<sup>70</sup>CZESŁAW MIŁOSZ, “Meaning” in: *New and Collected Poems 1931-2001*, Penguin, London 2005. 569.

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