

Paper Title: In Search for the Unity of Knowledge: Building Unity inside the Subject
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Abstract:

The study of the relationship between scientific and humanistic knowledge, or between empirical knowledge and philosophical-religious experience, involves two different conceptual levels. The first concerns the integration between scientific and philosophical rationality. This involves gnoseology (the various levels of abstraction in our knowledge of reality), epistemology (the problems of the foundation and the truthfulness of scientific knowledge), and also anthropology (the answers to the “questions of meaning” experienced by the subject). The second level concerns the integration between natural reason and religious faith, between what I know and what I believe. This paper is aimed at showing that the unity of knowledge, that begins by asking for the unity of the object and for the interdisciplinarity of methods, ends up by involving the subject, who is, ultimately, he or she in whom that knowledge must be unified. I briefly investigate which anthropology is capable of inspiring a balanced foundation of such an intellectual synthesis, and I recognize three consecutive degrees in the search for a unification: a) the unity of knowledge as “listening to”, b) as *habitus* (habit), and c) as an act of the person. I finally suggest that the act that grants unity to the intellectual experience of the subject, once he or she assents to ask for the ultimate questions on the origin, the ends, and the meaning of the whole of reality, has a *religious* nature, that is, it is prompted by the religious attitude of the subject, who learns from reality, remains open to the search for truth, and to the gift of God’s Revelation.

Biography:

G. Tanzella-Nitti took his university degree in Astronomy at the University of Bologna (1977), and his doctorate in Dogmatic Theology, at the Pontifical University of the Holy Cross, Rome, (1991). Italian C.N.R. fellow (1978-1981), he has been appointed Astronomer of the Astronomical Observatory of Turin (1981-1985). He is now Full Professor of Fundamental Theology at the Pontificia Università della Santa Croce in Rome. His fields of interest and research includes Theology of Revelation, theological and philosophical image of God, the dialogue between scientific thought and Christian theology; the role of University and the Unity of Knowledge. General Editor of the *Interdisciplinary Dictionary on Religion and Science*, a two-volume Encyclopaedia published by Urbaniana University Press and Città Nuova, Roma 2002, he is now the director of the web site “Documentazione Interdisciplinare di Scienza e Fede”, (<http://www.disf.org>). In April 2002 he received from the European Society for the Study of Science and Theology the award ESSSAT Communication Prize. He is author of 7 books and more than one hundred articles.

Paper:

Within the broad issue of the Unity of Knowledge, here I will focus only on some considerations aimed at showing as the unity of knowledge, that begins by asking for the unity of the object and the interdisciplinarity of methods, ends up by involving the subject who is, ultimately, he or she in whom that knowledge must be unified. The length assigned to the paper compels me to omit the historical perspective and to offer only some theoretical suggestions.

To think about the unity of knowledge should begin with a consideration of the unity of the object. Unity of knowledge means, at a first stage, unity of the objective reality. Only when the unity of the object is not overlooked, can we have access to the subject in a non-subjective way. In this case, it also becomes possible to look at the truth expressed by the action (phenomenology) without neglecting the truth revealed by the being (metaphysics). Moreover, a unification of the object also allows the inclusion of a theological perspective, given that Revelation shows, in a radical and basic way, that nature is “one” because of the uniqueness of its Creator, and that the history of the world is “one” because it receives meaning from He who is the beginning and the transcending end of this history.

Contemporary science willingly speaks of the unification of the whole of physical reality. Although it makes use of an extraordinary theoretical apparatus, employing formulations which resort to a level of abstraction never seen before, science can speak and work in these terms because “nature can undergo unification”. Theoretical unifying formalisms (gravitational theory, electromagnetism, the unified fields theory, electro-weak unification, etc.) have almost always preceded their corresponding experimental results. A strongly unifying picture has resulted from both contemporary cosmology and biology. The procedures regulating the structure and dynamics of the universe are able to link, in a consistent and harmonious way, microphysics and macrophysics. At the same time, the development and diversification of living organisms and of the biological processes driving their phenomenology also speak of a great underlying unity, going from the genetic level (the structure of DNA) to the more complex functions. This vision, as a whole, is not upset by the emergence of human beings, even though they might seem, at a first glance, to surmount or even to break this great unitary description, both structural and evolving, of nature. On the contrary, as we are told by contemporary cosmology, that a new and greater level of unification is revealed. In fact, in order for mankind to exist, all the universe must be also exist and must be one: there is nothing unnecessary or meaningless.

The recent re-evaluation of the idea of “form” in the study of many phenomena, particularly in chemistry, biochemistry and biology, seems also to have allowed greater attention to the unity of the object. There are properties that seem to be grasped and recognized only by abstracting from the parts and focusing on the whole. We also find “morphogenetic” categories which seem to govern the formation and the reproduction of some recurring patterns. This regards both the structural aspects of physical or biological entities and, especially, their dynamics. The notion of functional coordination or intrinsic finality has favored the understanding of phenomena and procedures in the realm of biochemistry; the use of “goal-setting” principles has found an even larger achievement, because they are known and applied also in the realm of physics and mathematics. The rediscovery and the successful application of analogy in science shows once more that we are facing a reality that includes some unifying criteria, while at the same time maintaining different levels of

complexity. One of the limitations of some theories of unification, however, is precisely to neglect the existence of complexity and the role played by analogy, and to look for an exclusive and reductive way of knowing, seeking in itself its own foundation. In this case, we deal more with principles close to reductionism than with synthesis of thought.

Various disciplines are encouraged to work closely together, given that the study of what they thought to be their own separate object now requires the contribution of other fields of knowledge. The temptation to expand one's own methodology to the contiguous field clashes, sooner or later, with the impossibility of operating within this enlarged field and still have the same degree of decisional power and completeness one had within the original field of study. Yet, there is a need for new methodologies, and new disciplines spring up (just think of the relationship between chemistry and physics and between economics and mathematics). It is precisely in such a context that the re-evaluation of an interdisciplinary approach is emphasized. And it happens that in an era of specialization and fragmentation of knowledge such as ours, a field of study which opens itself to dialogue —thus accepting the challenge of other sources of knowledge— can also better understand its own object. Originating from a need “intrinsic” to scientific endeavor itself to enhance the understanding of a specific phenomenology, to reconstruct the historical itineraries that have led to using a specific paradigm, idea or concept, the interdisciplinary approach represents today an interesting innovation, an innovation in contrast with the dominating Positivist and Neo-Positivist methodological reductionism, that has been overcome only in the last decades.

Taken in its “weak” form, the interdisciplinary approach has, however, two limitations. The first is that it can be driven by a pure pragmatic functionalism. This happens when the request of disciplinary integration only comes from a strong desire for a higher level of efficiency and production instead of the will to answer fundamental scientific or existential questions. The second limitation is the risk of a certain ingenuosness, as when the interdisciplinary approach is understood as a simple “accumulation” of experts or of *know-how*, creating the illusion that gathering scientists, economists, lawyers, philosophers, and even a few theologians, around the same table, is enough to solve mankind's greatest problems. In order to get to a deeper process of unifying knowledge, the interdisciplinary approach must have access to a philosophical consideration of nature (philosophy of nature) and of knowledge itself (gnoseology). To achieve this, the interdisciplinary approach must evolve from a simple methodological strategy into a progressive opening up to different levels of the understanding of reality. This is the only condition capable of triggering a “strong” interdisciplinary dialogue, following a path which looks for both a synthesis and a foundation. Only under these conditions does it become a “trans-disciplinary” and “meta-disciplinary” dialogue, paving the way for an itinerary that leads towards both its external and its internal boundaries: externally by searching for a meta-language and a meta-science allowing to the successful handling of what internally was not clear enough and could not be put properly into context; and internally, by trying to give a foundation to those methods and principles which do not possess their ultimate reason within the field of knowledge to which they belong. In this way, the analytical path no longer ends in mere de-composition, but opens up to the search for a foundation.

The discussion of the unity of knowledge cannot be limited to a simple reflection on the articulation that each discipline should have in a research project or in a program of university training. Instead, it must be founded on a deeper basis. It must

be capable of involving not only “the sciences”, but in particular “the person who makes science”. The unity of knowledge does not result from the unity of method or from the unification of different contents. Instead, it results from *interiore homine*, that is, from inside the person, an approach that draws upon a well-known expression of St. Augustine: «*Noli foras ire; in te ipsum redi; in interiore homine habitat veritas* — Do not desire to go outside, return in yourself, the truth dwells inside your consciousness» (*De vera religione* 39, 72). I will briefly describe three possible progressive levels: the unity of knowledge as “listening to”, as *habitus* (habit), and as “act of the person”.

Passing from the geosological realm to the anthropological realm, the unity of knowledge no longer appears as a “seeing of the world”. Instead, it appears as “the listening to the world”. Based on such a perspective, the dialogue/comparison between all the disciplines permits the overcoming of the *impasse* of ideologies, which often present themselves as *Weltanschauung* (world-view), and usually refuse to open up to the realism of knowledge voiced by things. Unity comes out of listening to nature, and by listening to the other (with a small “o”). To acknowledge such a fact, we must accept the constructive, and not totally revolutionary, character of any human knowledge. We must accept the humility of verification and comparison. We must admit the incompleteness of one single method compared to the display of all the different levels of complexity and of unpredictability of reality. Among the sources of knowledge which invite to “listen to”, there are certainly: “tradition” (all the knowledge and contexts historically acquired by a community); “human faith” (trust in the knowledge owned by others and in the experience made by others, necessary to the development of all knowledge); and “scientific faith” (belief in the objectivity, rationality and intelligibility of the physical world). A way of knowing based on “listening to” still remains a rigorously *critical* knowledge, but it is no longer a knowledge based on doubt or suspicion.

To a unification program built on listening, theology contributes with its specificity, emphasizing that Revelation is a knowledge derived from listening. It is the listening to the Word of God Who speaks through creation and Who reveals Himself throughout history. Giving priority to listening (whose meaning transcends the mere physiological experience of hearing) means emphasizing that it is in the listening to a word, more than in the watching, that the subject understands him- or herself as a *partner* of “someone else”, as the receiver of a gift, as a person who demands completion, precisely as an “I” facing a “you”. To acknowledge the existence of such dynamics of reciprocity and completion, one intrinsic to our own existence, is the first step in the search for unity. It also represents the best warranty against Descartes’ approach of self-sufficiency, who tried to build all knowledge on the knowledge of the self. “Listening to” represents, in the end, the confession that the subject is not the whole, that we arrive at self-knowledge through something else that we have not yet, through a word by which we *are interpreted* and *decoded*, through an encounter with the Other (now with a capital “O”).

After the “listening to”, the second step towards the unity of knowledge is to recognize that unity is not the sum of many parts, but instead a *habitus*. It is the “virtuous habit”, already trained by listening, that leads the subject to integrate his or her own professional discipline into the intentional context of all the other ones. As a result of such a *habitus*, we can face new situations and emergencies resorting to “creativity”, notwithstanding our limited and specific knowledge. This attitude well testifies to the unavoidable transcending aspect of culture upon nature. In addition to avoiding the risk of reductionism, to understand knowledge as a habit also allows the

subject to experiment the “immanent dimension” of culture (i.e. its results intrinsic to the person), and to develop the authentically “human” dimension of the scientific enterprise. In this way, it becomes easier to understand the meaning that one’s study has for the total good of the person. The unity of knowledge as *habitus* does not depend on the ever more extensive augmenting of the knowledge one has already acquired, but rather on the understanding of the value that this knowledge has for one’s own life, for society and for the progress of humankind. In this way we create the conditions to overcome that inner fragmentation which breaks down the person, scattering in many different and incommensurable pieces our experience of living. In other words, in order to achieve some unification of knowledge we must understand, first of all who the human person is in whom such knowledge must be unified.

The last step is to understand unity of knowledge as an “act of the person”. Supported by an intellectual *habitus* that is capable of grasping the meaning of each part within the logic of the whole, and open to listening to the other, the search for unity can be combined and consolidated around the action of the subject. It is the action that the subject performs when compelled by the entirety of all knowledge that he or she has judged meaningful and reasonable; an action, therefore, that reveals his or her most intimate intentions. It is the intellectual act of a cultivated person —whom J.H. Newman would have called a *gentleman*—, that is, one who has not neglected, because of scarce intellectual honesty or prejudice, any important contribution in the making up of his or her judgements, and in making his or her life choices. Any virtuous habit, in fact, is not an end in itself. Instead, it is oriented to praxis, to taking the responsibility coming from one’s knowledge. This responsibility can go as far as asking questions such as: what makes a society “civilized”, what makes a family “human”, what qualifies a science as “true”? When I say that habit or virtue are not an end in themselves, but are aimed at action, I do not intend to deny that all habit of life is obviously developed precisely through their corresponding acts. Instead, I simply want to underline the natural orientation of the *habitus* towards an activity possessing a higher synthetic value. I mean, for instance, what happens when we speak of the habit of the virtue of prudence, which is a virtue that prompts towards an intelligent behavior, not to passivity or inertia.

What is the “nature” of the act, one might wonder, that grants unity to the intellectual experience of the subject, once he or she assents to ask for the “grand unifying questions”, that is, those ultimate questions on the origin of the whole of reality, the sense of life, the place of human beings in the universe, the ultimate cause of human dignity? I am convinced that such an act has a “religious” nature. By this I mean the commitment of the person to look for truth and, once found, to apply it with all its intrinsic moral consequences. In fact, all the previous questions are at the same time both philosophical and religious. This would mean that, in the end, as declared on one occasion by John Paul II, «we move towards unity as we move towards meaning in our lives.» (John Paul II, 1988, 299). Culture can thus become a path towards the Absolute. Only when the subject wants to move towards the Absolute and the ultimate meaning of everything, does he or she find the motivation to draw together the various aspects of knowing into a synthesis, which can give an answer to truly relevant questions, those more existentially challenging. Hence, unity of knowledge does not depend on the “quantity” or on the “type” of knowledge we have. Instead, it depends on the “way” in which we can relate this knowing to the very reasons of our life. A way of knowing which “can be unified” is, in the end, a way of knowing that remains open, not only to the Truth, but also to God.

A pre-conceived agnosticism or a radical nihilism, that intended to dismiss the problem of truth, are both poles apart from any possible discussion of unity of knowledge. Overcoming such an intellectual position is a necessary philosophical premise—not ideological but learned—in order to begin any discussion on this subject. We find a clear analysis of this in a page of John Paul II's encyclical *Fides et ratio* (1998): «One of the most significant aspects of our current situation, it should be noted, is the “crisis of meaning”. Perspectives on life and the world, often of a scientific temper, have so proliferated that we face an increasing fragmentation of knowledge. This makes the search for meaning difficult and often fruitless. Indeed, still more dramatically, in this maelstrom of data and facts in which we live and which seem to comprise the very fabric of life, many people wonder whether it still makes sense to ask about meaning. The array of theories which vie to give an answer, and the different ways of viewing and of interpreting the world and human life, serve only to aggravate this radical doubt, which can easily lead to scepticism, indifference or to various forms of nihilism» (n. 81). On the contrary, a philosophy capable of re-discovering its vocation to wisdom, to search for the ultimate meaning of life «will be not only the decisive critical factor which determines the foundations and limits of the different fields of scientific learning, but will also take its place as the ultimate framework of the unity of human knowledge and action, leading them to converge towards a final goal and meaning» (n. 81).

Finally, this leads me to mention the university as a possible “place” for such intellectual synthesis. If the philosophical and existential questions around which all the knowledge of the subject is joined are the *universal* questions, then, by right, they also belong to the *university*. Moreover, these questions must be addressed within the university. For this to happen, it would suffice that those who teach and work within the walls of a university welcome these same questions within the personal walls of their involvement in searching for unity and truth. A university researcher or professor who is open to the unity of knowledge is a person capable of sharing with others a similar involvement. Such a person is whom people usually name a true “teacher”. The “teacher” is who has been able to transfer to the students his or her personal unity of knowledge, a unity reached, at times, with great difficulty and hard work. We willingly remember these “teachers” because, along with the subject-matter they taught, they were also able to communicate to us their love of what they were teaching. They also made it clear to us what role such knowledge had in their existence as a whole. By doing so, they opened up to us the way towards the “ends”, without stopping at the “means”. More than the specific content of their teaching, we better remember their ability to listen, their intellectual *habitus*, the position they took in the face of deep existential questions, all things in which we students were invited to take part. We cannot push the others to know it all without teaching first the meaning of what we know. It is in the opening towards this search for meaning that the person can gradually get back that “inner center” that the progressive forgetting of the ultimate questions about the truth, the dignity and the destiny of the human person—not the mere increase and diversification of the disciplines—has left beyond.

Bibliography

- M. BUBER, 1961, *Between Man and Man*, London: Collins
- E. CANTORE, 1977, *Scientific Man. The Humanistic Significance of Science*, New York: ISH
- A. BLOOM, 1987, *The Closing of the American Mind*, New York: Simon and Schuster
- M. HELLER, 1986, *The World and the Word*, Tucson: Pachart
- JOHN PAUL II, 1988, *Letter to the Director of the Vatican Observatory*, June, 1st, 1988, in *Physics, Philosophy and Theology: A Common Quest for Understanding*, R. Russell, W. Stoeger, G. Coyne, eds., Città del Vaticano: Vatican Observatory Publications
- JOHN PAUL II, 1998, *Letter Encyclical "Fides et ratio"*, September, 14th, 1998.
- A. MACINTYRE, 1990, *Three Rival Versions of Moral Enquiry. Encyclopaedia, Genealogy, and Tradition*, London: Duckworth
- J. MARITAIN, 1995, *Distinguish to Unite, or, The Degrees of Knowledge* (1932), Notre Dame (IN): Univ. of Notre Dame Press
- J. MARITAIN, 1974, *Education at the Crossroads* (1943), New Haven: Yale University Press
- B. NICOLESCU, 2002, *Manifesto of Transdisciplinarity*, Albany: State Univ. of New York Press
- J.H. NEWMAN, 1987, *The Idea of a University* (1852), Chicago: Loyola Univ. Press
- J.C. POLKINGHORNE, 1986, *One World: The Interaction of Science and Theology*, Princeton: Princeton Univ. Press
- A. SALAM, 1990, *Unification of Fundamental Forces*, Cambridge: Cambridge Univ. Press
- C.P. SNOW, 1959, *The Two Cultures and the Scientific Revolution*, The Rede Lecture, Cambridge: Cambridge Univ. Press
- C.P. SNOW, 1962, *Recent Thoughts on Two Cultures*, An oration delivered at Birkbeck College, London, 12.12.1961, London: Birkbeck College
- C.P. SNOW, 1964, *The Two Cultures: and a Second Look. An Expanded Version of the Two Cultures and the Scientific Revolution*, Cambridge: Cambridge Univ. Press
- G. TANZELLA-NITTI, 1992, *Questions in Science and Religious Belief*, Tucson (AZ): Pachart
- G. TANZELLA-NITTI, 1998, *Passione per la verità e responsabilità del sapere*, Casale Monferrato: Piemme
- T.F. TORRANCE, 2001, *The Ground and Grammar of Theology. Consonance between Theology and Science*, Edinburgh - New York: T&T Clark