

# ΣΟΦΙΑ—SOPHIA

## Rationality in the teaching and learning of economics and its implications for human progress

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## Abstract

In this article, product of a research, several purposes are intended. First, to provide to a lay audience certain generalities about rationality and its relationship with knowledge. Second, to present some of the aspects associated with the problem of rationality in economics. Third, to give an account of the reasons that make possible a conception about both science and scientific and human progress. Fourth, to recognize how this rationality -expressed in the method- responds, in a certain extent to the logical and epistemological presuppositions settled from the classical time –extended until the contemporaneity- prevailing in the different modes of construction of knowledge in general terms; and that don't acknowledge others ways of giving account of knowledge in relation to the particular ontologies of each science.

**Keywords:** Science, economics, method, progress, rationality.

## Introduction

Within the framework of the teaching and learning of any scientific discourse, it is necessary to begin to reflect on the prevailing rationality in contemporaneity; and the epistemological, methodological and logical presuppositions that lie behind it, as well as its implications in science and the progress both scientific and human.

Approximately as indicated in the summary of this article, but with a clear methodological perspective, it is proposed succinctly: First, from a brief approximation to the history of science and Western thought, to give an account of the nature of the rationality that has prevailed in the teaching and learning processes of science. Second, to understand the meaning assumed by rationality from the end of the 17th century to the 20th century, especially with the emergence of disciplines and the separation of knowledge from other knowledge linked to cultural expressions. Third, to understand the configuration of the rationality with which, from the twentieth century, there have been established the world, the science, and the scientific and human progress. Finally, to recognize other ways through which there can be accounted the rationality in conditions related to ontologies and the particular knowledge of each science. It is, in effect, to approach the contemporary movements that allow the recognition of places other than the constitutive of the classical conception of rationality, as well affirms Bibiana Vélez Medina, places: “Like poetry, the novel or the story of life that replace the flat style and the cold language that until recently dominated the academic expression

or the scientism “(Vélez Medina, 2014: 252); without incurring in this way in relativism, and contrasting in this way immovable paradigms of the teaching of traditional knowledge, typical of the legacy of Western culture, and that probably are inscribed in a certain order and sense of rationality that constrain other ways of teaching and learning .

Now, understanding and interpreting the underlying rationality behind economics leads us to remember, on the one hand, the expression of Martha Nussbaum: “Economics was born of philosophy” (Nussbaum, 2015: 1); and on the other, Nicholas Rescher, who regarding the relationship between philosophy –rationality- and economics, points out that, for example, for the interests of the logician, “the foundation of rationality *is consistency*; for the scientist, *the strength of evidence*; and [for] the economist, *the efficiency*” (Rescher, 1993: 23). These conceptions, especially that of consistency, are clearly adequate and relevant for the purpose of giving an account through a process of argumentation, of a rational knowledge; nevertheless, as it will be seen in this writing, these same conceptions constrain, in a certain way and from the theories of the classics, to other forms of knowledge. While *efficiency*, as the basis of rationality in economics, determines that the human faculty of reason -in its search process or approach to the truth- must be weighted by virtue of the efficiency of both the means and the results (the market?). Now, because of the aforementioned, Rescher will say:

[...] *All are correct, but partially. Each one focuses only on what is part of the reason, that particular aspect of the intelligent procedure that has a primary*

*importance in its own field. The fundamental thing is that rationality is something complex with many aspects, although all its parts are contained by the generic formula that rationality consists in conducting our affairs with intelligence.* (Rescher, 1993: 23).

Thus, rationality, understood as the ability to think and act in accordance with principles and criteria in pursuit of the objectives, is only predicated in correspondence with the sciences in a particular way; in this case, economics.

This reflection on rationality is then presented as a “necessary philosophical exercise, trying to understand and explain how the human faculty of “reason” is expressed, how this “reason” allows science to account or methodically approach the problem of truth and objectivity, and what the implications of rationality are, or of “Certain types of particular rationality” (Agazzi, 2004: 245), in science and in scientific *progress*. It is, in effect, to claim other forms of knowledge in relation to their ontologies.

## Development

### Conception from Aristotle and Galileo until the seventeenth century

Rationality<sup>1</sup> is a concept on which, in the history of knowledge in the West, a lot of discussions have been generated; and it is, in turn, one of the most debated in relation to scientific knowledge, especially from the century XIX until what goes of the XXI century; hence, the importance of recognizing the points of encounter and disagreement between rationality and the science of economics. However, despite the plurality of positions that lead this discussion and the implications of such positions in relation to different knowledge, it is perceived that this debate has not clearly and definitively been settled, and that the classical conception of rationality -which is installed in the economic discipline-, continues in a certain way to determine a large part of the criteria that justify knowledge in the social, natural, human sciences, or if it is wanted, in the formal and factual sciences (that are) present in contemporaneity.

Now, such classical conception of rationality is possible to catalog it in general terms in the history of philosophy in two large groups:

The first one, referred to the classical concept of rationality, characterized by the demonstrative argumentation (that is) product of an essential capacity of mankind that guides them from a theoretical perspective to the obtaining of true knowledge about the world. This conception -object of this reflection- probably constrains rationality, by linking it to a process of algorithmic character, and in those where the presuppositions of classical economics are installed.

The second (group), characterized by the pretext of understanding rationality with a practical character that concerns moral action; that is, the action on the part of individuals -and that leads them to that understanding-, which shows an important pragmatic content in the rationality, proper -for example- of the actors that participate in economic decisions.

In addition to the above, one cannot lose sight of the fact that in the light of epistemology, rationality (whose characteristic consists in “The capacity to decide how an exceptional case should be treated” (Brown 1998: 197)), is related to the reasons that justify both the beliefs and the decisions, actions, preferences, individual and collective patterns of behavior, and institutions, as Rescher pointed out. This process of justification of human beings makes it possible to have a belief as true, to make decisions or to act justifiably, provided that there are good reasons, which means: “Someone acts rationally in the field of belief, action or assessment when their reasons are convincing reasons” (Rescher, 1993: 17). Expressions that do not move away from the presuppositions of rationality (that are) anchored in economics.

This rational justification -within the scope of scientific knowledge in general-, as it has been pointed out, will be problematized from the classical conception of rationality, which is guided by principles and rules that are established with the pretension of achieving -by means of reason- objectivity and truth in a universal way; thus, in this classical conception, there is one: “Extremely close relationship between the notions of truth and rationality” (Putnam 2001: 12), while this allows or achieves a pretension to approach that relationship, which consolidates the classical rationality as

the only criterion that formulates the process of development in spaces of progress -paraphrasing Putnam- to accept what in scientific knowledge can be considered as fact.

In this sense, it is pertinent to ask “What is what constitutes an economic fact in economics?” This questioning may be somewhat problematic by virtue of the prevailing rationality. In the referred terms of Putnam (2001), it will only be a fact what is rationally acceptable; a criterion that will remain valid for science exclusively, and therefore, for economics itself. However, we should remember the forcefulness of the criticism put forward by Popper when he said that rationality is not reduced to an attempt to find the good reasons to affirm a belief as true; then, - following Robert Nozick commenting to Popper- “The rationality does not only involve doing or believing something for the reasons in favor of it, but also taking into account (some) reasons against it.” (Nozick 1995: 106). Based on this, Popper will highlight the relevance to science and its progress (also referred to in terms of economic science), that must have all evidence contrary to the current hypothesis or theory that leads to contrast, refute or falsify, thus demonstrating its high levels of corroboration. Thus, Popper questions the classical claim of the methodological monism of the sciences that only admits those evidences tending to confirm and verify their hypotheses, ignoring those that are proper and particular to other non-disciplinary and/or regional knowledge, and that precisely tend to the recognition of other cultures and epistemes.

It is also worth remembering how one of the meanings about rationality, coined throughout the history of philosophy, is demonstrated by the linguistic capacity of humans in the sense that: “A rational being is a being capable of communicating through language.” Aristotle had characterized the mankind as animals that have language (*logon ékhei*) “(Mosterín, 2013: 79), that is, as the creature that was distinguished from the others by its ability to speak and deliberate –*zwov logov ecov*-expression that was later interpreted - perhaps inappropriately - as a *rational animal*.

It is also appropriate to mention here that the aforementioned conception of mankind as rational

animals has led to multiple declarations; note, to indicate some, the one suggested by Jesús Mosterín, who believes that it would not even be correct to think of human beings as ‘rational animals’, and that the correct thing would be to think that they are both rational and irrational (Mosterín, 1987: 17).

In regard to such a conception of mankind as rational animals, Fernando Broncano, paraphrasing Adorno, will ask: “Is it possible to remain a rationalist after Auschwitz and Hiroshima?” (Broncano 2003: 142), which, translated into the interests of this article, would allow us to ask ourselves: “Is it possible to speak of scientific and human progress after Auschwitz and Hiroshima?” Thus, he submits to the sting of judgment and skeptical criticism to rationality, to science and to the idea of both scientific and human progress – linked this to the economic conception of human development-, and demonstrating with this the validity of the problem referred to rationality in the philosophy of science contemporary and its close relationship, in this case, with economics and its treatment in the fields of teaching and learning.

This model of classical rationality will have science as an important bulwark, and progress as a development model; hence, it is considered scientific everything that is based on the criteria of *universality, necessity and rules*, exposed by Harold Brown in his book *Rationality*. Brown, cited by León Olivé, mentions in this regard: “Given a specific problem -by virtue of the information available to the agents who have to arrive at a result, by virtue of their beliefs [...] - the rational results must be universal, necessary and determined by rules (Olivé, 2006: 96), assumptions that do not stray from a sense of rationality installed in economic sciences and in proper places of training.

According to what has been mentioned up to now, it can be pointed out that this conception of rationality, which is in question here, is narrow and reductionist, since, on the one hand, it not only ignores other knowledge and ways in which knowledge can be justified, but also, on the other hand -as it will be explained later- subordinates rationality to the *universality* of the results obtained on the basis of a principle of *a priori* character, sustaining in



turn that, *necessarily*: “Given a specific problem, every rational agent who has the same information at his disposal, if he acts rationally, must reach the same result” (Olivé, 2006: 96). Such a conception determines rationality in economics in relation to the efficiency of the means, budgets that are instituted in education.

It is in this context where the teaching of modern science, with a marked accent in two traditions: the Aristotelian and the Galilean. Although the Aristotelian position is fundamentally challenged in modernity, its logic and observational assumptions of an empirical nature are maintained for the purposes of the arguments in the framework of a rationality in which the sense of experience reigns with the data that validate that ontological position.

Going into question, we must refer how Aristotle, from the treaty of the *Organon* -instrument or privileged prolegomenon of scientific research-, sets the foundation for knowledge, not only of his time, but much of the history of Western philosophy. This *Organon* is constituted by the following books: *Categories* -dedicated to the study of the predicates in relation to the truth or falsity -, *Of interpretations* -concerned by the elements of the statement as a propaedeutic for the study of reasoning in general-, *First Analytics* -dedicated to the study of the syllogism, the formal logic, that is, the reasoning in general -, *Second Analytics* -dedicated to the epistemology and methodology of scientific knowledge, which starts from non-demonstrable principles -, *Topics*, whose interest concerns the dialectic-, and *Sophistical Refutations* -focused on matters related to reasoning, argumentation, fallacies-. By virtue of this, the Aristotelian logic -paraphrasing Ferrater Mora- is presented as the portico for philosophy by providing a rational foundation for beliefs, choices, actions and valuations.

According to what was already stated, from the first paragraph of Book I on *Topics*, Aristotle would define how his object of interest consists in configuring: “A method from which we can reason about any problem that is proposed to us, based on plausible things, and thanks to which, if we ourselves hold a statement, we do not say anything that is contrary to it” (Aristotle, 2000:

89). It is with this, therefore, a project to teach and account for the problem, not only of the truth, but also of the certainty; and that it installs logic as its method par excellence in relation to any object of knowledge; enabling in this way, through a series of logical precepts, the way for justified and rational knowledge of things.

On the other hand, from the denominated Galilean tradition (Comte, 2000), the channel of the rationality of control, manipulation and dominion of the nature opens up. The significant of knowledge is its pragmatism -philosophical concept with clear incidence from economics-coinciding with the assumptions of classical theory in economics around its usefulness to respond to a determined and univocal model of economic growth and progress. In this tradition, there are located both the rationalists and the empiricists. For the former, what knowledge deals with, as the possibility of establishing places for action and valuation, is to resort to the sources of reason, to justify the intentional scope of intervening in a certain sense, expressed in terms of mathematical language. For the latter, the world does not go beyond the information provided by the senses and corroborated by reason, in clear allusion to the postulates of Western thought.

In the landscape of Galilean science, there are established profound implications of the *mathematization* of the universe and of empirical experimentation as its methodological referent, which will be strengthened with the later contributions of Descartes (Comte, 2000). While the Cartesian plane allows, by its schematization, the rational domain of the world, adding the analytical method of its rationality oriented towards the appropriation of clear and distinct ideas, and from there a subject is installed as master of nature, guided by the rationalist method, guarantor of certainty, a situation that manifests itself in educational settings.

Modern science was based on the functional-mechanistic emphasis, for which it was necessary to propose methodological strategies that would guarantee the useful results of science in terms of the effectiveness that was expected of

it, a criterion of rationality that was founding of the assumptions on which economic theory rests and, within it, the valuations that determine its actions.

### **From the end of the 17th century to the beginning of the 20th century:**

Concerning the express relationship between rationality and science, the Belgian philosopher Jean Ladrière in his text entitled *The Challenge of Rationality*, states that modern science is born and developed in:

A cultural environment that was already deeply marked by the idea of rationality. And it rested essentially on the philosophical foundations that Greek culture bequeathed to the West. Now, what has dominated the conception of reason, which was elaborated in the context of Greek thought, is the idea of a speculative knowledge, ordered according to the criterion of truth; and truth itself was understood as the correspondence between representation, as expressed in discourse, and reality (Ladrière 1978: 11).

The constitution of the budgets of modernity, characterized mainly by the idea of progress (economic growth), is articulated in this period to the problems of epistemological nature around the nature of rationality, empowering the implementation of the sciences in positivism terms. Consequently, knowledge is conceived as a possibility of domination, fundamentally in the natural environment, and thanks to the scientific-technological “revolution,” human needs would be fulfilled because of such belief.

Following (Mardones, 1991), it is installed scientific positivism as the place of legitimization of the sciences and disciplines that deal with human and social phenomena, establishing in a univocal way the criteria to purify beliefs and valuation schemes, where their methods of study and research agree with the same criteria as the natural sciences, which legitimizes their scientific status, while overcoming the ambiguity of the philosophy and the logical-rational inconsistencies of the myth (Cruz K., 2017), situation that does not depart from the prevailing conceptualization, which is installed in the scenarios where knowledge is produced and validated.

The idea of progress as an economic growth is consubstantial to positivist presuppositions; this, by reason of the method that presupposed the superiority of reason to establish the legitimacy of true knowledge in terms of its utility (efficiency). From this postulate was undertaken the task of legitimizing the social sciences, and among these, predominantly, economics; as the place par excellence of the valuation and the precise measurement of the phenomena and social facts.

Criterion according to which the economic science must be an aseptic product in terms of value; and being for that reason, axiologically neutral, free of interests, even with respect to the same problems that in this sense its own dynamics generates in the social fabric. In the questioning of the constitution of the instrumental reason of Western industrial society, it continues to refer to the issues of intervention and economic policy.

The budget of political and ethical neutrality of economic science is widely debated by the sociology of science, by addressing the problems that transcend the justified discourse of science and the referents that are summoned with it (Escobar, 1998). This myth in relation to objectivity is based on the experimental and observational processes of science and its practical contributions to solve problems, configuring theoretical - conceptual corpus on which the decisive power of economic policy rests, influenced by the processes of teaching - learning of science in educational institutions.

This vision, constitutive of rationality, is a tendency that consolidated the economic utilitarianism as its major teleology, against which any other pretension was not valid due to its inability to respond to efficiency as a criterion of rationality, in accordance with what the theorists of classical economics denominated as the development of the productive forces and their concomitance with the development of the relations of production, equation of which the scientific knowledge and its reasoning is its most eloquent foundation and support (the force of the evidence).

As an exacerbated reaction of what they called the speculative idealism of the late nineteenth century in Europe, and particularly in Germany,

there arises the Vienna Circle, or the so-called logical positivism. This updated version of Comte's positivism assumes that everything that is not capable of being expressed in a "rigorous" language, through mathematical propositions, which express logical truths as generalizations of the objectively observable world (consistency), is not worthy to be considered as knowledge, and much less in the framework of scientific knowledge, a non-negotiable input to found the assumptions on which rests the theoretical and political rationality of economic science of its teaching and learning.

Similarly, "neo-positivists" consider that reality was expressed in a language of observation, giving account of what they called the corroboration of data with reality, thus avoiding the contamination of the language with which hard figures are expressed and the damages of the researcher. This position is known as a theory of correspondence between truth and facts, as an articulation between the ontologically observed and the epistemologically explained.

From these positivist nuances, academia and contemporary research in the field of social sciences have been fundamentally nurtured, as well as issues that circulate in the field of political intervention bets, especially those that use logic and discretion proper to economic liberalism.

Of this situation, it is eloquent the preponderance of statistics and the verifiability status attributed to mathematical and econometric models to express the intentions of a given monetary action, specifically those scenarios that promote economic progress as successful solution to overcome labor market crises and the lack of private initiative to boost market economy.

### 20th century and contemporary movements

Rationality, aspect inherent in the processes of teaching, learning and practice of science as explained by Rescher: "Consists of the proper use of reason to choose in the best possible way" (Rescher, 1993: 14). It could be said that all agents, in each of their areas of decision and based on their own cognitive limitations -both natural and those determined by their context-, choose in the best way that is possible, thus making use of

their rationality from the means they have at their disposal, clearly contextual. It should be noted that this is not, therefore, any form of relativism, but on the contrary, it will pretend in due course, to account for the base of good reasons, of everything that is relative to each particular science. In this way, it is about accepting that rationality is open, inclusive and far-reaching, as Rescher rightly points out, it cannot be seen as:

*A particular and delimited good that can be reached with the narrow technical means that appear within the reduced terrain of a particular discipline. Rationality, if properly conceived, constitutes a domain of such broad scope and complexity as that of intelligence* (Rescher, 1993: 14).

The foregoing because it is unlikely for teaching, learning and scientific practice, as classical rationality intended, to determine a set of rules or algorithms whose principle is *a priori, necessary*, self-evident and *universally* shared in the a rational choice process that operates as a great propaedeutic instrument for all sciences, in turn ignoring human contingencies, as Putnam points out:

*I do not believe that rationality is defined by a set of canons or invariable principles; the methodological principles are related to our worldview, including the vision we have of ourselves as a part of the world, and they vary over time. So I agree with the subjectivist philosophers that there is no fixed and ahistorical organon that defines what rational is* (Putnam 2001, 12).

In economic matters, for example, the rational process -that is, the process that leads the individual to choose one way or another, between one or another product or service offered by the market-, is determined by the cognitive importance that, as Rescher explains, although it is objective, it can also be conditional and subject to specific characteristics of each individual, or it can even be absolute:

*The cognitive importance of things is not something that people somehow make up; it is objective. Unlike being interesting, being important does not lie in the eyes of the beholder. The assessment of cognitive importance is a key issue for rationality*

*in its economic concern for returns on resource expenditure: Teof the* (Rescher, 1989: 69).

And he adds later:

*Importance can be either conditional (instrumental) or absolute (intrinsic). Conditional importance is importance relative to contingent ends, goals that someone may have adopted—a knowledge of human physiology, say, for a physician; or physical agility for a tennis player. Absolute importance, on the other hand, relates to mandatory ends, goals that people should have (self-respect, say, or honesty, or concern for the well-being of their dependents) [...] Accordingly, the importance of finding food is absolute (since survival is a universally appropriate goal), but the importance of knowing how to keep score at tennis is conditional in that it hinges on (say) one's idiosyncratic interest in playing or watching this game* (Rescher, 1989: 71).

It follows from the above, that at the tenor of the questions raised by the so-called critical school to the enthronement of positivism in the social sciences and with the contributions of the epistemological-methodological perspective of hermeneutics (Habermas, 2008), and the recognition of other knowledge, a reconfiguration has been forged in relation to knowledge, science and the world of life in the context of the contributions of reflections on the relationships between science, technology and society; and from there proposing alternative perspectives on the dichotomy to explain/understand in which the discussion is found, about the social and human sciences; and in them, the issues related to teaching - learning.

It should be noted that in this framework of the reflection proposed around the conjectures that underlie the rationality of economic knowledge, we propose reasons that allow us to think that the understanding of rationality linked to knowledge in general is the product of historical, social, economic and cultural relationships, among others; and it is not the representation of a supposed reality given in itself, nor is it built from an individualistic relativism that emerges in advanced modernity, but primarily by an argumentative consensus in which subjectivity and inter-subjectivity recover for itself the epistemic appropriation of the world, from

sociocultural contexts constructed by subjects that interact dialogically, a privileged place to think about the issues of the configuration of the rationality installed in other conceptions of the world, other ontologies that presumably settle in what is called regional knowledge.

The understanding of the different attributes that rationality expresses, not only surpasses the methodological monism of the Galilean positivist tradition, but it recovers the subjective connotation, for its justified belief of starting from the budget, that the social and human processes, and within them of education, are events and phenomena difficult to quantify, but in the field of culture, they consolidate worthy possibilities, not to be disregarded as the motivations for action and social transformation, the interests of localities, the valuations of autonomous societies, among others.

In a risky synthesis, we affirm that we are historical, symbolic and linguistic beings, we are able to understand ourselves from the perspectives of our historical circumstantiality and of the constitutions that with and from language, it has been possible for us to become as human beings. This statement is raised by Gadamer and Habermas, who point out that it is the configuration of communicative rationality to overcome the instrumental rationality of conceptions about progress and applicable to the comprehensive issues of the conditions in which it is installed rationality in the economic knowledge.

Thus, seen science from its history itself, it is manifested as a human activity, and as such, as all human activities, it is loaded with values, so it could be said, therefore, that this conception of rationality on which science is based, is guided by value judgments as an essential feature in the explanation of human actions and institutions that constitute scientific activity.

In this sense, education in the sciences has -or should have- in consideration the plurality of values that not only accompany, but in one way or another, constrain rationality itself. From the above it follows the importance of education in the processes of teaching and learning of science, because education is installed as: "The integrating axis between generations and culture .Therefore,



if we want to face our current problems using science and rationality, we must promote a critical attitude” (Wong, Peña and Falla 2016: 113); this attitude, which allows the recognition of rationality as plural in science which as mentioned in this article, proceeds in an analogical way in epistemic and pragmatic conditions.

Therefore, scientific rationality -as stated in this research- must be considered without restrictions; that is, not limited by the methods and techniques of science itself, but it must be understood in the sense that it depends (its configuration), not only on a specific method that accounts for it -of the specific science in question-, but also on a plurality of shared values.

### Conclusion

Paraphrasing Agazzi, since the Greek philosophers, there were considered clearly that rationality, product of human intelligence in a certain way, did not present the same characteristics in any field of scientific research and, on the contrary, it is unreasonable to pretend that such methodological monism prevails in relation to all sciences -as it has been pointed out in this article-, because it ignores the diversity of scientific knowledge and its ways of accounting for its objects of knowledge, which, according to Agazzi, without denying, of course, the unity of reason and its nature, invites us to recognize that the exercise of rationality itself:

It has different characteristics according to the different areas of reference. *Modernity* has often forgotten this condition, accepting as a model of rationality, and therefore as the most perfect expression of intelligence, the rationality of the physical-mathematical sciences. Only with a great effort could other disciplines be admitted to the field of sciences, and *reductionist* tendencies that try to erase these differences are still very rooted (Agazzi, 2016: 5).

This has led to examine the issues surrounding the universal scientific method, valid for all sciences; and its relationship or not, with scientific progress; exposing the importance of knowledge and its relationship with science and progress, both human and scientific. This classical notion of rationality in science is distinguished -as it has been referred to-

by methodological monism guided by the canon -rules- of mathematics and physics under criteria of *necessity*, objectivity and of -verifiability or confirmability- *universally* acceptable. However, as Agazzi suggests, it is in this methodological monism to reach levels of scientificity in which the concept or the classical notion of rationality fails.

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## Footer

1 Some of the ideas presented here are linked to the research project: “Rationality and progress in science, a proposal of analogical rationality, based on the philosophy of Evandro Agazzi,” from the Education and Human Development Research Group, category A in Colciencias. This research group belongs to the Faculty of Education of the San Buenaventura University of Cali.

2 The aspects referred to the nature of Classical rationality and the thoughts of Evandro Agazzi mentioned in this paper are linked to the doctoral research carried out at the Universidad Pontificia Bolivariana entitled “Rationality and progress in science. A proposal of analogical rationality, from the philosophy of Evandro Agazzi,” of the researcher Carlos Adolfo Rengifo Castañeda, with the support of the San Buenaventura University of Cali, so that what is referred to here is a collection of several ideas and materials from publications articulated with this research.