

RADIO INTERDISCIPLINARITY - A PERSONAL EXPERIENCE

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"A PhD journalist? This is very unusual!"

Abstract

For a long time, scientific discoveries were made in separate fields, defined by easily identifiable characteristics. This is how the fan of subjects in which scientists rushed to get closed in order to properly emphasize the identity of their preoccupations become larger and larger. The abstruseness of these entities often led to the rejection of some new fields that were not, in the beginning, considered sciences. This quality was only associated with already known fields such as: philosophy, history, physics, mathematics, astronomy etc. For centuries, researchers' preoccupations which went beyond the known and recognized patterns were accepted with great difficulty and their disciples had to provide deep evidence that the new activities meet the criteria required by true science and are not subsumed by an existing "senior." From the same perspective, it was very difficult to persuade scientists to unite their efforts with those of their peers from other fields in order to light together some study paths that have not been approached before. Although this mentality still continues to exist in the third millennium, a breakthrough in the twentieth century occurred when, as a result of the huge leaps made by human beings in all fields, some approaches, that coagulate the intelligence and experience of scientists in as many different fields of study as possible, were strictly imposed. The appearance and development of information technology, which allowed the generation and functioning of artificial intelligence, could not have been possible without connecting all information the human being possesses and without a collaboration between all subjects.

Keywords: *science, transdisciplinarity, radio journalism, interdisciplinary research, multidisciplinary education.*

"A PhD journalist is something unusual!"

This was the reaction of an Australian researcher at the World Criminology Congress in Kobe, Japan. He was basically stunned that, in Europe, a journalist can also have scientific preoccupations. He accepted the fact that the interest area of the press is extremely vast but he had doubts regarding the depth and accuracy of the media research. Subsequent discussions on the essential role of communication in research

and about the privileged position of the press in mediating information convinced him that journalists can be just as exigent and motivated when they analyse reality as doctors, jurists or cosmonauts. This dialog took place at the end of the first decade of the new millennium marked by the economic crisis that the Japanese labelled as one of the catastrophes triggered by men. And, something that is destroyed by man's intervention in nature, can only be repaired by the hand and mind of the human being. This process cannot, however, self-regulate without a global perspective. The subjects' need for brotherhood into an ecumenism of sciences as a fundamental landmark of the durable development of mankind which should, at the same time, prevent the altering of the environment does no longer need to be demonstrated.

It is known that history started from the punctiform appearance and development of sciences and, for their development, researchers were "lured" to analyse some deeper and more divergent directions. It was subsequently noticed that any attempt of the new generations to cover the so-called white and less analysed areas, starting from already known scientific theories most often confronted itself with a massive protest reaction against the scientific traits and, therefore, with rejection. The cast solidification of the subjects had already taken place.

Disciplinarity is defined as a parameter of a cognitive approach which preservers knowledge in the theoretical framework of an assumed cognitive subject (CHRISTIE & MARTON, 2013; DINGA, 2019). The theoretical framework is offered by the assembly of hypothesis (e.g., principles, axioms etc.) which define the explanations offered by a certain cognitive subject.

Disciplinarity is, basically, one of the most visible characteristics of human actions. It represents the specialization of an activity taken to the most refined forms and it was determined by the need for knowledge in the most intimate details of the reality in which the intelligent being was destined to exist together with all the other forms of matter. But within it, as in any medieval cast, communication is strictly limited, knowledge is kept tight under the threat of some harsh sanctions for the ones who dare to externalize key information.

The large-scale spread of science following the massive teaching and training of population led to the appearance of a large number of fields of study, absolutely normal in the globalization era (NICOLESCU, 2019). Communication became the key to changing the paradigm. The high complexity degree of the new subjects generated an unprecedented deepening of the fields of activity, forcing the ones who developed them to a more and more accentuated narrowing of their skills. Specialization and overspecialization following deep research into the most offering fields when it comes to scientific novelties represented, up to a point, the key to the development of humanity.

But the punctual concentration of efforts generated the chaotic development, largely consuming natural resources and the negative consequences appeared where nature was ignored. There was a risk that, sooner or later, mankind reached collapse. This is why, in order to ensure its continuous development, society was forced to unite different niche activities, to bring them together and to place them into the reunited light of individual spotlights. The beginning of the significant change of situation took place in 1987, the year in which The Global Environment and Development Committee, known after the name of the former Norwegian Prime Minister Harlem Brundtland, published the paper entitled "Our mutual future" (WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, 1987). It structured the idea that durability represents the fundamental requirement for human needs to have the necessary coverage, while avoiding environmental problems. Therefore, a powerful movement appeared, in favour of durable

economic development and of the new techniques which allowed the measuring and implementation of different reference levels, in time, space and from an ecological, social and economic perspective. And, since up to that moment, science struggled to find some unexploited niches, a more and more accentuated connection process appeared for distinct subjects and fields of research. The conclusion was that reality is much too complex to be fully understood with the help of a single sustainable development research method.

I can offer here an example from my personal activity. At the beginning of 1980s, as traffic controller, I became part of a multidisciplinary team of engineers, mathematicians, physicists, computer scientists, economists and even plastic artists in order to contribute to the achievement of an extremely bold project: the creation of an automatic guidance system for supersonic fighter jets. The success of the project reflects the quality and the dimensions of communication among the research team and the connections between elevated scientific entities such as The Romanian Academy, The Polytechnics and the University of Bucharest as well as with other numerous scientific research institutes from Romania and abroad. Although it might seem modest, the experience I am talking about is significant for the leap from a deeper and deeper specialization to the openness towards transdisciplinarity and even interdisciplinarity.

And another example, ten years later. At the beginning of 1990s, at the gates of the public radio station there were many highly educated youngsters, most of them with significant achievements in their prior scientific research, but they were forced to quit because of the massive decrease in the funds offered to research. The future journalists who came from all fields of activity answered to the need of the radio station to renew its voices with a similar enthusiasm. The first President-General Director of the new Romanian Radiobroadcasting Society, Eugen Preda, told those intrigued by this diversity that Radio România has to communicate as proficient as possible with the entire Romanian society. At the end of a long period in which communication had been brutally reduced to a limited number of subjects and heroes, the

Romanian public radio needed specialists from all fields of activity.

Remembering those events in the context of general knowledge, the need for a crucible that the Romanian society has to permanently develop becomes more and more obvious. This example makes it much easier to understand the need for multidisciplinary and pluridisciplinarity, an algebraic sum of sciences, practically reuniting a series of independent subjects, which together contribute to the achievement of the scientific endeavour" (ZAMAN, 2010). It is true that multidisciplinary supports itself on a series of sciences with which it operates in an organized manner, without integrating them. Each subject is based on its own work tools and it does not assume methodologies or work hypothesis from other sciences. Their relationships are reciprocal and cumulative, but not interactive (AUGSBURG, 2005).

But multidisciplinary represented only a beginning stage, necessary but insufficient. Soon, the development efforts overcame the simple adding of distinct subjects and scientists embraced more and more the idea of interdisciplinarity which, according to the target of the study, merges and transforms the methods, necessarily innovating a set of tools better adapted to the needs of research (ZAMAN, 2010). The new approach encourages the mutual take overs and borrowings of theories, methods or hypotheses. We therefore shift from relations of multidisciplinary in which cooperation between the scientific subjects can be reciprocal or even cumulative, to interdisciplinarity which creates the framework for interactivity (AUGSBURG, 2005; ZAMAN, 2010). This implies the shift of the traditional boundaries between sciences and the combination of their techniques in order to achieve a common goal. The methodologies and hypothesis which belong to some different fields are connected and modified in order to adapt to the research needs and new tools are built, which allow the investigation of some difficult subjects which go beyond the possibilities of a single subject. The complex topics from the field of economics, such as inflation, market, labour force, credit or exchange rates require different approaches (which combine economics, maths, geography, politics, sociology, biology, physics

etc.), impose a continuous and intense process of intercommunication. But up to that point, the very basis of the study must be recruited, starting from the earliest ages. Interdisciplinary education, starting from the school itself, gives students the opportunity to form a comprehensive picture of life and universe, to grasp the fundamental values much faster and more deeply, and to more easily distinguish the goals of means (ALEXANDRU, 2019).

We notice that, as in the case of pluridisciplinarity, interdisciplinarity studies always remain within the borders of one's research. However, the paradigm shift is achieved only by the transdisciplinarity that crosses the boundaries of isolated subjects, merging them for the benefit of knowledge. Basarab Nicolescu starts from the understanding of each subject as representing a *level of Reality*. The entire space between the multitude of levels of Reality, both horizontally and vertically represents a continuum of information. This continuum extends beyond the boundaries of disciplines, within them. This continuum goes beyond the borders of subjects, within them (NICOLESCU, 1999). This approach assumes the complex integration and correlation processes of some knowledge belonging or not to the scientific subjects, as well as their application with the purpose of researching some complex processes or phenomena, insufficiently elucidated or newly appeared in the social and economic life or in nature. The main idea of transdisciplinarity is that scientific knowledge cannot be regarded as belonging or stemming from a single field or subfield of science. We can only talk about transdisciplinarity when a philosophy, a philosophical trend or a general hypothesis is creatively applied to other fields of science and it forms a new complex of systems, relationships and structures. An interesting and suggestive graphical image is offered by professor Emil Dinga from the Romanian Academy, who highlights the increase in knowledge brought about by the synergistic integration of the results of research efforts made by developing the perspective, by jumping from subject to multidisciplinary, then by moving to interdisciplinarity and finally by applying the transdisciplinary mechanism that he sees as an endless cycle of knowledge sources (DINGA, 2019).

Let us also remember an extremely important aspect. The postmodernist and posthuman concepts of transdisciplinarity consider that the generation of scientific knowledge does not represent the attribute of some academic subjects with an impact in the horizontal plan, but the result of the research performed by a multitude of research teams, in the vertical plan, outside the university environment. Transdisciplinary scientific productions can also be generated by organised structures at the level of less complex communities, including through those scientific products resulted from the accidental effort at the individual or collective level.

The radio is, through its definition, the action field of multidisciplinary. And this is because, the same as the other journalists, the radio people sometimes find themselves forced to combine and integrate information from various subjects, together with their methodologies and work hypothesis, meaning to appeal to interdisciplinarity. They often go beyond the traditional boundaries of sciences and combine their action techniques in order to achieve a common goal. Methodologies and hypothesis belonging to different subjects are being used. They are connected and modified in order to adapt them to the research needs. New tools are built, which allow the investigation of some difficult subjects, which go beyond the possibilities of a single subject. Oftentimes, reporters who analyse the evolution of the political scene are forced to combine economics, maths, geography, politics, sociology, biology, physics, sports etc. Sometimes, through such a multiple filter, journalists can influence a certain politics or they can place themselves at the origins of a new discourse in international politics. Presenting about a future summit of the leaders of Central Europe, the radio-journalist emphasized the fact that Romania's invitation to this event basically means a political recognition of the real position of our country in the European concert. The analysis of the discrepancy between Romania's artificial geopolitical assessment (regarded as an East-European country) and its geographical localization right in the centre of the continent, at equal distance from the Atlantic and the Urals, as well as the cultural and historical arguments, although condensed in the very

small space of a radio report, has been transformed into an important direction of the Romanian foreign policy for many years.

In all modesty, I would highlight here the experience I gained during the years in which, from the microphone of the public radio station, I achieved a series of shows meant to offer the public extremely complex events. Their range is extremely vast. Starting from internal and international political duels, disastrous military confrontations and economic crisis, from the first landing of a spatial model on a comet, to the awarding of Noble prizes, from traffic to health issues, from sports to religion. And these series could continue. I agree, of course, that the level of these shows was not always the academic one. Radio does not impose such a thing. But multidisciplinary and the connections between very different fields cannot be ignored since the radio producer prepares the entire journalistic endeavour by himself, and not with the support of an entire team, as it is the case in other media institutions.

I offered this example to shed light on the complexity of the situation in which the journalist in general and the radio reported in particular finds himself in his efforts to offer the public well filtered information, understandable to everybody. The first and very important stage is that of proper, well-consolidated, interdisciplinary knowledge. Of course, no journalist is asked to know everything. This would be a nonsense. But one of the basic requirements in order to have a radio career is a very well-consolidated general knowledge baggage. Attention! We do not automatically expand this capacity over multi or interdisciplinarity! But it represents one of the key requirements for a visionary approach. Because, before presenting a complex situation to the public, the radio-journalist has to "have everything in his head!" Why do I always make this distinction? Because, while in the written press there is the necessary time to resort to information sources that are more difficult to access or to a more substantial help from the editorial team, the radio reported is always under the threat of "the live moment"¹. It is happening right now, I need to know everything now! Afterwards begins the febrility of expanding the documentation and the search for specialists

from the fields of interest. Of course, the proportion of the personal agenda steps in here and this represents another distinct page of knowledge. Because it is not only related to general knowledge, but it also implies a series of much more ample socio-professional connections. Here we speak about the aspects concerning the relationships with specialists from extremely varied fields, based on a certain trust and reciprocal esteem, on the acceptance of some intrusions in the private sphere at times and days in which they would normally not be allowed. Of course, we do not exclude getting to know some new personalities, the dynamic creation of some new contacts. I emphasize all these aspects because, despite the preconception presented in the beginning of this article, the journalist is not "a nobody" who picks up the words of somebody and broadcasts them to others. It is true that, the existence of some not very inspired and often stressed reporters who present various information in an unhappy manner may lead to such a perception. But, the radio-journalist who respects himself is a person who deeply analyses the essence of the processes that he presents to his listeners. There are of course some exceptions justified by the rapidity with which he has to react in merchandise selling competition. Here, I come back and quote a great radio personality, with vast experience and relevant contribution of the December 1989 revolution. Gheorghe Gherasim considers that despite the apparent airiness of his activity, the radio-journalist has to firstly be a scientist, with a training that should not be limited to the knowledge included in the phrase "rich general knowledge." Nicolae Dobrițoiu, another important personality of public radio, emphasized the decision of the management of the Romanian Radiobroadcasting Society of not allowing to go to waste the scientific human "patrimony," highly educated and with solid work methods from the former institutes which went down the path of dissolution, following the disappearance of research funds, because people with such a structure will never treat journalism different than the research activity in which they were trained.

If in general, the work of the journalist can be associated with disciplinarity, there are also situations in which, during the same day, the

journalist has to be able to answer to a series of events from extremely various fields. This is the situation of the reporter accredited by one of the state's fundamental institutions, such as the Presidency of Romania. One of the most interesting succession of events that the author requested to present during a single day (and this happened more than once) included the reception by the head of state of foreign counterparts on an official visit, meetings with representatives of international organizations (NATO, IMF, EU etc.), the reception of reputable scientists followed by famous athletes, talking to cult representatives, consulting with political parties to form a government and, at the end of the day, decorating famous artists. And this is just a modest example.

But the need for professional development of the radio-journalist by increasing the number of specializations does not stop here. I offered the above example in which his knowledge has to cover a series of fields, let's call them soft. And yes, we could start the enumeration exactly from the software of computers, which became more and more intelligent. Because, only in the last decade, the radio, as well as other fields, made a giant leap into the world of IT. Let us remember the sound processing tool offered by Windows 3.1.1, which allowed the audio recording and the processing of a maximum of two or three minutes of sound. It was a free toy that I kept using at the beginning of 1990s for professional purposes. It was the time when most radio operators, who with scissors and a roll of scotch, proved to be excellent craftsmen of clean sound on magnetic tape, said they were horrified by the idea of processing sound with the help of a computer. In the West, BBC and Deutsche Welle had already digitalized their entire production and they were copying their sound archives onto hard disks. We did not get discouraged and, at the beginning of 2000s, we initiated the first digital sound archive on CDs, at the work point that Radio Romania has set up at the Cotroceni Palace.

But self-reliance (based on specialist training) was just one of the issues that highlighted the radio journalist's need for multidisciplinary. One of the most frequent aspects refers to the collaboration with the sound technician or engineer. I offer just one example here. I took

place shortly after September 11, 2001. Shortly before the end of one of the extraordinary meetings of the Supreme Council of National Defense, the intention of the President of Romania to go down to the Press Centre for a Conference with journalists accredited to the Cotroceni Palace was announced. Such events happen quite rarely. At that time, there were some extremely important subjects which were expected. A live broadcasting had to take place. Its preparation requires, however, the professional intervention of the specialist, but the technician was sick and he could not be replaced in due time. That is the moment in which our former collaboration proved valuable. I extended the circuits and, with a lot of emotion, I made the connections with the General Technical Control from Radio Romania (a not so simple process given the fact that at that time the connections were made manually through a classic local exchange and through the Telephone Palace). Shortly before the start of the press conference, I requested connection in the press office of the Press Centre. The listeners of the public radio station were able to find out directly, from the President, the CSAT decision to engage Romania in the Anti-Terrorist Coalition.

My entire experience is now used to fulfil the mission of "Apollonia" University of Iasi, as well as for the urgent need to shift the educational gravity centre from its classical forms to a permanent training, with the goal of the individual's complex socio-professional training and integration, through the massive usage of the modern means offered by information technology. Therefore, one might obtain the normal continuity of professional training. This is not at all an easy and trap devoid process, but it is supported by the European Commission, one of the most important supporters of the connection between extremely different research fields. Taking into account the resistance that multi and interdisciplinary research sometimes still encounters, it is necessary for it to become, through results, methodological status and

applicability, a well-defined quasi-autonomous scientific field, with its own resources for programme financing. "Apollonia" University of Iasi has both strengths and intellectual and material tools from two very different, but extremely high-quality fields. They shall allow it to enter the specific market for research, development and innovation more easily. Nanotechnology, biotechnology, biomedical engineering and biochemistry managed to overcome major obstacles in ensuring financing and therefore the various subjects studied at "Apollonia" University of Iasi can generate new horizons.

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Endnotes

- ¹I used here the title of the most significant news column from the Romanian public radio station.