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Econophysics, Sociophysics & Other Multidisciplinary Sciences Journal (ESMSJ) provides a resource of the most important developments in the rapidly evolving area of Econophysics, Sociophysics & other new multidisciplinary sciences. The journal contains articles from Physics, Econophysics, Sociophysics, Demographysics, Socioeconomics, Quantum Economics, Econooperations Research, or many other transdisciplinary, multidisciplinary and modern sciences and related fundamental methods and concepts.



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## ACADEMIC RESEARCH FOR YOUNG TEACHERS (ARFYT)

*“Educated people lacking personal talent (...) I imagine them like an obscure room, with one entrance and one exit. Alien ideas enter through one door, cross the darkness of this room and leave through the other – so indifferent, lonely and cold. The head of a talented man is like a bright room, with walls and mirrors. Ideas come from outside – indeed, so cold and indifferent – but what a society, what a party they come across here.”*

Mihai Eminescu

A great number of scientific factors indicate that traditional methods of acquiring knowledge and search solutions for solving scientific problems are inadequate for modern research. Different disciplines require different amounts of time to complete research (e.g. the natural resource and environmental sciences, data-gathering and investigation, etc.), spatial and temporal factors may be crucial for successful research projects, programmes and partnerships. In the early stages of a research team formation, it is critical to develop a team timeline and establish a research framework that outlines the responsibilities and deadlines of each research team member, from the time necessary to develop a common language, to the time needed for activities that build trust and relationships, from the time to construct a mutual understanding of the research problems to the time for complex study of the conceptual model, etc. The research timeline should focus on the sequencing and responsibilities for research activities so that data synthesis, analysis, and the results writing may occur in a coordinated, spatially and temporally optimized manner. These factors, once included in the accountability strategy, can, and really expand the costs of integrative research, and all the researcher recognize that, as teachers move from doing disciplinary research to *inter-, trans-, multi-, and cross-disciplinary* research, the research process may take a longer time, and cost more money than originally planned.

The applications of research theory in any academic educational process, in conjunction with applied or exemplified research – mainly with regard to new technologies and the original systems of information – start from the BA stage or from the BA students, and continue with MA students and PhD students, and finish with teachers, according to which scheme the complex academic research and education means first of all *inter-, trans-, multi- and cross-disciplinary* domains and activities.

Academic research *par excellence* must act as a research problem-oriented field rather than in a purely unique discipline manner. *Interdisciplinary* research in academic education incorporates a greater degree of integration. *Transdisciplinary* research in academic education transcends embedded concepts and categories to formulate and solve problems in original ways. *Multidisciplinary* research means the maximum of possible integration. The *cross-disciplinary* research defines a permanent change in concepts, methods and models from a discipline to another. In all *inter-, trans-, multi-, and cross-disciplinary* researches, the original conceptions, even the theory or method to develop this new conception of the area of reality or system of inquiry, are rarely connected, associated and even shared simultaneously by the entire scientific community. This aspect could have a lot of real explanations, from classical research barriers like

idiosyncrasies (language ambivalence and paradigms multi-significances), spatial and temporal scales, covering data and adequate units, innovative methods, emergent techniques, to the depth and the breadth of the models, etc.

The modern *inter-, trans-, multi-, and cross-disciplinary* models do not mean a mental object of inquiry, that is often defined by one discipline, but rather a multitude of complex models realized in a lot of knowing or understanding ways adequate to the complexity of the world. The modern research moves towards integrated research in any possible manner, but differentiates the previous *four major types of integration* across another ten important research concepts: (1) the coverage of the spectrum of investigation; (2) the mixture of the basic concepts, methods and models in the research investigation cycle; (3) level of association and interaction among members of the scientific team; (4) the definition of the problem, hypothesis, test and validation; (5) epistemology and final scientific attitude; (6) research questions, theoretical and experimental answers; (7) the specificity of the knowledge generation; (8) academic workshops, conferences, etc; (9) papers, journals, books, projects, patents, etc., as the final research products; (10) competitive hierarchy criteria inside the team of researchers [1].

On one hand, the most important research product or result remains the scientific team and its visibility, structured as a functional network of students and professors, in a complete interaction process, developing a common research problem and mutually defining a conceptual language consistent with the multiple epistemologies and variable methods and models potentially or really applied within the team research's acts and actions, coordinating research specific way to answer the major questions, evaluating and scaling, structuring and restructuring the complex research process, synchronizing and territorialising the concrete answers as research outcomes, expected to anticipate the impact of the final data of the synthetic final product: papers, books, journals, projects and patents [2].

On the other hand, the diversity and the similitude as the fundamental characteristic of the modern scientific research indicate: (1) there are different and multiple ways knowing past and present in a given research context that may be equally valuable as well as similar projections for the future or valid prognosis and simulations; (2) there is an integration process of this diversities or plurality in options resulting from a concentrate understanding of the systems complexity; (3) there is also an adaptive cycle to reality and improvement of reality and knowledge about it: and (4) there is a valuable process of validation for this entire research action and the models intended for its application in reality.

The young scientists, researchers or teachers who are genuinely *inter-, trans-, multi-, and cross-disciplinary* may have difficulties finding employment, and current academic reward systems do not cope well with individual contributions to team efforts, while the idea of a specialized way of presenting their complex capacities and various abilities using scientific instruments, from CV to profiles, could be more useful and enlarge their visibility.

Some conclusions of the international workshops conducted and realized by the author of this paper in the University of Pitesti, over the last two years, entitled *Academic Research for Young Teachers* (AЯFYT I and II in 2012 and 2013), are pragmatically the main motivations of this introductory article, and of this entire special number 1 (volume 3, 2013) of our *ESMS Journal* (available on-line at <http://www.esmsj.upit.ro/>). The special issue structures aims at a useful presentation of a number of scientific research and derived scientological aspects, intending to give a motivated impulse by sound reasons for the young teachers and researchers in front of the ever more significant part played by *inter-, trans-, multi-, and cross-disciplinary* approaches in the collaboration between Engineering, Physics, Sociology, Mathematics, Statistics, Econometrics, Business education, Philology, etc. in modern academic research team.

The degree of reality coverage possible by using *inter-, trans-, multi-, and cross-disciplinary* methods and models increases significantly in contemporary academic research and education, connected with a number of interdependences between science and culture, underlying the classical and obsolete tendency of isolation in mono- or unique discipline methods and models. Thence, the new culture of *inter-, trans-, multi-, and cross-disciplinary* research remains a practical issue, not certainly in as far as that culture is regarded only as a product of academic life, *but life* (academic research and education) *having become, in that sense, a consequence or an imprint of research and education culture at the same time* [3].

Many of the academic institutions address critical topic areas such as Biodiversity conservation and sustainable development, Human ecology, etc. or complex domains like Econophysics and Sociophysics, Biophysics technologies, Quantum economics, etc., through education & research bound approaches. Also, this special issue tries to describe and overcome some of the barriers to expanding beyond traditional disciplinary research structures, including lack of funding for *inter-, trans-, multi-, and cross-disciplinary* research, lack of historical institutional, interdepartmental or cross-disciplinary cooperation (ranging from time requirements, differences in methodologies and disciplinary norms, to research team problems, research team leaders and egos, etc.), and thus it can generate inadequacy, mismatch, and finally even trained incapacities in understanding the real dimensions of the modern scientific research, and lacking the capacity to address increasingly complex scientific dilemmas of contemporary trends and realities.

Based on the recent experiences of our international workshop AЯFYT and related literature on *inter-, trans-, multi-, and cross-disciplinary* research, the next twelve principles describe the liaisons and bridges to overcome the difficulties and even more the barriers to research integration for young teachers:

a) the principle of diversity in selecting and developing the research team, based on young teachers as futures members of a new academic research community;

b) the principle of clearly defining a *inter-, trans-, multi-, and cross-disciplinary* problem, by addressing temporal and spatial scale issues;

c) the principle of redefining the common research team vision, through describing not only the research problem, but also emphasizing research questions jointly and clearly, and thus underlining the focal theme with the necessary topical and analytic subthemes, and desired research products;

d) the principle of the formal communication based on generating, recording, storing, processing, analysis, interpretation, use and dissemination of relevant information, redefined in strategies focused on the visibility of the results;

e) the principle of programming communication activities in search team (when and how, what and who support information or need information) to avoid the NETMA concept (“Nobody Ever Tells Me Anything”) to the end or reporting the research information (using formal and even informal interaction to develop the real team results/products, from the individual to the team levels);

f) the principle of common scope, range, activities, finalized with the delimitation of the research area and its cost, time and quality optimization;

g) the principle of defining the logical precedence relations in the research activities, from scheduling research activities, to identifying their dependence and interdependence;

h) the principle of adjudication and implementation of the research risk management, by reducing the impact of risk matrix of the research, and monitoring results and coordinated control activities;

i) the principle of a continuous team building process (recruiting new young teachers as actors in the research play, and assigning roles);

j) the principle of harmonizing activities and partial or complete integration of the research management;

k) the principle of recognizing the research team as a psychological autonomous group inside the academic environment, challenges encountered having to do with personal attributes such as trust, communication, space–time vision, and commitment, and attitude like finding a common theoretical and experimental perspective;

l) the principle of multiplied acquisitions needed for the research achievement, from scheduling, to selection and purchasing tenders, from initiating to monitoring and finalizing research, from achieving high performance, to strong relationships with suppliers.

One young teacher can easily identify at least ten reasons for using the team experience similar to AЯFYT experience to find and accomplish successfully *inter-, trans-, multi-, and cross-disciplinary* researches:

I) all the research team members can promote an organization structure similar to a modern young research team;

II) all the research team members can participate in all activities, from common papers and books, to workshop and conference, from projects to partnerships;

III) all the research team members contribute to establishing major activities;

IV) all the research team members can be consulted in setting the budget;

V) all the research team members can use time management techniques and will not allow the projects to fail;

VI) all the research team members can formulate the research tasks specifically and clearly detailed, but only the manager or the leader of the research team, in his/her real and formal quality as research network node, can approve the final objective of common research;

VII) all the research team members do not use bureaucracy, policies and procedures which can backlash against them as a team structure;

VIII) all the research team members agree on realistic goals and specific *inter-, trans-, multi-, and cross-disciplinary* research;

IX) all the research team members can foster team right from the first research phase or activity, but only the team manager can declare a final rule included in the research;

X) all stakeholders (partners, donors, customers or target audience) are involved early in the *inter-, trans-, multi-, and cross-disciplinary* research.

Instability is a pervasive phenomenon that has deep implications for virtually all complex research teams and research systems. In the research activities, the identification and mitigation of various types of instabilities is a well developed practice and a key focus, for example, of prevention of potentially destabilizing team trends or the elimination of potentially destabilizing activities in a research project or program.

The modern research team and research project have become working instruments necessary for the development of academic education and research activities, in almost every university, faculty, department, etc., starting with the basic individual research, going to the functioning of institutional research, being more and more *inter-, trans-, multi-, and cross-disciplinary*, from health to finance and insurance, from culture to agriculture, from road building to commerce, from industry to IT services, etc.

This special issue represents the natural sequence of these concepts reflected in the university or academic field, and of the wish of forming the modern research team, described as heterogeneous as far as the structure of scientists or teachers and training is concerned, but homogeneous in defining own project and its intelligence, from an emotional and partnering intelligence point of view, to adapt to the fast changes which occur all over the academic and educational world, within the European Union and, hopefully, even in our country, during the last decade. When one says changes, they mean the abandonment of activities deployed in the strictly institutional structured system as research institute, and their replacement with the young teachers forming research teams as a modern, effective and original solution to the new problems that education, economy and even the entire society in general are confronted with...

But the *inter-, trans-, multi-, and cross-disciplinary* research has its own rules and principles, not so restrictive and, apparently, not as bureaucratic as the externally-funded and classical research projects are [4]. This modern approach intends to facilitate the prompt comprehension of few mechanisms governing the existing and apparently

complicated connections between the sciences, disciplines, education and research in general, by turning to the friendly interface of academic research of young teachers, in the contemporary European and global context. In order to do this, this special number 1 of ESMSJ is divided into five papers, the authors being integrated in small or large teams, following a common pattern: from concept to language, from method to model, from simple to complex. Therefore, the beginning is notional, defining today's trends and presenting some of the usual concepts used in modern team research, from the necessity of the holistic approach and classical steps in modern research, which is intended to be completed by publishing articles, to the importance of a relevant profile on internet for the scientific research visibility, from the relevance and impact of a paper's title, abstract and key words for citations and data bases, to the scientific research visibility in 2014 and beyond, from translation, translators and academic writing, to the specificity of *inter-, trans-, multi-, and cross-disciplinary* research literature in academic interlibrary exchange...

Through its innovative and research teams and projects, the principles and the structural fields of the management in the contemporary and future research, a modern university emphasizes the importance of team principles. Thus, the monitoring of modern *inter-, trans-, multi-, and cross-disciplinary* research means not only the risks that can appear in the research regardless the integration of the different fields, problems, themes, but even the quality of team and partnership in research on which this special number is based upon.

In conclusion, the demands of strong disciplinary knowledge within *inter-, trans-, multi-, and cross-disciplinary* research remain substantial, and it is up to the research team members to link their specializations to the team research work, projects, programme, etc. The different degrees of integration in *inter-, trans-, multi-, and cross-disciplinary* research, offer different advantages, and to avoid the disadvantages for academic general research it is important to identify and validate the type(s) of membership and sciences integration inside the research team, type(s) all members and sciences implied will pursue, and clearly understand the challenges to the research team, project, partnership, inherent in each of them. The *inter-, trans-, multi-, and cross-disciplinary* research can be enabled by individual researchers and teachers, disciplinary distinctions, and programmatic design, but they need visibility, rigour, integration, proactive planning and continued reflection on the research process...

Thus, it is more than necessary today to develop reproducible principle and reliable criteria for identifying the distinctive qualities of *inter-, trans-, multi-, and cross-disciplinary* research for the next decades and search for the best answer to the question – how the structure of young teachers, innovation and education of a group of young teachers succeed in forming a modern and successful research team, in which the structure could be defined and understood as a set of interacting components of a competitive system, and when the functions of the entire research team change from being valuable resources the team converts into an adaptive complex system, or else it simply just disappears.

Also, academic *inter-, trans-, multi-, and cross-disciplinary* research is characterized by an explicit engagement with university and society. The future means a new and more richly integrative academic research, and in the next decades universities as well as the entire society must renounce the inadequate and isolated disciplines and researches and embrace the new manner of *inter-, trans-, multi-, and cross-disciplinary* research, but in a more integrated system of research, publishing, experimenting and theorizing specific types of activities, commonly described as a process of collaborative and combined investigations and inquiries into a complex problem with sharing, creation, and synthesis of knowledge among sciences, disciplines and researchers. Anticipating the future research in academic education as something much more complex than the mere intersection of any other fields of education process, and something broader than a mere sub-field of education, helps *inter-, trans-, multi-, and cross-disciplinary* researchers make good use of an exceptionally fertile networking of scientific knowledge, theories and methods coming from a larger and larger group of domains and disciplines, and the role of ARFYT could be that of a very small part or piece in a huge puzzle of global research.

There exists, in the space and time of Romanian academic research and education, an inimitable example, a mentor-disciple relationship, absolute and mystical through his approach and consequences, who was described by one of the two individuals involved, namely Mircea Vulcănescu, concerning Nae Ionescu, as simply the "Professor." During an examination, the "Professor" (i.e. Nae Ionescu) had given Mircea Vulcănescu, then a student, a white ball without asking him virtually anything, so the latter insisted on being given a subject, so as to be judged classically, through the usual "viva voce examination", and so the much needed dialogue could be achieved...

"But why should I examine you viva voce?," the teacher asked him.

"So that I could realize what I know", Mircea Vulcănescu replied.

"This is precisely why I do not examine you, so you'll think you know something", the Professor's reply came.

The final consequence would be a normal one, hardly unexpected, if not a chained one, in the cobweb of a spiritual

attachment bonding mentor and disciple (and revealing the interdependencies between research and education), never permanently closed in a full dialogue. The Professor's work would be published only thanks to the notes taken down by his best students, and none other than Mircea Vulcănescu made this exceptional effort of recovery of an educational document using research methods.

"Beware of the man who keeps telling you the same thing for twenty years", was the still valid formulation of the Professor, whose course was considered among his students a wellspring of living water and fresh thoughts. This is why publishing his course of logic or metaphysics was impossible and also other courses during his lifetime. Mircea Vulcănescu's thoughts regarding his mentor are fully suggestive through their undisguised though critical admiration. "*You can only capture the Professor's shadow, for he carries the mystery unsolved after himself, tricking you into thinking there is nothing unsolvable about it. He fears he may be "fixed", and consequently you will find that there is a way to sum him up in a mere formula.*" Ethical elements and the trainer will be essential. "*It is he who, out of all my teachers, had the greatest influence on my mind,*" Mircea Vulcănescu finally confessed. The educational, cultural, ethical and formative acts reunited in education need continued rigour and creativity, and this could also define the research process, and, especially, the young teachers' team created for future research.

We would like to give our thanks to all those wonderful authors whom we have quoted throughout this issue, for their effort as "pioneers" in the individual fields approached. We remain deeply grateful to all our readers, whether they are undergraduate students or MA students, teachers or researchers, or just simply... readers, and we also thank especially those who have the kindness of submitting to us their suggestions and those who will take the time to point out eventual errors or ambiguities encountered in the text of this special number 1 of ESMSJ, which of course remains open for further improvement.

Editor in chief,  
Gheorghe Săvoiu

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**AFYT I 2012**  
**ACADEMIC RESEARCH FOR YOUNG TEACHERS**  
**INTERNATIONAL WORKSHOP PROGRAMME**  
**THE 13<sup>th</sup> OF NOVEMBER 2012**

9h00 – 14h00 MORNING SESSION		15h30 – 19h00 AFTERNOON SESSION	
9h00	OFFICIAL RECEIVING GUESTS Opening speech		
9h30	Rector of the University of Pitesti	Gheorghe SĂVOIU, Mladen ČUDANOV, Ondrej JAŠKO <i>The Specific Thinking, Working and Publishing in the International Academic Research Team</i>	15h30
10h00	Gheorghe SĂVOIU & Ion IORGA SIMAN <i>Concepts, Variables, Methods and Models in the Academic Multidisciplinary Research</i>	Maria Camelia MANEA & Constantin MANEA <i>Academic and Non–Academic Translation in Academic Research</i>	16h30
11h00	Vasile DINU & Laurențiu TĂCHICIU <i>Amfiteatru Economic an Economic and Business Research Academic Journal</i>	Dana STANA <i>The importance of Interlibrary Exchange for Academic Research</i>	17h30
12h00	Coffee break	Coffee break	18h30
12h30	Dana PIRVU & Amalia PANDELICĂ <i>Academic Realities for Students and MBA Research and Mixed Research Team</i>	Moderators: Gheorghe SAVOIU, Ion IORGA SIMAN Final discussions	19h00
13h30	Moderators: Gheorghe SAVOIU & Ion IORGA SIMAN	Workshop closing	19h30
14h00	Lunch break		

**AFYT II 2013**  
**ACADEMIC RESEARCH FOR YOUNG TEACHERS**  
**INTERNATIONAL WORKSHOP PROGRAMME**  
**THE 14<sup>th</sup> OF DECEMBER, 2013**

9h00 – 14h00 MORNING SESSION		15h30 – 19h30 AFTERNOON SESSION	
9h00	OFFICIAL RECEIVING GUESTS Opening speech		
9h30	Rector of the University of Pitesti	Gheorghe SĂVOIU, Marian ŢAICU, Slađana BARJAKTAROVIĆ RAKOČEVIĆ, Siniša MALI <i>The Relevance and Impact of Paper's Title, Abstract and Key Words for Citations and Data Bases</i>	15h30
10h00	Gheorghe SĂVOIU, Ion IORGA SIMAN, Mladen ČUDANOV, Adam SOFRONIJEVIC Ondrej JAŠKO, Jelena MINOVIĆ <i>The importance of a relevant profile on Internet for the scientific research visibility</i>	Constantin MANEA & Andreea Silvana MANEA <i>Translation, Translators and Academic Research Writing</i>	16h30
11h00	Gheorghe SĂVOIU & Vasile DINU <i>Some characteristic tendencies for internationalization of the Romanian economic research</i>	Adam SOFRONIJEVIC, Mladen ČUDANOV, Gheorghe SĂVOIU, <i>Ever to Excel: Scientific Research Visibility 2014 and Beyond</i>	17h30
12h00	Coffee break	Coffee break	18h30
12h30	Dana STANA <i>The specificity of transdisciplinary research literature for academic interlibrary exchange</i>	Moderator: Gheorghe SAVOIU Final discussions	19h00
13h30	Moderator: Gheorghe SAVOIU	Workshop closing	19h30
14h00	Lunch break		

# THE IMPORTANCE OF A RELEVANT PROFILE ON INTERNET FOR THE SCIENTIFIC RESEARCH VISIBILITY

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**Abstract.** *Many researchers and scientists use Internet to present themselves and their scientific or educational activity papers, books and projects). Why the new impact of Internet became so important? One answer could be the great majority of the young researchers want to improve the communication within the scientific community. How can researchers communicate and improve their visibility in an optimal, or a better manner? The young researchers can gain new abilities on writing good profiles and finding the adequate places on Internet for their papers and books. The new scientist' profiles, especially with regard to their work structure and impact can help them much than the classic publishing way using strictly only publishing houses. The most recent of the existing literature focus mostly on specific and single platforms. This paper presents a study of some specific profile problems and their characteristic utilities (detailing scientists' profiles on institutional and private Web pages, social networking services, etc.). For this purpose, the authors' profiles belong to themselves as researchers or academic teacher or academic researcher, being the easiest way to explain how to obtain visibility, cooperation and partnership in academic research. Thus, Internet offers a lot of solutions and some of them were detailed to identify and analyse the method and the framework, suitable for the next generation of young academic teachers and researchers, identifying structures and further analysis of scientists' profiles. As a natural consequence, a new type of management appears on the Internet and a new theory or a new discipline called the management theory of Internet presentation.*

**Key words:** *science, scientific research, scientist profile, visibility, management of the Internet presentation.*

## 1. INTRODUCTION

*Which could be the most adequate signification or meaning of the contemporary word science?*

Derived from Latin *scientia*, science, in the sense of knowledge, could be defined and circumscribed as a systematic ensemble of knowledge connected with nature, society, and thinking. On the other hand, *Scientics* or *scientology* means the science of science, an investigation into the way in which the study of nature through observation and reasoning has evolved all through several millennia of human activity. Science emerges when at least four major elements are joined together: “*a specific or a characteristic part of a dynamic reality, a method or a collection of methods for investigation, an original theory or an aggregation of theories and a special model for understanding, validation and projection*”. [1]

The scientific research, implies the permanent evolution of science, and develops from hypothesis, through demonstration, to become theory, through a complete

process of analyzing gradually the dynamic. Since Aristotle's period science (*episteme*), as the final result of a research, could be of an applied type (*techne*) or theoretical (*theoria*), which reflects the duality of scientific research as a whole or entity. Hans-Georg Gadamer demonstrates that scientific research, which is in a constant search for truth, may be completely different in the so-called hard sciences and natural sciences, where the essential goal remained, that of the forecast, compared to the so-called spiritual sciences, which have as an objective knowledge “*with no prediction*” [2] and Roger Penrose, in his book *Our Daily Mind*, tried to determine still finer shades for the previous distinction or cleavage, acknowledging the existence, in the field of knowledge and research, of four types of theories: superb, useful, tentative, and “*apparently*” misguided or targeted [3]. The first redoubtable scientist who has succeeded and clarifies the difficult aspects of the problem of the demarcation between scientific and pseudoscientific research was Karl Popper, in his *Logic of Research*, published in 1934. Karl Popper had listed four distinct lines along which a theory can be tested and evaluated critically, following its intention to become a true science: a) control of the internal consistency of the theory as a hypothetical-deductive system; b) examining the logical form of the theory or future science to determine if its content is informative, or the theory or science is somewhat tautological; c) comparing or confronting the empirical consequences derived from such a theory or future science with those derived from competing theories or sciences to determine whether or not the first has a knowledge value superior compared to the other, assuming that it will successfully pass the tests the empirical evidence proposes; d) assessing the future science or theory in light of these tests [4]. The distinction between scientific and pseudoscientific research may be restricted to a key [5] fully valid in exact sciences or in natural sciences, i.e. the amount and value of knowledge that various scientific theories and future sciences possess, which depends on the degree of falsifiability (defined by the relationship between theory and the basic statements) or of testability (the degree of testability increases with the degree of generality and precision of the theory or future science), and the involvement in empirical predictions that prohibit a considerable part of the possible observations selecting finally, out of all the theories that pass all the tests, those with a true value of knowledge.

The success of a scientific research depends on the structural properties of the phenomena investigated, and also on understanding that nature or the outside world has a high



degree of order, perceived by human reason as objective laws. However, scientific research also extends to the sciences of the spirit, in the sense given by Gadamer, the value of which is recognized through their vast amount of explanatory power, or of knowledge "with no forecast", i.e. those which Roger Penrose refers to as tentative and apparently misguided or targeted [5].

The process of the unification of science and research in the new concept of scientific research, combines a systematic set of knowledge about nature, society and, especially, by means of and about thinking, redefining science as "*systematic knowledge derived from observation, study and experimentation, conducted in order to determine the nature of the principles of what is being studied*" (Webster's New World Dictionary of the American Language), and a manner of applying and investigating the relations between phenomena (using concepts and variables) to solve problems of prediction and systematic and profound knowledge (constantly generating new methods, new models, new theories)...

## 2. SOME SCIENTIFIC RESEARCH TYPOLOGIES, SPECIFIC QUESTIONS AND STEPS

The terms *inter-*, *trans-*, *multi-*, and *cross-disciplinary research* describe integration and collaborations, often without clearly distinguished aspects among them. Generally, multidisciplinary research is used to describe maximum interaction among different researches in different disciplines, whereas trans disciplinary researches tends to describe collaborations transcending characteristic sciences to define original knowledge in between and at the borders of research from different disciplines, and interdisciplinary research refers to problem solving in which there is an intensive mixture of paradigms, methods and models ideas from a lot of researches coming from many disciplines. The connections between academic research and academic institutions highlight the interdependence of *inter-*, *trans-*, *multi-*, and *cross-disciplinary research* and educational institutions at three levels: a) organizational (university, faculties, research departments, research funding entities); b) research community (researchers and research teams members), and c) individual practices, and the more intensive these correlations are the more sustainable is the context academic research.

*How frequently and profoundly could change the science its manner of realizing important researches and, which are the most important details, structure, and steps differentiating classical research from modern research?*

Classical scientific research was partial and structured, discontinuous and extensive, based on efficiency and non-restrictive principle most of all, analytical and inductive, phased and paradigmatic, in its major aspects and spirit. Modern scientific research is more systemic (made in a holistic spirit), continuous (made in a historical spirit), based on more and more principles (in the extended aspects generating the spirit of ethics), defining (in a conceptual spirit), based on established steps (a new kind of phased in a modelling spirit), more and more paradoxical (in a theoretical spirit). The modern scientific approach is more and more a holistic one, and at the same time it is less and

less of the one-sided type (uni-disciplinary), and that means inter, trans, cross and multidisciplinary thinking and acting, judging and validating, prospecting and simulating, practicing and theorizing reality, etc.

While classical scientific research communicated in a more and more diversified language about a dynamic reality, modern scientific research needs the universality of that language, doubled by the universality of access, the visibility of the contents, theories, methods, models, and authors similar to its re-aggregated object of study in a large world of so called world scientific research. The young researcher must remember, or even find out that the school of logical positivism had stated, maybe among the first, that the sciences considered important "share" the same language. Modern scientific research also means a special integrated theory able to match, in a practical manner, a part of reality, and the essential instruments of forecasting and projection remain models for scientific research. A scientific theory could be defined as "*a shape or a paradigm of the universe, a restricted part of it, and a set of rules that connect the magnitudes in this shape or paradigm to the observations that the researcher makes*" in the research activity proper. The classical shape of the old theories meets the conditions of optimization and adequacy to the perennial reality, if it satisfies at least three requirements: a) describes accurately, synthetically and correctly a class of much more extended researched observations, starting from a "parsimonious", constructed in keeping with William of Ockham's principle, or the principle of "*the minimum simplification through hypotheses*"; b) makes predictions, in a Popperian philosophical sense, concerning the results of the future observations of a research experiment, the time evolutions of a research phenomenon; c) possesses a temporary validity as a research product, in the sense that it is only a hypothesis about the reality of the universe, which is itself in expansion. *How quickly and frequently could change a new theory the entire classical scientific research into a modern one?*

The very latest scientific research experiments of elementary particle acceleration describe losses of about one percent to the benefit of antimatter. The quantum world, that of the particle - wave non-determination in the mechanics of a quantum type, in a similar manner to the coexistence, in the theory of relativity, of matter and energy, seems much more imbalanced and likely to accelerate those imbalances with respect to classical macro-materialism. *But could immediately quantum physics' theory changes our modern science?* And what means quickly or frequently, or even immediately in contemporary sciences? These are major questions for practice and not for theories' way of answering... This becomes ever more significant under the circumstances of the rapid change in the methods and models measuring instruments and units or standards employed in evaluation the general scientific research results. There is room for quantum physics here, for instance, to gain recognition, in point of methods and methodology, and especially in theory for several decades to come....

*What could have constituted the beginnings of the scientific research: the method, the theory, or the model of thinking in the process of investigation a special reality and defining a science and its status?* The explosion of data from the contextual reality has imposed the need to reanalyzed and

clarify the importance of Empedocles' roots mixture in the *method, theory and model* of a new reality of the modern science. This mixture remained the ever-green beginning of modern scientific research. The scientific research determinations have often been called as methods, and they hide, under the quantitative indicators, the real meanings of qualitative information, illustrative as to understanding the structure, the level, the dynamic, the area or space of existence, the differentiated changes between concentration and diversification of specific reality. The contemporary multiplying theories and detailed disciplines (more than 8,000) explain or not the associations, causes, correlations, and final effects of characteristic phenomena, and new tendencies, the original temporal and spatial projections and thus urge to major reflections about the pragmatism and utility of scientific research. Modern science becomes also a brief transformation of knowledge from the most usual and simple access to information into a special way of thinking and research, using specific steps, structures and notions.

The practical steps of a scientific research conducted towards completion by publishing action of papers and books in prestigious journals and excellent publishing houses, could be reduced to the next significant iterations:

I) selecting one or more publications (journals and magazines) and publishing houses, in their natural hierarchy;

II) carefully studying the publications and publishing houses selected, which are accessible and similar to the very research that has already been completed, while analyzing not only the procedures and rules but also the standard structure and the detailed aspects of the process of publishing, etc.;

III) the title of the article or of the book must be selected for its topic suitability in relation to both the publication or publishing house and the very research conducted, a good title being able to highlight the relevance and originality of the scientific research and to satisfy the simplicity and resonance requirements;

IV) drafting the article or the book is perhaps the most elaborate activity, based on the strictly observed writing rules and slightly different for the abstract and bibliography;

V) the abstract, the contents and the foreword will be written, against all expectations, after the paper or the book are almost finished;

VI) the structure of the article or of the book are structured in relation to the requirements of the publication or publishing house, which will be fully respected; there is no a standard structure for a book but could be defined a standard structure of a paper, the beginning is remarkable, with an **introductory section**, followed by a brief **overview of the recognized theoretical and applied literature**, and also of the latest articles published in the range of topics chosen, by the title and content of the scientific research; a special section is devoted to aspects describing **the databases and the research method or methodology**, detailing, if necessary, up to the instrumental level (actually, taking over the method of the research), followed by **results and discussion**, the part that should prove both the researcher's discernment and pragmatism; the **conclusions** or findings close the writing of the research, and allow a final assessment of it [7];

VII) there is not a fully standardized method or style of writing an article to transcribe a research, but there are significant differences between individual or teamwork papers or books, applicative or theoretical papers or books, predominantly deductive or mostly inductive papers or books, articles focusing on modelling or the impossibility of modelling papers or books, etc.;

VIII) the citations in the text of the article or books and the tables (or graphs and charts) presentation become the elements qualitatively attesting the level of the research, for the future visibility;

IX) the bibliography or references must prove both remarkable rigour, and a serious research capacity from the authors;

X) the procedure of publication or publishing is a long one, which can take months or even years.

Based on the economic research as an example, the specific thinking of the research stages research is different in the classical econometrics from that in the modern financial modelling, as in the example provided in Table no. 1:

### The difference between the stages of the classical research based on econometric, and research based on financial econometric modelling [8]

Table no. 1

Stages of classical research based on econometrics	Stages of modern research based on the financial econometric modelling
I. Securing the data sets and defining the methodology II. Theoretical working out of the econometric model (sub-stages) <ol style="list-style-type: none"> <li>1. Identifying the model</li> <li>2. Specifying the model</li> <li>3. Estimating the model</li> <li>4. Model checking</li> </ol> III. Operationalizing of the econometric model (sub-stages) <ol style="list-style-type: none"> <li>1. Analyses of the model</li> <li>2. Using the model in forecasts</li> <li>3. Using the model in simulations</li> </ol> IV. Securing updated data series V. Confronting it with reality	<ol style="list-style-type: none"> <li>1. The overview of the theory in the field of which the phenomenon investigated is part</li> <li>2. Presentation of the theory underlying the econometric financial model</li> <li>3. Securing the data sets and the methodology</li> <li>4. Estimating the econometric financial models</li> <li>5. Empirical results</li> <li>6. Decision on statistical hypothesis testing</li> <li>7. Decision on testing the econometric financial model as a whole</li> <li>8. Validation or invalidation of econometric financial model (review of points 2,3,4,5,6,7)</li> <li>9. Conclusions and the impact on the previously existing theory and economic - financial econometric modelling</li> </ol>

*Which is the most adequate type of scientific research in modern process of inter-, trans-, multi-, and cross-disciplinary research?* The research is generally based on experimental or theoretical models. Models for researchers are either a modality of representing a simplifying empirical objects or parts of reality, phenomena, and physical processes (either models of phenomena or models of data) or an alternative in which the human way of thinking or mental processes can be amplified (for the scientist's thought, construction and the manipulation of models are vehicles for learning and understanding), or a substitute for direct measurement, experimentation simulation of reality). The typology of modern research defines two kinds of researches: experimental research and theoretical research. The first type of scientific research is based on experiments and experimental models that have a common origin, given by the laws of nature, or the laws of the universe (from the equilibrium, to conservation, from classical mechanics, to the generalized theory of relativity, from quantum particle, to macro universal effect, etc). Some aspects of these types of research models are used to determine both the static and dynamical properties of the represented and simplified reality. A law of nature is a scientific generalization, based on empirical experiments or research observations repeated over the years, and which is accepted by the scientific community (including the laws of our human nature, i.e. the social, economic and political laws). It is widely held that a law of nature resulted from a research process is understood to be universal in scope, meaning that it applies to everything that there is in the world or in reality (a law of nature govern entities and processes in a model rather than in reality). [9]

A distinctive experimental research is research based on simulations models, and this type of research is restrictive, being used only for the dynamic realities, i.e. models that involve time (the simulation's aim means understanding, solving and projecting the equations of motion of such a model). Researchers are acknowledging the importance of models with increasing attention, and are probing the assorted roles that models play in scientific practice. Interpretation "in simulacra" of a special reality through the research based on simulation model means to simplify reflections of this reality, but despite their inherent and relative falsity, model remains extremely useful (in fact, in classical or modern research there is no complete and entire true model able to describe the reality).

The theoretical research is defined as mental scientific research and is based on mental model, representing our understanding of a portion of the reality that we have profoundly rendered conscious, or methodically known. Any research based on mental or thinking model must be flexible, in the sense that it should reconsider the reality that is being studied or synthesized as a domain of information extended beyond the numerically limited universe, or in other words, beyond the simple mathematical model, thus becoming a filter through which reality could be interpreted, so that rational action could be exerted on it, and especially one may select, in a well-grounded manner, and according to an optimal prognosis, the solution or variant for action best

suited to the respective situation. In a certain sense, logical, philosophical, mathematical, physical, economic, etc. scientific thought can be identified and redefined, in turn, through the mental models of certain sciences. There are disadvantages of a general character inherent to virtually all the scientific researches based on mental models: the comprehension difficulty, the subjectivity, the methodological imperfection, the lack of completion in point of covering reality, etc., and also a lot of specific disadvantages (such as the multiplication appears to be of variables and equations in economics, or general references as connections or correlations to sociological models, name as an instrument usable to know the permanent and invariable essence of things in the linguistic model, or minimality and non-contradictorality in the logical model). [10]

Generally described, disciplines are transient or evanescent entities compared to global science, a family of theories, methods and models reunite together. This temporary sense of discipline can be seen as changing framework organising scientific research activities and addressing well-defined problems and during a few decades this kind of discipline surpasses over time and even transcends the real experiments or practices and disappears because of re-contextualisation of disciplines, a weakening of disciplinary boundaries and even due to an alteration of initial identities, which changes discipline essence or transform it in its core and profound spirit [11,12,13].

Modern researchers refer increasingly to the scientific research as to a craft [14], and describe the acquiring of the research skills as an apprenticeship, suggesting that all scientific researches require not only theoretical models, but especially experiments and practices, habits and customary conventions, and all of these considerations emphasise the importance of contemporary terms *inter-, trans-, multi-, and cross-disciplinary research, as a complete or integrated ability* to understand the full complexity of real problems...

### 3. VISIBILITY AND PROFILES IN THE SCIENTIFIC RESEARCH AND A NEW MANAGEMENT THEORY OF INTERNET PRESENTATION

The modern and especially recent scientific literature, and that is equivalent with many sources of inspiration from the same author [15,16,17] or means a lot of sources from different authors [18,19,20], develop a new sense of research visibility on Internet using the concept of *profile*. The general papers describe three levels for the study of researcher's profiles: profile networks, profile instances or cases, and content units. The content on the profiles can be classified with regard to its type, verbosity, and placement. Many of the recent paper represents the first investigations to construct a basic structure for further researches into contemporary scientific community, including *Academic Research for Young Teachers* (ARFYT I and II in 2012 and 2013) and for many other scientists' online self-presentation... There are many types of profiles (some profiles of the authors of this paper are presented in Annexes 1 and 2), but in keeping with the Internet priority in

scientific research communications the existing literature about research has explored mostly the on-line presence of general public, but recently or not so recently the theoretical studies of content created by scientists in their profiles focused on single platforms (e.g. Web pages [21] or blogs [22, 23]. Academic teachers, researchers or scientists can, however, have several standard profiles on different platforms and thus a more holistic approach is needed. Furthermore, while some results, findings and profiles offer general categorisation and typologies and even Helena Bukvova from Technische Universität Dresden, Germany, for example, recently in 2012 wrote some generous papers detailing her researches in this new domain, but even these are not specific enough to serve as an analytic content approach, because of the speed of the transformation of scientific communication, where profiles, abstracts and key words actually create a new generation of young teachers and researchers and new image of the research team [24].

Social media and new archives increase and multiply so much as nobody could have anticipated, they simulate experiments or re-evaluates its use of new communications tools like profiles archives, key words archives, or abstracts archives becoming soon a vast area of research, and access being possible by using a guide or specific Information on the Internet routes [25,26] The majority of the young teachers and a lot of researchers and scientists take advantage of the Internet to present themselves and their work "*Scientists are often expected to create profiles on institutional web pages and they may also create profiles on social networking systems, or share their thoughts on blogs*". [16]

A new type of journal combat have been initiated on Internet by editors and researchers, a innovative competition for visibility, and these in spite of the lack of ethical conduct any without assuring ethical behaviour. But the most important novelty is the new type of management appeared for internet profiles or any kind of presentations. Increasingly, more and more platforms and blogs, sites and links offer the opportunity to create personal scientific profiles or to connect to other researchers or scientists as users. These features have been added in an original manner, focusing on management of resources, like citations, key words, abstracts, etc. The strength of the Internet as a communication channel consists in its variability and it can be used to reach a broad, heterogeneous audience, employed for variety of purposes, and adjusted for personal needs and all these advantages emphasize the importance of the *new profile management* on Internet [27]

The new type of management recognizes the need for strategies on-line self-presentation, based on the theory of impression management by Erving Goffman [28] anticipating the behaviour in Internet new conditions (Goffman's theory has used a dramaturgical analogy similar to contemporary on-line self-presentation, where the act of presentation means a performance, a good mixture or a coherent combination of suitable *setting, credible front,*

*interaction with the audience, communication objectives, regions, teams, etc*). Erving Goffman uses a dramaturgy metaphor to explain the self-presentation during social interaction. Each academic teacher or researcher presence on Internet can be described as a "*performance*", where the participants adopt the roles of performers and audience.

*During the performance, each participant acts out a character – the "self" – according to his or her understanding of the encounter and aims... [29]*

And above all these aspects, the decision for an adequate platform, suitable site and derived link is perhaps the most complex of all, underlying the complexity of the issues, the aim of the framework the delicacy of the procedure, and the relevance of the entire profile design for the future evaluation of scientists' Internet presence and scientific results.

#### 4. SOME FINAL REMARKS

To the old Greek term *entropis*, whose initial signification was return or involution, was added the acceptance of factor/dimension that characterizes the state of an isolated system, as far as its evolution possibilities are concerned. Clausius considered, as early as the last century, that increases in entropy are tantamount to the principle of energy degradation. In other words, a system becomes all the more capable of evolution as its entropy is lower. Entropy is considered as irreversible, defining the very index of our ignorance of the system. The increase in entropy occurs at the same time as the increase in ignorance, and uncertainty, generating an equivalent diminution of information. How could the presence of the Internet and research profile change all these aspects? – could be the questions for the new researcher generations to come. The online self-presentation as a part of an overall professional presentation of the academic teachers and researchers or scientists requires a tactical and a strategic approach being a profound act of management in research presentation...

Self-presentation of the academic teachers or researchers in everyday encounters is a complex matter using complex solutions, mixed platforms and links, often relying on subtle and implicit signals. The limited richness of the virtual world means that signals and messages often need to be made explicit if they are to get across to the communication partner... But all profiles are somehow standardized and the future is alive and ruthless with these standards, new profiles and new rules are waiting: profile that are built by new specialist or profile's managers, profile written by the authors, profile just managed by to authors, profile inaccessible for various reasons (language), suitable profile with increased visibility, specialized profile that contains articles and ranks, etc. Although the future will require complete research profile, this could not be a reality, but a proper and adequate profiles mixture could replace it in a major proportion...

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**Ion Siman**  
 In [hmscience](#), **Ion Siman** (1951-), Ion Iorga Simăn or Ion Iorga-Siman, is Romanian physicist and biophysicist ([chhops](#)-physicist) noted for his circa 2005 to present work, together with Romanian economist [Gheorghe Savoiu](#), in the development the sciences of [sociophysicis](#) and [econophysicis](#).

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**UPESW 2013**  
 The following are some photos of Siman and his books perused by American electrochemical engineer Libb Thims during th visit, together with Gheorghe Savoiu, following the UPESW 2013 workshop.




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# THE RELEVANCE AND IMPACT OF PAPER'S TITLE, ABSTRACT AND KEY WORDS FOR CITATIONS AND DATA BASES

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*Abstract. The number of citations is used to measure the impact of a scientific paper, of a magazine, but also of a researcher. Most scientific articles do not have citations, and the number of visits is dependent on very many variables. In the online environment, given the abundance of information, the research is made using certain key words. The purpose of the article is to examine how the title, the abstract and the key words of an article can influence its visibility and the number of citations.*

**Keywords:** *relevance, title, abstract, keywords, citation, data bases*

## 1. INTRODUCTION

All magazines are interested in publishing articles with a high potential impact, which could attract citations, and therefore increase the visibility and prestige of the publication. Thus, the correct identification of the elements of an article that might attract citations is interesting both for the authors and for the editors of journals. In this context, we propose to examine the importance and impact of the title, abstract and keywords on the number of citations and visits of the databases.

The authors usually give most of the time to presenting the methods and the results of their research and give very little time to formulate the title, the abstract and the keywords of an article. However, these elements can ensure the success of the publication.

Given the specificity of the scientific publications in the online environment, it is necessary to take into account an optimization of the elements of an article to increase its chances of being found and read by the target public.

In the online environment the search has a number of peculiarities and the elements of an article that influence its chances to be read / quoted. In the era of printed publications the title of an article was less important because it was published in a certain context. An article that approached the issue economically was first published in an economic journal. Currently, the search using the word "incubator" will return through the search engines results in the industrial field.

## 2. FROM THE SEARCH TO THE CITATION OF AN ARTICLE

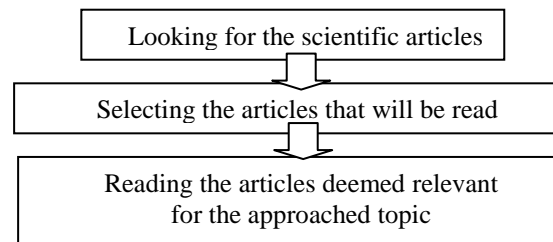
Laurence (2001) was the first who published data a clearly showing that the online publication increases the impact of the scientific papers [1]. His study was later confirmed by

other studies [2]. The online access of a paper is made most often by searching using key words.

From the statistics published by databases (for ex. REPEC) we can see a big difference between the number of views of the abstract and the number of downloads of the paper. This aspect clearly shows that, if after the reading of the abstract, the paper is not deemed interesting, it is no longer read.

The title, the abstract and the key words enable the interested persons to look and select the articles that will be read in the first phase and quoted subsequently.

In this process, we distinguish three distinct phases:



Source: prepared by the authors  
Figure 1. Search-reading-citation

### Searching for scientific articles

The normal question that arises is "How does an article become read?". We distinguish three main ways:

- Directly from the magazine that publishes the article, in the printed version or in the online version. An increasing number of magazines appear only in the online version for reasons concerning the costs implied by the printing. In our opinion the number of direct visits is small because it is conditioned by the fame of the magazine.
- By searching using the search engines. This method is time-consuming because the search engine shows the pages containing the searched words, whether they are scientific pages, press articles, blogs, etc. In this type of search, the title plays an essential role because the search engines deem the title as relevant for the content of the article.
- By searching in the scientific databases. The advantage is that the search is only in scientific papers and consequently, the results of the search are highly relevant.

The search is made using either the key words that are relevant for the topic of interest, or using the title of the



article if it is known. The citation of an article can contribute to the increase of its visibility because other researchers will be interested in its content.

On the internet there are a lot of more or less elaborate guides about how an article should be used in order to provide its success and to attract citations.

The papers can be classified in many categories as can be seen in box 1.

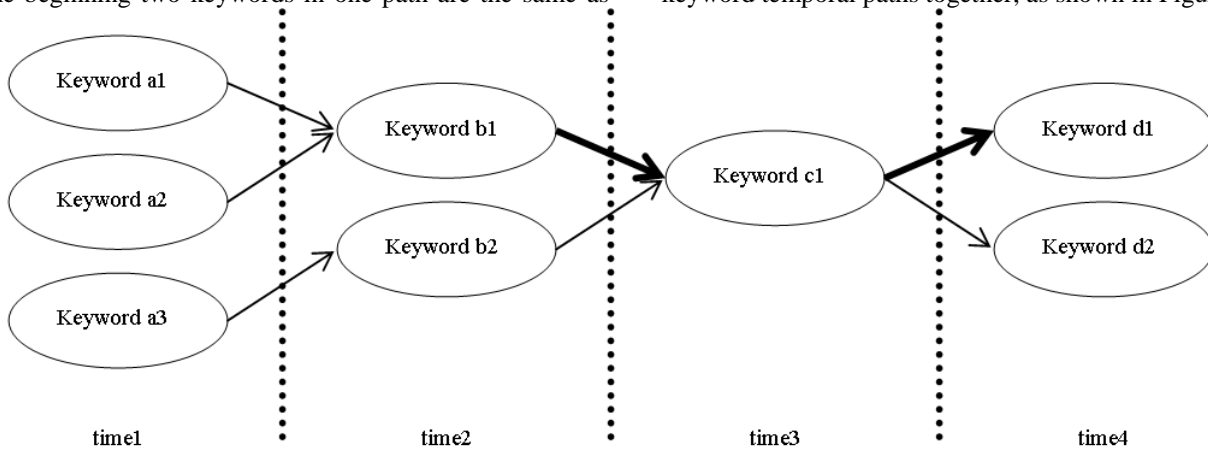
<ul style="list-style-type: none"> <li>• Academy News</li> <li>• Acknowledgements</li> <li>• Addendum</li> <li>• Advertisements</li> <li>• Author Index</li> <li>• Book Reviews</li> <li>• Cartoon</li> <li>• Commentary</li> <li>• Correspondence</li> <li>• Corrigendum</li> <li>• Editor's note</li> <li>• Editorial</li> <li>• Erratum</li> <li>• From the archives</li> <li>• General Articles</li> <li>• Generalia</li> <li>• Guest Editorial</li> <li>• Historical Notes</li> <li>• Hypothesis</li> <li>• In Conversation</li> <li>• In this Issue</li> <li>• Institutional Members</li> <li>• Keyword Index</li> </ul>	<ul style="list-style-type: none"> <li>• Letters to the Editor</li> <li>• Living Legends in Indian Science</li> <li>• Meeting Reports</li> <li>• News</li> <li>• News Focus</li> <li>• Occasional Poems</li> <li>• Opinion</li> <li>• Pedagogical Notes</li> <li>• Personal News</li> <li>• Preface</li> <li>• Prof. C. N. R. Rao</li> <li>• Publications received</li> <li>• Random selections</li> <li>• Reports and Documents</li> <li>• Research Accounts</li> <li>• Research Articles</li> <li>• Research Communications</li> <li>• Research News</li> <li>• Research Snippets</li> <li>• Retraction</li> <li>• Review Articles</li> <li>• Reviews</li> <li>• Science Notes and News</li> </ul>	<ul style="list-style-type: none"> <li>• Scientific Correspondence</li> <li>• Short Communications</li> <li>• Short Scientific Notes</li> <li>• Special Section: Atmospheric And Oceanic Sciences</li> <li>• Special Section: Clinical Neuroscience</li> <li>• Special Section: Earth Sciences</li> <li>• Special Section: Materials</li> <li>• Special Section: Megha-Tropiques</li> <li>• Special Section: Microscopy in Biology</li> <li>• Special Section: Radar Imaging Satellite-1</li> <li>• Special Section: Science of the Himalaya</li> <li>• Special Section: Tuberculosis</li> <li>• Supplementary Notes</li> <li>• Technical Comments</li> <li>• Technical Notes</li> </ul>
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Source: <http://www.currentscience.ac.in/php/features.php>

Box 1. Types of papers

Li and Sun (2013) studied the application of weighted co-occurring keywords time gram in academic research [3]. The cited authors started “with identifying all paths with up to three keywords. Then any two different paths are examined. If the beginning two keywords in one path are the same as

the last two keywords in the other path and the time value of the first path is later than that of the second path, we combine the two paths to one”. Li and Sun (2013) constructed keyword temporal network by combining many keyword temporal paths together, as shown in Figure 2.



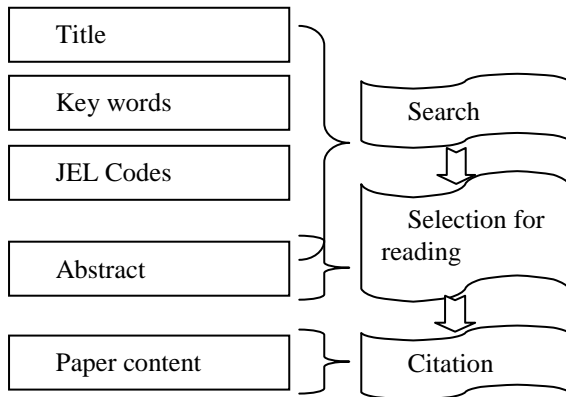
Source: Li, S., & Sun, Y. 2012

Figure 2. Keyword temporal network composed of different keyword timing paths

**Selection of the articles that will be read**

Researchers will select the articles based on their relevance for the topic in which they are interested.

**The citation** is the recognition of a significant contribution of the author of the quoted paper for the researched field.



Source: prepared by the authors

Figure 3. The relevance of paper elements for citation

From the diagram above we can notice that the title, the key words, and the abstract are the most viewed parts of an article. Their quality and relevance for the reader will determine whether the article will be read or not. The title and the article should be drafted taking into account that it must determine the readers to open and read the whole article.

However, it must also take into account that the title and the abstract must be consistent with the topic discussed in the article, in order to avoid disappointing the readers.

**3. THE RELEVANCE OF THE ELEMENTS OF AN ARTICLE FOR CITATION**

**Paper title**

The title is certainly the first and the most widely read part of a paper. In the specialized literature there are studies that analyse the correlation between the length of the title and the number of citations [4].

The title can be longer or shorter, can describe the results obtained or the research method, and can sometimes be amusing.

The importance of the structural elements of a scientific paper for its visibility and for the number of citations was the object of vast studies [5], [6]. Other authors studied the link between the amusing titles and the abstracts of scientific papers, and the number of citations [7]. Their conclusion was that the amusing titles and abstracts get 33% less citations than normally. An explanation could be the association between the amusing title and a topic treated less seriously, thus affecting the credibility of the paper.

The articles that have shorter titles are accessed and quoted more often than those with longer titles [8].

**The abstract**

The abstract is positioned at the beginning of the paper, and briefly presents its content to its potential readers.

The abstract helps the reader decide whether he/she will also read the content of the article. This is the most important role because the author does not write the abstract in order to trick somebody into reading the article.

The abstract can contain certain key words or expressions very possibly used by the potential readers to search. They help researchers find the article. The search engines use the abstract to find the articles relevant for a certain search.

The fact that repetitions should be avoided must also be taken into account. Repetitions can create the impression that the abstract was written in order to “trick” the search engines, with serious consequences for the author’s image. The abstract obviously has the role of making the reader curious, but the principles of professional ethics should always be observed.

The role of the abstract is to summarise the text of the article. The abstract should broadly present the content of the article, its main points.

Table 1. Types of abstract

No.	Type of abstract	Description
1.	Critical abstract	Includes a critical statement about the validity of the study carried out. These abstracts are usually shorter than the other types, having 400-500 words. They are used less frequently.
2.	Descriptive abstract	Indicates the type of information presented in the scientific paper. It does not contain critical statements concerning the study and does not present the results and conclusions of the research. It may present the purpose of the research, the methods used and the scope of the research. They have a length of 100 words or even less.
3.	Informative abstract	It contains the information of a descriptive abstract, but it also presents the results and conclusions of the research, and possibly the author’s recommendations. These abstracts have a length of up to 300 words, being the most used.
4.	Highlighting abstract	It is written especially to draw the reader’s attention. It has no value if it is not accompanied by the article. It is less frequently used in the academic environment.

Source:

<http://libguides.usc.edu/content.php?pid=83009&sid=62116>

A too long abstract loses its role of summarising the article and the reader's interest shall be lower due to their lack of time.

A successful abstract should not contain background information whose disclosure may lead to an excessive length of the abstract. This information is dedicated to the content of the article. An abstract with an excessive length risks being less read because of the researchers' lack of time. The references to the specialized literature (including the footnotes) and the citations should be avoided in the abstract. They will be left for the content of the paper, especially the literature review part.

The elliptical phrases, the abbreviations or the jargon words can create confusion among the readers and should be avoided. The abstract should be self-contained. Consequently, the images, figures, tables or references to them should not be included in the abstract.

**How do we select and draft the title, the abstract, and the key words?**

Scientific journals have their own requirements for the title, the abstract and the key words. In order to increase the visibility of the published articles, magazines aim at the indexation in the international databases. In the indexation process they must also observe the specific requirements of these databases.

Table 2. Frequent requirements for paper elements in call for papers

Element	Frequent requirements
Title	The length, the inclusion in a particular topic
Abstract	Number of characters or words
Key words	Number, relevance for the article.

Source: prepared by the authors

The titles have the following features [9]:

- They identify the main issues addressed by the paper;
- The start with the topic of the paper;
- They are exact, unambiguous, specific and complete;
- They do not contain abbreviations;
- They attract readers.

The titles of the scientific papers can be classified according to several characteristics, as can be seen in the table 3.

Table 3. Title's main characteristics

Title characteristic	Type
Length	Short or long
Formulation	Descriptive, declarative or a question
Content	Describes the results or the method used

Source: prepared by the authors

**The key words**

Most readers tend to search not only for one key word, but for two or even more key words. The paper title should contain the most relevant words for the paper.

**4. DISCUSSIONS**

The title and the abstract are used to invite reviewers to review the paper. They decide whether they will review the article or not, just based on the title and the abstract. In certain databases, the search takes place exclusively using the names of the authors, the title of the work and the abstract, without the key words of the article. Consequently, the author must include in the title and in the abstract certain key words that could be used to search in databases.

The number of citations is not always directly proportional to the visibility of the article or its quality. Andrew Moore, chief editor at the Wiley Publishing House, shows that the author's fame is another factor that influences the number of citations [10]. A higher quality article and with a high number of visits, but with a less known author will receive a lower number of citations than another article written by a famous author in the field.

Another issue, related to the authors' fame, is copying the citations from other authors. Simkin and Roychowdhury (2003) show that a high number of citations were inserted without reading the quoted work [11]. In order to prove this, the quoted authors study the number of errors present in quoting a text, but nonexistent in the quoted text. Repeating a quoting error identically in a significant number of authors shows that they have taken the citation ones from the others, without studying the quoted work. According to the quoted authors only 20% of those who quote, actually read the work they refer to in their papers.

The assessment of the quality of a scientific paper based only on the number of citations has a number of limitations, especially:

- If an author writes in a very narrow research field. In this case, his paper will be accessed by the few researchers in his field.
- If the paper is published in another language than English. In this case, the number of visits depends on the number of speakers of the language in which the article is drafted.
- If the author publishes the results of his research in a printed book. The limited number of copies and their perishability make the number of readers be much lower than in the case of the online publications.

In our opinion, for the narrow research field, it is wrong to assess the quality of a scientific paper exclusively based on the number of citations.

An article that is in one or several of the above- mentioned situations, will have a smaller number of citations in spite of the fact that it is a good article.

**5. CONCLUSIONS**

The title, the abstract and the key words are free to anybody on the internet and, therefore, can have a significant contribution to the increase of the impact of a scientific paper. These three parts of a scientific paper are essential for its impact and citation hits. The author should "help" readers find his/her work and optimizing these essential parts of the paper can ensure success.

Optimization of title, abstract and key words for data bases and search engines has some limits. The title and the

abstract are written for human readers, and not for search engines.

Concepts such as E-book, E-library, E-author, E-citation, E-education and E-research are increasingly apparent

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# TRANSLATION, TRANSLATORS AND ACADEMIC WRITING

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*Abstract. Translation into and from English is admittedly part of the broader picture of globalization, the ongoing process in which a language tends to gain recognition as a universal idiom of communication. Lately, academic writing has proved to be as significant and challenging, at least as far as translation is concerned, as literary discourse and writing. The authors of the present paper start from a set of theoretical assumptions in order to check the above suggestion, turning then to empirical evidence in order to demonstrate the fact that most of the conventions and regularities commonly associated with academic writing can turn into serious challenges for the translator.*

**Keywords:** *translation, translators, corpora research, academic writing*

## 1. INTRODUCTION

The authors start from the assumption that there is a generally felt need for universality in using language (in both its meanings, which French and Romanian can, incidentally, render much better, as *langue* and *langage*, and *limbă* and *limbaj*), respectively), as well as unified use of various concepts, nuances of use, etc. As far as the English language is concerned, its “universality” as a global language, has been obvious for circa 100 years.

On the other hand, **academic writing** has been found to represent the most important single field of educated communication, surpassing for instance fiction. As well as being (perceived as) a standardized, accurate, normative form of language, academic writing tends to be a more professional form of writing. As a rule, it is a form of writing employed among (and between) scholars. This kind of writing naturally requires research, in-depth analysis, summarizing, along with regular editing and proofreading. Academic writing is instrumental to, and actually underlies hundreds of topics and (sub)fields.

Turning to **translation**, we usually find various contradictory opinions as to what type of translation actually is, or should be considered, the most difficult to do. Some say it is translation in the field of fiction, i.e. literary texts, though there are actually dozens of statements, arguments and pieces of evidence to the contrary. It seems that, after all, the hardest job is to translate texts belonging to more specialized or *technical* domains (which, needless to say, are more often than not written in academic English). Both literary and academic translators are specialists in their genres or fields (or even subfields). Most translators hold

graduate degrees in literature, linguistics, but hosts of other translators are diploma-holders in some academic field related to the material they translate (physics, biology, chemistry, anthropology, computer science etc.). Before being a translator, someone who deals in translation should be an excellent writer in his/her own right, mainly on account of the fact that the style and concepts specific to both literature and academic writing tend to be quite sophisticated, complex and abstract.

## 2. ACADEMIC VS. LITERARY

While literary translators basically aim at achieving interlingual variants of written literature (fiction books, novels, short stories, poetry, essays, etc.), by conveying the contents of a variety of documents (also including journal articles and feature reports) in the form imposed by the specific structures of the target-language, translators of more technical texts have to face a similar set of language constraints, though the range of the texts they have to render may not look as spectacular. Most people empirically consider the job of the literary translator to be more (or, at least, essentially) *creative*: they have to produce target-language texts which faithfully convey the tone, the “voice”, the atmosphere, viz. the “style” of the source-text. More often than not, the original confronts the literary translator with such undeniable challenges such as metaphor, slang, colloquialisms and cultural allusion, for which he/she must find a suitable substitute/equivalent in the target language (and it should be added: *if* and *when* they think it appropriate). That is why the job of a literary translator may include things like working in close association with the author of the source-text (or even working in pairs), so that they may be sure they have captured the style and literary nuances as exactly as possible, or being preferred, as a mouthpiece of their own literary work, by some multilingual writers, or specializing in only one or two genres (e.g. fiction, poetry, essay, etc.), or choosing to translate only into one’s native language.

The seemingly obvious conclusion derived from most of the above considerations would be then that the “acme” of a translator’s activity is literary translation, which can even demonstrate expression skills superior to those of the respective multilingual authors! Moreover, working in pairs can include translating half of the original text, and then cross-translate the whole of the text with the other translator’s aid (“smoothing” transitions, as it were), or having the second translator act as a “reviewer” for the whole of the translated text, checking for

clarity, fluency, consistency, authenticity, stylistic adequacy and general tone.

That is not, however, entirely so – as academic translation may pose a comparable range of **problems**. Unlike literary translation, academic translation usually involves the translation of academic articles, abstracts, essays, and manuscripts: so, it may look like a much more monochord gamut. It is true that academic translators do not usually need to hold a degree in the specific field underlain by the texts they translate; nevertheless, experience is the key word in that field. Moreover, what academic translation specifically requires is a very good command of academic writing in the target language, which also includes excellent acquaintanceship with the vocabulary and general argumentative, theoretical, etc. structures of the respective specialized domain. Very much like literary translators, most academic translators choose to translate into their native language, while some academic translators restrict the range of the texts they work on to one or two authors, on account of that writer's specific style. (Our tentative assessment is not concerned with interpreters, professionally employed in academic interviews or at conferences, because their work does not deal with writing proper).

A related, and lately much debated, question is whether the majority of the translating job done by the literary translator, or that done by the academic translator is more interesting, due to the challenges and novelty each of them intrinsically contains.

Academic translation concerns rendering foreign or native variants for a wide range of articles, manuscripts, abstracts, summaries, presentations, prefaces, epitomes, etc., written in the source language. It is what is usually called specialized or technical literature, texts that are mostly used as reference sources. Academic translators are not always contacted by the very authors of the texts to be translated, but rather by various researchers who may happen to need those texts as primary sources of information.

### 3. SPECIFIC CHALLENGES

Our first debatable issue in discussing the potentialities and specificity of academic translations: what does translating specialized text mean? Markel (1998) defined such type of writing as “writing about a technical subject, intended to convey specific information to a specific audience for a specific purpose” [1], so we actually talk about technical writing *and* academic writing rolled into one. Thus, it represents a useful, most welcome component of a translator's very training, making up for the variety of language characteristics reality actually faces one with. Familiarity with several genres will felicitously equip the future specialist in translating texts written in specific fields of language with the necessary skills to generate (and replicate) texts consistent with those genres.

Many researchers in the field of translation have noticed a relative lack of interest in the (mainly theoretical) issues involved by translating academic discourse, especially translating technical and scientific material, e.g. Franco Aixelá [2] and Sarukkai [3]. As a rule, translating academic discourse has tended to be seen as less important, marginal, less frequently

addressed, or devoid of essential difficulty. However, reality itself demonstrates that translating academic texts occurs quite frequently, and its importance can hardly be underestimated. For instance, most scientific journals belonging to the non-English-speaking world impose, as an absolute prerequisite for publication, writing in English (or else, abstracts written in two languages), as do numerous university departments for thesis and dissertation abstracts or CVs, and the journals that publish translated versions of the papers included are by no means infrequent. On the other hand, there is almost unanimity of views as to the complexity and multifariousness of academic translation, including translation challenges that ranging from specific conventions and structures, technical terminology and genre conventions to subtler cultural issues.

One of the foremost challenges facing translators busy in the field of academic translation is generated by the (apparent) paradox that academic discourse seems to be at once both **universal** (arising, as it does, from the very universality of science) and **variable** (as it is steeped in particular cultural traditions, thus generating noticeable, sometimes even daunting, variation): Mauranen (1993) [4].

Major differences have been noticed by various studies in contrastive rhetoric, mainly in so far as the conventions of academic writing in different languages are concerned, so it is but natural to take heed of, and capitalize on such (practical and theoretical) knowledge in the field under consideration – translation studies. Academic translation can, consequently, be highly different in various cultures. Thus, there are researchers who convincingly note that academic writing is dissimilar in different languages, and should be treated as such: “the discourse of science in our global world is still highly cultural both in its textual structures or sequencing and in its cognitive processes” [5, p. 105].

The logically enough conclusion is that (good, authentic) translation, be it in the rather specialized field of academic discourse, should adhere to (most) conventions imposed by the target language. This should be “optimum adherence to the stylistic norms of the target language” – [6, pp. 144–145], or at least a fair compromise between preservation and adaptation [7, p. 127].

### 4. SPECIFIC ISSUES

As already mentioned, translating academic discourse involves a broad range of complex issues arising at different levels. The respective gamut extends from the general approach or translation strategy used by the translator to issues involving a particular text, or even its constituent linguistic or textual features. In translations of technical proper, economic, legal, art, didactic, etc. texts (i.e. translation for specific purposes), the permanent interplay the translator establishes between the text in its entirety and its components must include an intrinsic analysis of, and reflection on, the particular style of the material, which more often than not is likely to characterize the writer himself/herself of the text. So, there is a need for the holistic approach to translating academic discourse, not only at a purely theoretical level, but also as a matter of practical action. In this

respect, a much needed complement to the theory in the domain can be provided by various sets of data acquired through attentively exploring and studying the particular issues typical of academic translation.

If we turn to the topic of the language material to be taught, we can find (and research has proved) that different languages exhibit substantial dissimilarities as far as the conventions of academic discourse are concerned. Many studies in the past sought to illustrate the sheer variety of the subdomains in which languages differ when it comes to written discourse, mainly in the technical field: lexicon and word-formation items and rules, use and prevalence of various grammatical categories, syntactic structures, word order, discourse conventions, general style, parts of the standard discourse frame, etc. Among the widely different (standard) make-up conventions count the wording of the abstract, the thesis statement, the demonstrations, and the conclusions.

## 5. THE NEED FOR CORPORA RESEARCH

We are not trying to analyze massive corpora of research articles, which would be the object of a much more in-depth endeavour. That would involve comparing Romanian originals with their English translations, analyzing the English originals in terms of abstract or thesis statement use, etc. and general form conventions. Anyway, the results of such studies that we could come by clearly demonstrate that, for instance, the thesis statement is used more frequently in original English research articles than in original Romanian research articles, and that the English translations of the latter by and large correspond to the Romanian originals. The results also reveal differences between the two sets of originals in terms of thesis statement position and the degree of authorial presence, again with the English translations corresponding to the Romanian originals. A comparison of the Romanian originals and their English translations could identify certain changes (or adaptations) made during translation. Similar findings suggest that the differences between the two languages in point of thesis-statement (or abstract wording), in both use and form, can create (sometimes serious) problems in translation.

So, one of the conventions in which languages may differ is the use of the thesis statement. The thesis statement is a sentence (or, less frequently, a string of sentences), generally appearing at the end of the introductory section of the paper, stating the main idea or principal goals of the paper. Its direct purpose is to facilitate the reading of the text. Although the term itself is used chiefly in the context of essay writing for teaching first-, second-, and foreign-language writing, it is sometimes used in reference to other genres. In this paper it is used in the context of academic writing, typically referring to research articles. Though it has long been recognized as a convention of English academic discourse and is presented as an important feature in most EAP (i.e. *Employee Assistance Program*) textbooks, not many studies concerning expressing and translating thesis statement in Romanian academic writing have been produced: so, its very status seems to be highly unclear, at least in Romanian academic writing. Accordingly, it has been suggested that Romanian

academic writing is not as writer responsible as English academic writing is.

The corpora that an undertaking of the analytical kind mentioned before (which could be the outset of a broader future study) should make use of, ought to include highly representative material – for the occurrences of thesis statement (or abstract, as may be the case). Anyway, the respective corpus should ideally include some 100 units (namely, texts published preferably between 1999 and 2012), in articles illustrative of one field of research, and advisably subdivided into three sub-corpora, which should consist of an equal number of Romanian articles and, respectively, English translations corresponding to those materials.

The thoroughgoing analysis that has to be conducted on that material must consist of identifying instances of thesis statements (or abstracts), according to the general criteria of identification. Then, a comparison of the three sub-corpora should be carried out in terms of thesis statement (or abstract) frequency, the position of the thesis-statement within the introduction, and the degree of authorial involvement as expressed in its form. The final stage of analysis lies in the examination proper of the Romanian originals and their English translations. The degree of correspondence in thesis-statement (or abstract) use and form will be noted for each original and translation pair, which will generate a final correspondence table.

The results of such a thorough analysis will concern the degree of explicit authorial involvement in the thesis statement, the extent to which the general convention of the genre were observed by the translators, and more importantly, the degree of correspondence between the Romanian texts and their English translations.

The findings of the analysis will certainly confirm the hypothesis of the said research endeavour: there are in fact substantial differences in the frequency of thesis-statement use in the Romanian originals and English originals. This difference, however, cannot be said to be reflected in the English translations of the Romanian originals. Differences are also to be noticed between the two sets of originals in terms of position and form: in both respects, the English translations tend to correspond to the Romanian originals. A further comparison of the thesis statements that can be identified in the Romanian originals and their English translations could demonstrate that literal translation tends to be used, possibly in half of the cases, and changes which could generally be described as improvements in terms of TL conventions could be observed in some other instances.

The interpretation of the analysis based on similar research can prove, be it indirectly, a set of characteristics of academic translation in Romanian. Consequently, it can be argued that Romanian academic writing is in general a bit less reader-oriented than English academic writing (since thesis statement can be interpreted as an aspect of reader-oriented writing), and is most probably in keeping with its own conventions, typical of this genre in Romanian. This suggests that complex issues may arise in translating academic discourse between the two languages, which are as many challenges for both professionals and non-professional translators: the differences in rhetorical

conventions may lead to translations which fail to conform to TL conventions.

And, indeed, there are numerous challenges for translators in the academic field: the Anglo-American originals generally tend to be more metaphoric in expression, and even more colloquial. Consequently, one has to find appropriate academic equivalents in one's own language (i.e. the target language)... and the other way round (when it comes to translating from Romanian into English, which is, in actual practice, the far more frequent case).

## 6. EMPIRICAL FINDINGS AND INSTANCES

Both systematic observation and empirical experience has shown us that there is no one-to-one relationship between what can be considered "academic" (and/or formal) in English and Romanian. To take a very simple example, we can compare Romanian terms and phrases like *a executa*, *a realiza*, *a constitui*, *a întreprinde*, *relativ / privitor la*, *comparative cu*, etc. (which tend to be more neologistic and a bit more "formal") with their respective English counterparts: *to do*, *to make*, *to be*, *to carry out*, *about/on*, *unlike*, etc. This basically means possessing, or acquiring, the much needed "common sense" in matters of translation and adaptation (and equivalence).

It is definitely a truism to say that translation (any kind of translation, not only the academic kind) should avoid erroneous comprehension of the target text (which should naturally include Romanian terms such as the famous adverb *respectiv* – normally and canonically meaning "respectively", but very often misused to mean "that is" or "i.e."); in the context, however, the most significant components of the translated sequence are, of course, the (highly) specialized – or *technical* – terms and phrases.

A standard, rather general but well-established observation concerning the typical challenges in academic and formal writing shows that, as a rule, the most common such "quirks" are: the use of the Passive voice, the group of the Subject and its inherent problems (e.g. the author's plural, the use of the impersonal, etc.), the use of the tenses, word order, the various syntactic objects, a.s.o. Thus, academic and technical texts written in English, unlike their Romanian versions, will abound in structures like *Experiments were conducted which...*, *attentively processing the research material...*, *There are such cases when...*, etc.

Further conclusions can be derived from a (somewhat simplistic, unscientific, if not rather naïve, we have to admit) experiment: employing the often used possibility of having recourse to translating "engines" (with their advantages, and mainly shortcomings...), such as *Google Translate* or *Babel*. Our personal findings tend to demonstrate that such databases, if suitable used and especially refined, within various contexts, can generate surprisingly good results. The main finding was that, anyway, English is, more often than not, "simpler" or "more unassuming" (we could not bring ourselves to using the word *simpler*, though) in point of expression, e.g. Romanian "în cadrul", "în contextul" are simply translated as "in"; or (*animale*) *poichiloterme* and *exoschelet* become *cold-blooded (animals)* and *outer skeleton*, etc.

Most Romanian polysemous neological terms are prone to serious difficulties and (various degrees of) speciousness in the field of Anglo-Romanian translation. There are, for instance, (otherwise good) translators who, correctly (but somewhat obsessively) render English words that do not count as "genuinely specialized" terms – at least as far as their form is concerned – which occur in clearly "technical / specialized" contexts, through terms whose make-up or aspect has a **technical** (occasionally, rather unwieldy) tinge, based on "learned" segments / combining forms, such as *anthropo-* in *anthropology* and *anthropomorph*, and *pal(a)eo-* / *pal(a)e-* in *palaeobotany* or *palaeography*. For instance, the word *arheoscheletologie* was used in a context where the film character whose words were being reported was simply *interested in old bones*; similarly, Eng. *warm-blooded* was rendered as *homeoterm* (instead of Rom. "cu sânge cald"), while *cold-blooded* was translated as *poichiloterm* – cf. Eng. *homoiothermic* / *homothermal* "having a constant body temperature, usually higher than the temperature of the surroundings; warm-blooded" and *poikilothermic* / *poikilothermal* "(of all animals except birds and mammals) having a body temperature that varies with the temperature of the surroundings" (COLL). Similarly, *grass-eating (animal)* was rendered as (*animal*) *erbivor*, and *carrion-eating (animals)* as (*animale*) *necrofag*. See also Eng. *weightlessness*, a lexically and semantically "transparent" or "compositional" term, vs. Rom. *imponderabilitate*.

Here are some other examples of such non-neologistic, non-Romance, more concrete translation equivalents, which have the advantage of being much more frequent, e.g. "*modificările survenite în cadrul politicilor guvernamentale*" ↔ "*the changes in government policies*"; "deoarece acestea satisfac nevoi de bază ale oamenilor" ↔ "because they *meet* people's basic needs"; "*se disting două categorii de servicii de interes general*" ↔ "*there are two categories of services of general interest*"; "*strategia europeană în domeniul serviciilor de interes economic general*" ↔ "*the European strategy for services of general economic interest*"; "...sau le-ar furniza în alte condiții" ↔ "...or would provide them *otherwise*"; "furnizorii de servicii de acest tip" ↔ "...providers of *such* services"; "are o serie de drepturi privind prestarea serviciilor din acest domeniu" ↔ "has a number of rights *regarding services* in this area"; "...printre profesorii din instituțiile de învățământ liceal" ↔ "investigated among the *teachers in high schools*"; "în cazul unor valori mai mari" ↔ "and *for higher values*"; "e situată la limita..." ↔ "...*is close to the limit*..."; "...în sensul unei populații..." ↔ "*meaning a population*..."; "De aici rezultă că..." ↔ "It *follows* that..."; "...sprijină substanțial ideea conform căreia..." ↔ "...*substantially supports the idea that*..."; "*procesul educațional*" ↔ "*education*", etc.

A kind of rule of thumb of Romanian-English (academic) translation is that the Romanian variant tends to be longer (compare, for instance: "Rezultatele obținute prin cercetarea statistică și discuțiile legate de acestea" and "The results obtained by statistical research and related discussions"; "Acest lucru este ușor exemplificabil" cf. "This is easy to illustrate / This is easily illustrated..."; "...opinion that the quality of vision and perspective is essential" cf. "în zona opiniei conform căreia



experiența managerială...”; “...the changing needs and expectations of users” cf. “evoluția necesităților și a așteptărilor utilizatorilor”; “...the opinions of the teachers-managers differ from the opinions of the teachers (exclusively) on both the decision and the management of...” cf. “...diferă de opiniile profesorilor (exclusiv) referitoare atât la decizia, cât și...” [on is used to indicate the basis, grounds, or cause, as of a statement or action: *I have it on good authority*]; “Obiectivul cercetării axate pe chestionare ... l-a constituit...” cf. “the aim / target... was...”, etc. (However, it would be useful to compare the Romanian terms *obiectiv* and *țintă* in various specialized and academic contexts, e.g. “*Obiectivul cercetării axate pe chestionare*” cf. “*Ținta acestei cercetări aplicative este aceea de a demonstra că...*”).

## 7. CONCLUSIONS

Therefore, a tentative, situation-based conclusion may be drawn that English is (or at least seems to be) a ‘no-nonsense’, pragmatic language, which makes use of simpler, more transparent / analyzable / “compositional” structures instead of longer, ‘learned’, ‘opaque’, ‘un-etymological’ variants. On the other hand, if academic writing in Romanian tends to be a lot more “neologistic” than its English counterpart, the latter is more often than not rather neologistic as far as some specialized or technical terms and structures of set phrases are concerned.

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# EVER TO EXCEL: SCIENTIFIC RESEARCH VISIBILITY 2014 AND BEYOND

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*Abstract. This paper is dedicated to the new trends in research visibility. The authors start from the history of science, to the importance of the scientific research visibility and finish in the future of this new aspect based on some anticipations of the contemporary tendencies and realities. Experiments with new way of conducting scientific research and publishing its results perhaps in a more open manner, might be a first step away from an object-oriented approach focused on a finalized scientific product, towards a system based more on constant, collaborative and simultaneous knowledge production that will have a firm ground and effective exposure in a digital world leading to a better visibility of individual and group scientific output.*

*Keywords: visibility, research, liquid or fluid text, nano-publication*

*“Hippolocus begat me. I claim to be his son, and he sent me to Troy with strict instructions: Ever to excel (αἰὲν ἀριστεύειν – aièn aristeúein), to do better than others...”*

Glaucus, Homer's Iliad, Book Six

## 1. INTRODUCTION

The similarity between the atom, as an indestructible element of reality, and its shadow, in the Platonic sense of the idea of the atom, generates the assimilation of science with a certain manner of thinking. *Science in antiquity began by looking for an answer to the question connected with a certain peculiarity of primordial element of nature, like earth, air, water or fire, which generated the alternation of the diurnal and the nocturnal, as well as the climatic variation, or the diversity of the times of the year* [1]. Two of the greatest philosophers in Miletus, Thales (624 - 546 B.C.) and Anaximenes (585-525 B.C.), developed their philosophical theories starting from elements they considered vital, respectively water and air, with Thales, water representing the origin of any form of life, but also its end as well, and so did air, or the breath of air, with Anaximenes; Moreover, Anaximenes reunited in air, all the four essential elements within a chain of successive transformations, and considered water to be condensed air, while rain water was, wrung by air, the earth was nothing else but strongly pressed water, and, fire rarefied water. Anaximenes believed that air, water, earth and fire exist to the

only end of enabling life to exist. Hence, the long philosophical journey of those who wanted to explain nature; it was continued via the writings of personalities placed at the extremities, defined as absolute contraries, namely). Parmenides (540-480 B.C. eternalized the world, and implicitly its essential elements (all that exists has existed, and nothing can be born out of nothing), while Heraclitus (540-475 B.C.) celebrated eternal movement and change (*everything flows*), or the transformation of an element into another. Empedocles (490-430 B.C.) was the man who would conclude the ancient attempt at finding an elementary structure for the world, including the field of science: he tried to explain all the changes in nature through the fact that the four original elements or matters, which he called “roots”, were combined in various proportions, and then they separate mutually, again and again... Those combinations were to be, later on, defined through the existence of some germs or seeds, by Anaxagoras (500-428 B.C.), and finally Democritus (460-370 B.C.) defined the atom – the very meaning of which term is, in fact, “indivisible”. With Democritus a whole cycle of philosophical investigation was actually wound up, a cycle that was critically illustrative of original matter and its primordial elements as well as the idea of change, while opening ever new questions.

*The four cardinal elements of nature, philosophy, mythology, later turned into the foundations of religion, can be by and large assimilated with the definition of science in general: the earth delimits that specific reality or object of study of science, air is virtually identified with the breathing specific to science or the method, water is superimposed on the clarity of scientific theory, which is generated by the eternally virginal seed of the present of knowledge, while fire symbolizes its model and creative impact, which can also be devastating if exerted on any theory, which it can reduce to ashes... The legend of Hermes mythologizes the concept of science as essence of the initiation into understanding the mysteries of the world and the dynamics of its constitutive elements. The world as a reality in itself is turning itself into a coherent entity, in a system or universe theory, whose every single part is connected with all the others in the universe, and so are the universes among themselves, within an unimaginable *multiverse*, which is why any action exerted on one of them is reflected on all the remaining entities, which have become inseparable: air, water, fire and earth being images of the same reality.*

Science emerges when at least four major elements are joined together: *a specific or a characteristic part of a dynamic reality, a method or a collection of methods for investigation, an original theory or an aggregation of theories and a special model for understanding, validation and projection* [2]. And thus scientific research derived from these four fundamental elements of the science and implies a part of reality, method, theory and model.

## 2. ACADEMIC SCIENTIFIC RESEARCH VISIBILITY

The modern scientific researches, trying to understand the causes and the effects of the reality as specific phenomena, and the new tendencies, the original temporal and spatial projections have invited, and still invite us to adequate the instruments to make more visible the results. Using the same way in which *inter-, trans-, and multidisciplinary researches* have created new sciences, we try to understand the birth and growth of the way of thinking of the living modern sciences, and their new paradigms, new manner of research and contemporary results, all the time with an eye directed to the future visibility. Scientific research and almost equally important scientific communication that is laying foundation for the new ideas and implementation of the research results, is ongoing in a specific environment and the framework put forth by the Western Civilization – a home to inquisitive mind, critical thought and consequently scientific excellence. For better or for worse this environment is highly competitive and thus the pressing need for the best results. But also, and no less important, for the best ways to communicate these results to one's stakeholders if one is to succeed and obtain funding for the next research project. At the heart of a successful contemporary scientific communication lies the good visibility of research results. In the downpour of scientific information it is impossible to cover all publications, even in the very specific field one is priding him/herself to be an expert in. If an echo cardiographer decides to sit down today and read all the papers in the field it would take him/her 40 years and would lead straight to retirement without a chance to put to use such an extensive knowledge on peers' works [3]. And such a knowledge up until recently was a bare prerequisite for anyone to even dare calling himself an expert in the field. We see it is no more. So what is our echo cardiographer to do? Or, what are all of us to do in order to be, even in theoretical possibility, the best in such a flood of scientific papers and results and get the next project's funding based on scientific excellence and not combination of it and the pure luck? Because as of now the chance is a viable factor in determining what is a good science or what is the science at all because not all of the scientific results published will be ever read.

If scientific communication is to remain efficient and scientific visibility stay out of determining force of chance, scientific communication paradigm is to change and with it scientific publishing paradigm, authoring process and concept of scientific visibility as we know it today. There are a couple of phenomena visible today that may be helpful in predicting the way in which the solutions may appear. The first is the

automation of structured text production within the framework of general automation of some of the intellectual activities. This may have the profound effect both on the way scientists receive information and on authoring process. And the second one is emerging new forms of scientific publishing that also determine ways of production and consumption of publications of scientific research results.

The second machine age is dawning and bringing possibilities for automation of intellectual work [4]. Self-driving cars, super-computers that beat human champions in general knowledge quiz shows, robots that diagnose patients, are all reality as of now. More importantly for our subject matter, software that produces structured text that can not be distinguished from the one written by humans is also a reality. Topics addressed by these robot authors are economic and business reports, sport reports, yellow press reports. All of these are highly structured texts and the paradigm behind the phenomena lies in the conjunction of good meta-authors, even better data available and excellent algorithms to connect them. Early prognoses that mere existence of such technology will have immediate effect on scientific communication proved wrong or perhaps proved the timing within the concept of immediate wrong [5]. As of January 2014 no structured scientific texts have been written by robots although technology is out there. Literary reviews, abstracts, conclusions and forewords could all be massed produced if there was an economic incentive big enough as in the fields of reporting on company profits, minor league baseball matches and popular culture stars urban adventures. An expectation still exists that such an incentive will emerge and that in few years time we will have scientists relieved of the burden of writing such parts of papers that show readers, editors and peer reviewers that they are legitimate experts in the field or are part of the tradition in scientific writing. This may significantly foster production of scientific papers, but will also be a challenge to peer review system and already crumbling ethical standards in authoring community. On the other end of the scientific communication channel are effects that automation of consumption of scientific texts have on usage and they are available for some time now. A solution for efficient automation of interpretation of data in tables and graphs has been presented [6], as well as the proposition for extraction of relationships between factual statements in the text that can lead to more efficient search for the specific relationships [7]. Exciting advancements have been made in the fields of deep parsing of scientific texts [8], statistical analysis of general text [9] and finding of predominant senses words have in a text [10] which all allowed for further advancement in machine translation and machine speech recognition nowadays witnessed by general public using Google Translate and Apple Siri products. Anyone anticipating modes of scientific visibility in the near future should count in the effects of automation of intellectual work and pay special attention to specifics ups and downs in regards to existing frameworks such as peer review, Open Access movement and the publisher's paradigm.

More visible in the line of scientific communication are the formats that are used to present scientific research results. The paradigm of codex printed book in Latin has been replaced by the paradigm of the digital journal paper in English and this starts to give way to a needle in a haystack metaphor. If there is enough reading material in journal papers only for a full life time of reading just in a specific field, not to mention the broader discipline, how do we cope? One viable solution has been presented in the form of a structured triplet, and it's most sophisticated spin-off so far has been the nano-publication concept. A nano-publication allows for machine power to weigh in and help human researcher pinpoint exact relationships of interest [11]. A nano-publication is a very short declaration connecting two concepts by means of a third and providing metadata about this relation (conditions under which the relation is viable, author, timestamp, etc.). Originating in life sciences, nano-publications seem to be envisioned and increasingly shaped as a tool for the efficient publishing of datasets. The abundance of datasets is a relatively novel development in science. Not long ago, quality datasets were strictly guarded and unavailable to outside researchers. Nowadays the gap between available datasets and the resources to even curate them let alone analyze them is widening each day. Therefore nano-publication format is addressing one important issue of contemporary scientific research and research funding. The nano-publication concept has the potential to successfully face the challenge of providing a novel method of evaluating datasets and scientific work based on them, while at the same time preserving the values of the traditional means of scientific communication [12]. Nano-publication concept also has the potential to foster scientific research in developing and transitional countries by providing incentives for looking into datasets in open access, curate and do other preparatory work for nano-publications to be machine readable [13]. How a nano-publication does achieve all this? It is based on XML technology and open standards that allow for wide machine readability. Triplet concept that is in its foundations allow for extraction of database relations and curator of concepts is needed and viable role in this framework, concepts being all objects that may be a part of a triplet, name entity, relation, scientific concept, gene, species etc. By maintaining a wiki of concepts that contain millions of concepts both high skill and not so high skill intellectual human labor is needed. On one side of the equation is researcher who envision the new relationships, manages the research project that lead to data base creation and is responsible for overall scientific communication and research result visibility and on the other side there is a low level skill technician whose work is needed in order to make all the necessary preparations so that data may be machine readable, if one is to look falsely on him/her a servant to the machine. This plays well in the ideas about changing the shape of skills-education vs. market need for labour curve, which tended to be linear and now is more U shaped, with low labour and high skilled labour being needed while the mid field is occupied by machine labour [14]. In this we find another proof for the thesis presented by these authors who claim that new digital

technologies emanating also in such concepts as the nano-publication are destructive for existing frameworks, in this case framework of scientific communication and at the same time creative. They create new kinds of need for low level skill intellectual labour that will feed the machines with data prepared in a specific way and also by freeing more sophisticated skilled researchers from repetitive/structured work tasks will create new possibilities for this kind of labour to be employed.

So far we have examined how researchers may collaborate with machines in order to make their research more visible and their communication more efficient both by examining new technologies available and new format of scientific publishing. Now we will look at yet another new format of scientific publishing that allows for researcher to collaborate more closely and in this manner approach the challenges of higher productivity and higher quality demand in another fashion. Fluid or liquid text or a book is a piece of writing created by collaboration of two or more authors that add changes to it with such a frequency that a reader or rather the one observing the creative process has a feeling that the text is flowing, it is not being transformed in increments, from one version to another, but is in constant change. In order to present such a work to a reader the liquid/fluid text needs to be frozen for an edition and the work continued until another point in time when another version for readers is required. One immediately thinks of a scholarly textbook that nowadays have a lot of authors, fast paced changes and the need for editions in regular time intervals. An example of a practical experiment that focuses on the benefits of fluidity for scholarly communication is the LiquidPub project at <http://www.iiia.csic.es/en/project/liquidpub>.

The deconstruction of the idea of a final document such as in Wikipedia where the validity of a document is now marked only by a temporal stability rise questions beyond scholarly communications [15]. The concept of modular data sets that can be recombined, as proposed by [16] offers a way to look beyond static knowledge objects, and presents a view on how not only to structure and control, but also to analyze overwhelming flow of information. With the help of this software-based concept we can examine how to remix and thus take an active stance to shape science and the culture in the future and to deal with knowledge objects in a digital environment. Liquid or fluid text, the concept of the remix and reuse can be all paths to a new way of critical thinking about the possibilities of the scientific text and scientific communication, opening up new venues both in time and in space for visibility of scientific research results. If we think about research results beyond the concept of a stable object, but as a grounding basis to explore strategy of further scientific inquiry and the challenge to established notions like stability, identity and materiality that are all bound up within the existing paradigm of scientific communication and presentation of scientific research results, it will enable us to argue for and pay more attention to otherness, difference and another knowledge system based more upon fluidity.

### 3. A FINAL REMARK

Experiments with new way of conducting scientific research and publishing it's results perhaps in a more open manner, like for instance via liquid texts or wiki pages, might be a first step away from an object-oriented approach focused on a finalized scientific product, towards a system based more on constant, collaborative and simultaneous knowledge production that will have a firm ground and effective exposure in a digital world leading to a better visibility of individual and group scientific output.

Modern scientific research has not abandoned the tendency towards maximum integration or unification, the doctrine of unified research and unique law or of the unity of science (an

expansion of logical positivism over the scientific method, theory and model, turned into the "physicalism" of the Vienna school, that of Rudolf Carnap, but also find the example of the sciences of complexity, that is only one in a rich series, which could be listed he from Econophysics through Sociophysics to quantum economics and so on), and scientific research has thus accepted the new course of original products of the research visibility in approaching expanding reality with big enthusiasm and creativity.

The modern scientific research based on an extended mixture of inter-, trans-, cross and multidisciplinary research team and research products is unifying [2], while classical science isolates all the time...

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## THE SPECIFICITY OF TRANSDISCIPLINARY RESEARCH LITERATURE IN ACADEMIC INTERLIBRARY EXCHANGE

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*Abstract. Achieving discipline in the universe of information means acknowledging the concept of transdisciplinarity, as well as the complexity and unity of knowledge. Modern Romanian education promotes this concept because the space between and across disciplines is full of information, and because a total, rather than totalitarian vision is wanted, with direct reference to values. However, what will accelerate inter-university transfer of information will be sharing publications between libraries, the specific solution, provided today in the form of library collection development and boosting knowledge, as an effective means of interlibrary cooperation supporting and developing research. The librarian accommodates the user's needs and provides on-demand, customized services, managing information quickly and effectively, in a specific way, while promoting quality contents: scientific and research-oriented, academic rather than non-value.*

**Keywords:** *research, transdisciplinarity, interlibrary exchange of publications*

### 1. INTRODUCTION

It is necessary to intervene in the informational universe for the purpose of "disciplining knowledge." Theorist Basarab Nicolescu said that there are now 8,000 disciplines, and hyperspecialization in one of them inevitably involves ignorance and incompetence in the other 7,999; hence, the concept of *transdisciplinarity* was born (meaning acceptance of complexity, and the unity of knowledge).

Transdisciplinarity is not, however, a new discipline, and should not be confused with any of the following terms :

- *interdisciplinarity* – the transfer of methods from one discipline to another
- *multidisciplinarity* (or *pluridisciplinarity*) – crossing of disciplines
- *encyclopaedism* – the incursion into all disciplines, horizontally, gathering all the knowledge accumulated by them
- *adisciplinarity* (or *antidisciplinarity*) – denial of disciplines (or subject matters), studying only what lies between and beyond disciplines.

Transdisciplinarity stands in direct relation to the aforementioned terms, and fully covers its object and subject: self-knowledge and direct access to knowledge, necessarily having a total or overall vision, rather than a totalitarian one, in relation to values. Modern Romanian education is based on such a concept and tries to promote it, because the space between disciplines and across disciplines is full of

information. The first approach to such literature was undertaken by Jean Piaget, Edgar Mills, Paul Cilliers, Basarab Nicolescu, etc. One should mention, as the first publication in the field, the journal titled "T" – an online transdisciplinary education review edited by the Centre of Transdisciplinary Applications in Education of the National College "Moise Nicoară" in Arad. Along the road to establishing literacy with respect to this concept perhaps the first that should be mentioned is the "Transdisciplinarity Charter", adopted by the participants in the First World Congress of Transdisciplinarity, worked out by Lima de Freitas, Edgar Morin and Basarab Nicolescu – *Convento da Arabida*, 6 November 1994 (translated into French, English, Portuguese, Spanish, Italian, Romanian, Arabic, Turkish and Russian at <http://ciret-transdisciplinarity.org/chart.php#ro>).

Margareta Petrea, in the paper *Sharing publications at the SMI Library – mutual interest, or general mood?* says: "From a strict purity of the book stock, theorized and practiced for a time, the Library of the Mathematical Seminar has diversified its interests due to the imperatives imposed by inter-disciplinary, and the applicative and speculative fields have begun to be represented in its collections. This fact has turned its attention towards new sharing partners, the addressability shifts bringing mutations in the book stock structure as well. Approximating the intimate nature of the related sciences, experts consider them to be effective and useful within the larger book framework because, far from fragmenting the much desired organicity into a flimsy, inconsistent mosaic of disparate works and areas, it enables the multidisciplinary upsurge to lead, as much as possible, to comprehensiveness instead of incoherence" (SMI Library = the Library of the Mathematics Seminar in Iași).

We cannot but subscribe to the above considerations, while also emphasizing the idea that what will accelerate the transfer of information between universities will be interlibrary exchange of publications. This will be the actual situation in the crisis that we are going through at present; exchange, sharing will be an opportunity for library collections to develop, knowledge enhance its dynamics.

### 2. INTERLIBRARY ACADEMIC EXCHANGE AND TRANSDISCIPLINARITY

In Romanian legislation, internal exchange of publications has appeared ever since the first regulations of schools, and still appears in the current laws of libraries and the Legal Deposit. As far as the international exchange of publications is concerned, the first agreements that were concluded were the

various conventions (the one signed in Brussels in 1886, and ratified by Romania in 1923, the Paris Convention, signed in 1858 and ratified by Romania by Decree 835/1964), and currently to exchanges are being conducted under general cultural agreements – Romania has signed 124 such agreements (some including a clause on exchange or dissemination of cultural and scientific publications, others are agreed between the heads or directors of the institutions seeking to establish a relationship of international exchange ). It appears therefore that the exchange of publications has been constantly included, over time, in the regulations issued both in this country and abroad, providing specialist librarians with the opportunity of being abreast of what is happening in the coordination of the exchange.

Considered to be the most economical and significant means of book acquisition, exchange of scientific publications, especially from abroad, is also an effective way of interlibrary cooperation. And that being said, expressing of course a variability characterized by a consistent analogic orientation, libraries triumph and are able to respond quickly to the new opportunities for the specific requirements of users who seem to be completely immersed in a world of technology.

Relations with neighbouring libraries can be subsumed to various strategies combined to consortium policies. The large-scale development of these interlibrary cooperation relations will further enhance the role and importance of the Library in the Science society. The following issues are to be discussed:

- free movement of ideas and information is favoured between libraries and countries
- books, in their traditional form, have and will still have a greater value to researchers and scholars, as well as bibliophiles
- information is acquired, retrieved, processed and disseminated by national and international experts
- scientific literature is promoted, in keeping with the users' interests, and hence, quality and progress in some areas, as well as professional improvement
- visibility of personalities in certain areas around the world – of course, as a type of propaganda for specialist Romanian culture, no less than a manner of projecting the image of the institution, and Romania's own image in the world.
- methodological and practical enhancement.
- permanent contact with the international market of intellectual values
- dissemination of Romanian scientific publishing output
- maintaining close cultural relations between nations
- supporting research, teaching and education
- researchers from richer universities compare their production with the views of colleagues from economically less developed countries, while researchers from universities with modest or small budgets do not lose contact with the cutting-edge knowledge in their field
- the degree of interest at the present moment, and presumed usability (in the future)
- helping to align teaching materials for students to the same quality standards.

Beyond the scientific content promoted, the exchange of publications will turn the profession into much more than mere routine; it will become dynamic performance, the path to *transdisciplinary knowledge*.

Unfortunately, the exchange could be less profitable for libraries, considering the related costs or the researchers' and university teachers lack of interest.

The principles of international book exchange are:

- being *free of charge* – publications received through exchange are often not displayed for selling, being own publications
- *reciprocity* – a principle enshrined in various agreements, treaties and conventions – the beneficiary undertakes to provide identical or equivalent treatment
- *diversity* – the publications should belong to the sphere of the monographs, periodicals, theses, manuscripts reproductions, and be on various media (paper, microform)
- operational efficiency
- *flexibility*
- *generosity*.

The exchange partners are:

- active partners, when they have done at least one exchange in two years
- passive, if they have failed to send publications over the last three years, have not responded to correspondence, or the documentary offer does not meet the criteria proposed for the selection of the library.

As far as higher educational institutions are concerned, domestic and international exchange of publications is conducted using the following categories of documents:

- publications and documents issued by the higher education institution concerned (annals, scientific papers, courses of lectures, manuals, etc.)
- purchases made especially for the same purpose.

Internal exchange of publications is primarily aimed at supporting the scientific information activities conducted by the university (own information tools, journals, books, courses, etc.).

International exchange of publications provides :

- knowledge by foreign partners of developments in Romanian education, research, culture and art
- bringing of valuable scientific information into the country
- hard currency savings to the state budget.

The exchange activity has its own forms of recording and evidence forms: sheets of partners, ordered by country, highlighting the publications sent, the publications received, etc. It is based on the following general rules:

- the exchange is a form of scientific dialogue between partners
- the exchange partners are chosen according to their profile
- the exchange is conducted based on the idea of how valuable the content is, rather than the amount of pure financial value
- every partner will be considered an individual case, even if the exchange technical operations are streamlined and standardized



- between the exchange partners a balance has to be established. Currently, libraries manage an exchange balance in three ways :

1. copy for copy exchange (book for book, subscription for subscription, etc.)

2. value-based exchange (i.e. based on price), in which each partner agrees to provide publications amounting to a certain sum based on a specific currency conversion rate over a given period of time (for multiple exchanges of books, periodicals, children's books, etc.). The parity may differ from the official exchange rate. As the price of books is extremely high in some countries, and in others very low, this method may pose problems. A solution could be establishing individual correlations, and ignoring the official exchange rates.

International exchange of publications is often done for publications which are in duplicate or in surplus quantity. Active cooperation between libraries will meet the increasingly ampler needs of research. Mutual support is provided for beneficiaries in consulting documents needed in their research, by easing access to the international sources of information. The role of exchange in the library system depends on the basis of the exchange – the bartered publication. Exchange partners often offer their own publications, which creates the possibility of maintaining stable (not just accidental) exchange relationships. They also offer a guarantee that no one outside the editor institute will exchange that publication. A constant and fixed number of partners will permit to determine the fixed number of copies to be printed.

The value of the article published also depends on the quality of the respective journal. Internally, journals and reviews are classified as follows:

- Category A: ISI journals
- Category B+: BDI indexed journals
- Category B: journals with recognition score
- Category C: journals with potential recognition
- Category D: journals on record by NURC

Externally, they are classified as:

- ISI journals (with or without an impact factor).
- BDI indexed journals.

The selection and evaluation is conducted by *Thomson Scientific*, which record, and delete items from the database every two weeks. Each year the editorial board of Thomson Scientific evaluates over 2,000 periodical titles and selects only about 10-12% of them for inclusion in the database. Those which are already included in the database are assessed on a permanent basis.

What matters in the evaluation of periodicals is:

- **regular issues** (the rate of publication should be the same as the frequency / periodicity declaration)
- **the international standards of editing** (informative title of the periodical, full description of title and abstract of articles, complete bibliographic information for all cited references, complete information for each author (e- mail, affiliation data, etc.)
- **language** of editing (full publication in English)

- request of the **peer review** process (concerning the quality of the research presented: it is recommended that each article should provide information about the primary source on which the research presented is based)

- **editorial content** (whether or not the field has been already covered)

- **international diversity**,

- **citation analysis**

- **type of periodical**.

So, a long way has to be covered, and many rules observed, in which process the library gives both support and conformity. The importance of national and international interlibrary exchange for academic research becomes, in this context, vital. And, as scientific progress is analyzed in relation to scientific research, and access to information is analyzed, open access to information becomes a prerequisite for achieving the quality of scientific research. The Internet will be used to communicate scientific work, and the considerations of authors, publishers and those involved in academic communication are presented in accordance with all the stages of publication, on both traditional and electronic support. Those who should produce scientific papers are often the typical users of open access, of scientific repositories (in universities the implementation is suggested of institutional deposits to store the scientific production). The members of the academic community are present both as researchers and users.

Research brings about the scientific foundation of the knowledge gained through practical experience, which thus constitutes the deposit of scientific memory. Combining the effort of all libraries in bringing quality products and services to the users they are serving, can be found in all activities in the domains of library management, but especially in interlibrary exchange and loan, in shared book purchases, bibliographic projects etc.

### 3. CONCLUSIONS

Teaching and research must be permanently supported. Bringing a project to a close does not mean that it has to be completely forgotten: rather, it should be rendered visible, the target audience should have access to it, which means sustainability; and in doing so, the part played by libraries becomes essential. The articles arising from the research study of the project will take shape in an objective, usable form, and that route should not stop there.

Today, when people are increasingly hurried, they ought to be ever more well-informed; when publishing houses are closing because of sales syncope that are hard to predict, and libraries have little storage room, a special role in supporting intellectual work is held by well managed information, provided fast and efficiently by the future librarian, an information expert. Educational reform and excessive techno-industrialization have changed the functions of libraries, forcing them to offer formal and informal educational support, to stimulate open and distance learning, to provide opportunities for training in a user-friendly environment, and



to accommodate the needs of users by providing on-demand, customer-tailored services.

In this context, the inter-library exchange service will acquire new values compared to previous forms of organization, corroborating it with document purchase services will be moderated by consortium policies and strategies, while solitude and traditionalism will no longer be viable options. This will also support the document postulating the fundamental principles of academia: *critically transmitting culture through research and education, respect for university autonomy and academic freedom, moral and scientific independence in relation to political and economic power* (excerpted from *Magna Charta Universitatum*, the document considered to be the Constitution of all universities: issued in 1988 to celebrate 900 years since the founding of the University of Bologna, covering two pages and translated into 43 languages including Romanian, the document is signed by 583 universities from all over the world).

EIT (the European Institute of Innovation and Technology) promises to adopt guidelines for the management of intellectual property, so that its mutual agreements can be concluded on the management and use of intellectual property for the benefit of all partners. However, for the time being

publication exchanges are being conducted based on bilateral agreements, rather than based on a clear methodology. IFLA (International Federation of Library Associations and Institutions) recommends the following steps:

- writing a letter of offer
- sending the list of publications on offer
- submitting the application
- response to the application
- sending the publications
- the balance of the exchange.

Interlibrary exchange of publications is conducted only between partner libraries that have agreed to collaborate. To do the follow-up of the exchange relations specific evidence instruments are used, in which are recorded, by partners and countries, both the publications sent and those received. The aim of this collaborative activity is boosting the specificity of the scientific research literature, thus promoting content quality (research-oriented, academic, and definitely not non-value). And, because the space between disciplines and across disciplines is full of information, **transdisciplinarity** it also sought, the final purpose of understanding the present world, the imperative of **the unity of knowledge**.

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