



# Transdisciplinary Methodology in Research and Education: The EMMY Case

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doi: 10.22545/2013/00036

**T**his paper sums up some of my previous ideas on transdisciplinarity applied during the last years. My pedagogical experience enriched with situations solved by me through transdisciplinary methodology/ thinking, i.e. the levels of reality paradigm, theory of Complexity, and the logic of the third included. These three pillars of transdisciplinary methodology are used in the sense described by Basarab Nicolescu. That is why I consider EMMY is a quite concrete application of transdisciplinarity to a better understanding of human behavior. Here are some of my ideas I am using in the teaching process: a) there is no more “science”, but only the triadic process of research, cognition and (new) knowledge; b) EMMY is an application of transdisciplinarity as a methodological tool; c) there are no “social sciences”, but a united and interconnected corpus of relevant knowledge on humans and their behavior.

**Keywords:** transdisciplinarity, methodology, End Means Methodology (EMMY), transdisciplinary research, transdisciplinary teaching and evaluation, postmodern logic, triadicity.

## 1 Introduction

Time is more and more proving that modernity has (almost) closed its eyes and that postmodernity asks for its own life and identity, i.e. for new ways of thinking, of teaching and evaluating of human knowledge. My PhD thesis [1] (Drugus, 1998), written in manuscript form in 1984 and sustained only in 1996 when political framework changed (a bit...), contained an embryo of my *End Means Methodology (EMMY)*. EMMY is a para-disciplinary way of thinking and an alternative way of teaching economic disciplines, combined with managerial, entrepreneurial, anthropological, political, ethical, psychological, sociological, historical and legal dimensions of any human action. Since the 80s my teaching was not at all a classical one, but a perpetual dialog (Q & A) on things around the main humanistic themes, with the accent on creativity and alternative answers to older problems. My preoccupation was to better understand and define human action (thinking and sensing – as preparatory phases towards an effective and efficient action). The very essence of any conscientious human action/ behavior is *decision*. How people make and take good decisions in order to attain their desires/ wants/ purposes/ aims/ ends is the most important tool a graduate may have in her/his mind in order to make a good living for

her/him and for her/his family. My first published article (1972) was on “Information and decision” [2] (Drugus, 1972) and its humanistic essence is still valid nowadays.

Since then (1971 – 1976) my research activity at Romanian Academy (Iasi branch) was not only on economic issues, but represented a humanistic view on individuals’ desires & purposes (i.e. ends), ways of satisfying these (i.e. means), and ways of improving the results (effectivity) of any human action. As a consequence, I was interested in American (economic) radicalism and have chosen this theme as main subject for my PhD thesis (1976 – 1996). American (left) radicals underlined their preoccupation for human dimension of economic activities (anthropocentrism). To better understand the roots and essences of (American) radicalism I have read both sociological, philosophical, historical etc. branches of this research trend and realized that only an interdisciplinary and holistic view may help me to understand any of its particular preoccupations. Interdisciplinarity was my preferred research theme and it was my meeting with Basarab Nicolescu in 2000 (in Iasi) to channel my interdisciplinary interests towards transdisciplinary research, with his historical contribution of defining the three pillars of transdisciplinarity: levels of reality, complexity and the logic of the third included. As a member of CIRET (2000) I dedicated all my research efforts to apply the transdisciplinary vision to my university courses. It was quite natural to observe that my triadic vision on human essence (the human continuum of end-means-end/means ratio) was a transdisciplinary one. In 2005 I founded at George Bacovia University in Bacau, Romania, a new journal called “*Economy Transdisciplinarity Cognition*” (www.ugb.ro/etc) with Basarab Nicolescu as member of the Editorial Board. All of these motivated me to use more and more the transdisciplinary methodology in almost all my courses at George Bacovia University. One of my master degrees taught courses (“*Research methodology and management of research*”) is, as a matter of fact, applied transdisciplinarity, i.e. End-Means Methodology as a research transdisciplinary tool applied to research activity. Although the “official” name of this course was “Methodology of scientific research”, I changed not only its name, but its content as well.

## 2 Words, Words, Words... From the Confusing Words: “Science” and “Discipline” to the Integrative Word “Knowledge”

I suggested to my students that the word “science” is, nowadays, a quite confusing one, due to its overuse, misuse and abuse of its presupposed self induced “power”. Nor any research is “science”, nor any academic discipline is a “science” and not every university teacher is a “scientist”. Reading John Horgan’s book “*The end of science*” [3] (Horgan, 1996) stimulated me to enlarge the demonstration of the inappropriateness of this word (“science”). Finally, I concluded that the problem is a nominal and semantic one, a problem of definition and of adequacy between a word and its content. My solution was a radical one, i.e. I cut the Gordian knot by simply eliminating the confusive word and replacing it with another one, at a higher level of reality and generality. I proposed to use, instead of “science”, knowledge (the old name/ meaning of the Latin word “scientia”). This simple replacement of a confusive word is itself an application of transdisciplinary thinking, i.e. of using the first pillar of it, *levels of reality*. The segmentation of knowledge into “scientific” and “nonscientific” was a break/difficulty to unification of “science” with religion, philosophy, art etc. As a matter of fact, it is not about putting together two different things as “science” and religion, but about interconnecting two or more kinds of knowledge (empirical and transcendental) under their common name – Knowledge. As a result, instead of “science” we may use *empiric research and cognition* and instead of religion we may use *transcendental cognition (knowledge)*. Put together these two kinds of empirical research and transcendental knowledge, it comes that we are studying things at a higher level of reality. In my opinion, art is the third included among, across and above them, just because this way of knowing things is empirical and inspirational/ transcendental. As a result, I obtained a new knowledge continuum called empirical research-art-religion. All of them are truly inseparable and part of the holistic vision on our environment. All these three are under sign of generality, i.e. of philosophy. Modernity generated (ultra)specialized knowledge (disciplines and “sciences”) and postmodernity is obliged now to stimulate integrative knowledge.

Much of the debate focused on how to obtain more new info, new knowledge, new methods and new methodologies is, as a matter of fact, and first of all, a discussion on words meanings. As a result, a lot of efforts are made to define and redefine concepts, with the unpleasant consequence of a bigger and bigger relativity of these concepts, theories and paradigms. A lot of confusion was growing instead of heaving more clarity and simplicity. That is why, at my first visit in Western Europe, at Paris, Sorbonne University, in *August 1900*, at the First International Conference of ISINI (International Society of Inter-communication of New Ideas) – a society founded by the Romanian thinker Anghel N. Rugina, in Boston, 1988 - I communicated my (older) proposal to redefine the essential concepts and the main disciplines studying the human behavior. I multiplied half of A4 sheet of paper with the following content: *Politics = ends; Economics = means; Ethics = end-means adequacy; and added a transdisciplinary equation: Economic = Politics = Ethics.* In my mind the three former distinct disciplines are similarly with a trilateral pyramid: every of three triangular faces of the pyramid are quite identical as compared one with another, although every one is situated in a different place. For sure, this abrupt way of radical change generated resistance and ignoring. But, little by little my theory (EMMY) was more and more known and accepted, both in Romania and abroad. Google showed me that in USA there is learned, used and applied a new vision called Means-End Theory. Anyone can see it is about *End Means Methodology* written other way... Very recently (November 2012) an American professor taught a lesson about entrepreneurship using as a main idea a scheme about goals and means, quite similar with my article from 1972. It is not my intention to claim any priority or merits. My declared end is to be of some help in improving the effectiveness of teaching and learning, improving human life and behavior by making and taking good decisions using EMMY and its schemes for evaluating the human action results.

Although that times I hadn't such a philosophical perspective in my mind, for sure that preoccupation for concentrating information in simple and few words is an expression of what it is called today in poetry as minimalism. Otherwise, my vision could be named as *maximalism*, just because a maximum of information should be concentrated into one and single concept/ word. In a convergent vision, mini-

malism and maximalism are presupposing each other, so it is possible to speak about a mini-max cognitive vision, i.e. minimum of words and maximum of meaning. Concerning meanings I add that it is a pity that American culture is using "knowledge" and European culture is using "information" for one and the same reality. These differentiations may cause confusions in a much globalized world. It is not only about words, but about meanings and their very clear definition. The confusing terms (science, social, knowledge, information etc.) should be clarified by common efforts. In my opinion, the lack of free competition in academic & research sector (or, similarly, the excessive support offered by state to this sector) is one of the principal causes for generating confusion, for lack of preoccupation to really adding something new to the already acquired knowledge

In my vision, the postmodern age is characterized by the ever growing role and importance of information/ knowledge, research/ searching for knowledge and of cognition/ adding new knowledge. Transdisciplinary thinking is part of this revolutionary change that would radically transform our lives. Here is a very good description of this cognitive context in which transdisciplinary thinking may and must develop as quick as possible: "*This revolution recognizes the changed world in which we live. A world in which: information is readily and easily accessible; where change is so rapid that traditional methods of training and education are totally inadequate; discipline based knowledge is inappropriate to prepare for living in modern communities and workplaces; learning is increasingly aligned with what we do; modern organizational structures require flexible learning practices; and there is a need for immediacy of learning*" [4], (Hase & Kenyon, 2000)."

## 2.1 From Complexity to Simple, Essential and Compact Ideas. Complexity May Be Solved Using Levels of Reality and the Included Middle (the Logic of the Third Included)

Edgar Morin [5], (Morin, 1982, 1990) wrote a lot about complexity and how to deal with it, opposing this paradigm of complexity to the paradigm of simplicity. As far as I understood that, simplicity is defining disciplinary modernity (Cartesianism), and complexity refers to transdisciplinary postmodern knowledge. But, one description of the principles

that describe the “paradigm of simplification” is: *“the principle of reduction (narrowing the understanding of a whole to the knowledge of the basic elements which constitutes it) and the principle reducing the knowledge of organizations to the principles of order inherent to them (laws, invariants, consistencies, etc.)”*. See: [5] (Morin, 1982, 1990) apud: [6] (Alhadeff-Jones, p. 479).

Here appears a contradiction between what Morin and I do understand by complexity. In my opinion, modernity was that one which generated not only a lot of (new) disciplines and sub-disciplines, but generated a fabulous growth of every discipline at such dimensions that no human being may know its real and integral content, all ideas proposed or demonstrated a.s.o. Let me take the example of Economics. Since Hesiod, Aristotle, Smith, Rothbard, von Mises and Marx and until the growing number of Nobel prizes there is a huge amount of writers, professors, researchers and practice people that use concepts in function of their own beliefs, contexts and audiences. This created a real complexity concerning (for the beginning, with) one discipline, not to mention the thousands of disciplines that are not able to properly communicate among them and establish links, bridges or common spaces for dialog. Day by day the complexity is artificially (but inherently) and unnecessary growing inside disciplines and among them.

*Value* is a presupposed quite clear concept, but discussing on added value, surprisingly, there appears a lot of meanings and definitions of value. For example, in my vision any value is defined by the ends (goals, purposes, targets, aims etc.) someone is wanted to be reached as a consequence of a certain combination and consuming of means, able/ adequate to the desired ends. Other people consider value simply as “something important for me”. Of course, personal desires are important for everyone, but sometimes they do not have the degree of acceptability from the human context they are living in. There are desired ends that are destroying a lot after their accomplishments (e.g. extracting oil is destroying Earth underground). I consider end/means definition of value is open to be operationalized and to help people to understand the actions of others and to take “right” decisions from different points of view.

Economy and Economics do not refer to the same “values” people have in their minds all over the world.

For example, Western cultures depict economic activities more rationally, in terms of ends and means, but Eastern (Asian) cultures depict economy more in terms of environment and the human life connected with a specific natural context. In my opinion there is no real conflict among these two visions.

What to do? To let them (disciplines, theories) die under the huge pressure of the immense quantity of concepts meanings and systems of thought specific to every discipline, i.e. under the quasi infinite complexity? My answer is: simplification, reduction of all these immensities of artificially multiplied knowledge to small and manageable dimensions, able to make more sense in comparison with the previous complexity. Finally, my proposal is not to reduce or to annihilate complexity, but to extract senses and essences from it and to work with them. For example, Economics could be reduced at its essence which is *“combining means in order to attain desired ends”*. As a result under the name of Economic “sciences” we have Accountancy, Statistics, Macroeconomics, Finance, Marketing etc. etc. Similarly, Politics could be reduced at *“proposing ends in function of usable means”*, and all knowledge about this item should be unified under the name of Politics. Ethics could be reduced at *“permanently adequating ends to means and means to ends”*. Of course all these refer to human beings and their behavior/ action/ activity. These three disciplines are easily to be seen and considered as ONE or as a continuum, concerning ALL human aspects, but only through their (common) essences. I also applied here the transdisciplinary solution of getting a higher level of reality, above complexity, starting from disciplines until integrative knowledge. Andrew Sage [7] (Sage, 2000) is putting an equal between transdisciplinarity and “integrative knowledge” and I do agree with him and with the editors of the book that includes his article.

Let me use a quite common example to prove the utility of my above proposals. Writing this article concerns a lot of human dimensions: a political one (defining my end – writing this article - in function of my means: time, ideas, ability, desire to publish etc.), an economic one (using and combining my means/ resources), an ethical one (fitting/ matching/ adequating my means to my end and to others’ ends), a managerial one (thinking, feeling and writing as a concrete activity of using my ends, my means and my way of adequating them), a legal

one (respecting rules, laws and regulations imposed by the Editorial Board) etc. Finally, writing an article has its own history (and this article will be history soon, no matter if published or not), has its psychological and sociological dimensions etc., etc. As a result, I'll concentrate a lot on (correlated and integrated) knowledge about my and general human behavior describing the process of writing an article (a human action). That is why I do consider/ think that education should start up (gymnasium, grammar school) with this kind of transdisciplinary, less disciplinary, essentialized and compacted kind of knowledge. Only faculties will/ may introduce students to certain (narrow) disciplines (but still using transdisciplinary methods and methodologies) and only master and PhD degrees will create specialists in a narrow field of reality, but with the big gain of having the simplified complex background in their minds. Nowadays, specialization (I mean teaching through specialized disciplines) begins in the first year of gymnasium and only postdoctoral studies try to enlarge again the complexity of the domain and to make connections with strange disciplines. It is interesting to mention here that it is not about a fight against disciplines but about an intelligent and useful equilibrium between disciplines and transdisciplinary vision. The old Latin name of the discipline was *disciplina/ discipulina* and this meant instruction, knowledge. Finally, both *disciplina* and *scientia* referred to knowledge and this is an extra argument to the necessity to name all of them with a single word: knowledge. We need now more and more global/ general/ unified knowledge, just because all is globalizing nowadays: economy, political activity, ecology, research, monetary and many other dimensions of reality.

In a quite interesting book, **Paul Heyne** [8], (Heyne, 2011) explained why there is not a good economist that one who is only an economist. He said that *“A better economist should understand that (s)he can obtain some gains in negotiations with other specialists from other domains. A specialist with a good economic thinking is studying the human condition and may enrich herself/ himself from changing ideas with other specialists which are studying the human condition, beginning with philosophers, political scientists, and sociologists and ending up with literary critics, art historians and cultural anthropologists. If you intend to continue your studies, then you should not ignore and completely eliminate*

*the other humanistic disciplines”* (my translation from Romanian edition) [8]. My conclusion is that **Heyne** is making a plea in favor of general knowledge on human, not in favor of a quite specialized homo oeconomicus. But, my point of view is not to let this getting of new knowledge from negotiators or colleagues from other fields, but from school itself, and not necessarily as part of specialized disciplines but as part of a general knowledge (transdisciplinarity) on human behavior and ways of correct thinking. Fortunately, in Romania there is a bigger and bigger quantity of experiments, articles, pleas and mass-media articles able to generate more and more favorable attitudes towards transdisciplinarity. I'll give some examples in the following chapter of this article.

## 2.2 Using Transdisciplinary Thinking Based on Levels of Reality in Solving a Quite Complex and Paradoxal Problem: Which was First, the Egg or the Hen?

At a course lesson on transdisciplinary methodology, two years ago, I insistently asked students to put questions, be those strange ones or complicated problems to try to solve them using the components of transdisciplinary methodology. A student put the very old problem of “which was first: the egg or the hen”? Many laughed at, some tried to explain how simple is this problem to solve, and I remembered that only some days ago I listened to radio about a very serious research that implied many Nobel priziers in physics, chemistry, biology and medicine. They were asked to have a special holidays having fun in a tourist residence, but to work hard and give “scientific” answer to an ancient problem: which was the first, the egg or the hen? They seriously worked and offered interesting and lucrative hypothesis and demonstrations. Finally they reached a consensus and offered to the entire world the much waited answer: it was the egg at the very beginning of the evolutionary process, just because without this “seed” it was impossible to have a hen. I was quite amused hearing this answer and remembered that in grammar school a teacher asked us the same question and I and other people gave the same answer as the Nobel priziers... Students were a bit amused and a bit disappointed that the answer was so naive and well known... But I denied this answer and told to students I simply did not agree it. Why? How? Smiles

appeared on students faces: “this professor have an excessive good impression about him...”. Immediately, I used the transdisciplinary methodology with its three pillars founded by **Basarab Nicolescu**. I said that the answer is not acceptable just because we may ask: but before the egg, who gave birth to it? Who was the primordial HEN to create at least an egg? The answer offered both by any schoolboy or schoolgirl and a strong team of scholars was generated by a linear thinking at one and the same level of reality. But, at a superior level of reality we may find another answer. So I did, and invited students to climb up at a superior level. I suggested them to think at a pre - Big Bang time, when our Universe was quite concentrated with all Information, Energy and Substance in it. All planets, seeds, beings, ideas, energies and substances, beings (hens included...), vivid things (eggs included) were there. At that level of reality it is a nonsense to ask which part of that primordial Atom was first, which one the second, and so on. All components co-existed simultaneously and continuum; no one was differentiated and no sequence existed. It is the same thing as asking which molecule of water is prior to a molecule of wine in a glass of wine & soda. So, we have to compare the two answers: the pre - Big Bang and the post - Big Bang. Of course there are two different realities (levels of reality). In pre - Big Bang situation both hens and eggs were there without any temporal sequence. In post - Big Bang situation, time and succession appeared. In this new level of reality the ancient question makes sense and the logical answer is based on this. As a result, Nobel prizes were right in a temporal pre-Big Bang sequence, but this sends us to the pre-egg time. To conclude, we have two true and non-contradictory answers at two different levels of reality. Of course, a lot of new consequences appear from here.

### 2.3 Logic of the Third Included - As a Solution to Problems from Different (More Complex) Levels of Reality

The included middle (third included) is a logical operation by which two relatively opposed things are better understood and interconnected by a third one that links the previous two. This eternal seeking for harmony was delayed by the binomial thinking and the study of the opposites. Modern times accelerated this disjunction tried to separate things in order to better know them (analysis) although

a synthesis was all the time recommended. Post-modern times (after 1950) tried to deconstruct this way of obtaining new info and proposed a synoptical and synthetical vision, in which not only the opposites were on the first plane, but the third medium term that linked them. In such a way a dyadic view was replaced by a triadic one, with a deeper and better understanding of things. Although this view increased complexity, this is to be preferred just because complexity may be solved with the help of new soft and technologies. See, in this respect, a Romanian contribution to complexity problem: Radu Dobrescu [9], (Dobrescu, 2005) [http://ace.ucv.ro/sintes12/SINTES12\\_2005/COMPUTER%20ENGINEERING/06.pdf](http://ace.ucv.ro/sintes12/SINTES12_2005/COMPUTER%20ENGINEERING/06.pdf).

End Means Methodology (EMMY) [10] (Drugus, 2011) is based on triadic thinking, simply because we are living in a three-dimensional space and a three-dimensional time. “Trans” is the old name for three. As a result transdisciplinarity is based on a special triadic logic called logic of the third included. Logic of the third included is an intrinsic part of End Means Methodology (EMMY) when establishing the set of triads describing human existence and its environment. For short these triads are:

- temporal: past-present-future
- spatial: micro-macro-mondo (or: smallest-medium-biggest)
- structural/ existential: Information-Energy-Substance
- human action essence: ends-means-ends/means ratio
- theoretical description of any human action: politics-economics-ethics
- practical description of human action reality: policy-economy-morality
- transcendental Christian reality (Holy Trinity): Father-Holy Spirit-Son (“*Tres unum sunt*”)

A lot of triads there exist and built up our world and its understanding (e.g.: point-line-plan, introduction-content-conclusion, etc.). It is easy to observe that the first component of every of these seven triads appears as most important to us, but the middle term is the unifying one and it may be considered as the third included, a third one element which is the common essence of all three. This explains why our world is built as it is known to us.

More than that, the medium term (third included) cannot have a distinct/ isolate existence apart from the other two elements. But it is quite interesting that every one of the three elements may play the role of the included middle among the other two, just because all three elements are part of a unified entity. This observation helps us to seek for the unity of things and not for their separation and segmentation (as modern Cartesian wisdom learned us). This kind of thinking is not necessarily a postmodern contribution, but as Basarab Nicolescu recently said in an interview afforded to Iulian Boldea and published in "Familia" / ("Family") magazine (which appears in Targu Mures, Romania), it is well known from Aristotle and Stefan Lupasco [11], (Boldea, 2012).

### 3 Transdisciplinary Teaching and Evaluating

My older proposal in favor of proposing/ imposing transdisciplinary teaching not at the academic and post academic levels, but at the gymnasium and high school levels could be simply put as such: kindergarten, grammar school, gymnasium and high school should have transdisciplinary/ holistic/ general knowledge level; and specialization could appear only beginning with academic level. As a matter of fact it is not to oppose or contradict the two ways of teaching: disciplinary (specialized) teaching versus transdisciplinary (non-specialized) teaching, but most important is to use specific ways of combining them with different charges. In favor of my proposal comes a quite genuine experiment led by prof **Mirela Muresan** [12], (Muresan, 2010) at "Moise Nicoara" national college from Arad, Romania. The alternative learning meant a new way of teaching: without disciplines, without marks and evaluators tests, but with team teaching and creative learning. It is worth mentioning that a specific structure was created ad-hoc. It is called **The Transdisciplinary Center of Educational Applications from "Moise Nicoara" National College, Arad, Romania**. Here is a short description of a transdisciplinary successful experiment, description made by Professor Mirela Muresan herself: *"During the last 5 years more than ten TD projects were conceived and performed at the "Moise Nicoara" National College, from Arad. The first one started in 2008 and its outcomes are described in a book published in Romania, with a foreword written by Basarab Nicolescu (1). The last one took place this year in the frame of "the different school week" provided by our Minister of Education. It was called A Transdisciplinary "Reading" of the Water and it is described in our "T" Journal (2). All these didactical experiments attempted to apply the TD methodology in the classroom. The experiments of "Moise Nicoara" College were the first ones performed in Romania in the field of the high-school education. These experiments proved that transdisciplinarity is not a utopia. Transdisciplinarity can be transformed in a current practice in school; but to pass from theory to practice means new problems and questions searching for new answers. In my opinion, the most valuable thing is the fact that these didactical transdisciplinary experiments succeeded to identify some important reflection points which are absolutely necessary for applying the transdisciplinarity in public education. Some of these questions are: what a transdisciplinary curriculum means? What does it really implies? Could we practice the transdisciplinary methodology within the frame of a disciplinary designed curriculum? Could we conceptualized the "didactical border" between inter/pluri and transdisciplinary approach in the teaching-learning process? Which is the difference between the "transversal competences", "cross-curricular" ones and the "transdisciplinary competences"; or could we speak about TD competences without enlarging the definition of the concept? Which would be the correct relation among information, competences and values in the educational process? the right balance among to know/to do/ and to be? All these questions were also refreshed during the recent International Colloquium organized in Arad, Romania, the first one of the kind in our country. (3)*

1. Muresan, M., coord. (2010), Transdisciplinari-tatea de la un experiment spre un model didactic, Junimea, Iasi, with a foreword written by Basarab Nicolescu

2. Muresan, M., (2012) A Transdisciplinary "Reading" of the Water, in "T" Journal, no.2 edited by The Transdisciplinary Center of Educational Applications from "Moise Nicoara" National College, Arad, see <http://www.moisenicoara.ro/t-journal-no-2/>

3. International Colloquium "Transdisciplinarity in Primary, Secondary and High School Education", <http://www.moodle.ro/edutd> ".

Another example is that of **Adina Sorohan, professor at the National College “Lucian Blaga” Sebes, Alba, Romania**. Here is her contribution to transdisciplinary thinking at pre-academic level, depicted in her own words: *“In 2010 I started to apply the classes I teach a series of workshops which enable students to perceive different levels of reality, to develop the types of intelligence: analytical, emotional and bodily, to learn to communicate, to acknowledge the existence of diversity in unity and of unity in diversity, to rediscover nature as the origin of everything that surrounds us, which leads to the regeneration of senses, emotions and thoughts. In **The lyrical text: a transdisciplinary approach (high school level) (2011)**, efforts are made to discover, understand, analyze and interpret the lyrical text from several perspectives, against a background of labyrinthine recesses which intertwine and complement each other from playful activities, methods of synthesis, all to uncover the sublime beyond what the lyrical universe appears to be at first reading. In **The perception of the lyrical text through the sense (2012)**, I proposed an initiation in the perception of the lyrical text through the senses, varying the methods of perceiving the poetic message, interpreting the levels of the lyrical text, corroborating personal experiences with the emotions transmitted by various layers of the poetic text”*.

It is interesting to observe that the pro-transdisciplinary activity in Romanian education (under the guidance of Professor **Basarab Nicolescu**) generated a lot of preoccupations to implement the new transdisciplinary vision in teaching in this country. Even the concrete measures are still to be taken, the Minister of Education, professor **Ecaterina Andronescu** [13] seems to be in favor of transdisciplinarity in recent declarations since October 2012. I'll translate some of these thoughts and hope they will be transformed into practical attitudes and methods of teaching: under the title *“The teachers are those who are overcharging the curriculum”* she underlies that *“textbooks should contain only the essential things for a certain discipline. Teachers are those who overcharge the content of a discipline; they try to tell pupils all things they know. A lot of info could be obtained from alternative sources as is internet. A textbook should comprise the skeleton of a certain theme, and after that the pupil may add new info on it. It is necessary to start dialog with universities in order to prepare them for*

*a transdisciplinary teaching”*. Unfortunately, this seems to be only an electoral discourse just because nothing happened since then.

The traditional education (teaching and evaluating) is under fire all over the world. When things are not going well the main cause is found in the education court. That is why even American education system is criticized and some proposals to change it are already done. Here is an announcement of this kind recommended to future entrepreneurs: the accent is put on free thinking, self confidence, initiative and creativity.

Debbie Ruston posted a job: **CONSULTANTS/HIGHER EDUCATION PROFESSIONALS - An ACCREDITED Curriculum That is RE-Inventing & Transforming Education -** “According to the US Dept of Labor: 65% of today's grade school kids will end up at jobs that haven't been invented yet. As an Educator, or someone that works with Educators, you probably recognize the changes needed in our educational system. A recent study determined that 80% of college grads can't find work. The dropout rate is massive. Generation Y are moving back into their parents homes after college. We are seeing a massive shift in thinking and individuals are realizing that to take control of their futures in this changing economy, they must stop relying on employers and governments to provide solutions. We must prepare for the new economy by creating self reliant, visionary entrepreneurs, which provide opportunity for themselves and others. How can educators effectively teach students how to successfully move into entrepreneurship, and take this control of their futures, when they have never been an entrepreneur, and are only trained in traditional forms of employment? Our Multi-Award Winning Curriculum offers proven, dramatic results which will prepare students to successfully enter into Entrepreneurship. We offer a Success Education curriculum that will transform the thinking of the students and prepare them for an entire lifetime of success. Users will learn to let go of ego, take on a higher level of personal responsibility for their own lives, learn how to set meaningful goals and a plan of action on the achievement, create a stronger sense of teamwork, improved attitude and commitment, a higher level of integrity, ethics, cooperation, will build confidence, leadership skills, and strengthen decision making skills, which will prepare students to create a successful, self reliant future for themselves - important in today's economic



world, where individuals can no longer rely on corporations/government to provide solutions for them. Students will also learn how to utilize Social Media to build their own business brand. Our virtual community provides a private platform for the organization to communicate, recognize and incentivizes, to build a more committed, more positive interaction among users.” (This Ad was extracted from internet)

I’ll try to expose here my own experience in teaching transdisciplinarity or using transdisciplinary thinking in teaching and evaluating. I consider transdisciplinarity as a new way of thinking reality and its complexity by interconnecting ideas, things, concepts and methods in specific and creative modes, without limiting or bordering “domains”, “fields” or “feuds”. Modernity exaggerated and extremised the Aristotle idea of discipline, later on called “science” (or “scientific” disciplines). The so called “scientific” research proves not to be so “scientific” as it pretends to be. Not every PhD thesis is a real contribution to the growth of “science”. “Science” comes from Lat. *scientia* = knowledge. In my opinion it is better now to use other two words instead of “science”, i.e. to specify some of phases that are describing the process of production of new knowledge: a) research is the first phase of observation, formulating of hypothesis and testing them; b) cognition (or the cognitive process) c) (new) knowledge is added to the old one. As a result of replacing “science” with one or more of these stages, we may speak about researchers but not about scientists/ scholars, i.e. not any/ every scientist is a researcher (see serendipity in research), and not any/ every researcher is a scholar (adding new knowledge to the old one). Using the right word to describe the right quality/ status/ position of someone implied more or less in research activity.

I use transdisciplinary methodology when teaching Management. I gave up the hundreds of definitions to this activity (and theoretical approach) by re-defining it simply as thinking-feeling-deciding continuum concerning establishing ends, choosing means and continuously supervising the degree of adequating/ equilibrium between the proposed ends and the chosen means. This way of understanding and describing human action could be called Machiavellian Economics (a book with this title “Machiavellian Economics” was written by Alan F. Bartlett [14] in 1986, republished (revised edition) in 1987 and bought by me in September 1990, but with different

content from my EMMY. See [14], (Bartlett, 1987). I may call it *Machiavellian Management*, just because the essence of management was clearly essentialized by Machiavelli: “ends justify means”. Of course, Machiavelli was not published and taught in communist Romania, but my EMMY put this managerial essence in other words: “end-means-end/ means ratio”. I must recognize here that I was attracted by the harsh criticism addressed in that period to the “hypocrite and bourgeois” writer Niccolò Machiavelli, but I often suggested that Machiavelli was right.

## 4 EMMY as a Transdisciplinary, Postmodern, Holistic and Integrative Vision on Human Action in the Knowledge Based Society

### 4.1 Towards a New (Postmodern) Theory of Efficient Human Action

Human action is and will be a permanent component of any human context, although in postmodern times human thinking will be extensively computer-aided. In this case, the prime and decisive element of obtaining better results will still remain the human brain, respectively the human action in its theoretical-projective phase. In consequence, we will approach the human action theory from a postmodern perspective with inherent nuances and differences as compared with the human action theory as it is defined in the classical works of libertarians L.W. Mises and Rothbard Murray.

The modern theory of efficient human action (praxeology), with well-known predecessors, such as T. Kotarbinski and others uses the theory of human action applied strictly to a defined economic context, in a narrow sense as sector of production of material goods. Therefore, the optimization of human action by classical praxeological approach strictly aimed the increase of the value of some indicators, such as: productivity, economic efficiency, industrial and agricultural output etc. Without denying the utility and functionality of such specific approaches in my postmodern vision, I will enlarge the area of economics, with direct consequence of emphasizing other dimensions of optimising human action. Thus, instead of the modern concept of optimization, we suggest the use, on a large scale, of the concept of

*adequation*. The difference between the two concepts consists in the fact that the first one is mainly quantitative while the latter is mainly qualitative. Moreover, while the concept of optimization supposes the exact measuring and even an elaborated set of mathematical tools, the concept of adequation appeals to ineffable and difficult to measure elements, such as: intuition, imagination and inspiration. All these dimensions are not opposed to those elaborated by econometricians, statisticians and economists in the classical sense, but they are complementary, integrative, part of the postmodern holistic and transdisciplinary epistemology.

For the elaboration of the concept of *adequation*, a series of stages were developed:

- The redefinition of some disciplines, both quantitatively and qualitatively; quantitatively - by enlarging the area of a certain discipline and qualitatively - by extracting essences of every discipline and by redefining their concepts.
- The redefinition of the relations between disciplines and adding, along with the disciplinary approach, the interdisciplinary and transdisciplinary approaches.
- The permanent concern to integrate the analysed contexts into neighbouring ones, with a larger or narrower area. However, the rule will be the concern for the integration in larger fields, which supposes both a holistic vision and the finding of new epistemological visions. For example, the logic of the included middle generates permanently and continuously new levels of reality, respectively larger contexts able to help understand previous contexts.

An example of transdisciplinary, postmodern vision in the field of human action theory is my 35 years old “End-means methodology” (EMMY) which suggests a triadic approach, a compacting and essentializing of certain disciplines from the so-called “social sciences” (This term of “social science” is already obsolete, confusive and with too many definitions to be accepted. A critique of this pair of words will be the content of another article). The starting point of this new vision was represented by the attempt to essentialize and find the defining elements of human being, of human action respectively. In time, there has been consolidated my conviction that it is quite specific to all human individuals the

idea of finality, instrumentality, and subsequently, of adequation between the aimed finalities and the used instruments. The finality can be suggested by the concept of “purpose” or “end”, the instruments by the concept of “means” or “resources”, and the compatibility between them is suggested by the phrase “end-means adequation”. Moreover, for every of three essential characteristics of human being (end, means and end/means ratio) is necessary to establish three theoretical approaches/ fields. Thus, the field of studying ends is subject of the field (discipline) called Politics, the field of collecting, combining and consuming means being subject to Economics, and the field of adequating ends and means, both at individual, group and society level being subject to Ethics. This has given rise to a rather strange conclusion at first sight, but perfectly logical and explicable in further phases, that the three dimensions/ fields (politics, economics, and ethics) have a common substance, that is the binomial pair “end-means”. In order to make this conclusion more comprehensible, I offer the following demonstration:

- Politics is the field of establishing **ends** in accordance with the existing **means**;
- Economics is the field of collecting, combining and consuming **means** in order to reach a pre-established **end**;
- Ethics is the field of simultaneous and continuous adequation of **ends to means** and/or **means to ends**.

It is obvious that the three fields defined by means of the concepts “*ends* and *means*” are inseparable and impossible to understand their significance without considering them as a unitary whole. That is why I called this triadic complex as the politics-economics-ethics continuum. In order to better suggest the very essence of this continuum I called it End-means methodology, for short EMMY. I have appealed to this vision on the human existence and action in order to emphasize the concept of **adequation**, which I considered a more integrative and knowledge-generator one in comparison with the concept of optimization.

This new EMMY vision has also generated another audacious hypothesis, that of equalizing EMMY and management. This new hypothesis has determined the redefining of the concept of *management*, under the form of triads, having in their centre the concepts of *ends* and *means*.

## 4.2 Management as a Specific Way of Optimizing Human Action

There are a lot of definitions for management as a theory and a human practical action. Theoretically, management describes the essences of human being and of human action. These essences were considered: finality, instrumentality and the permanent adequation of instrumental aspects to the teleological ones (or vice-versa). For short, I consider a triadic approach which aims to be holistic, postmodern and transdisciplinary, as well. In this respect, the fundamental structure of any human action is end, means and end/means ratio.

I mean by ends the broadest category of teleological aspects, which is all intentions, desires, hopes, plans, strategies, visions, aims, purposes, targets and so on. In short, any purposeful and consciously-intended action is part of this large category - ends. I realise that the common meaning of ends makes direct connections with finitude and with something which implies no continuation. In my vision, ends refer simply to something to be fulfilled in the future. Of course, this accomplished human action (initially viewed as an end) transforms immediately into a means that may be used to attain a lot of different purposes. In my definition of ends I imply unconditionally the necessary means to attain a specific end. This restriction is essential for defining future ends in a quite determined connection with the necessary means to attain it. In other words, it is improperly said that someone is establishing an end without immediately adding the necessary means. Otherwise, such ends could be simply dreams or - better - utopias. I take as a companion to this short demonstration Stephen Covey [15], (Covey, 1989) with his well known book "The Seven Habits of Highly Effective People". The second habit is: "Begin with the End in Mind". For a summary description of this formative book you may see: [http://en.wikipedia.org/wiki/The\\_Seven\\_Habits\\_of\\_Highly\\_Effective\\_People](http://en.wikipedia.org/wiki/The_Seven_Habits_of_Highly_Effective_People)

On the other hand, the means are defined as all kind of instruments (things, ideas, energies, techniques, combinations, resources etc.) meant to contribute concretely to attaining a specific end. Like in the case of ends, the means could not be defined if some misses to mention "What for?" This is a quite clear distinction which differentiates EMMY by the libertarian theory where the Austrian schools economists are using ends and means separately

without connecting them immediately and specifically. In this case I may call my new vision as neo-libertarianism, or as I told it some lines before – Machiavellian Management (in spite the negative attitude towards Machiavellian thinking some may have).

As about the third term *end/means ratio*, this is viewed as a simultaneous and continuous act of having in our minds ends and means in order to compare the degree of adequation among them. This triadic process helps us not to forget the interrelationship between ends and means, on the one hand, and the necessary adequation among them.

Management theory, defined in a neo-libertarian and EMMY style tradition is defined as "thinking, feeling and acting/ deciding". All these three categories are strictly connected with ends, means and end/means ratio. Defined in such a way, management could be easily applied to practical day-by-day activities and not only to firms, corporations or states. Families, groups and institutions are practicing management in a quite "scientific" way...

The process of continuous and simultaneous adequation of ends and means is the best way to harmonize human action, to reduce any waste and to be able, at any moment, to know where you are. The process of adequation/ harmonization is, as I already mentioned above, a mental one and not a mechanical or mathematical one. More than that, the literary expression of ends and means needs a more complex training of managers, including: communication techniques, precise writing, essay writing, report writing and literary style. Sometimes, a metaphor or a comparison may help more than any sophisticated mathematical demonstration that could be true for some seconds or for a very short period of time.

## 5 Conclusion

This paper is not only a synthesis of some of my previous ideas and articles. The attentive reader may found here new proposals, classifications and clarifications that may help improve our dialog on Management, Politics, Economics, Political Economy, Ethics, Law to mention only some of the older modern disciplines which could be usefully melted into EMMY or – same – Management. Many professors felt scared with the spectre of not having their beloved discipline in curriculum. I suggest there is

no reason to be scared; there is reason to be scared only for maintaining this strange educational system more and more professors and graduates are denying for its inefficiency, waste of time and less of openness to creativity and innovation. Of course, transdisciplinarity and its new visions are not panacea, but at least is trying to offer new solutions and a large terrain for debate.

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