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CHALLENGES FACED BY MODERN ACCOUNTING AS A SCIENTIFIC DISCIPLINE. FOUR PLANE REFLECTIONS

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K e y w o r d s: accounting, scientific discipline, ethics, commercialization of knowledge, data processing, thinking about accounting.

A b s t r a c t

The following text presents the author's four plane reflections in relation to modern accounting as a scientific discipline. This science is becoming increasingly significant in the world at present, which is due to the fact that: (1) the accounting science (scientific discipline) is an applied science, i.e. the one that considerably enriches the accounting practice, important not only for the company which deals with accounting, (2) its research spectrum is presently extraordinarily comprehensive as it focuses on many aspects, including the social and behavioural ones, which are important for accounting.

Bearing in mind that accounting in real terms in the context of the worldwide standardisation trend in the author's opinion is one of the most original systems and the one which demands exceptional professionalism from among all the information systems related to human activity, the author shares her reflections with reader on the tasks of the scientific discipline dealing with this kind of accounting in a methodical and scientific way.

The planes of deliberations have been determined by: (1) unlimited data processing revolution, (2) the imperative of opposition to the traditional perception of accounting, (3) commercialisation of scientific research results, (4) ethics in scientific research.

O WYZWANIACH STOJĄCYCH PRZED WSPÓŁCZESNĄ RACHUNKOWOŚCIĄ JAKO DYSCYPLINĄ NAUKOWĄ. CZTERY PŁASZCZYZNY PRZEMYŚLEŃ

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S ł o w a k l u c z o w e: rachunkowość, dyscyplina naukowa, etyka, komercjalizacja wiedzy, przetwarzanie danych, myślenie o rachunkowości.

Abstrakt

W artykule przedstawiono cztery płaszczyzny przemyśleń Autorki dotyczących współczesnej rachunkowości jako dyscypliny naukowej. Nauki, która – w świecie i to szczególnie obecnie – nabiera ogromnego znaczenia. Dzieje się tak ze względu na fakt, że: (1) nauka o rachunkowości (dyscyplina naukowa) jest nauką tzw. stosowaną, tj. istotnie wzbogacającą praktykę rachunkowości, ważną dla rozwoju nie tylko przedsiębiorstwa, które tę rachunkowość prowadzi, (2) jej spectrum badawcze jest współcześnie wyjątkowo szerokie, ponieważ koncentruje się na wielu aspektach (w tym także społecznych i behawioralnych) ważnych dla rachunkowości.

Mając na uwadze, że rachunkowość w praktyce – w kontekście ogólnoświatowego trendu jej standaryzacji, w opinii Autorki, jest najbardziej oryginalnym i wymagającym wyjątkowego profesjonalizmu systemem informacyjnym ze wszystkich znanych i odnoszących się do działalności człowieka, Autorka dzieli się swoimi przemyśleniami na temat zadań dyscypliny naukowej, która taką właśnie rachunkowością zajmuje się metodycznie, naukowo.

Płaszczyzny dla rozważań wyznaczono przez: (1) rewolucję nieograniczonego przetwarzania danych, (2) imperatyw przeciwstawiania się stereotypowemu myśleniu o rachunkowości, (3) komercjalizację wyników badań naukowych, (4) etykę w badaniach naukowych.

Introduction

The modern world is frequently referred to as an information era. It means that the information and its attributes like usefulness, credibility, accessibility and the way of application determine human activities and have an impact on the appraisal of their effects and further planning of the activities. The information of this nature seems to be ubiquitous and of great intensity. However, they are mingled with unreliable information, which only introduces noise and often performs peculiar diversifying functions. In the information era the ability to select it is of the utmost importance and the conviction of its accuracy cannot be overestimated.

Accounting as an information system is located within the family of systems functioning in the contemporary world and generally regarded to be a system generating information of high quality parameters. A distinctive feature of accounting is the fact that it provides processed information acquired on the basis of elementary source materials. The processing follows clearly defined methods and is subordinated to the aspiration for creation of reliable information aggregates. The significance of processing is multi-dimensional and essential. For these reasons, accounting as a practical discipline as well as a scientific discipline in the information era has an important role to perform: an information role in practice and an epistemological role in science.

The article identifies and discusses synthetically four reflection planes. They are presented below with regard to accounting as a scientific discipline. They are based on the observation in the area of: (1) the development of technology connected with data processing, (2) stereotyped perception of the

economic significance of accounting (harmful for accounting), (3) trends connected with conducting science for the commercialisation of scientific research results, (4) ethics significant in the scientific research[1]. The basic method used in the process of writing was a critical analysis own observations of phenomena which occurred over some decades and now are important for accounting as a science.

PLANE 1 – unlimited data processing revolution[2]

Every „time", century and era have their distinguishing features. The contemporary time is absolutely unique for a number of reasons. One of them is the unlimited data processing revolution, which is not indifferent also for accounting, which deals with data processing on daily basis.

This revolution results from three trends (See more: PŁOSZAJSKI 2013, pp. 5–10; see also: *Przerażony kameleon* 2005): calculation capacity exponential growth, broad access to it and a dramatic price decline. Data processing is becoming the cheapest way to solve management problems and it is so intensive that it rapidly changes the business model of companies and institutions.

„Databases of the state of the human world", the so-called Big Data and their processing are changing also a broadly perceived cognitive process. Although the data are collected in different configurations, they may be processed simultaneously. The purpose of the processing is to search for the sense hidden in the data!

It may also be noted that „in the old model when data were difficult to acquire and their processing was costly, companies had to decide which data were necessary for them, i.e. they had to determine the structure of their database system before they started to collect them. Presently, the collection, analysis and storing are very cheap. [...] A dramatically declining cost of data

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[1] The presented reflections were born and then reinforced together with the observation of parallel changes in the area of data processing, substantive changes on a global scale in the accounting related laws as well as the behaviour of practitioners and scientists in the area of accounting. The author has already expressed her opinion on accounting, see for example the last publication on this subject: (KARMAŃSKA 2013a). In the form presented in this text the author's observations are presented together for the first time, with references being made to earlier publications, where a given problem was discussed in a broader context.

[2] The observations below indicate the necessity for the extension of scope of research to be undertaken at present within the area of accounting as a scientific discipline, with the reason resulting from a tremendous progress in data processing technology. Broader context and examples of research done in Poland now, see: KARMAŃSKA (2013a).

collection and processing allows for the solution to the calculation tasks which were economically unjustified or seemed impossible yesterday. [...] In the new model, in which data are easily accessible and their processing cheap, it is possible to completely convert the sequence hypothesis – data collection so far followed in science and business. In this „structureless search" huge databases are built by means of collection of all the available data and only then questions are asked. And even these questions are often not necessary. The methods used today allow for a simultaneous analysis and search in many databases of different quality in search of unexpected correlations. We do not need a clearly formulated research hypothesis – we can wait for its later appearance. (Paradoxically, only this process may appear to be true research. Albert Einstein once said that if we knew what it was we were doing (i.e. searching), it would not be called research – see P. PŁOSZAJSKI). In the self-updating world of the sixth wave of entity Internet and computer revolution, it will change our way of learning. We will be able to make predictions without any prior model building and theory creation". [...] As a result of this computer revolution company's resources become elements of the information system able to collect and process data, communicate, cooperate with other entities, and even adjust and automatically react to any changes in the environment. These „intelligent" resources will improve the quality of processes, give new features to products and create new business models. A company is becoming a full-time data analysis laboratory. The purpose is to analyse every transaction and all the conclusions drawn from the customer interaction in order to maximally shorten the waiting time for the data and be able to make decisions in real time" (PŁOSZAJSKI 2013).

The above synthesis, in my opinion, outlines the world which we are witnessing and which is unimaginably changing. The world in which accounting has undoubtedly its own place, as it is the most original system and the one which demands exceptional professionalism from among all the information systems related to human activity which I know. It has such a unique ability to inform about the past and future of a business entity, which can operate thanks to the human initiative and business skills. It has also another feature: it is used by a powerful group of stakeholders whose impact, from every time perspective, is not indifferent for the fortune of not only business entities or country economies but also for the whole world. Like any other system, accounting has its information inputs, processing procedures and information outputs. It has always (for centuries) had them, but nowadays in every element of the accounting information system there is much to happen. It results from the fact that the environment which makes use of the accounting system wants to know more and more in order to operate in the

conditions in which remaining in the modern economy requires knowledge and important competence like the knowledge management skill. Accounting information outputs are growing, which changes not only their formal relations, they require the application of new approaches to determine values included in them, they are completed by new elements, also narrative. All of it translates into the information scope and quality. Good quality is to be ensured at every stage of operation. It is worth noting that in order to cope with tasks of modern accounting, people connected with it have to possess a comprehensive knowledge of economics, finance, management and law as well as many others than competence „knowledge", including the so-called soft competences.

This world does require from everybody active behaviour and openness to changes from which there is no retreat. It means that also accounting has to verify (possibly not only in business) some emerging important areas and new generation information solutions. It is the time, I think, in which the science of accounting will have extremely much to say due to the rise in significance of management information meeting definite quality features, intensified in different aspects. Firstly, it will be necessary to examine the accounting environment in the area of economics, finance and management, which are the scientific disciplines as well as the practice examined by them that will first react to „the new", changing the models of how to do business. Secondly, it is the science of accounting not the accounting practice that will (or should) determine a number of new attributes of the accounting information system which could do well in the conditions in which the usual features are: (1) information bulk, including financial available free of charge and online, (2) necessity for data selection and examination of their reliability also online, (3) threat of information manipulation (also financial), possible actually every day.

New conditions from researchers coming from many scientific disciplines require a scientific exploration, which is related also to accountants. In order to make this exploration cognitive, the human environment should approve the paradigms whose recognition will allow for further research. If it is not possible (and such a situation cannot be taken into account at present), a discussion about them is advisable.

In view of the aforementioned, it is recommendable that conclusions should be drawn to determine new conditions, scientific *status quo* of such concepts which are thought to be paradigms nowadays or which aspire to be called paradigms. In this connection, the environment scientifically connected with accounting should be aware of the features of the knowledge based economy (information era) as these are the features which as a matter of fact will decide about the recognition legitimacy of well-known accounting paradigms.

The accounting challenges posed by the information era are of a diversified nature. Irrespective of the fact whether their weight is closer to financial reporting or cost management, they emphasize more distinctly than ever before in the accounting history a great significance of this discipline for the corporate management. There may be an impression of a huge synergy and mutual interdependence of the corporate management sciences with the science and practice of this discipline. These relations give rise to the need for research in the area of accounting, which in the era of accounting always have to possess (1) an interdisciplinary context, and their results should useful in practice.

In order to be useful, accounting research results have to (2) satisfy the needs of wide circles of stakeholders and corporate managers. They should even (3) exceed their expectations, and anyway, (4) they should consider primarily the need for a deep penetration of the nature and determinants of business activity in order to determine, through the modelling of the phenomena appearing in it, the ways of possibly most reliable presentation of their effects and explain the causes of the observed trends.

It results from the above that when undertaking new directions of research in the area of accounting it seems absolutely indispensable to determine what eventually they are supposed to serve. It is indispensable, although not all research in different disciplines was conducted at the moment when it was well known what purposes their potential results may serve. Research is often initiated only in order to answer the question: What would happen if? However, the situation in accounting is different. The scope of impact is enormous, though confined to business activity. The functions performed by it result from the ancillary role ascribed to it by business administration sciences. Paradoxically, everything that improves accounting improves corporate management as well. Obviously, there is a feedback between the company management and its accounting. And it is to determine the goals of accounting research. It is the hub of a new search for the ways of how to reflect and analyse the broadly perceived effects of accounting and the ways of early warning systems (both through the use of management accounting tools and financial accounting concepts).

PLANE 2 – the imperative of opposition to the traditional perception of accounting[3]

It is worth pointing to the fact that the world of business which does not penetrate the problems of accounting as accounting scientists do, and treat it rather as a system terminologically hermetic and necessary to run in a business entity for formal reasons (because the law requires it), depreciates the information value of accounting and the work done by people connected with it. Is usually thought that there is a Dt or Ct in the same place for centuries. Thus, nothing interesting can occur and nothing has really occurred. Not to mention the fact that in such an opinion, accounting has really one task: to keep register and make calculation in the public and legal area, or possibly to monitor the state of dues and liabilities as well as the balances of bank accounts. It becomes more exciting when notions like *creative accounting, aggressive accounting* or even *toxic accounting* appear. These are successive labels given by those who make use of their authority in business and evoke this sort of creativity forgetting that it is them to be responsible for the authenticity and quality of data generated in the accounting system.

The thinking stereotype outlined above to frequently come across in practice as well as among people who professionally explore broadly the economic practice on many planes (I do no mean accounting itself), has unpleasant consequences for both the accounting practice and accounting as a scientific discipline.

In practice, people dealing with accounting are identified with the function of „bookkeeper" and usually in a technical sense. It is thought that they make everyone's life difficult as they require some signatures, announce that there is no money, that costs are too high and incomes too low, that losses are being generated instead of profits. The people who can hear that get irritated because they cannot tell expenditure from costs, incomes from inflows, and they clearly associate depreciation, profit and its division with money. They do not want to worry that their decisions have an impact on the volume of costs (for example fixed costs), which they are not even aware of. They want to pay low taxes and achieve high profits, labelling their decisions with slogans of *sustainable growth* or *social corporate responsibility*. They treat accounting support as meeting one of the duties indispensable to do business.

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[3] The observations below indicate the necessity for the extension of the scope of research to be conducted at present within the area of accounting as a scientific discipline also in order to clearly determine the identity of the accounting information system and confirm its unquestioned role in the economic growth on a micro- and macroeconomic scale as well as on the global scale. On the contemporary trends of the accounting practice development, the related opportunities and threats as well as the perception of accounting – despite stereotyped ways of thinking – as a system of high qualitative features see e.g.: (KARMAŃSKA 2013c).

Although luckily, there are also different attitudes towards accounting (presented by business managers to be spelled by capital M), there is a new challenge for accounting as a scientific discipline – the need to prove the necessity for debunking a stereotyped way of thinking about accounting. Accounting as a scientific discipline should do this not only for the accounting itself, but primarily for business, which is becoming increasingly global and cannot dynamically and sustainably develop without possessing enough financial information. This financial information is: (a) more and more complex in terms of the assessment methodology of particular categories, (b) very detailed as determined by absolute transparency of the conducted business, (c) characterising different, important for the decision making process, areas of financial and operational risk, and in every case (d) qualitatively dependent on the professionalism and business ethics of accountants. In order to understand and confirm the accuracy of this statement, an effort should be made to have a look at about 3.000 pages of the text of the International Financial Reporting Standards and the accompanying interpretations, describing the rules and requirements in the area of contemporary accounting practice.

PLANE 3 – commercialisation of research results[4]

The significance of changes in the present day scientific world is reflected in the practice of creation of the so-called Technology Transfer Centres. Such centres are founded primarily in scientific entities and universities. The major role of such centres is to undertake actions leading to the sales of free transfer of results of research and development work.

A Technology Transfer Centre completes its tasks in particular through[5]: (1) examination of intellectual property with regard to the obtaining and retaining of legal protection, (2) examination of the commercialised potential of intellectual property, (3) making reports including the results of examination of intellectual property, (4) finding an investor interested in the use of intellectual property (5) setting the form and conditions of commercialisation, in particular through negotiations and conclusion of appropriate agreements, (6) cooperation with external companies and institutions, (7) application of

[4] The observations below indicate the necessity for the extension of the scope of research to be undertaken at present within the area of accounting as a scientific discipline irrespective of the possibility of commercialisation (i.e. sale of research results). They are presented here because the creation of the so-called Technology Transfer Centres in scientific entities and universities becomes an opportunity on the one hand and threat to the development of science on the other.

[5] Cf. e.g.: Order no. 10 of 27 February 2013 on founding the Technology Transfer Centre. Rector of the Warsaw School of Economics, ZOWA-0161/ZR-10-67/13.

agreements concluded as a consequence of intellectual property commercialisation, (8) conclusion of agreements on the use of property owned by the institution in which the research was conducted used to commercialise scientific and development as well as provision of scientific and research results, (9) register of commercialised intellectual property.

The review of standard tasks completed by the Technology Transfer Centre indicates the importance of the problem connected not only with copyright, but primarily with the importance of the features of scientific research results which make it possible to treat them as in a scientific (research) institution as a peculiar ready-made product having a value of practical usefulness.

It seems, on the one hand that doing research with an assumption of finding something to be sold or donated may be a good driving mechanism for the development of science in a given area. On the other hand, it may pose a real threat to research, which primarily should be conducted exclusively due to clearly scientific reasons. It may be stated that we are watching science (perceived as an autonomous part of culture serving the explanation of the functioning of the world a human being lives in) become an area of more and more commercialisation.

The answer to the question whether it is good or not is not really that simple. To a large extent it depends on the scientific discipline in the context of which a possible commercialisation is considered. The observations below are related exclusively to accounting as a scientific discipline.

At the beginning, it is worth mentioning that the modern economic determinants – global and information at the same time – constitute a potential which favours new directions of development of accounting as a scientific discipline. It results from:

– dynamism of changes in the business environment, stimulating to search for better concepts and ways of analysing and reflecting business activity,

– freedom (including language) and time of information flow/ exchange of information allowing for quick business communication,

– aspiration to create the world accounting model, which is reflected by the awareness of necessity for cooperation of world institutions and organisations connected with accounting.

At the same time however, the above mentioned determinants may impose some limitation with regard to the scope and desire of conducting scientific research in the area of accounting due to:

– dynamism in the business environment makes concepts, research results and tools used permanently, completely or partially outdated,

– freedom (including language) and time of information flow/ exchange of information favours information noise and hinders the application of the „quality filter”,

– aspiration to create the world accounting model is in turn susceptible to the impact of *pressure groups* or *interest groups,* to yield to the pressure of representatives of different business environments of different countries participating in institutions and organisations determining the conceptual framework of the world accounting.

In these difficult conditions, with no sense of stability anywhere, the work in the area of accounting cannot be considered an easy task. Thorough research takes a lot of time, absorbs a lot of energy and intellectual effort and requires substantial sacrifice, determination and perseverance. Its result is never known in advance. And it is a generally recognised standard in the world of science that if the research is to serve the development of a certain discipline (in this case accounting), it should contribute to it some novel elements, enrich its workshop and conceptually develop its analytical framework. Coping with these requirements, especially nowadays, is becoming a serious challenge for the environment scientifically connected with accounting. In the time of commercialisation it is worth bearing in mind a timeless mission connected with it: „truly scientific work for the sake of true science".

The criteria of research quality appraisal with regard to accounting have hardly ever been explicitly defined. When reviewing or appraising research results, one does it subjectively, being customarily guided by a well perceived contribution to science. The appraisal requires primarily that the scientific research in the area of accounting should, first, clearly specify: (a) substantive reasons for the conducted research, (b) the so-far conceptual findings of other researchers dealing with this area (whenever the research is a continuation and not a pioneering work). Second, the research should penetrate the analysed problem multiaspectedly in the most comprehensive approach from the accounting perspective but respectively in the context of finance, economics and management. Third, it should present the author's own analysis of the problem under consideration. Fourth, it should be concluded with a properly sorted out study presenting the research results and the outline of further possible areas or directions of research based on the conclusions and solutions achieved, and fifth the popularisation of research results.

As presented at the beginning, nowadays, there is a strong tendency to undertake research whose research may be, putting it bluntly, sold, which is called commercialisation in a more politically correct way. It is difficult to generalise whether or not this trend is right. Certainly, it is entirely „safe" for the development of knowledge in some areas important for the broadly perceived economic growth. Certain threats may refer also to accounting. People dealing with accounting as a scientific discipline can effortlessly notice them. They can also notice that some research done in this discipline of

knowledge is not subject to commercialisation due to the holistic approach to certain accounting related aspects. (A good example of research which may be considered valuable in the cognitive sense and at the same time the research not to be subject to commercialisation is for example *Grounded Theory of Accounting Development. Based on the Case Study of Armenia*, the research I began in October 2013 at the Gavar State University, Armenia).

Bearing in mind the aforementioned observations, it should be emphasized that an accounting researcher (like possibly researchers in other fields) in the era of the knowledge based economy should be primarily characterised by a humble attitude to knowledge and the aspiration to diligently explore it. The commercialisation of research results should not dominate or obscure this attitude. Understanding the „laws that govern the world", I think that the maintenance of an appropriate research attitude in the area of accounting as a scientific discipline requires not only being aware of the scientific mission but also striking a happy medium, which may be reflected in researcher's desire to keep balance between conducting research subordinated and unsubordinated to commercialisation.

PLANE 4 – Ethics in scientific research in the area of accounting[6]

The researcher's attitude is inseparably connected with behavioural ethics. The problem is becoming even more transparent if wrong behaviours in the research environment are mentioned here.

Ethicists formulate many definitions and devote numerous scientific studies to it. Nevertheless, each of us is able to declare whether something is ethical or not. It is so because in real terms ethics means the whole of the evaluations and moral standards accepted in a given environment. These standards may differ in time and space. There are many factors to determine their composition. Ethics as a specified list of moral standards is not an intrinsic being. It always refers to human actions and attitudes, whose immanent attribute it should be as a matter of principle.

About ethics – in the broadest sense – one can speak as a generally accepted and impeccable human behaviour with regard to other people, situations, phenomena and objects which directly or indirectly will affect the appraisals,

[6] The observations below indicate the necessity for conducting research within the area of accounting as a scientific discipline with maintaining an ethical research attitude. Unquestionably, ethical behaviours in the area of accounting translate into the accounting practice. On the significance of professional ethics in the accounting practice see: (Karmańska 2009) and (*Kodeks etyki zawodowej w rachunkowości,* 2013).

undertaken or abandoned actions of other people. Ethics begins with a man and eventually focuses on another man or group of people. Every human action may be appraised in terms of ethics, even if the undertaken action is not aimed directly at people, as for example conducting scientific research, making a financial report or marking an examination paper.

External appraisals and mental effects of human actions may be conducted only by another man or the doer responsible for the behaviour or action if he is aware of his ethical or unethical attributes. It is worth emphasizing that these attributes to a large extent depend on the cultural determinants of the environment in which human actions and behaviour are regarded as ethical or unethical.

Approaching the problem in a methodical way, there may be two kinds of factors determining the ethical attitude of a researcher in the area of accounting mentioned:

– exogenous factors, which result from all sort of codes or legal standards worked out by experts in different fields and imposing the behavioural standards also on this researcher,

– endogenous factors, which are connected with internal (personal) code predetermined by cultural factors or the natural environment as well other environments including economic.

The ethical attitude of the person conducting a scientific research is a resultant of a degree to which he accepts exogenous ethical and moral codes and endogenous honesty and „clarity of conscience", which together may cause that in the ethical aspect this person will be appraised not on the basis of the research results (which reflect the research potential and not ethics) but on the basis of the way the research has been conducted and presented. I think that every researcher in accounting or other areas feels whether he behaves ethically or not. However, one should be aware that different people's „ethical sensors" may have different „sensitivity", which eventually results in the necessity of explicit speaking about ethical research attitudes.

Accounting as a scientific discipline has a strong impact on the accounting practice through the conducted research and creation of theories and models adequate to the dynamically changing management conditions. The period during which accounting was supposed to deal only with the generalisation of practice is over now. It may be stated that there has also been a change in the direction of flow of ethical patterns in the accounting related activities. At the beginning the accounting practice penetrated science and shaped scientific research standards. At present, the scientific research standards affect the accounting practice much more strongly that for example 20 years ago. What may be considered to be a model useful in practice, as a rule is first born in the sphere of science. As a consequence, within the practice of accounting also

ethical standards are to a large extent determined by the science of this discipline.

Thus, exerting an appropriately strong impact on ethics in scientific research is very well grounded. It cannot be unnoticed that the researcher's attitude may be strongly affected not only by the qualitative changes in the way scientific research is conducted, the availability of source information and opportunity to process it, but also the aforementioned commercialisation of research results, which is tempting and creates opportunities to disobey the rules of ethical work and ethical scientific cooperation.

However, the publication *Dobre obyczaje w nauce (Decency in science)* says[7]:

Unlike other creative activities, science is presently a cooperative and general social undertaking. It is elevated to the level of factors deciding about the development of mankind and the world, about the fortunes of countries and nations in the 21st century. It imposes on the scientists a duty getting young scientists accustomed to and instilling in them the principles of good quality work and decency. It also results in a duty of pointing out those who disobey these rules.

The set of decencies quoted here creates exogenous standards of professional ethics. Research workers are ascribed a high rank in the social hierarchy and perceived as authority in social life. In this way, a demanding framework is set which should accommodate 100% of the „internal professional personality code of every scientist", i.e. endogenous professional ethical standards.

Decency in science refers to practically all functions performed by a research worker[8]. In order to realise what behaviours of a research worker will be considered ethical, it is enough to present only general principles. Their specification is as follows (Excerpts from *Dobre obyczaje w nauce* 2001):

1. The research worker is bound to the universal ethical principles, in particular the rules of decency in science.

2. The research worker cannot demand from his co-workers or subordinates a behaviour contrary to the principles of decency in science.

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[7] In the preface to *Dobre obyczaje w nauce. Zbiór zasad i wytycznych* (2001, p. 4). The principles included in „Decency in science" result from many discussions in the academic environment in Poland, a similar document prepared in 2000 for the European Union by European Science Foundation, discussions paragraph by paragraph and point by point as well as voting on the approved version of the text. This kind of action of formulating guidelines and hints is held in the whole world in different ways. It is about the maintenance of the reliability and accuracy of science, about the ethos of scientist and the social confidence to science. Ibid.

[8] They include ethical standards grouped in the following way: (1) General Principles, (2) Research worker as a creator, (3) Research worker as a master and manager, (4) Research worker as a teacher, (5) Research worker as a reviewer, (6) Research worker as an expert, (7) Research worker as a propagator of knowledge, (8) Research worker as a member of society and international community.

3. The research workers cannot excuse his behaviour contrary to the principles of decency in science with obedience or loyalty.

4. In a situation when the use of decency in science clashes with other generally accepted systems of value, the research worker should make a choice according to his conscience and make a personal decision with regard to every individual moral conflict.

5. The research worker recognizes education as an important part of culture and defends it against unjustified charges.

6. The research worker is obliged to combat the improper use of scientific achievements and the use of them against people.

7. The research worker should continually broaden and deepen his knowledge and improve skills.

8. The research worker is obliged to have a critical approach.

9. The research worker should defend their freedom. (Freedom of education means freedom of choice of problems to deal with, freedom to choose the method of solution, and primarily freedom of thought and freedom speech).

10. The research worker condemns the use of non-scientific criteria in science, and is full of reserve not contempt with regard to the problems which are not included in science yet.

11. The research worker does not act maliciously to damage the reputation of a fellow research worker.

12. The research worker does not make the quality of his work dependent on remuneration, but has the right demand fair remuneration for his work.

13. The research worker has a special responsibility to spread, in his environment personally and through institutions and scientific organizations, the principles of diligent scientific work, to fight scientific dishonesty or behaviour against decency.

The above imperatives should constitute „stone tablets" for everybody dealing with or intending to do research. It refers to all the scientific disciplines, so accounting may be by no means an exception.

Conclusion

At present, accounting as a scientific discipline is going, like economics, finance and management, through a difficult period. A period in which these disciplines are searching for their identity and verifying scientific paradigms. The era of the knowledge based economy has brought the unprecedented conditions. Earlier theories describing the world of business and, more comprehensively the whole economy, appeared doubtful or insufficient in relation to the fact that the world practically in every aspect of its functioning has been

dominated by *information*. Accounting is an important system in this information based world. The scientific research on how such a system should work in order to effectively serve not only individual business entities and countries, but also in a broader sense, a further sustainable economic development of the world, is becoming an unquestioned mission of accounting as a scientific discipline. Scientific research confined only to a single business entity and its accounting is currently absolutely insufficient. Accounting and the related legal standards are an element of the macroeconomic and global policy.

In view of such conditions accounting as a scientific discipline faces numerous challenges. This text attempts to bring them closer on four planes; they are seemingly distant but in real terms they are strongly connected.

Translated by MIROSŁAW SZYMAŃSKI

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References

Dobre obyczaje w nauce. Zbiór zasad i wytycznych. 2001. The 3rd, altered edition. Polska Akademia Nauk, Komitet Etyki w Nauce, Warszawa.

KARMAŃSKA A. 2013a. *Wprowadzenie.* In: *Nauka o rachunkowości na progu gospodarki opartej na wiedzy. Polski sondaż środowiskowy*. Ed. A. KARMAŃSKA. Oficyna Wydawnicza, Szkoła Główna Handlowa, Warszawa.

KARMAŃSKA A. 2013b. *Nauka rachunkowości, proces poznawczy, paradygmaty i prawda w rachunkowości – garść ustaleń i refleksji.* Zeszyty Teoretyczne Rachunkowości, 71(127).

KARMAŃSKA A. 2009. *Wartość ekonomiczna w systemie informacyjnym rachunkowości.* Difin, Warszawa.

KARMAŃSKA A. 2013c. *Wiara w liczby 8-3-6-4-7 – kontekst sprawozdawczości przedsiębiorstwa. Spojrzenie holistyczne*. In: *Wiedza i bogactwo narodów. Kapitał ludzki, globalizacja i regulacja w skali światowe.* Ed. R. Bartkowiak, P. Wachowiak. Szkoła Główna Handlowa, Warszawa.

Kodeks etyki zawodowej w rachunkowości. 2013. Association of Accountants in Poland, Warsaw.

PŁOSZAJSKI P. 2013. *Big Data: nowe źródło przewag i wzrostu firm.* E-mentor 3(50): pp. 5–10.

Przerażony kameleon. Eseje o przyszłości zarządzania. 2005. Ed. P. PŁOSZAJSKI. SGH Foundation for the Development of Managerial Education, Warszawa.

Order no. 10 of 27 February 2013 on founding the Technology Transfer Centre. Rector of the Warsaw School of Economics, ZOWA-0161/ZR-10-67/13.