European Journal of Science and Theology, August 2014, Vol.10, No.4, 111-121

THE URGE FOR SPIRITUAL OPENING IN THE DIGITAL ERA

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(Received 29 March 2014, revised 12 April 2014)

Abstract

Digital Technologies are more and more present at any level in society and thus influencing our lives and our attitudes towards everything we are involved in. Although we might say that the capabilities of modern computational systems could 'weaken' our spirit because of the implied comfort, this is not true, as a great deal of results of some computational capabilities can represent a challenge to the human spirit. As an example, data mining and pattern recognition software could lead to a complete remodelling of the conceptual framework for physical systems, measurements and physical quantities and set new bases to the way relations between them are interpreted.
In this way, emergent phenomena occurring at global levels which cannot yet be estimated will become explorable. The paper will show some of the perspectives of this new 'look into' physical systems.
But the spiritual approach is seen to be needed in education. The overwhelming emergence of digital gadgets and apps are changing the relation between the educating and educated person, as children and teenagers are eager and much more capable to assimilate the novelties of the digital era. They begin to 'feel their superiority' over their educators and what they really feel (unfortunately only at an unconscious level) is the urge for radical changes in the present life of mankind. As one can easily see that traditional education is a continuation of the standard attitudes of primitive societies, with unquestioned authority of the parents over the children, the urge for radical changes comes from the need of another spiritual attitude towards the partnership educator/educated. The paper marks out the importance of real communication, based on face-to-face transmission of non verbal messages in both directions.
On the other hand the social impact of the internet has not to be lost out of view while looking for communication in an educational partnership. Educators have to understand how to use social networks to improve essential messages exchange with the educated.

Keywords: data mining, pattern recognition, physical quantities, partnership, emotional intelligence

1. Introduction

Apparently, the impact of the digital era on the daily life is one of moving away from nature and from all aspects of natural life, while increasing comfort

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and ease of routine work, by weakening the spirit and getting more and more artificial. But this would be exactly so if the same situation did not represent one if the strongest challenges to humanity. In order to overcome the complexity of options, amenities and data, the human mind HAS TO raise to a not yet existing level of spirituality.

We will analyze this urge by taking into account two realms: scientific research and education.

2. Scientific research

Although many experimental researchers enjoy the unprecedented existence and continuous apparition of new measurement instruments, of data logging and archiving systems for measurement results, they have to face the need to handle the complexity implied by all these novelties. Because this complexity is overwhelming and one cannot approach it by having a traditional, purely rational, strictly logical attitude. There is a shift needed in the position of the exploring mind in order to be able to perceive senses and processes which have not yet been observed.

Let's start with the observation that the enhanced capabilities of cloud computing and cluster computing together with the latest versions of data processing software allow multidimensional representations and correlations.

As an example we can take ***Data mining software*** which has emerged from the need to handle huge amounts of data. Most of those packages are based on the idea that one can find '***patterns***' in the representations of some measured values as functions of other ones, while *those* ***patterns do not express known relations between the named values*****.**

Launching a simple internet query about data mining software, one can find: *STATISTICA Data Miner*, *DB Miner*, *BLIA Soft Knowledge Discovery*, *Data Lab*, *Ghost Miner*, *IBM SPSS Modeler*, *Knowledge Miner*, etc. Most of them try to find clusters of data where there is no theoretical hint that there should be some. No existing correlation between the different types of data is *a piori* assumed, only multidimensional plotting is done in any possible combination and after finding the most neat cluster associations of data, one tries to mark out patterns. But what should we do with them?

Tracing patterns is possible only if the approach is done at a high level of abstraction, which should be able to support an ***apparent lack of sense*** of such correlations resulting from unattended associations. The results of the associations suggested by the software can be processed only by ***an open mind, in a state of 'qualia'***, through a phenomenological process. This is the only way ***to find the sense*** of this kind of correlations.

A really appropriate framework to an approach of the phenomenological processes is the one launched by Mihai Drăgănescu in his work 'Orthophysics' [1]. Here, the concept of '***phenomenological sense***' is of highest importance. It is referred to the sense perceived by the human mind through direct contact with

the explored reality and by having the feeling of immediate life experience in so called 'qualia' state.

Furthermore, in order to explore physical systems, there is a need of 'feeling' what is going on with the mind while it explores. We have to move on from simple to complex. And the simplest facts in studying physical systems come from the mind:

- Perception of the systems,
- Conception about the systems,
- Intention to compare systems,
- Selection of specific systems and
- Convention to attribute values.

And here, with the convention comes the link to Physics and physical quantities: the calibration standards, as the selection of these standards are the key to the convention of attributing values and even to the definition of physical quantities.

The intention to compare comes from the need to assess the difference between ***different systems*** and between ***different states of the same system***. Doing this, a lot of questions arise about the way the mind is operating cuts and intrusions into the phenomenological sense of physical systems:

- Which are the criteria to mark off a system from its environment?
- To what extent is the mind justified to cut off links between the system and its environment?
- How can one establish if a link is relevant for the existence of the system and for marking off the system from its 'exterior'?
- Which links to the 'exterior' of a system can be declared to be negligible?
- How can one make the difference between links of the system parts to each other and links of the system parts and its 'exterior'?

Part of these questions is debated in my book "Resonances" [2].

In order to answer them, we have to rely on the quality of mind, on its ***capacity to 'catch' the phenomenological sense*** of the explored domain of reality. In this way ***we will avoid*** unscrupulously ***'cutting off'*** links of which we cannot know if they are negligible or not. Furthermore, negligible errors are nevertheless ***errors*** and one is running the risk that they ***can accumulate in an uncontrollable way***, so approximations coupled with neglecting of the 'insignificant' errors cannot represent a good solution. One has to search a shift on the conceptual level in order to overcome such kind of problems. It seems that a good direction to this purpose is raising the level of abstraction, as the higher the level of abstraction is on which the mind is placed while exploring, the more it can 'perceive' extended senses.

There is a large debate about the objectivity of phenomenological senses and many philosophers defend that opinion of objectivity. This is what Mihai Drăgănescu calls ***intro-opening***. He "puts in view his 'ring of the material world' represented schematically by an one-ring-diagram, linking to each other by two branches 'the Depths of Matter' and the 'Universe'. These two branches, these two oriented arcs, are: the one coming from the Depths of Matter to the Universe and is called 'opening' and the other, the reverse one is called 'intro-opening'." [1, p. 180]..."In his vision, the depths of matter, containing the info-matter ... are opening

continuously and infinitely generating thus the Universe. This one is opening by generating life which generates conscience and consciousness being in a continuous opening towards the most hidden mysteries of the world, this consciousness itself penetrates the 'interior' of those mysteries to the depths of matter." [3]

What is to be done?

- To admit that a good part of our knowledge is based on assumptions with limited evidence only.
- To give up consciously the dependence of the 'undeniable truths' we 'hold'.
- To admit that discursive thinking allows only exposing the 'finite parts' of the explored reality.

Applying this to scientific research, especially to physical systems, we need to:

- Redefine the concept of physical quantity and create a conceptual mathematical framework to support this redefinition;
- Correlate this framework with existing mathematical formalism;
- Formulate assumptions about the existence of distance 'links' between physical systems, about non-local 'communication;
- Find a mathematical formalism of those 'links' functioning.

It is easy to observe that a lot of steps to more and more abstract concepts have been already made during the past century. One has passed:

- From concrete physical space to parameter space;
- From dimensions to the number of freedom degrees;
- From coordinates to generalized coordinates;
- From relativistic space-time to the multidimensional space of the brane theory;
- From physical quantities, as we have mentioned them before, to the lattice of operators over a state space;
- From fundamental physical quantities, as an absolute attribute of objective reality, to the assemblies of measured values.

The huge amounts of data representing measured values in all kinds of ways processed by the named data mining systems do not lead to simple representations of some values as functions of other ones, but to multidimensional, non-graphical correlations lying on the principle of structural relational data bases. But if these data bases in their classical form rely on well-known and well-defined relations between different data sets, here one has to look for and to establish possible relations which are not known yet. This has to be done based on repetitive clusters, on patterns discovered by the software while manipulating the data in all possible ways. Furthermore, one has to work with incomplete data sets, what makes problems even trickier.

Of course, we do not intend to show the capabilities of some software package, but to stretch out what an open mind can do in connection with such a performing package by having an approach at a high level of abstraction. The Centre for Complex Studies has such a project of exploratory research, entitled THE ORTOSENSE VIEWED AS THE HOLOGRAM OF SENSES.

3. Education

To approach education in the digital era is a big challenge. This is due to the fact that the parameters of the relationship between educator and pupil have significantly changed. If before, an educator would rely on lengthy traditions, he himself being educated in this manner, he has now an 'object' to educate that seems to be already knowledgeable thanks to its access and tools of the digital age. Already from a young age the student has its own value system that was built beyond the relationship to its educator and parents. Moreover, the parent or teacher's authority is deeply fractured, giving the pupil a chance to find several points of view online, which haven't been assimilated but seem more important than the ones given by parents and teachers, because they become 'imaginary' instances which he does not have to respond to.

Therefore, the task has become much more difficult for the educator, because he needs to develop new skills and to acquire new knowledge in order to gain 'advantage' over his pupil. This is not for anyone, as many teachers believe that they already have the necessary skills and no not need further personal training, they are even appalled that pupils do not obey blindly. This is where the lack of communication between educator and pupil or child arises.

The task of repairing this situation is undoubtedly in the hands of the adults, because they need to look at the detail and the big picture simultaneously. And this can only be achieved by those who have ***pedagogical vocation***. Because most teachers (and parents) are not tested for this vocation before gaining their new title, most educators are just holders of information in their field. In my opinion there are many fundamental mistakes made by adults regarding their relationship with children and adolescents. This is even before entering the digital age.

The first consists of the fact that the adult does not consider his pupil as a human being still growing, as his equal, as a partner in communication. He requests of him to have knowledge of behaviour and attitudes, as if he had already a vast experience in the real world. If he does not fall into the approved patterns, he is punished, humiliated, despised. Of course this gives birth to the inadvertent rift between them, and the efficiency of the educational act is therefore compromised, equal to zero. The adult needs to respect the child's dignity, to give him value, give him wings; to make him comprehend that learning is positive and will bring many satisfactions in the future; to make him desire to be a complete human being, to gain his own personality, give him the faith that working towards knowledge is to his advantage and that this work should not be a bane. He mustn't learn because parents and teachers say so without further explanation, or in order to be competitive with his peers. He should know that this is how he will be complete, having an appropriate and vast perspective of the world in which he lives. Making him face this high goal delicately and with diplomacy, he will learn to grow constantly, step by step, and with patience the adult will plant into his mind and soul deeply and profoundly, that drive towards knowledge and spirituality, which will work permanently in

the child. And there is no need to spend a great deal of time on this. Most parents and teachers put the blame on the lack of time, when the rub lies with the manner in which the problem is approached. Because, if you offer the child some of the essential teachings (such as Polonius' preach to his son Laertes [4], or that of Neagoe Basarab to his son Teodosie [5] or the incomparable verses of Kipling - *If* [6]) you can mind your own business and let the truths seep through, working silently on their own inside the child. They will reveal themselves in his daily actions, in his attitudes that life will make him take. Not to mention pointing towards certain important readings or the personal example.

The second mistake the adult makes is that he considers if something was once said, regarding a method or practice, the child has immediately understood it. It is not so. Practice has shown that, in order for something to be truly assimilated, it has to be repeated in different ways and from different perspectives again and again until there are signs that understanding is already there. Patiently and with explanations. Then with the personal example, or being put in a similar situation, mirrored maybe and taking a different role. To put him in a situation that he had put someone else. To feel how it is in someone else's shoes. That is to switch from ***teaching via intellect*** (through words) to ***via emotion*** (with examples and empathy exercises). And not in any case to be reproached or punished and humiliated.

In the communication act the adult must, according to our opinion (and in order to obtain the wanted result), ***to adapt his behaviour*** to child's profile and psychological type. One does not obtain similar results from an introvert as from an extrovert. The variety of human types (everyone is unique in their own way) needs an extremely fine tuning of the adult's behaviour towards each and every child. This is the beauty and the challenge of the educational act!

The type of behaviour that we stand for until now is available for traditional education, but even more so important with the radical changes that technology has brought into education.

3.1. Education in the digital age

We will not plead against the development of digital technologies, as it might initially appear, but on the contrary, we are aware of the huge benefits that they have brought to our lives. We plead, however, for its balanced use without excess or inappropriateness.

The expansion of the internet and the tools of access have introduced a great gap between generations. Because of their high capacity to adapt quickly to the surrounding world, children assimilate very fast and interact much quicker than adults with the digital world. They are surrounded by video devices, mobile phones, PCs, iPhones, tablets, etc., such as older generations had the telephone, TV, radio and the gramophone. They appeared in a world where all these digital instruments are readily available and already common. It is natural that they will use them. An adult, even if having an urban background, is more cautious in using the instruments and the world that they open apart from people who work

in the IT industry and the researchers who always work with such products. We've heard so often somebody saying that they did not know how to manoeuvre a gadget and asked for their kids' help which solved it effortlessly. Therefore, it is no wonder that there is a sort of superiority sentiment born in child's mind vis-a-vis their professor or parent who does not know how to use a machine so simple to him. From here on he extrapolates and assumes he knows better than dad, the teacher and then, what is the point of their authority?

In order to establish a balance, the adult must show his value, highlighting his life experience, his knowledge that is obviously wider and deeper than that of the child. And there is another thing: to accept and make the child accept the fact that they both learn from each other. Because each partner of communication needs to offer what he knows the best in order to re-establish the balance and equality. Thus, the child seeing that he is appreciated will try on one hand to develop his skills and on the other, to be attentive to what the parent or teacher says.

In primitive societies, the authority was inherently known to belong to the head of the family, of the clan or of the tribe. He embodies the EGO of the group and is therefore incontestable and respected. Today, when the human being conquered his individuality and became himself an EGO, he cannot listen blindly to his chief. Therefore the father or teacher has to place himself on a higher level and to demonstrate this if he wants authority and respect from other EGOS. From here on it can be deduced that the type of pupil-teacher relationship from the traditional school, in which the latter dictates and the former needs to conform, is doomed. This sort of relationship does not have beneficial effects anymore. It has to be thought over in the above mentioned sense.

Another fact, one we count among the negative aspects of the digital era, and brought major modifications in the relationships parent/child and professor/pupil is that the children became a 'slave' of digital communication. He spends hours in front of the computer or an iPhone screen, believing he ***communicates*** with his peers. In fact, what he experiences is not genuine communication.

We believe that true communication cannot exist without face to face contact. Only then are two people in a complete relation, with all senses present and able to detect the nuances of tone, mimic and gestures that the other shows. All these elements compose a fluid communication, very nuanced and thus effective. The written word, even visual contact through software like Skype (which may distort sound and image), does not realise true contact. Because in front of the screen or webcam someone is not himself, unconsciously creating his artificial image.

Another example of our own experience, when our daughter was in the second grade, her teacher complained to us that she had an ugly handwriting. When we went home, we asked for her notebook. When opening it we saw that the page was covered in signs and I pretended that I suddenly wanted to vomit. I was probably very convincing as my daughter was very surprised of my

reaction. I gave her the notebook back saying she should take it away, because it made me sick. You might not believe it, but since then she started being very careful how she wrote, and her handwriting became readable and even beautiful. I admit I was surprised myself by the effect my trick had on her and I realised that if I had started to reproach, or tell her off, I wouldn't have obtained the same correction. The feeling I gave her when I opened her notebook did more than any dissertation on the subject.

The human being is layered and these levels are assimilated and gradually appropriated. The first level is the physical, gifted with the senses it gains at birth. The others are also present, but only latently. As it grows, the human develops the other levels one by one in intervals of 7 years each (the sensorial, the emotional and the intellectual). As Rudolf Steiner, the founder of the Waldorf School, sustained at his conferences on education from an anthroposophic perspective, the child needs to be approached in different ways, according to the phase of his development [7]. That means one needs to be careful to the according potential at each moment, depending on what he was able to achieve until then. If, for instance, you teach integrals to a 7 or 10 years old child, its capacity to deal with the abstract will be in embryo-phase, still dormant, and will therefore not understand anything. Instead, if you address to this child at an emotional level, chances are that he will understand, assimilate and never forget what you taught him. Because the long term affective memory sets in here.

4. Isolation and loneliness – communication only at intellectual level gives birth to isolation

Digital communication is realised through the filter of reason making many people actually isolate from community, even if one has 'many friends on Facebook'. This isolation has many consequences, emotional as well as intellectual and physical. Wasting so much time in front of the screen, the subject 'forgets' about his physical body. He forgets the need for maintenance and development, physical exercises and movement. And, as one of your main components is neglected, distortions on other levels appear, because the human being is an organic whole, which cannot function properly unless all components grow together. The exclusively virtual contact with the world can develop the intellect so strongly to the detriment of the emotional and physical characteristics. Moreover, the intellectual level, unless used with care, can block the access to other levels, those of spirituality.

Wasting too much time in front of a screen, the adolescents risk to be isolated from others feeding with the illusion that they are always together with others.

For some people, constant contact through the internet has become a drug, a disease. I had the experience to talk to such a person who declared that she wanted to find out about my experiences. I started to communicate with her, as fluently and eloquently as I could. To my astonishment, I realised she was

always concentrating on her phone, reading emails, searching on Google not being careful to what I had to say. I stopped. After a few moments of realising I wasn't continuing, she asked why. I said that I was under the sensation I was chatting alone and that I did not need to share my stories she had asked me to. She said that she understood everything I told her, but when I asked what was about, as she was explaining, I realised she hadn't been paying attention. That's what she called communication. It was actually a terrible ***fear of loneliness*** which was expressed through the 'hunger' of friends on Facebook, of constantly texting insignificant messages under the impression of communication.

The methods for 'healing' someone from this terrible disease, are completely different. The self knowledge, through meditation, trying to understand the interior motives for reacting in a certain way, is a method one needs guidance on. A guidance that can be realised only face to face, where a look, a grimace, a certain gesture can replace and be more pertinent than any treaty of psychology. We think there are many people who realise that at least once in their lives, they were influenced by a gesture or a key word which changed a certain behaviour. That which is said by somebody with a certain tone and voice has a strong impact. If the same words would be written somewhere, it would not have the same creative force that determined the change. We think there is nothing to replace face to face communication and its force. This is why adults need to pay attention that children have an equal measure of communication, digitally as well as face to face.

As anything in this world, there are also positive aspects to the otherwise destructive technology. The challenge for educators in the digital age relies on making allies out of these tools, especially as they are so close to the students. When studies show that, in the US 38% of children under the age of 2 have had contact with or played with a tablet or a smartphone [M. Wagner, http://mashable.com/2013/10/28/children-under-2-mobile-media-study/], you cannot ignore the fact that these tools for future generations are already „part of their DNA".

We believe that teachers need to orientate their educational discourse towards guiding the students in this vast digital universe at their hands to show them how to search on Wikipedia or Google the knowledge that they want to earn, the knowledge that they truly need and are beneficial for their development. Their priorities must be organised, their creativity stimulated and let them ***discover on their own***.

Distant teaching could not have been dreamt of before the digital age. Now there are experiments in the world, where pupils in India can be taught by teachers in the UK or US [www.ted.com/talks/sugata_mitra_build_a_school_in_the_cloud.html, www.ted.com/talks/salman_khan_let_s_use_video_to_reinvent_education.html]. The teacher launches questions such as 'what is a star?' and they need to find the answers on whatever sites they find and try to formulate a correct answer. The search process and the joy of discovery are more effective than if the teacher would have delivered the answer on a plate, in an Astronomy lesson. The one they have found on their own will never be forgotten.

If a teacher is truly talented, he needs to make a partner and ally out of the children's ability to use digital technology. Under no way should it be despised, or worse, forbidden. He needs to be aware that teaching how to use the dictionary will not be as useful, because it's at the fingertips of any child. Moreover, the teacher needs to be twice as careful when making a statement if asked by his pupils. If his answer is wrong, he can be easily discovered by children who can rapidly search for the correct answer. This can bring mistrust and make the children believe that the teacher is unknowledgeable or worse, that the teacher is dishonest.

5. Conclusions

While digital technology is continually developing and more children will have access to it so readily, making the days before the Internet feel like the Stone Age, we must understand its mechanisms and faults in order not to let it take over. It is imperative that we learn how to teach these future cyber-aware children and speak their 'language' in order to give them the handy human skills that they need to survive in the real world. And as previously stated, blocking and ignoring its benefits will cripple one as a teacher and estrange one from his subjects, making the connection impossible. The balance between the humane and the digital must be kept in order to develop us, as well as for the children which asks guidance. It is a long path to take towards a better understanding of education and how to leverage the 'distractions' from it, as benefits, but as long as digital technology is growing and as readily available to children as it is, we must maintain this drive towards a harmonious communication between pupil and teacher. Otherwise we will continue to be baffled why the generational rift is so difficult to breach.

As this is such a vast domain without simple solutions to the problem, further studies tracking contemporary changes in technology and education need to be made in order to see how the issues develop.

Acknowledgement

Parts of the present paper have been presented at the Conference 'The days of the Academy of Technical Sciences from Romania' held on 4-5 October 2013 in Brasov.

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