Review

Not peer-reviewed version

Artificial Intelligence for the design of bottom up/Top down of Organizations, funding for sustainable Research and Start-Up developments

Lucia V. Gontero Bracamonte and Angel Guillermo Bracamonte *

Posted Date: 30 June 2023

doi: 10.20944/preprints202306.2152.v1

Keywords: Artificial Intelligence, encrypted currency, economy, sustainable development, Education and Critical Thinking, Research and Education, Science and Diplomacy, Technology Transfer.

Review

Artificial Intelligence for the Design of Bottom Up/Top Down of Organizations, Funding for Sustainable Research and Start-Up Developments

Lucia V. Gontero Bracamonte [1] and A.Guillermo Bracamonte [2,3,*]

[1] Technical School IPET N° 266 Gral. Savio (Escuela Técnica ENET N°1, Gral. Savio), Argentina.
[2] Instituto de Investigaciones en Fisicoquímica de Córdoba (INFIQC), Departamento de Química Orgánica, Facultad de Ciencias Químicas, Universidad Nacional de Córdoba (UNC). Ciudad Universitaria, 5000 Córdoba, Argentina; gbracamonte@fcq.unc.edu.ar
[3] Departement de chimie et Centre d'optique, photonique et laser (COPL), Université Laval, Québec (QC) G1V 0A6, Canada; guillermobrac@yahoo.ca
* Correspondence: guillermobrac@yahoo.ca; gbracamonte@fcq.unc.edu.ar

Abstract: This brief communication intends to develop critical thinking on the development at different levels that could be evaluated in the well-being of humans from the local development towards a global scale or planetary point of view. Therefore it was presented and discussed how Artificial Intelligence tools could provide important contributions and influence in the design of critical thinking to develop ideas and insights within Research as well as funding for technology transfer. In this context it should be highlighted that the generation of funding and economy for sustainability that it should be based on critical thinking and analysis of what is need it from the close surrounding towards longer distances as well as in the inversed direction. In this regard, the main axes that support it are based on the importance of entailment of individuals in their close surrounding as well as to longer physical distances and cultural differences. An in this context it should be highlighted the existence of large diversity and varied Multicultural differences. These factors could affect the developments of technology, education; level, and quality of life. Thus the Economical and development indexes could be largely varied and different between them. For this reason it should highlighted the local development within shortened times by interacting to receive or provide materials with aggregated value or non-tangible values. Therefore, it could be accelerated the process of improvement in a targeted field looking for average homogeneous development everywhere. And there, it is where the link-up and transfer strategies of technology and education by creation of varied strategies in communication media. As for example the communication plays an important role to transfer knowledge within the different social status and imagining the development of thinking that later it will be the basis for the next generation of technology. By this manner, it could be coupled different levels of educations degrees by a factor in common related with curiosity and open minds to learn, work, and live together in the context of developments of new smart manners of living where economy and new encrypted currency are involucred and provide by different manners sustainability. In these perspectives the development and education at the University and higher degrees taking into account the transmission of important factors such as; i) entailment, ii) development of knowledge, and iii) transference, is fundamental. Finally, it should be highlighted the particular need of good human relationships, emotional intelligence, and diplomacy to afford from the simplest challenges to the higher ones.

Keywords: Artificial Intelligence; encrypted currency; economy; sustainable development; Education and Critical Thinking; Research and Education; Science and Diplomacy; Technology Transfer

 doi:10.20944/preprints202306.2152.v1

1. Introduction to Big Data and Artificial Intelligence

The information for the generation of critical thinking and new projects [1] related with high impact interest in social and natural sciences is highly required to arrive to develop fundamental Research towards real transfer to applications [2]. In order to get control this important factor, it is required to manage a big quantity of knowledge from the origin considered as previous one to the current in progress for the proposal of solutions and new developments within the desired Research fields. Therefore, for the strategy to get Research funding is required to manage Big Data [3,4], and Artificial Intelligence [5] that maybe in many cases is not considered but it is used unconsciously by the already incorporated Internet of Things [6] and free access technology with minimal cost provided as service in developed and in developments countries or regions of the globe.

The entanglement between Academia and Industry or productive sector of aggregated values is an essential factor to manage in life in general as well as within Education, development and technology transfer [7]. This arises from the simplest interpersonal interactions from where a complex matrix or network of connections begins where certain targeted objectives can be activated or deactivated [8]. This is basic for sustainable development and required to participate locally with an impact in the vicinity to greater distances and in the opposite order [9]. Thus, mechanisms can be activated to increase levels of knowledge and development to any desired level through the simple targeted knowledge that it is desired or required [10]. The existence of different organizations that participate in mentioned activities is very important and required, as well as it is knowledge to let it works [11]. In this way, it is possible to aspire to reflect the development at all levels that can be evaluated for the human well-being from local to a global or planetary scale as it is basically required [12]. In this sense, the main axes on which it is based are on the importance of individual interactions in their vicinity as well as at greater physical and cultural distances [13]. And these two aspects should be mentioned in a reality where there are many cultural differences. These factors affect technological development, education; level and quality of life. In this sense, those providers of knowledge and know-how will be the directors in communications and they will be able to contribute more to the development outside than in their immediate close environment (Figure 1) [14]. And of course that all types of activities require to carry out local activities to accomplish targeted objectives previously planned at both sides. So, from the acceptor as well as from the donor of knowledge or material wit added value are required local organization, but by different manners [15]. Similarly, on the social acceptor side, the situation will be improved in some required aspect. And in this way, one could aspire towards a global improvement between a donor and receiver, which with the passage of time it could be generated an effect in the opposite direction. So, it could be generated a feedback up on needs. And in this way there is the possibility that it would be an overall improvement in both directions. In this block chains the economy and currency it is an essential factor control accurately and maybe it is the only one that permit that [16]. Of course that economy is generated by societies formed by persons but in the moment to begin social and technological entangling for improve lives and well-being.

This is a very simple concept on a global scale which has taken a long time to be incorporated into new policies and education at global level. If a scale of years or generations is contemplated, this implementation can be considered very new if it focuses on the history of the human being. And it not new, it should be noted that. However, for the ongoing generation or next generation it is. That is why the current stimulation towards entanglement and activities of development in different areas of Science with an impact on human development could show impact in the near future with very interesting prospects in the short, medium and long term as well. In order to accomplish that, the education of the different members who are involved in the interactions and blockchain activities is very important, as well as all the others placed at closer and longer distances.

In a similar way, continuous training at different levels and social data All these inter-connected themes and topics were added in the discussion in order to open the discussion about how it could be proposed targeted objectives at different levels and by this manner organize the economy to optimize. In the same context it should be contemplated for a harmonious intercultural relationship, of knowledge in search of an improvement in the quality of life of all those members of the

 doi:10.20944/preprints202306.2152.v1

community involved. And from an international relations point of view, the development of diplomacy in education and science is an essential factor. In this regard, the different topics mentioned have been developed with an interdisciplinary approach where the social and natural sciences are closely related: and one cannot exist in the absence of the other.

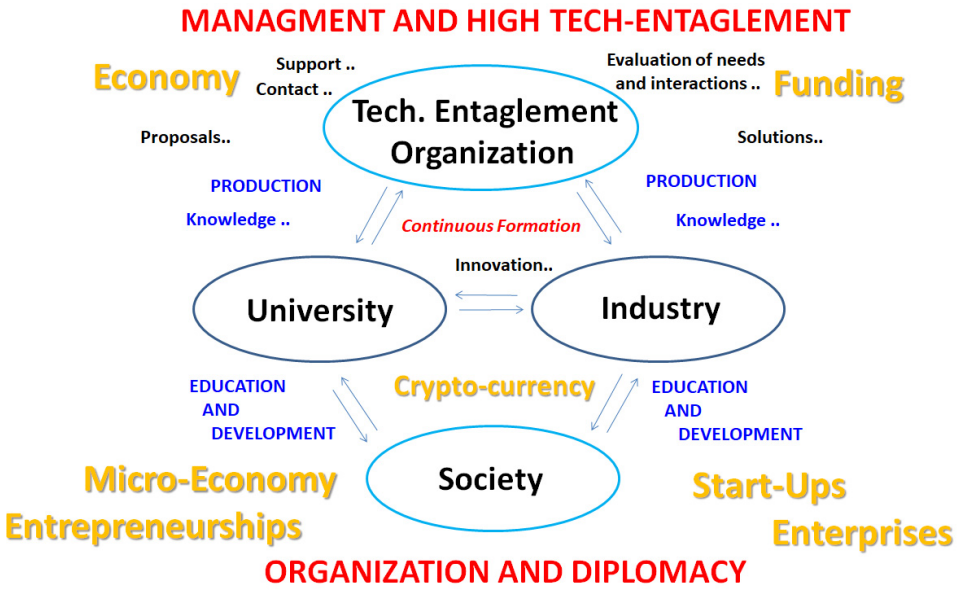

Figure 1. Schema of management and high technology entanglement interactions to develop Research proposal based on sustainable funding and development. Reprinted with permission from ref. [13].Copyright 2022, Bitácora digital Journal. ISNN 2344-9144 https://revistas.unc.edu.ar/index.php/Bitacora/issue/view/2676.

2. Education, Research and Development from Insights to Interactions

The development in Science and Education with an impact on the technology that we use daily is a challenge at different levels to involve the different constitutive elements of the local community towards greater physical dimensions related to geographical limits [17]. In this regard, the media play an essential role in transferring knowledge to the community at different levels. This process prepares for the interpretation of changes and modifications at the organizational level in society as well as for the development of new possible ways of smart and sustainable life where the organization and economy are essentials factors to manage [18]. In this sense, local development focused on education, work, and like all related or consequent cultural activities are very important [19]. And this must be contemplated in the vicinity of the environment of each one of the individuals of a community regardless of differences between them; since the common factor which unites the different constitutive elements is to live with a better quality of life [20,21], In this way, any local start referring to a modification related to education or any other variable that affects the human well-being will have an impact toward larger scales. And that is so because all human actions have a reason for being and are a response to a smart responsive stimulus. And, it is there, where the construction of a sustainable society can be modulated, which is openly and known to a large majority of people who have access to information and are dedicated on it. Those participants must continue to think of different alternative ways to create access points to information and education to raise awareness about the importance of local development towards larger scales and dimensions. In this direction, it could be mentioned all those for example that are dedicated to developing a new generation of entrepreneurs, businessmen and researchers, who promote innovation in Technology, Nanotechnology, and emerging new Technologies from its Research and Development (R&D) laboratories [22].

 doi:10.20944/preprints202306.2152.v1

In these previous paragraphs, only one of the variables was mentioned, but others can also be contemplated; such as production, manufacturing, know-how, to build and provide everything we need as humans. Thus, in times where access to information is favored through different modalities in the media, it is essential to design new alternative ways to provide this information to the different levels of society. In this way, in a developed and advanced society, and director of new trends, lines of thought, etc. should provide these insights in different formats within media in order to support sustainable life from local towards longer distances. Thus, economy and the creation of currency should as well inter-connected in order to fix long terms objectives depending of needs [23]. It is there, where written communications, as well as through other communication media, could be taken important roles to educate all citizens in different fields of knowledge by formal and non-conventional ways in order to develop brain plasticity within a complex world [24].

It is important to mention that even if it is a challenge to initiate related activities, this should be taken as a way to proceed where success is not assured, but it would be one of the only ways to success in the targeted objective with the pass of time. So, the process of iteration of analysis, discussion and conclusions should lead to improved status in the long way to achieve results. This concept is shown along the human history; and by this manner it could be had an idea of what is the meaning of sustainability and perseverance. In this way, sustainability could be achieved among all the different local points which are generating actions with effects at greater distances.

3. Science and Diplomacy with Global Perspectives

In this subsection it is presented how the from current state of organization and status of knowledge it could be improved towards further proposals, funding accompanied with innovation considering targeted objectives up on needs within the society. In these perspectives, from local developments towards longer distances it should be contemplated other types of activities more related with organization focused on education for Research, development and entanglement of technology development [25]. These activities should be coordinated by varied organization associated with education and financial institutions where diplomacy is incorporated if it is considering a global perspective. How to proceed in these perspectives is not evident and it should be evaluated varied situations, local needs and interconnected potentials inter-connections towards global perspectives [26]. So, all type of activity have impact on the formation of critical thinking within the population that could affect the final idiosyncrasy and attitude against new external proposals as well as the generation from their own society [27].

In this way, it is important to mention that the generation of new policies and organizations to promote education for Research and developments towards technology entanglement within different productive sectors such as Educational, Technological, and Research sectors as well as within the organizations representing the Industrial sector is an important factor of development [28]. Different training events and workshops can be mentioned on this subject where social and Natural Sciences are met to show and discuss local social challenges towards a global vision or extending the frontiers in order to find new insights and solutions in varied targeted objectives, problems, and problematic situation or conflicts. It could be mentioned the Diplomacy and Democracy Convention organized by Argentinean Association of Canadians Studies (ASAEC) [29], supported by the Canadian Embassy in Argentine, where it could be found varied themes and topics related, such as targeted organizations for sustainable developments. For example the Laboratory of Latino-American Studies at Montreal, Quebec, Canada leaded by Prof. Victor Armony at University of Quebec, Montreal (QC) Canada [30]. This event takes place at the National University of Rosario and various foreign participants interacts to discuss about their roles in complex social networks. It is just a mention how it could be developed from local further interactions and new opportunities of discussions about sustainable developments. And in this context, it should be mentioned that within these types of meetings, forums, and workshops is possible to found Researchers and projects where it could propose collaborations as well as add insights with other perspectives or propose their own projects. In similar manner Horizon Europe Brokerage events where it have been presented and discussed Research projects and ideas in development for future technologies and sustainable

 doi:10.20944/preprints202306.2152.v1

development offer many opportunities to hear from the direct involucred Researchers as well as to present ideas and potential future project in collaboration [31]. Therefore it is an open source of ideas and funding that it is on table for discussion all around the globe. Therefore, different governmental and non-governmental organizations are promoting technology entanglement, Research, development and funding from local towards global participation. By this manner, from local needs that require basic contributions for their immediate development can participate, and also others ones with great potential for the delivery of material with added values and knowledge for developments towards longer distances but based on a capacity developed locally so far maybe from it was conceived, designed and build or fabricated.

Just to mention, in some cases, there are actions between different countries or regions of the planet where it is required diplomatic actions and support [32]. Thus, it is important to remember the meaning of diplomacy as a branch of politics and organization that deals with international relations, where procedures that regulate the inter-relationships between the different states must be established. In these perspectives there are open sources of collaborations around the planet that should be contemplated within hierarchical organizations for sustainable development and funding generation.

The Diplomacy is essential for communications, relations and multilateral actions in search of objectives that favor the different participants [33]. This is also a simple concept and applicable to different situations where it is required to develop or contribute something necessary in both directions with respect to the intervening participants. In this way, different educational levels can be coupled with a common factor related to curiosity and open minds to learn, work, and live in community in the context of developing new intelligent sustainable ways of living. With these perspectives, the development and education at the University and Postgraduate level in Sciences taking into account the transmission of the importance of the aforementioned factors such as; i) connections with other partner and institutions, iii) development of knowledge, and iii) transfer, is essential. Finally, the particular need for good human relations, emotional intelligence, and diplomacy at all levels must be highlighted in order to succeed from the simplest to the most complicated challenges to be addressed in the course of any development [34]. About Diplomacy and all themes and topics related it should be noted the importance of all members within different organizations to act together with values in common to maintain the work together. In this direction and sense there are currently various organizations promoting diplomacy to bring different cultures closer together in order to create a global citizen, or at least with a global conscience [35]. In this context, there are many organizations that propose interactions within inter-different parts and regions around the planet. It could be considered that the globe actually is interconnected. Maybe there are natural interactions due to proximity such as Europe and America; however as well there are in the other way towards Europe, America, Asia and Africa as well. So, it should be mentioned many other local examples maybe; that should be expanded in order to develop conscience and critical thinking on special needs focused on diplomacy and education in different parts of the planet [36]; but highlighting the importance of the local point of view at each place in these complex world. It could be mentioned special programs related with programs and events where European Union share knowledge and give the opportunity to participate within open forums to discuss about Research and Developments within collaborative projects with future perspectives in the next generation of materials and applied technology [37]. In addition, new programs focused on Science Diplomacy leaders developed in Switzerland [38] can be mentioned, where leaders and aspirants meet to train and discuss it. These organizations are required not only for inter-lateral relations; as well it is to support peace, education and economy between different parts of the planet with variable culture, history and heritage.

4. Importance of Technology Entailment for Development and Technology Transfer

The meaning of entanglement within Technology could be applied from fundamental applied Research developments towards services from academia to Industry up of needs as well. So, the objective it is the interaction and communication of needs between Academia and the productive

 doi:10.20944/preprints202306.2152.v1

sector of materials with added values. In this context the generation of funding opportunities is opened to get new opportunities for sustainable development. This way it is not so far from fundamental Research; or unless it should not be considered so far due to the need that all knowledge acquired it should show some expected applications to improve the human development.

Thus, the development, and technology transfer activities, which arise from the intrinsic training of the different members of the communities involved is required. In this context, the link is the union between two parties interested in exchanging knowledge and technology as needed. Knowledge may be related to the know-how of a product or material with added value; as well as focused on education. So, about materials it is noted that products that are essentials for life could be obtained by these entanglement of technology and needs. It means that it could be acquired help, support, and direct transfer if necessary, depending on the case, if the product is available and it has been already developed.

In recent times, the linkage for different products has been largely positively affected by different inspiring sources of innovation. From where new technologies have emerged applied to different products of daily use and specific high-impact technology such as within life sciences. It is just to mention the recent Corona Virus pandemic situation where it was involucred all the globe in the prevention and treatments as soon as possible to get controlled the problem [39]. Conceptually, development is necessary to obtain everything that is needed to live based on the organization of society. And in these perspectives it also involves the way to obtain everything mentioned. And in order to accomplish that it should be taken into account previous constructions and development mechanism in the different points or localities involucred and established initially to participate in a long road or perennial process to develop and get solutions for sustainable development. By this manner, the geographical location, economical factors developments should be known, as well as statistical indexes, Demography and Economics, which they can be very varied. It is not easy this evaluation and applications; however it should be highlighted these factors to carry out a local improvement in short and mid-term interval of times, as it is necessary to connect, interact and either by receiving or providing a material or know how [40]. And it is there where communication between different interested parts to transfer of Technology and Education in different spheres of human development is vital. By this manner, it could be expected to improve quality of life with perspectives to improve well-being in different parts of the planet.

Therefore, in the last decades it has been applied drastic changes in education policies through the creation of different strategies based on the media within different formats as well as implemented in formal education programs. The language and critical thinking is involucred in these modifications applied. This is a general mention that could be varied depending of the place; however the trend in education is going through this direction. At the same time there is a huge augmentation of organization carrying out activities of entanglement in technology and education that it is only achieved by a diplomatic way accompanied with high qualified human resources.

5. Concluding Remarks and Future Perspectives

The themes and topics related with artificial intelligence and big data are very broad; however from their analysis it could be taken improved decisions in order to develop targeted aims. In this context the impact of these decisions could be great in each of the daily activities that carry out the members of the society. This has had repercussions regarding the needs of the human being as an individual member of a group; and in this sense education has an important contribution. In this context the bottom up and top down of knowledge is very important to optimize funding and projects developments within Sciences. And it should be noted that it is a very important key point to get success because the same funding it could be applied for varied objectives. But not all the targeted objectives or aims could permit to get the success of a real development.

Therefore, it is important to take into account the variable of communication and inter-connections between different actors with the capability to take decisions on the previous mentioned roles to set up an organization to develop actions in order to accomplish targeted aims. In this context, it is also important to highlight that fundamental science accompanied by objectives focused on the

generation of materials with functionality are of high interest in the society, So materials with added value due to their daily uses is highly desired. In addition, considering new technologies from the conception of a functional material it is important to transfer it to a device which it could be part of portable and miniaturized instrumentation, such as “Development of Nano-, Microdevices for the next generation of Biotechnology, Wearables and miniaturized Instrumentation”. In this way, in search of new non-classical light and energy generation strategies based on hybrid silica Nanoarchitectures with organic emitting molecules of the Laser type, the Dynamics of NanoBiostructures assemblies was studied with the consequent generation of Nano-Bio-Ultraluminescence. not previously observed. This work has been recently published and has the title "Self-assembly dynamics and effect on synthetic nanobio-optical properties by hybrid monocolored silica nanoparticle labeling of Escherichia coli", and has interesting perspectives from a Biophotonics approach towards Biodetection and generation of Hybrid Nano-Biomaterials with potential Biolaser properties. Therefore, in the previous paragraphs, different topics and related publications have been mentioned, which they have involved Multidisciplinary Research as a result of Fellowships, Entrepreneurships, Research Grants, and funding generation by Technological and know how entanglements between Academia and Industry relationships with different teams of work, Research groups and Universities.

In this context, it should be highlighted the importance of the information for the decision making and project management in different areas of Science. With this direction, in this context it is mentioned the importance of generating large-scale social projects such as the "Futur ICT Project, from the European Union, Participatory Computing for Our Complex World" should be highlighted, to explore the development of life in different societies in the planet based on the collection of data and the search for experimental data as well. These projects, related to different areas of science, but with a common factor and a social point of view, have been subsidized by the "European Union Seventh Framework Program - Project 'FuturICT", being a coordination and support in taking actions on Information and Communications Technology. And these may also have other implications related to a selection of contacts and assemblies of interactions in the context of large-scale Data manipulation, which also generates analysis and projections in future perspectives which make linking and development.

All these ideas are of course taken into account from a local point of view towards a Global vision, which implies that a problem in a remote local place can have an effect at greater distances. In this way, the World Economic Forum (WEF), also called the Davos Forum, should be mentioned and highlighted. Which is an international non-governmental organization based in Cologne, which meets annually in Davos (Switzerland) to discuss economic problems at the planetary level. Similarly, the importance of security in current times must be taken into account, since it can again affect the future of the planet. Thus, from different point of developments placed in different geographical sites need to work together, promoting and assuming responsibilities in common based on sustainable development for a healthy planet; but considering prototyping, modelling problems and solutions in order to predict factors of developments to be applied.

Acknowledgments

It is specially acknowledged to the Département de Chimie and Centre d’Optique, Photonique et Laser (COPL), Québec, Canada, for the research postdoctoral position, and the National University of Cordoba (Universidad Nacional de Cordoba, UNC), Argentina, and the National Research Council of Argentina (CONICET) for the research and teaching positions held by A. G. B. Special thanks are also given to the Secretary of Science and Technology of UNC (SeCyT), Argentina, for research funding. We are thankful to Prof. Denis Boudreau from COPL at Laval University, Québec, Canada, for inviting me to participate in his research project on genotyping and Nanophotonics projects. Special thanks are also given to Prof. Cornelia Bohne for the postdoctoral research position in Supramolecular Dynamics, University of Victoria, Victoria, Vancouver Island, British Columbia, Canada. And by this manner for the long standing Research Collaboration in progress; as well as to all the Canadian Grants that permit that.

In similar manner, it is thanks to Professor Burkhard König from the Institut fur Organische Chemie, Universitat Regensburg, Regensburg, Germany, for the Research Visit and Lecture opportunity given in his Laboratory to the author. As well to Professor Jessica Rodríguez-Fernández, PhD from Department für Physik und CeNS Ludwig-Maximilians-Universtität,München, to encourage me to the Research visit in Germany too. In addition, it is greatly acknowledged as well, to Prof. Nita Sahai from University of Akron, Institute of Polymer Science and Engineering, and NASA Astrobiology Institute, Ohio, United States, for the postdoctoral research position focused on Synthetic Biology, RNA and Origin of Life (OoL) projects.

Moreover, it is specially acknowledged to the Argentinean Association of Canadian Studies (ASAEC, Asociación Argentina de Estudios Canadiense), member of the International Council of Canadian Studies (ICCS) and supported by the Embassy of Canada in Argentine, at National Universities of Rosario (UNR), Cordoba (UNC), Comahue, Cuyo (UCuyo), La Plata (UNLP), and Tucumán (UNT), in Argentine (https://asaec.info/).

In addition, It is gratefully thanks for the current collaborations within life sciences in progress. Special thanks are also given to Prof. Valeria Amé from Centro de Investigaciones en Bioquímica Clínica e Inmunología (CIBICI), Departamento de Bioquímica Clínica, Facultad de Ciencias Químicas (Center of Clinical Biochemistry and Immunology Research) Department of Clinical Biochemistry, School of Chemistry, UNC, Argentina. Special thanks are given to Prof. Daniela Quinteros and her research group from Unidad de Investigación y Desarrollo en Tecnología Farmacéutica (UNITEFA) (Unit of Research and Development in Pharmaceutical Technology), Department of Pharmaceutical Sciences, School of Chemistry, UNC, whose current research focuses on bioconjugation and new hybrid biological nanoparticles.

In addition, it is greatly acknowledged the visit to Professor Jesse Greener Laboratory, in the Département de Chimie forming part of the CQMF (Quebéc Center for Functional Materials) and CERMA (Center for Research on Advanced Materials), and as well to Daniel Cote Biophotonics Research Group from COPL, at Université Laval, Québec, Canada. It is also gratefully acknowledged to Prof. Dr. A. E. Shalan, BCMaterials, Basque Center for Materials and Nanostructures, Bilbao, Spain; and to the attached young Researcher E. S. Abu Serea as well. In similar manner to Researcher and Professor Shaimaa Elyamny from Electronic Materials Research Department, Advanced Technology and New Materials Research Institute, City of Scientific Research and Technological Applications (SRTA-City), Alexandria, Egypt. In this context, special thanks to AES the National Research grants from MINECO, Spain, "Juan de la Cierva" [FJCI-2018-037717].

Finally, It is acknowledged to all the related supporters of the recent Entrepreneurship-Start-Up:"Bio-highlighting solutions" in progress, since "Awarded Prix Ideas Challenge 2010", Entrepreneuriat ULaval - Université Laval, Laval University, Quebec, Canada. (https://www.eul.ulaval.ca/), recently presented at NANOMERCOSUR 2022 (http://www.nanomercosur.org.ar), and Program for Start Up de SF 500 (https://sf500.com.ar/) Life Science Foundation. In similar manner to all collaborators in the Research Group-In-Progress (at the technological sci. capabilities map of National Research Council-CONICET: https://kumu.io/conicet-cba/mapa-cct#mapa-cordoba/grupo-de-diseno-y-desarrollo-en-nanofotonica-biofotonica-y-nanomedicina?focus=%23elem-4MSbstak%20out%201) and in Collaboration with International Researchers as Start Up-Entrepreneurship: https://guillermobrac.wixsite.com/website). In this context it should be mentioned the Research Group in progress is focused on "Design and synthesis of new Optical active Nanostructures with Ultraluminescent applications applied for Photonics materials, Biophotonics, Nano-, Microfluidic systems, and Devices" ; in Collaboration with COPL, Ulaval, Canada, and other International partners.

References

1. L. Li, H. Lai, Multi-Layered Projected Entangled Pair States for Image Classification, Sustainability, 15, 5120 (2023) 1-15.
2. 2nd Edition, Big Data and Social ScienceData Science Methods and Tools for Research and Practice, Edited By Ian Foster, Rayid Ghani, Ron S. Jarmin, Frauke Kreuter, Julia LaneCopyright 2021. ISBN 9780367568597

3. D. Knebel, A. Ayali, M. Guershon, G. Ariel, Intra- versus intergroup variance in collective behavior, Sci Adv 5 , 1, eaav0695 (2019) 1-9. DOI: 10.1126/sciadv.aav0695
4. M. Hilbert, Big Data for Development: From Information- to Knowledge Societies, SSRN Electronic Journal (January15) (2013) Available at SSRN: https://ssrn.com/abstract=2205145 or http://dx.doi.org/10.2139/ssrn.2205145
5. Editors Ansgar Steland, Kwok-Leung Tsui, Book© 2022, Artificial Intelligence, Big Data and Data Science in Statistics, Challenges and Solutions in Environmetrics, the Natural Sciences and Technology. ISBN978-3-031-07154-6
6. D. Gil, M. Johnsson, H. Mora, J. Szymański, Review of the Complexity of Managing Big Data of the Internet of Things, ID 4592902 (2019) 1-12.
7. A. Terán-Bustamante, A. Martínez-Velasco, A. Marie López-Fernández, University–Industry Collaboration: A Sustainable Technology Transfer Model, Adm. Sci. 2021, 11, 4, 142 (2021) 1-17.
8. E. Brynjolfsson, T. Mitchell, TECHNOLOGY AND THE ECONOMY, What can machine learning do? Workforce implications, Science 358, 6370 (2017) 1530-1534.
9. J. Hörisch, I. Wulfsberg, S. Schaltegger, The influence of feedback and awareness of consequences on the development of corporate sustainability action over time, Bus Strat Env.;29 (2020) 638–650.
10. L. Tõnisson, J. Voigtländer, M. Weger, D. Assmann, R. Käthner, B. Heinold, A. Macke, Knowledge Transfer with Citizen Science: Luft-Leipzig Case Study, Sustainability, 13, 7855 (2021) 1-18.
11. United Nations, Educational, Scientific and Cultural Organization; Education for Sustainable development, Published in 2020 by the United Nations Educational, Scientific and Cultural Organization, 7, place de Fontenoy, 75352 Paris 07 SP, France © UNESCO 2020 ISBN 978-92-3-100394-3 https://doi.org/10.54675/YFRE1448
12. L. D. Barreto Torres, G. Farias Asmus, S. Regina da Cal Seixas, Quality of Life and Sustainable Development, W. Leal Filho (ed.), Encyclopedia of Sustainability in Higher Education, © Springer Nature Switzerland AG 2019. DOI:10.1007/978-3-319-63951-2_26-1
13. B. Eddy, H. Oussama, Social relationship paradigm applied to object interactions in industrial IoT, IFAC-PapersOnLine, 51, 11 (2018) 1391-1396.
14. Lucia V. Bracamonte-Gontero, A. Guillermo Bracamonte, Opinion. Global development from local perspective: importance of Entailment and Diplomacy in Sciences, Education, and Continuous formation, Bitácora digital Journal. 12th Ed., Vincular Faculty of Chem. Sc. (UNC) 9, 13 (2022) 67-69. ISNN: 2344-9144 https://revistas.unc.edu.ar/index.php/Bitacora/issue/view/2676
15. A. Devine, A. Jabbar, J. Kimmitt , C. Apostolidis , Conceptualising a social business blockchain: The coexistence of social and economic logics, Technological Forecasting and Social Change, 172, 120997 (2021) 1-20.
16. W. Viriyasitavat; Li Da Xu; Zhuming Bi; V. Pungpapong, Blockchain and Internet of Things for Modern Business Process in Digital Economy—the State of the Art, IEE Transaction on Computational Social Systems, 6, 6 (2019) 1-30.
17. l'Atlas Géopolitique et Culturel, Du Petit Robert des Noms propres Dictionnaires Le Robert, Paris ISBN 2-85036-824-6.
18. V. Brinia, P. Selimi, A. Dimos, A. Kondea, The impact of communications on the effectiveness of the educational organizations,Education Sciences, MDPI, Educ. Sci. 12, 170 (2022) 1-16.
19. J. S. Hornsby, J. G. Messersmith, M. Rutherford, S. Simmons, Entrepreneurship Everywhere: Across Campus, Acr oss Campus, Across Communities, and Across Borders, Journal of Small Business Management 56:1 (2018) 4–10.
20. R. Sfeatcu, M. Cernuşcă-Miţariu, C. Ionescu, M. Roman, S. Cernuşcă-Miţariu, L. Coldea, G. Bota, C. Camellia Burcea, The concept of wel being and health and quality of life, European Journal of Science and Theology, 10, 4 (2014) 123-128.
21. Luana Dandara, Barreto Torres, G. a Farias Asmus, S. Regina, C. Seixas, Chapter Quality of Life and Sustainable Development, Encyclopedia of Sustainability in Higher Education (2019) ISBN : 978-3-030-11351-3
22. T. Lee, The Rise of International Nongovernmental Organizations: A Top-Down or Bottom-Up Explanation?21, 393–416 (2010) 1-24. https://doi.org/10.1007/s11266-010-9137-5
23. B. Jones, World Economic Forum (DAVOS), In book: Encyclopedia of Corporate Social Responsibility (2013) 2738-2740. DOI:10.1007/978-3-642-28036-8_564

24. J. Klein, The Relationship between Level of Academic Education and Reversible and Irreversible Processes of Probability Decision-Making, Higher Education, JSTOR, 37, 4 (1999) 323-339.
25. G. Bjelobaba , A. Savic,* , T. Tošic , Ivana Stefanovi´c 2 and Bojan Kocic, Collaborative Learning Supported by Blockchain Technology as a Model for Improving the Educational Process, Sustainability, 15, 4780 (2023 1-23.
26. Alan I. Leshner, Protect global collaboration, Science, 366, 6471 (2019) 1291. DOI: 10.1126/science.aba4762
27. R. Laaja, K. Macours, D. Alejandro Pinzon Hernandez, O. Arias, S. D. Gosling, J. Potter, M. Rubio-Codina, R.Vakis, Social Sciences: Challenges to capture the big five personality traits in non-WEIRD populations, Sci. Adv. 2019;5: eaaw5226 (2019) 1-13.
28. R. G. Carter et al., L. Van Egeren, Innovation, entrepreneurship, promotion, and tenure Academic incentives must reward broader societal impacts, Science, 373, 6561 (2021) 1312-1314.
29. Argentinean Association of Canadian Studies (ASAEC, Asociación Argentina de Estudios Canadiense), member of the International Council of Canadian Studies (ICCS) and supported by the Embassy of Canada in Argentine, at National Universities of Rosario (UNR), Cordoba (UNC), Comahue, Cuyo (UCuyo), La Plata (UNLP), and Tucumán (UNT), in Argentine (https://asaec.info/).
30. Convention of Diplomacy and Democracy by Argentinean Association of Canadians Studies (ASAEC), and supported by the Canadian Embassy in Argentine, November 11st, 2021("Congreso Nacional e Internacional sobre Democracia") Conference by Prof. Victor Armony at University of Quebec, Montreal (QC) Canada; and Director of the Laboratory of Latino-American Studies at Montreal, Quebec, Canada.
31. Horizon Europe Brokerage events: https://hadea.ec.europa.eu/events/horizon-europe-brokerage-event-2024-cluster-health-2023-06-02_en
32. A. Banerjee, L. Gray, W. Robert Pearson , B. L. Schmitt , K. Shield , G. Zanalda, Integrate US science and diplomacy, Science, 372, 6542, (2021) 582. DOI: 10.1126/science.abi8644
33. M. Hutson, AI learns the Art of Diplomacy. Metas algorithm tackles both languages and strategy in a classic board game that involves negotiation, Science (2022) 1-5.
34. D. Helbing, Introduction: The FuturICT knowledge accelerator towards a more resilient and sustainable future, Eur. Phys. J. Special Topics 214, (2012) 5–9.
35. Découvrir le Canada, Les droits et responsabilités lies a la Citoyenneté, Sa Majesté la Reine du Chef du Canada, représentée par le ministre de Citoyenneté et Immigration Canada 2012 ISBN 978-1-100-98714-9.
36. F. Giannotti, D. Pedreschi, A. Pentland, P. Lukowicz, D. Kossmann, J. Crowley, D. Helbing, A planetary nervous system for social mining and collective awareness, Eur. Phys. J. Special Topics 214 (2012) 49–75.
37. .
38. RTS radio, émission du 10 de février 2021 (https://www.rts.ch/), sur « New programs launched to train anticipatory science diplomacy leaders » at GENEVA, Switzerland, 8 October 2021 (https://gesda.global/new-programs-launched-to-train-anticipatory-science-diplomacy-leaders/).
39. Martin Ame, S. A. Serea, A. Shalan, A. G. Bracamonte*, Detection of Viruses and Development of New Treatments: Insights into Antibody-Antigen Interactions and Multifunctional Lab-On-Particle for SARS CoV-2, J Nanotechnol Nanomaterials, Scientific Archives (Creative Commons Attribution License), 2, 2 (2021) 67-75. ISSN: 2692-630X
40. S. Buckingham Shum et al., D. Helbing, Towards a global participatory platform. Democratising open data, complexity science and collective intelligence, Eur. Phys. J. Special Topics 214 (2012) 109–152.