EDITORIAL

Science in the Time of Pandemic: How to advance your projects when you cannot perform experimental work?

Daniel A. Lowy^{1,*}

¹Genesis Sustainable Future Ltd., Sárospatak, Hungary

²Northern Virginia Community College, Alexandria, VA, USA

*Correspondence: lowy.daniel@valhu.hu, 33 Rákóczi St., Sárospatak H-3950, Hungary

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In early June 2020 I was invited to deliver an online talk about how to progress your work over the quarantine. When no access to laboratories is granted, one cannot perform experimental work. My Zoom presentation had a title inspired from a well-liked novel by Gabriel Garcia Márquez: *Science in the Time of Pandemic*¹. The take home message conveyed to the audience was that over the pandemic it is highly recommended to start writing. One should put together the literature review of the work, whatever it is, a B.S. or M.S. thesis, Ph.D. dissertation, introduction to a research paper, a review article, or a book chapter.

It has become a rule of thumb to start writing as soon as you are halfway done with your work. Only the first draft will reveal what data is missing, what kind of additional experiments have been performed by other research scientists in the field, which should be adopted for complementing your portfolio and strengthen the manuscript. Steps involved do not represent a novelty to any of the colleagues, who have already written a literature review: (1) choose your topic (search terms), (2) use your database of preference (ISI Web of Science, Scopus, PubMed, or other), (3) retrieve the initial pile of science papers, which is typically extremely large, (4) to refine your search, add one or more search terms, so that the number of hits should drop at least by one order of magnitude, (5) check the relevance of articles contained in the restrained pile, (6) for the most significant papers, follow the citations ahead in time (citing papers) and back in time (cited papers), and (7) pay attention to and include in your work the highly cited papers, which have exerted the most significant impact on the scientific community.

A relevant question to be answered is, how do you assess that you covered the most important literature pertaining your topic? In other words: when to stop your documentation?

Based on my experience, gained by writing ten book chapters and two review papers, I found that eventually you reach a crucial point, where citations ahead in time (citing articles) and citations back in time (cited articles) start to converge. At this stage of the documentation, authors cited in various papers are getting repeated (same author referenced in different papers) and no further relevant sources can be retrieved. This is when you can conclude that the entire field was retrieved, so that you can start writing. Next follow the usual sections of a paper, with two suggestions: (i) in the Conclusions section

¹Gabriel Garcia Márquez: Love in the Time of Cholera

avoid repeating word by word the Abstract, and (ii) for cited references follow strictly the format imposed by the journal or publisher!

I am happy to tell that most authors of the current issue of DRC Sustainable Future used efficiently their time away from their laboratory and successfully completed the writing of their manuscripts. This enables us to release the second issue of our journal, prepared over times that have been way out of normal.

It is to the Editors' great satisfaction that the authors' list of this issue is very diverse, comprising experts residing in 6 countries located on 4 continents: USA, Peru, Armenia, Ukraine, Romania, and Hungary.

One important topic of this second issue is sustainable education, which extends the scope of our journal, being of general interest, and becomes particularly valuable under the circumstance of the ongoing pandemic. Zsádány Vécsey has built a highly successful developmental software on the Flow theory, introduced by famous American-Hungarian psychologist Professor Mihály Csíkszentmihályi. Its concept is based on "Good Business" ideas and is embedded in an online serious game, which tests and measures 29 leadership skills, essential for sustainability. This paper provides an overview of current challenges faced by the leadership development sector.

<https://genesissus.eu/drc/vecsey/>

Professor Michael Bodo from Ochsner Medical Center in New Orleans, Louisiana, USA, accounts for his lifetime activity toward designing and devising medical test apparatus, which serves for monitoring life parameters under anoxic conditions. His results are of crucial importance in the future, for accomplishing successfully flight missions to other planets.

<https://genesissus.eu/drc/bodo/>

Professor Bence Mátyás contributes with a paper related to flight missions, in the first approach to planet Mars, where he aims to grow plants. By releasing molecular oxygen into the planet's atmosphere, plants can eventually render it livable. Described in detail is Genesis1:11™ a high-technology concept, which supports plantation and forestation in distant places. It enables to inject microorganisms and to grow plant roots into extraterrestrial soils contributing to a sustainable future for humankind in remote places (particularly terraforming Mars) with extreme climatic and environmental conditions. Rooting pots are discussed, which allow complex organisms, like plants, to host numerous microbes.

<https://genesissus.eu/drc/genesis/>

Sustainable agriculture and agricultural practices represent an important focus of this issue, being addressed by research scientists from Armenia, Peru, Romania, and Hungary.

Astghik Sukiasyan and Armen Kirakosyan from the National Polytechnic University of Armenia in Yerevan assessed environmental risk factors of several heavy metals in the coastal areas of different rivers in Armenia. Presence of heavy metals was evaluated in three different regions of various soil-climatic conditions. By using Zea Maize L. as the indicator plant, authors found that hazard classes, which allow categorizing heavy metals, primarily depend on the synergism of biota response to the degree of contamination. It is concluded that Maize can serve as a natural filter of coastal areas for monitoring migration of heavy metals.

<https://genesissus.eu/drc/sukiasyan/>

An in-depth investigation on the use of pesticides was conducted in a closed agricultural community in Peru. Typically, pesticides are handled, applied, and stored without complying with the required safety rules. Multiple causes include lack of personal protection equipment, insufficient knowledge of involved risks, and concern that valuable equipment or materials may get stolen. This study represents a useful tool to farmers from South America and third world countries on rendering health and crops sustainable.

<https://genesissus.eu/drc/1754-2/>

Development of insecticide resistance results from repeated insecticide treatments, which cause severe difficulties to cultivators in Transylvania (Romania). This explains why, over recent years, increasing attention has been paid to sustainable biological control. János Bálint, Imre-István Nyárádi and their co-workers from Sapientia University in Transylvania, Romania and the University of Pécs in Hungary report on results obtained in the biological control of thrips

pests (Thysanoptera: Thripidae) of peppers. In experiments performed under greenhouse conditions, they used the predatory mite *Amblyseius swirskii* and the pirate bug *Orius laevigatus* against the western flower thrips. Authors also evaluated the relationships between beneficial organisms and greenhouse climate. Introduction of natural enemies has proven successful in biological plant protection, as thrips were blocked from producing economic losses.

<https://genesissus.eu/drc/1798-2/>

In their second article, János Bálint, Imre-István Nyárádi and co-workers address the effects of different fungicides and bactericides on the rooting of *Geranium* (*Pelargonium*) cuttings. While cuttings offer the advantage of producing a relatively large number of identical plants in a short time, they pose the risk of easily transferring diseases from the mother plant. Authors assessed the rooting effect of some bactericides and fungicides used during cuttings and did not find any significantly negative impact on the rooting process of treated and control geranium cuttings.

<https://genesissus.eu/drc/csorba2/>

Soil respiration, a major component of the global carbon cycle was examined in a temperate deciduous forest (located in Northern-Hungary). Zsolt Kotroczó from Szent István University, Budapest, and István Fekete from Institute of Environmental Sciences at the University of Nyíregyháza, both in Hungary, report on adding or removing aboveground and belowground litter to determine total soil respiration. Authors investigated the relationship between total soil CO₂ efflux, soil moisture, and soil temperature. Determined was the temperature sensitivity of soil respiration (Q₁₀) via measuring the soil temperature every hour and soil moisture once a month. Obtained results reveal that soil life is impacted by the absence of organic matter, rather than by an excess of organic matter. Measurement of CO₂ emission from soils with different organic matter content can contribute to sustainable land use, considering the climatic factors modified by global climate change.

<https://genesissus.eu/drc/kotroczo/>

A unique paper of this issue deals with threats posed to biodiversity and human health by illegal trafficking of animals, plants, and related natural products. This activity may contribute to climate change, as well. For over one-decade, international communities, and organizations (UNODC, Interpol, Europol, and EU) have been warning on these wildlife crimes. Therefore, awareness of the phenomenon is highly important to researchers, law enforcement agencies, and judicial authorities. In his paper, Csaba Zsigmond evaluates seizure data on illegal imports into and out of the European Union (EU). Such goods are animal and plant species, protected by the international CITES Convention. Trends of these imports are evaluated over a five-year period, from January 1, 2015 to October 10, 2020. In his quantitative research, the Author collected data from the www.wildlifetradeportal.com database, searching it for the 27 Member States of the EU.

<https://genesissus.eu/drc/zsigmond-3/>

As in the first issue of our journal, we publish here a paper related to sustainable energy and the benefits of green energy, namely, use of wind energy in Polonyna Borzhava Mountains of Transcarpathia, Ukraine. István Hadnagy and co-workers account for climatic conditions that impact wind energy harvesting. They discuss the statistical structure and seasonal peculiarities of wind climate at meteorological station Play. Authors determine significant parameters of exploiting wind energy: available daily and yearly course of wind power, wind power density, and specific wind directions that are richer in energy. In addition, they examine wind speed and the number of year-around energetically useful wind hours. It was found that in the study area, a 3 m s⁻¹ start-up speed wind turbine can operate 63% time over the year.

<https://genesissus.eu/drc/hadnagy-2/>