

EDITORIAL

A PAPERLESS JOURNAL, BUT STILL ON PAPER NEVERTHELESS

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Since immemorial time, humanity has expressed its desire to transmit ideas, emotions, concerns, and knowledge, in a manner that could be conserved through time. This legacy has been shaped in the form of documents, recorded on a wide range of media: stone, wood, bark, leaves, vegetable fibers, metal, clay, fabric, parchment, and paper. We are now witnessing the passage to the multi-media era, where information is output in the form of pictures, movies, sounds, texts or a combination of these, stored in a plethora of media such as flash drives, ZIP disks, diskettes of various kinds and sizes, CD and DVD ROM, internal and external hard disks, and others electronic media. Some of these media have already passed away, and no equipment is currently available to read and interpret the content stored in their memory.

Post-Linnean botany has been mostly perpetuated through books, journals, leaflets, and herbaria, and paper has proven to be a pretty effective medium for conserving the information. Libraries and plant museums have guaranteed unconditional access to this information. The validity of paper as the best storage medium, both from the point of view of efficiency and environmental impact, has however been put into question in the last two decades (Conway 1996). Let us discuss these two points separately.

Preservation is not a matter that applies to paper alone. The digital world poses significant challenges for the preservation of data as well, and the risk of loss is probably higher than in most other preservation functions (Conway 1999). Nevertheless, the principles of digital preservation are the same as those of the analog world and, essentially, aimed at extending the useful life of information resources. In some cases, however, the basic conservation

principles of longevity, choice, quality, integrity, and access, have shifted in priority and actors.

Traditionally, preservation of the information involved a complex, physical work aimed at perpetuating the integrity of the sources through the active control of external and internal factors of deterioration (stabilizing and maintaining temperature, humidity, light exposure, pollution, dirt, dust and mold, surveying handling techniques and security, adopting alkaline paper standards, deacidification, etc.). In the digital world, preservation is less concerned for the longevity of the storage media, but is much more dependent on the life expectancy of the access system to retrieve the data stored on them. For this reason, most libraries simply do not physically store electronic publications. Even though a study by Shipman *et al.* (2011) unequivocally shows that to destructively digitize documents in-house (disposing of the physical originals afterwards) is the most cost efficient method of preserving them over time, in the first instance it is several hundred percent more expensive than physical conservation. So, the libraries' e-journals, e-books, databases and so on, are linked to from their catalogues, but stored elsewhere. Where? Usually, on the publisher's own website.

In the past, the active role of the publisher ended when the book or journal or whatever kind of printed matter was released and dispatched. From this moment on, the responsibility of its conservation as a tangible item, and the preservation of the information stored in it, was passed on to the individuals, libraries, archives, museums and other subjects who owned copies of the publication. In the digital world, this responsibility remains mostly assigned to the publisher.

So, this poses a basic question to *Lankesteriana*. Are we ready, from the point of view of the knowledge,

the protocols, the human and IT resources needed, to be entrusted as the main conservators of the information stored in our journal, in an exclusively virtual, intangible, digital format? Last month, in only two consecutive days, we lost two of the three external disks (in addition to the two servers) where the history of *Lankesteriana* is preserved. None of us, as I fear is true for most editors of scientific journals, is a specialist in computer science, and even less in the theory that must undoubtedly exist on the best practices of preservation of digital information. We have already replaced the two damaged disks, but not our confidence in the efficiency of our conservation system. Simply said, we are not ready to go completely paperless and we do not know when we will be.

On the other side, the environmental issues associated with paper and digital media have occupied a large part of the debate on migration from traditional to electronic storage. They both do present common environmental issues including the extraction of materials, the use of huge amounts of energy and water for their production and transportation, and their transformation into waste throughout their life cycle. Whilst the use of paper seems to be more environmentally questionable during the production stages (but the organization representing the paper and print industry claims that the paper-making process is sustainable), digital media are particularly difficult to handle at the end of their useful life, as they contain toxic materials including lead, mercury, cadmium, brominated flame retardants, antimony trioxide, polyvinyl chloride, and phthalates. A study by Toffel and Horwath (2004), comparing the reading of newspaper content on a personal digital assistant vs. the traditional way of reading a newspaper, and the wireless teleconferencing vs. business travel, shows

that for both cases wireless technologies create lower environmental impacts. On the other side, Bull and Kozak (2014) argue that the context of the information and communication technology will continuously impede the ability of the the Life Cycle Assessment methodology to measure its products to be compared with the environmental footprint of paper media. Our assumption that digital is “greener” than paper could still be based on unsubstantiated claims.

As the main reason for physically distributing *Lankesteriana*, aside from improving its visibility, is to augment the probabilities of its “forever” conservation, we decided to remove from the mailing list of the journal all the individual subscribers, who obviously play no role for this purpose, including the authors themselves, who have so far received a physical copy of their publications. This also includes the numerous research libraries which, over the years, have shown their interest in essentially converting into repositories of digitized information, and therefore no longer require a physical copy of the journal to be placed on the shelves, and those organizations that the Costa Rican laws of printing assumed as obligatory recipients but were recently downgraded to “digital” users. Coherently, *Lankesteriana* will no longer accept individual subscriptions, which will be reserved exclusively for those public libraries that wish to offer a form of financial support for the management of the journal.

Cleaned of individual subscriptions and libraries no longer interested in receiving physical copies of the journal, from the first issue of the journal for 2019, the mailing list of *Lankesteriana* will be reduced to 280 copies, including the copies to be used for interchange and those printed for the journal’s physical archives and intended to replace any copies lost or damaged during shipment.

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