e-ISSN 1574-180X

An International Journal on Grey Literature

Volume 19, Number 2, Summer 2023

'A SHIFT IN FOCUS ON GREY LITERATURE'

www.textrelease.com Grey Literature Network Service www.greynet.org

The Grey Journal

An International Journal on Grey Literature

COLOPHON

About TGJ

The Grey Journal is a flagship journal for the international grey literature community. It crosses continents, disciplines, and sectors both public and private.
The Grey Journal not only deals with the topic of grey literature but is itself a document type classified as grey literature. It is akin to other grey serial publications, such as conference proceedings, reports, working papers, etc.

The Grey Journal is geared to Colleges and Schools of Library and Information Studies, as well as, information professionals, who produce, publish, process, manage, disseminate, and use grey literature e.g. researchers, editors, librarians, documentalists, archivists, journalists, intermediaries, etc.

CIP
The Grey Journal (TGJ) : An international journal on grey literature / Dominic Farace (Journal Editor); Jerry Frantzen (Technical Editor) ; GreyNet International, Grey Literature Network Service. - Amsterdam: TextRelease, Volume 19, Number 2, Summer 2023 – NLM-NIH (USA), TIB (DE), CVTISR (SK), EBSCO (USA), KISTI (KR), NIS-IAEA (UN), NTK (CZ), Figshare (UK) and the University of Florida (USA) are Corporate Authors and Associate Members of GreyNet International.
e-ISSN 1574-180X (PDF)

Subscription Rate:
€240 institutional

Contact Address:
Back Issues, Document Delivery, Advertising, and Subscriptions:

TextRelease
Javastraat 194-HS
1095 CP Amsterdam
Netherlands
T +31 (0) 20 331.2420
info@textrelease.com
https://textrelease.com/glpublications.html

About GreyNet

The Grey Literature Network Services was established in order to facilitate dialog, research, and communication between persons and organizations in the field of grey literature. GreyNet further seeks to identify and distribute information on and about grey literature in networked environments. Its main activities include the International Conference Series on Grey Literature, the creation and maintenance of web-based resources, a Global Distribution List and Social Media, and The Grey Journal. GreyNet is also engaged in the development of distance learning courses for graduate and post-graduate students, as well as workshops and seminars for practitioners.

Full-Text License Agreement
In 2004, TextRelease entered into an electronic licensing relationship with EBSCO Publishing, the world's most prolific aggregator of full text journals, magazines and other sources. The full text of articles in The Grey Journal (TGJ) can be found in *Library, Information Science & Technology Abstracts* (LISTA) full-text database.

Contents

'A Shift in Focus on Grey Literature'

ISBN 978-90-77484-44-9

PUBGREY

Registry of Publishers in Grey Literature

First Edition
March 2023

Algeria	Australia	Austria	Belgium	Canada	France	Greece
Hungary	Italy	Japan	Netherlands	Switzerland	UK	USA

www.textrelease.com Grey Literature Network Service www.greynet.org

EDITOR'S NOTE

PUBGREY - Registry and Consortia of Organizations Serving as Publishers in Grey Literature

GreyNet International seeks to maintain a registry of organizations that serve as publishers in the field of grey literature. The PUBGREY Registry contains standardized records submitted by the publishing bodies. Records include the sector of information, document types, publication formats, main areas of coverage, submission and acceptance, open access compliance, contact details, and identifying characteristics of the organization. PUBGREY Registry is a unique information resource connecting both the supply and demand sides of grey literature.

The first edition of PUBGREY contains twenty-five record entries from organizations in fourteen countries worldwide. Together, these organizations are seen as a consortium of publishers in grey literature. They confront the outdated mindset that grey literature is not published literature, they establish that grey literature is openly accessible and preserved, that grey literature undergoes a review process maintained by the publishing body, and with its increased assigned digital persistent identifiers grey literature adheres to the FAIR data principles of interoperability and reusability.

New record entries are welcome and will be included in the next edition of PUBGREY.

Dominic Farace
Journal Editor

Grey is the new black: changing library instruction virtually*

Aleksandra Blake and Margaret McLeod
Carleton University, Canada

Abstract:
Searching for grey literature can often be a tricky and overwhelming process, in part because this topic is not always integrated into standard information literacy teaching sessions in post-secondary libraries (Mahood 2014, p.222). Despite the fact that grey literature is not considered scholarly, it is an important source of information for students, researchers and professionals in different areas of study and employment. This topic is often overlooked and not always integrated into standard information literacy teaching sessions in post-secondary libraries. And it should be. As Kingsley suggests, "the role libraries hold within research institutions is changing as the world shifts towards a digital and increasingly open future. This requires a rethink of the types of services and skill sets that are appropriate for an academic library to encompass" and teach (Kingsley, 2020, p.281).

While graduate students are well versed in searching for traditional academic literature (e.g., monographs and peer reviewed journal articles), they might be a bit "out of their league" in their ability to find grey literature (e.g., literature published outside of the mainstream academic and commercial publishing sectors). However, grey should be their new black— for example, many masters and doctoral students need to be equally capable of finding the material published by a wide range of researchers if they are to graduate with a robust set of professional skills that can be used in a variety of workplace contexts.

Our experience in designing and delivering a grey literature workshop tells us that our instincts are accurate—students are eager to learn these skills and put them to use in either a face-to-face or a virtual classroom.

Keywords: grey literature, library instruction, information literacy, graduate students, searching, databases, academic library, research, elearning

What is grey literature and why is it the new black?

Grey literature (e.g., literature published outside of the mainstream academic and commercial publishing sectors) (Frater, Myohanen, Taylor & Keith 2007,146) is everywhere. Searching for grey literature ("grey lit") is an important part of conducting systematic, scoping, or other comprehensive literature reviews in many disciplines. Access to grey literature allows researchers to find alternative perspectives that may not be represented in standard literature and locate experts in a particular field. In addition, grey literature offers the potential to balance any tendencies for bias found in mainstream published literature. Publications that can be defined as grey literature (for example: government documents, conference papers, clinical trials and technical reports, etc.) are timely, rapidly produced, and very current, offering an alternative to traditional academic peer reviewed sources.

The research suggests that citing grey literature has become more and more standardized. Scholars from different subject areas consider those resources valuable and helpful in bringing the academic community closer to civil engagement and matters important and relevant to societies (Kousha, Thelwall and Bickley, 2022). In addition, researchers need to find databases and repositories outside of traditional academic sources. Due to that fact researchers are encouraged to document and share their work and study strategies and processes involved in knowledge synthesis. Documenting the process can help others in discovery of grey literature by other researchers and contribute to greater exposure of those resources to a wider community of scholars who are new to the field (Farrah & Mierzejewski - Urban, 2019). It is not

* First published in the GL2022 Conference Proceedings, February 2023
Video Presentation: https://av.tib.eu/media/59872

a secret that at least one third of the reported research gets formally published, the other two thirds face delays in publications and become unavailable or discoverable via traditional academic channels (von Elm et al., 2033).

Kingsley suggests that evidence of impact of research outside of the academy "can take many forms, from annual reports from organizations and NGOs), minutes of community meetings…Given that librarians, by their profession, possess expertise in the location of information, they can offer support and advice to researchers need to collection this material" (Kingley, 2020, p.286)

Farrah and Mierzejewski - Urban (2019) argue that traditional databases often index resources that cover information about existing and outdated research. New and emerging trends are often missed and not considered or properly added to be discovered by researchers. In addition, the Kousha, Thelwall and Bickley (2022) research affirms that resources such as grey literature are becoming relevant in the academic environment and researchers should give those resources deserved attention. Traditional academic resources and non-traditional ones are becoming "equal" partners in the field of citations, "advantage of non- academic citations is that they can provide bridge to the external world and ground academic research in practical concerns" (Kousha, Thelwall and Bickley, 2022, p 3490).

In addition, this opinion is supported by current studies completed by Farrah and Mierzejewski-Urban (2019) which indicate that grey literature resources are playing a very important role in research that covers new and emerging health related technologies. Authors reviewed 22 reports published by 8 different organizations and institutes and concluded that almost half of the resources referenced in those documents were considered grey literature, which indicated that more and more scholars view these types of resources as relevant and valuable. Resources that came from the manufacturing industry, clinical trial registries, regulatory agencies and news agencies were only a few listed examples. This indicates the growing relevance and importance of resources that come from non-traditional publishing.

Students and faculty are often lost during the research in the vast world of grey lit. An important factor which hampers students from using and searching for grey literature is Information Fatigue Syndrome (IFS). IFS is defined as "A weariness or overwhelming feeling of being faced with an indigestible or incomprehensible amount of information (Savic, slide 4). This stress can "interfere with our sleep, sabotaging our concentration and undermining our immune systems" (Savic, slide 3). The sheer amount of grey literature available out in the universe is overwhelming and can be difficult to find. GreyNet International lists 150 types of documents that qualify as grey literature (2022). That is staggering. This is where librarians and subject specialists can play an important role and partly why we decided this was an important presentation for students. Using our grey literature Subject Guide, we can help by filtering information, listing high impact resources, and determining the reliability and trustworthiness of a source. Add to this the well-documented issue of stress on all university students, and you have a melting pot of problems that librarians can definitely help with.

Once students actually find grey literature, especially if it is Internet-based, there will be yet another factor that needs to come into play and perhaps add to the stress of academics and using grey literature. Although all resources used by students should be looked at through a critical lens, this is especially true of grey literature. "Information source assessment creates a new mental pathway that intervenes in the ladder of inference process and prevents us from forming misguided beliefs" (Lui, 76). And so begins the use of the CRAAP (Currency, Relevance, Authority, Accuracy, and Purpose) test for grey lit sources by evaluating any bias, relevancy, authority etc. There are other evaluation tools students can use as well and Liu has expanded on the CRAAP test in fact to add elements of metacognition and assessing sources "by reflection, asking students to pierce filter bubbles, examine their own biases, question their own interpretations, keep an open mind and suspend their judgment" (Lui, 78). All of this adds to the anxiety and frustration that is grey literature.

Figure 1: Word cloud

Actual responses from participants to the question "What comes to mind when you think about grey literature?"

As subject specialists in the Carleton University Library, we both are responsible for subject specialties in the social sciences. We decided to design and deliver a presentation on grey literature for graduate students because we recognize that, more and more, students are being required to find the "non-mainstream" research and are frustrated by this search process because they are unsure about how to locate research that might not show up in a traditional academic database or discovery layer search. For example, social work, international affairs, health and political science researchers are expected to look for policies and critiques more frequently now than ever. Grey literature sources, which are very current, provide the latest information on topics not yet covered by scholarly material.

At Carleton University, graduate students have the opportunity to participate in professional skills workshops. These workshops are offered as part of the Graduate Professional Development Programs initiative and include topics such as presentation skills, networking skills, and formatting a thesis or dissertation using Microsoft Word. Our workshop provides students with a greater understanding of how grey literature is defined, the benefits of searching it, and links to a number of useful sites providing access to resources relevant to students in different fields.Not all university graduates will be working in academia. Many will find work in places like the government or at NGOs, among others, and searching for grey literature may become valuable and transferable skills in their professions. Our new workshop *Grey is the new black. Grey literature: how to find it?* is designed to prepare grad students to find "grey" research, for both their academic and professional work.

Designing face-to-face and online workshops

In planning this new session, we started by thinking about our individual approaches to teaching and how we could effectively combine our pedagogical methodologies. Fortunately, we found that we agree on certain fundamental principles. In particular, we both believe that the primary job of an academic library instructor is to facilitate the discovery process rather than to provide answers to all the questions. As such, we think that active learning and access to specialized software are critical to creating a productive learning environment and teaching core skills such as strategic searching and evaluation of sources. The role of a research instructor is not only limited to pointing users to the right resources but also to teach them good research habits and skills that they will be able to apply in their future endeavors. Our instruction programs are

designed to familiarize patrons with a physical and virtual collection and ways of retrieving both print and electronic resources. Moreover, the sessions we create teach students the jargon and vocabulary related to the field of subject related library research. We want to make sure that students know how to dissect the research process and to make it a more systematic process. Our goal is to ensure that the participants in our sessions gain knowledge that they will be able to take with them beyond their academic education. Plus, we want them to have fun!

In addition, we used the ACRL (Association of College & Research Libraries) Framework for information literacy in higher education as pillars in order to strengthen our pedagogical approach. Authority is Constructed and Contextual frame highlights to the researcher that it is an essential skill to "think critically about biases no matter the source" (ACRL, 2021). We believe that students need to be aware that think tanks, NGOs and any other interest groups produce relevant and important information that can be dependable and valid. Moreover, in our instruction we include ideas such as the Searching as Strategic Exploration frame "searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops" (ACRL, 2021). As mentioned above, searching for grey literature requires creativity and critical thinking. Thus, we as instructors need to reinforce the idea that research for grey literature will challenge their perception of how and where to find information.

In February 2020, we offered this course face-to-face in the main library teaching space. Eleven grad students attended the session and we received positive feedback from the participants. For the purpose of this session, we used a previously existing grey lit help guide that contained essential information related to understanding and searching for these materials. We brainstormed ideas and came up with the following learning outcomes:

- Define what grey literature is and is not
- Justify why it is important to search grey literature when conducting knowledge syntheses
- Identify key grey literature sources
- Select grey literature sources specific to a topic and begin creating a search plan
- Articulate the process involved with producing a well-documented and transparent grey literature search

Engagement was high. We offered several activities such as small group work, grey literature recognition exercises, and open discussions. Positive responses from our participants encouraged us to continue our collaboration and to improve upon what we had already accomplished. The topics we covered included search strategies, identifying key authors, resource types and how to find them, web-searching tips which included Google Advanced tips and tricks, using search engines other than Google, using social media, finding grey literature in traditional library databases, keeping track of your searching and last but not least citation tips.

And then Covid hit. According to Miller and Janke (2022), "The most significant change during the pandemic was the rapid shift to online content and services…For many their instruction and consultations pre-pandemic had been a very in-person model." One of the respondents to their interview questions responded "noting the "biggest cultural shift" was to the completely virtual library" (p. 50). It was no different for us at the Carleton University library. It changed the way everyone needed to think, work and teach information literacy.

Moving forward required that we change our mode of delivery; the library building was closed as of mid-March 2020, which meant that we would have to switch to an online delivery format if we wanted to offer the workshop in either the summer or fall terms. Initially, we started this new design phase thinking that our online workshop would be less interactive for students. However, moving from in-person to online was easier than we thought. Although teaching via an online platform such as Zoom is different from being in the library classroom, we found that our students were engaged and just as interested as those who had taken the workshop in the early winter to the group of nineteen students in 2021 and twenty four students in 2022.

Our design process began with a review of the grey literature guide already available through the library website. We recognized that the current help guide was not the optimal teaching tool for an online workshop. Instead, we decided to create a subject guide that would be the basis for structuring our workshop and sharing information with students on an ongoing basis. Our subject guides are similar to Libguides but created on the Drupal platform.

We created a new subject guide for grey literature titled "Grey Literature" (https://library.carleton.ca/guides/subject/grey-literature, January 25, 2023) and taught the workshop using this guide because this type of online resource has greater visibility on the library website, and the layout of the guide allows for customization. We set up the guide to fit the desired Drupal-based format and organized the content based on a number of priorities:

1. The information needed to match the flow of our presentation.
2. The content needed to be readable online and easily discoverable by anyone who finds the guide without our support.
3. The information needed to meet the needs of our users, from novice to more experienced researchers. For example, the researcher is able to explore the different sections of the guide with no need to review the content if they are already familiar with specific sections.
4. The guide needed to reflect the steps that one needs to take while researching. First, they must familiarize themselves with the topic (what grey literature is and why it is relevant to explore it), then go on to the stage of searching (hence the guide, which directs users to links to databases and repositories), and finally they need to evaluate and cite information, which is the last part of the guide and our session.

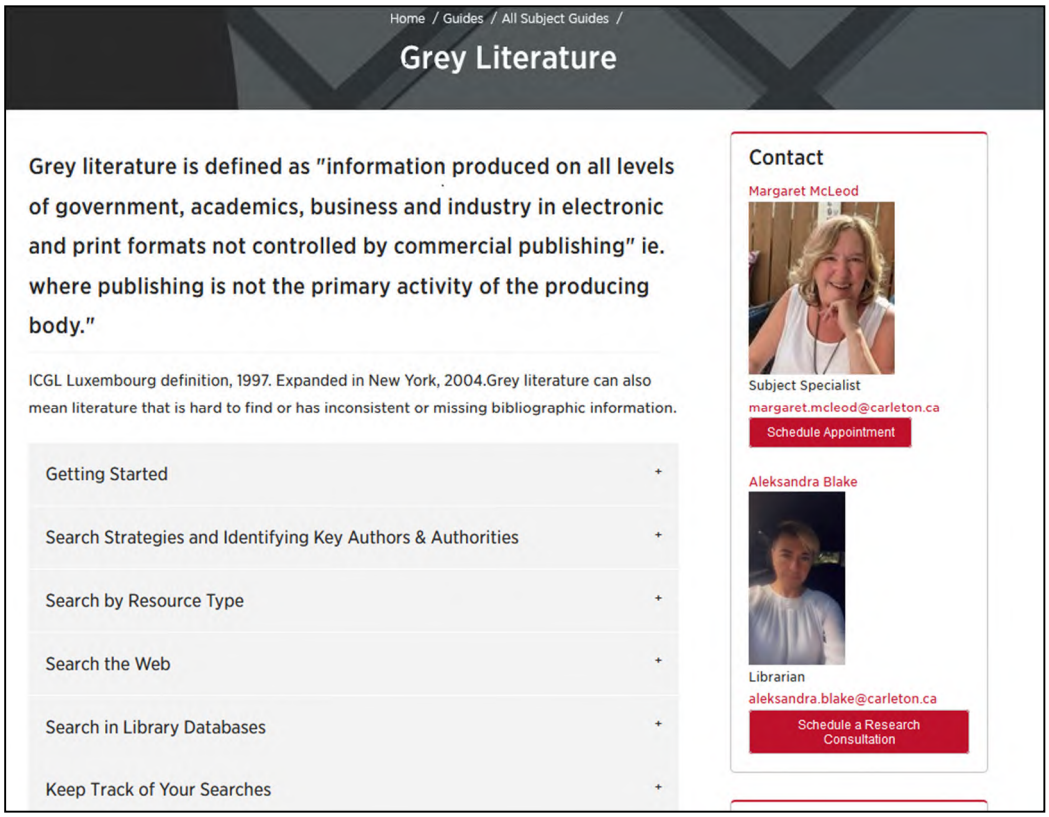


Figure 2: Webpage

This detailed subject (or "lib") guide replaces a three-page help guide.
https://library.carleton.ca/guides/subject/grey-literature

We set up Zoom sessions for our presentations in the fall and winter terms 2021 and 2022. During the workshops, we presented the information by screen sharing the guide. Essentially, the guide was our instructional roadmap.

We had to work hard to keep up with the participants, because the Zoom chat box kept filling up with their answers and additional questions! We also set aside 15 minutes of the presentation time for more in-depth conversation by dividing participants into two breakout rooms and continuing to facilitate an open discussion. We had prepared some topics for analysis, but our participants had specific questions related to their own research and we followed their lead. It was interesting to watch how the discussion developed, especially the peer-to-peer collaboration. Thirty-one participants attended our one hour online session. In order to make the presentation more interactive, we used an application called Mentimeter, which is a web-based application that supports the creation of online polls with real-time feedback. In addition, we had the group do an interactive exercise in which they identified which items were grey or not grey. Padlet is another pedagogical tool that we used during presentations in order to interact with participants during the workshop. It is a cloud-based software, hosting a real-time collaborative web platform in which users can upload, organize, and share content to virtual bulletin boards called "padlets" (Appendix) . At the end our online courses were more interactive & multidimensional than our in-person session.

Debriefing: Grey is the new black and Zooming is the new interactivity

We think that the online format made the session more interactive, and allowed the students to be more engaged with the multidimensional content than the in-person session. Participants seemed less nervous about contributing ideas online, especially through the chat feature. They were more likely to be on an equal footing than in the classroom, as everyone had a chance to respond whereas in class it might be only one or two who speak loudest and first. We applied active learning techniques by using Mentimeter and Padlet to encourage engagement with the material and each other, screen sharing of documents, and online discussion rooms. All of these features allowed us to interact with students as much as possible and keep the conversation flowing.

Despite our initial apprehension, we are happy with the final product and students' reaction to our workshop. Moving from each section of the presentation was smooth and looked seamless, so this process was much easier for us than we had anticipated. Participant feedback was positive and overall, students enjoyed learning about Carleton's library technology to help with grey literature.

Most recent feedback included:

- "Really helpful to have the guide and to walk through the site in this way." (Anonymous, personal communication, November 2, 2022).
- "Very helpful, thank you! Love that the grey lit guide is available online so I don't have to remember everything or take notes." (Anonymous, personal communication, November 2, 2022).
- "Love the work the library has put into this. Thank you!" (Anonymous, personal communication, November 2, 2022).

Our next steps are to prepare to teach again in the winter term of 2023. We also hope to create an online module that students can explore on their own time to learn about grey literature. In addition, we will review the basic structure and content of the workshop and will update the subject guide to reflect comments and suggestions we have received from students as well as the constant changes in the field of grey literature.

In addition, based on our presentation we prepared a poster to be presented for the Twenty-Fourth International Conference on Grey Literature 2022. The poster takes you on a journey through the research process that leads to the discovery of grey literature and demonstrates how the library staff at Carleton University organized and delivered a graduate-level information literacy session entitled "Grey is the New Black: Searching for Grey Literature" in the new online reality. We shared our experiences of how we cultivated academic learning that is both interdisciplinary and overlooked in instructional practices.

The importance of grey literature to both students and those in the workforce cannot be stated enough. The frustration and time commitment required to search for and evaluate these materials is critical. Engaging students in university with these materials is vital so that they have all the tools needed to satisfy both their academics and career goals. The library subject guides and workshops fulfill their need to learn how to find, evaluate and use these resources with the support of pedagogical resources such as the ACRL Frameworks. Research skills and emotional support should go hand in hand in order for young and up and coming researchers to be successful in their endeavors. In order to avoid Information Fatigue Syndrome (IFS) and feel confident in their own abilities in searching for grey literature successfully, the subject specialists need to continue to provide support.

Overall, we believe that by having to teach this workshop in person and online, we have strengthened our teaching praxis. In particular, by being able to provide information via different media (visual and auditory), we can reach a larger audience and enrich student learning. Plus, students continue to have the opportunity to learn a skill set that they can use professionally. We were able to support each other in this new quest by relying on our ongoing partnership and collaboration. In order to cultivate academic learning, it is vital to continually change our approach to teaching and implementation of our instructional practices. We were concerned about the switch to an online layout for the delivery of the workshop. In fact, moving from in-person to online was easier than we thought. We entered the project thinking it might be more difficult and less interactive, but found the students were engaged and just as interested.

References

ACRL, Association of College & Research Libraries. (2021). Companion document to the ACRL Framework for information literacy for higher education. Politics, policy, and international relations. https://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/Framework_Companion_PPIR.pdf

Bonato, S. (2018). *Searching the grey literature: A handbook for searching reports, working papers, and other unpublished research*. Rowman & Littlefield.

Farrah, K. & Mierzejewski - Urban, M. (2019). Almost half of references in reports on new and emerging nondrug health technologies are grey literature. *Journal of Medical Library Association*, 107(1), 43-48. doi:dx.doi.org/10.5195/jmla.2019.539

Frater, M. (2007). What would you tell me if I said grey literature? The New York Academy of Medicine grey literature report. *Journal of Electronic Resources in Medical Libraries, 4*(1-2), 145–153. https://doi.org/10.1300/J383v04n01_13

GreyNet International. (2022). *Document types in grey literature.* https://www.greynet.org/greysourceindex/documenttypes.html

Kingsley, D. (2020). The 'impact opportunity' for academic libraries through grey literature. *The Serials Librarian, 79*(3-4), 281-289. https://doi-org.proxy.library.carleton.ca/10.1080/0361526X.2020.1847744

Kousha, K., Thelwall, M. & Bickley, M. (2022). The high scholarly value of grey literature before and during Covid-19. *Scientometrics*,127, 3489-3509. https://doi.org/10.1007/s11192-022-04398-3

Liu, G. (2021). Moving up the ladder of source assessment. *College and Research Libraries News*, 82(2), 75-79. https://doi:https://doi.org/10.5860/crln.82.2.75

Mahood, V. (2014). Searching for grey literature for systematic reviews: Challenges and benefits. *Research Synthesis Methods, 5*(3), 221–234. https://doi.org/10.1002/jrsm.1106

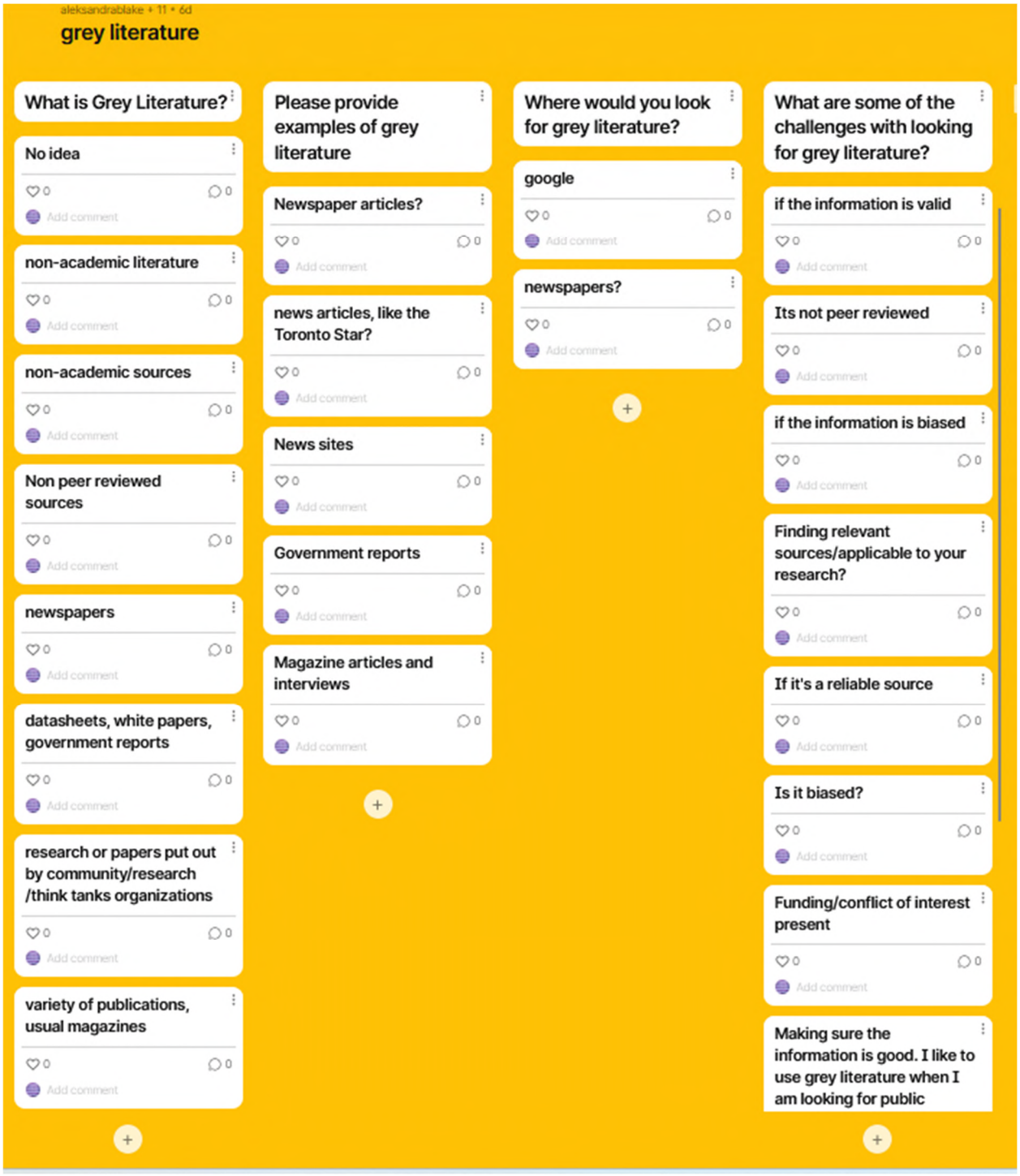
Miller, K. & Janke, R. (2022). Canadian academic nursing librarians: Impacts of the COVID-19 pandemic on librarianship practice. *The Journal of the Canadian Health Libraries Association, 43*(2), 47-57. 10.29173/jchla29596

Pappas, W. & Williams, I. (2011). Grey literature: Its emerging importance. *Journal of Hospital Librarianship, 11*(3), 228–234. https://doi.org/10.1080/15323269.2011.587100

Savic, D. (2022, December 5). *Information Fatigue Syndrome and Digital Burnout*. [Conference presentation]. Twenty Fourth International Conference on Grey Literature, Amsterdam, Netherlands. https://doi.org/10.5446/59863

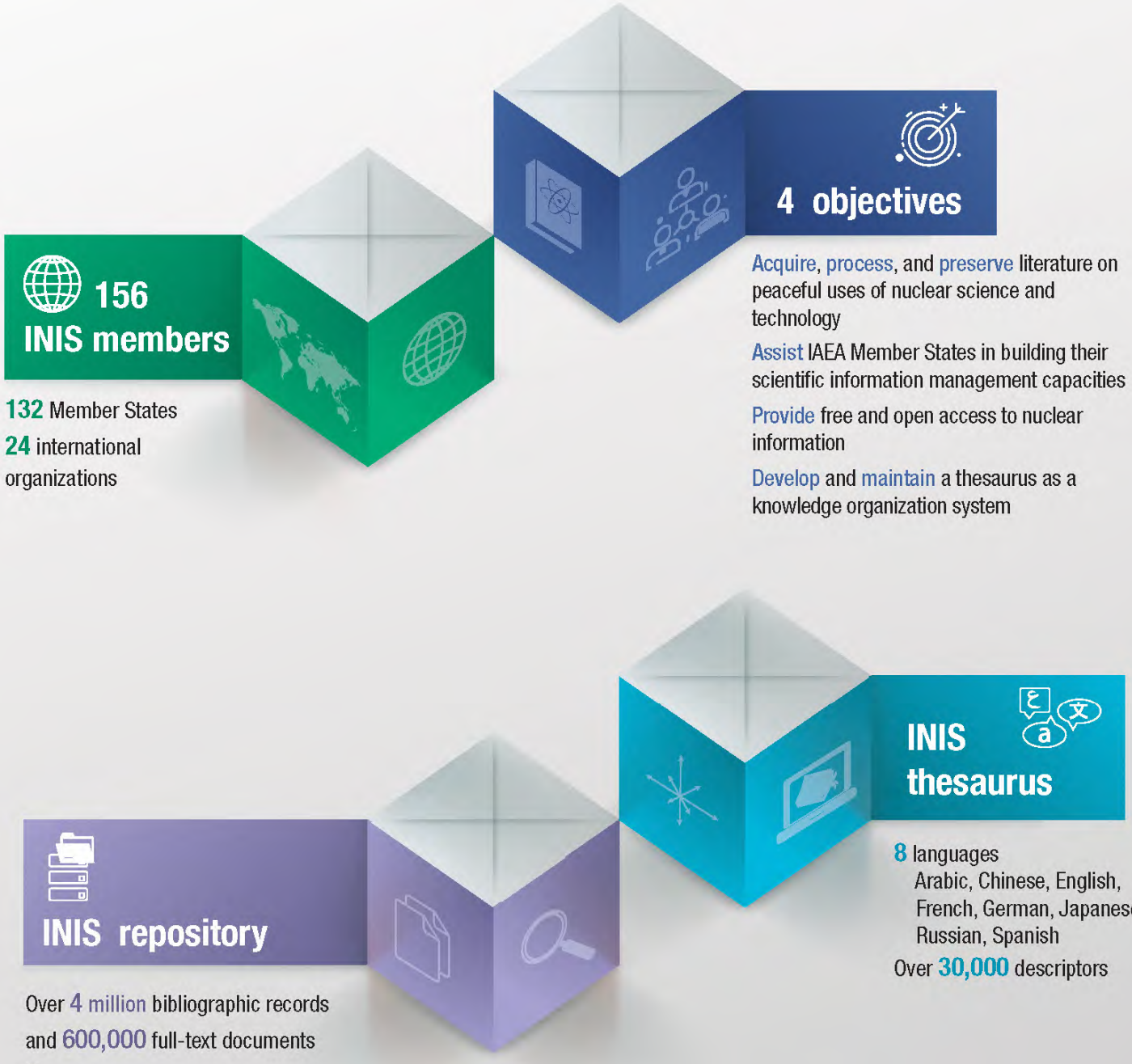
von Elm, E., Costanza, M. C., Walder, B., & Tramèr, M. R. (2003). More insight into the fate of biomedical meeting abstracts: A systematic review. *BMC medical research methodology*, *3*(12). https://doi.org/10.1186/1471-2288-3-12

Appendix: Actual responses from participants captured by the Padlet software



International Nuclear Information System – INIS

Organizing the world's nuclear information and making it universally accessible



156 INIS members

132 Member States

24 international organizations

4 objectives

Acquire, **process**, and **preserve** literature on peaceful uses of nuclear science and technology

Assist IAEA Member States in building their scientific information management capacities

Provide free and open access to nuclear information

Develop and **maintain** a thesaurus as a knowledge organization system

INIS thesaurus

8 languages
Arabic, Chinese, English, French, German, Japanese, Russian, Spanish

Over **30,000** descriptors

INIS repository

Over **4 million** bibliographic records and **600,000** full-text documents

3 million web page views

2 million unique searches

1 million unique visitors

IAEA | International Nuclear Information System INIS

www.iaea.org/inis

February 2019
19-00898

Information Fatigue Syndrome and Digital Burnout*

Dobrica Savić,
IAEA Consultant in Nuclear Knowledge Management

Abstract:
Around 2000 years ago, the Roman philosopher Seneca the Younger complained that his peers were wasting their time and money accumulating too many books, admonishing that "the abundance of books is a distraction." Instead, Seneca recommended focusing on fewer but better-quality books and reading them thoroughly and repeatedly. After the invention of the printing press in the 15th century, the plethora of information the machine produced was thought by some to be distracting.
Today, information overload and digital over-stimulation lead to digital burnout — a situation where physical and mental exhaustion is caused by spending too much time in front of screens. Symptoms of this condition are apathy, indifference, or mental exhaustion arising from exposure to too much information. Stress induced by attempts to assimilate excessive amounts of information from the media, particularly social media, the internet, or work makes us ill by interfering with our sleep, sabotaging our concentration and undermining our immune system. David Lewis, a British psychologist, calls this ailment Information Fatigue Syndrome (IFS).
This paper looks at Information Fatigue Syndrome (IFS), and particularly at the contribution of grey literature (GL) to IFS. To better understand the amount of grey literature around us, it is enough just to look at the GreyNet website which lists over 150 grey literature types. They include articles, blogs, images, videos, emails, web pages, press releases, lectures, manuals, academic theses, and many others. Today, grey literature occupies a considerable role and is one of the main contributors to our digital burnout. The diversity of GL types, volume generated and shared, frequency of creation and change, currency, veracity, and value will be reviewed.
The purpose of the paper is to generate suggestions on how to successfully deal with Information Fatigue Syndrome. Additionally, it will offer suggestions on how to continue using valuable grey literature efficiently, and how to do all of this without causing unnecessary stress or wasting time.

Keywords: *digital burnout, grey literature, Information Fatigue Syndrome*

Introduction

Is there anyone among us today that has not experienced the nagging feeling of having too much information and too little time to deal with it? Do you sometimes feel mental exhaustion from being exposed to too much information? You overly multitask but your concentration and memory fade, while your irritability grows. Your feeling of helplessness grows, together with relationship problems with your colleagues and with your loved ones at home.

Welcome to digital burnout and to Information Fatigue Syndrome where the overwhelming amount of grey literature plays a significant role.

We believe that information fatigue is a new phenomenon, something *sui generis* to the 21st century. However, around 2000 years ago, the Roman philosopher Seneca the Younger complained that his peers were wasting their time and money accumulating too many books, admonishing that "the abundance of books is a distraction" (AZ Quotes).

* First published in the GL2022 Conference Proceedings, February 2023
Video Presentation: https://av.tib.eu/media/59863

Lucius Annaeus Seneca

Seneca recommended focusing on fewer but better quality books and reading them thoroughly and repeatedly.

After Johannes Gutenberg invented the printing press in the 15th century, the plethora of information produced, shared and disseminated widely was thought to be very distracting and counterproductive.

Similarly, the introduction of personal computers and especially the creation of the World Wide Web has dramatically increased the amount of information easily available to all of us.

Information Fatigue Syndrome (IFS)

It is well-established that information overload and digital over-stimulation cause digital burnout — a situation where physical and mental exhaustion is caused by spending too much time in front of screens.

Stress induced by attempts to assimilate excessive amounts of information from the media, particularly social media, the internet, or work, makes us ill by interfering with our sleep, sabotaging our concentration and memory, and undermining our immune system and overall well-being.

Information Fatigue Syndrome is defined as a weariness or overwhelming feeling of being faced with an indigestible or incomprehensible amount of information.

David K. Lewis

If we look at the term information fatigue syndrome, also known as information overload or information intoxication, we come across David Lewis (Wikipedia), a British psychologist, who lived from 1941 to 2001, and who is credited with coining the first use of the term. He said that "Having too much information can be as dangerous as having too little. Among other problems, it can lead to a paralysis of analysis, making it far harder to find the right solutions or make the best decisions."

In his report, diabolically entitled ***Dying for Information?*** (Waddington, 1998) Lewis said in 1996 that an excess of information is strangling many businesses and causing mental anguish and even physical illness in managers at all levels. Lewis speculated that the problem would only worsen, and it seems that his prediction was correct.

His conclusions came from a Reuters survey of 1,300 business people in Britain, the US, Singapore, Hong Kong and Australia, which included junior, middle and senior managers in a variety of industry sectors. Two-thirds of those interviewed indicated that stress, attributed to dealing with too much information, had damaged their personal relationships, increased tension with colleagues at work, and contributed to a decline in job satisfaction.

More than 40% felt that important decisions were delayed and the ability to make choices was hampered by excess information. The cost of collecting the surplus data exceeded its value. One-third said they suffered from health problems as a direct consequence of stress related to information overload.

Grey Literature Fatigue Syndrome (GLFS)

Let's look at grey literature and the role it plays as a part of information fatigue syndrome. It is believed that grey literature† overload is a major part of information overload and a cause of information fatigue syndrome.

There are two major factors that make grey literature the main contributor to our information fatigue syndrome. They are an extensive variety of grey literature document types and extremely high amounts, the quantity of grey literature output.

Also, grey literature is highly contextual and often software dependent, so it is hard to collect and process, and even harder to make sense of and preserve for future use.

Examples are social media, news items, emails, reports, and data.

Grey Literature Types

To illustrate the huge number of grey literature types, we can consult the GreyNet website (GreyNet, 2022). It lists over 150 document types including databases, data sets, data sheets, data papers, satellite data, census data, and product data, just to mention some of the many data types. See Appendix 1.

Information Fatigue Symptom

So, what are the major symptoms, the visible and observable behavioural and other changes characteristic of someone who suffers from information, including grey literature fatigue syndrome?

They are:

- Apathy
- Indifference
- Mental exhaustion arising from exposure to too much information
- Poor concentration
- Short-term memory failure
- Overly multitasking, resulting in incomplete tasks
- Over-stimulation causing headaches and nausea
- Tension
- Relationship problems at home
- Occasional irritability
- Frequent feelings of helplessness
- Compulsive need to be connected to the internet

Main Causes of Information Fatigue Syndrome

As the great novelist and poet Gertrude Stein put it - *Everybody gets so much information all day long that they lose their common sense.*

Having established the starting ground for information and grey literature fatigue syndrome, let's look now at its main causes.

A. Digital world

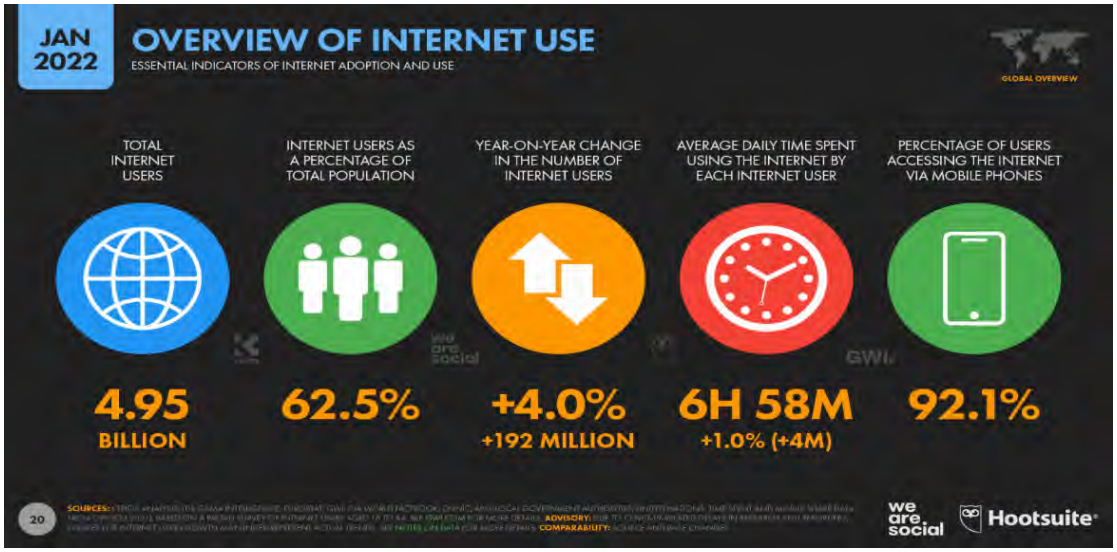
Since we live in a different world today, the digital world, its main characteristics and attributes make up the basis for digital burnout.

As of January 2022, the total population of the world was 7.91 billion. 57% of those live in urban areas, and over 67% of the total population or 5.31 billion use a mobile phone.

4.95 billion people, which is well over 60% of the population, are internet users, and almost all of the people connected to the internet are also active social media users.

† *Grey literature represents any recorded, referable and sustainable data or information resource of current or future value, made publicly available without a traditional peer-review process (Savic 2017).*

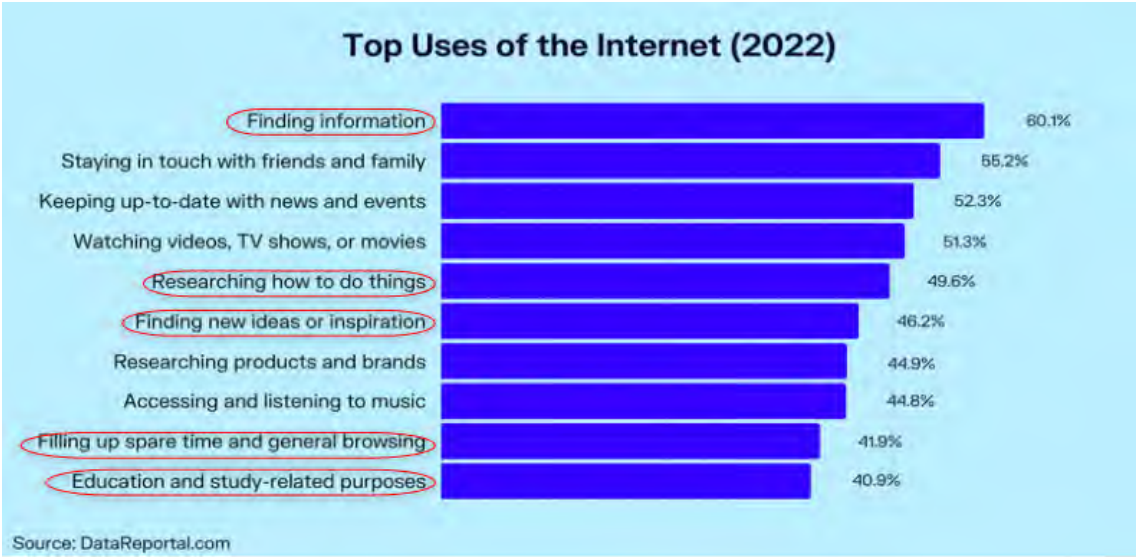
B. Internet use



Consulting the illustration above (Datareportal, 2022) regarding the overview of internet use, let's concentrate on just the two last figures.

The average DAILY time spent using the internet by each internet user is almost 7 hours. This is an astonishingly high number of hours spent, which should make us all think hard about its usefulness and our reasons for spending so much time using it.

For all of us who are creating, providing, and organizing information and grey literature on the internet, the statistic that 92.1% of users access the internet through their mobile phones should be of the utmost importance. The previous reality of personal computers (PCs) occupying this major role is not valid anymore. It is clear that focus has dramatically shifted towards the use of mobile devices. To that end, we need to direct our efforts towards this relatively new tool and adjust our internet and web presence consequently.



The above graph (Oberlo 2022) of top internet uses shows that the majority of people are using it to search for information, communication, and entertainment. It is encouraging that there is a high percentage of use geared towards education and study, which should be encouraged, especially for school-age internet users.

C. Social media

How much time do we spend on social media apps? Statistics show that monthly, on average, we spend almost 24 hours on YouTube, 20 hours on TikTok, and the same on Facebook. Another 19 hours are spent monthly on WhatsApp, the most popular communication app.
Generally speaking, an average social media user spends between 80-90 hours monthly on various social media apps. Translated into weekly work hours, we spend over two work weeks browsing various social media or reading messages we've received.

So let's review this, on average, every user spends almost half of his or her productive work hours on social media blindly devouring content that is often questionable.

Let's have a quick look at some YouTube statistics in 2022 (DemandSage 2022):

- There are 2.6 billion YouTube users
- Viewers watch over 1 billion hours of video every day
- Localized in over 100 countries and 80 languages
- 63% of watch time derives from mobiles
- 400 hours of video uploaded every minute
- The most popular video platform

D. Data

The amount of data available around the world in 2020 was estimated at 59 zetabytes (ZB). While it is predicted that this will reach a mind-boggling 175 ZB by 2025.

One ZB (Intellobics 2011) is equivalent to one trillion gigabytes. If each bit is a coin around 3mm thick, one ZB made up of a stack of coins would be 2,550 lightyears. This would get you to our nearest star system, Alpha Centauri, 600 times (TechCentral 2021). To put it into a closer perspective, one ZB is equivalent to 36,000 years' worth of HD-quality video.

E. Email

In a work environment the quantity of emails sent and received represents probably the main contributor and cause of information fatigue syndrome. It is estimated that there are 4.3 billion email users around the world (Oberlo 2022), and there is also an evident trend that the number of email users is growing.

People around the world send over 333 billion emails daily (Statista 2022).

F. Journals

Regarding journals, in 2009 we passed the 50 million mark of the total number of scientific papers published in various journals since 1665 (Jinha 2010). Approximately 2.5 million new scientific papers are published each year.

As of 2014, there were approximately 28,100 active scholarly peer-reviewed journals (Ware 2015). This excludes the increasing number of predatory, fake scientific journals, which produce high volumes of poor-quality research.

G. Books

It is estimated that there are between 500,000 and one million books published annually (Bobby 2022).

With self-published authors, there are close to 4 million new book titles published each year. Unfortunately, the typical self-published author sells only about five copies of his/her book.

The average US book now sells fewer than 200 copies per year and fewer than 1000 copies over its lifetime.

According to Google, there have been 130 million books published since the invention of Gutenberg's printing press in 1440. However, this doesn't factor in books published after 2010, nor does it include self-published book titles.

In 2021 a total of 826 million books were sold in the US. An interesting fact is that 75% of people surveyed in the US prefer print to e-books or audiobooks.
Let's remind ourselves of Seneca's message, that it does not matter how many books we have, but rather how good these books are.

Information Fatigue Syndrome Solution
Is there a solution to Information Fatigue Syndrome?

The solution to Information Fatigue Syndrome is not simple or straightforward.
Some main actions to deal with it are the following:

- Filter all the information that comes your way and make sure that you don't contribute to the digital burnout of others by spreading and sharing unnecessary information
- Sharpen your focus when looking for and using grey literature and any other information
- Focus on essential, not on interesting
- Prioritize
- Pick reliable and trustworthy sources of grey literature
- Delegate
- Ask for help
- Learn to say NO
- Shut down disrupting devices
- Separate business from private time
- Relax, go for walks, meditate

There is also a role that information specialists could play. They can:

- Help with filtering information
- Maintain lists of high-impact resources
- Prioritize readings and research materials
- Do preliminary search
- Determine reliable and trustworthy sources
- Offer learning and research hubs
- Provide opportunities to experience modern IT environments
- Offer information and KM training
- Encourage exploration, creation, and collaboration
- Provide no-stress and quiet spaces
- Become pillars of open-access and open science

And finally, let's consider a huge wastepaper basket to be a possible solution for information fatigue syndrome, since as Albert Einstein said, '***information is not knowledge!'***

References

AZ Quotes. https://www.azquotes.com/quote/1261725

Bobby. 2022. The number of books published each year. https://www.tagari.com/the-number-of-books-published-each-year/

Datareportal. 2022. https://datareportal.com/reports/digital-2022-global-overview-report

DemandSage. 2022. YouTube Statistics (2023) — Trending Facts & Figures Shared! https://www.demandsage.com/youtube-stats/

GreyNet. 2022. Document Types in Grey Literature. http://greynet.org/greysourceindex/documenttypes.html

Intellobics. 2011. Understanding information measures. https://intellobics.com/2011/02/14/understanding-information-measures/

Jinha, Arif E. 2010. Article 50 million: An estimate of the number of scholarly articles in existence. July 2010Learned Publishing 23(3):258-263. https://onlinelibrary.wiley.com/doi/abs/10.1087/20100308

Oberlo. 2022. Top Uses of the Internet in 2022. https://www.oberlo.ca/statistics/what-is-the-internet-used-for

Savić, D., 2017. Rethinking the Role of GL in the Fourth Industrial Revolution. 10th Conference on GL and Repositories: proceedings [online]. Prague: National Library of Technology. http://nrgl.techlib.cz/index.php/Proceedings. ISSN 2336-5021. Also published by TGJ (The Grey Journal) Special Winter Issue, Volume 14, 2018.

Statista. 2022. Number of sent and received e-mails per day worldwide from 2017 to 2025. https://www.statista.com/statistics/456500/daily-number-of-e-mails-worldwide/

TechCentral. 2021. The world's data: The world's data: How much we're producing and where it's all stored. https://bit.ly/3WX41q6

Waddington, Paul. 1998. Dying for Information? A Report on the Effects of Information Overload in the UK and Worldwide. http://www.ukoln.ac.uk/services/papers/bl/blri078/content/repor~13.htm

Ware M, Mabe M. 2015. The STM report. The STM Report: An overview of scientific and scholarly journal publishing Celebrating the 350th anniversary of journal publishing. http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1008&context=scholcom.

Wikipedia. https://en.wikipedia.org/wiki/David_Lewis_(philosopher)

Appendix 1: Grey Literature Document Types

A
Abstracts
Advertorials
Announcements
Annuals
Article

B
Bibliographies
Blogs
Booklets
Brochures
Bulletin Boards
Bulletins

C
Call for Papers
Case Studies
Catalogues
Chronicles
Clinical Trial:
- Source Document
Codebooks
Conference Papers
Conference Posters
Conference Proceedings
Country Profiles
Course Materials

D
Databases
Data Papers
Datasets
Datasheets
Deposited Papers
Directories
Discussion Papers
Dissertations
Doctoral Theses

E
E-Prints
E-texts
Enhanced Publications
Essays
ETD (Electronic Theses and Dissertations)
Exchange Agreements

F
Fact Sheets
Feasibility Studies
Flyers
Folders
Forum:
- Internet

G
Glossaries
Government Documents
Green Papers
Guidebooks

H
Handbooks
House Journals

I
Image Directories
Inaugural Lectures
Indexes
Interactive Posters
Internet Reviews
Interviews

J
Journals:
- Articles
- Grey Journals
- In-house Journals
- Non-commercial Journals
- Synopsis Journals

K
K-blogs

L
Leaflets
Lectures
Legal documents
Legislation
LibGuides

M
Manuals
Memoranda

N
Newsgroups
Newsletters
Notebooks

O
Off-prints
Orations

P
Pamphlets
Papers:
- Call for Papers
- Conference Papers
- Deposited Papers
- Discussion Papers
- Green Papers
- White Papers
- Working Papers

Patents
Policy Documents
Policy Statements
Posters
Précis Articles
Preprints
Press Releases
Proceedings
Product Data
Programs
Project:
- Deliverables
- Information Document (PID)
- Proposals
- Work Packages
- Work Programmes

Q
Questionnaires

R
Readers
Registers
Reports:
- Activity Reports
- Annual Reports
- Bank Reports
- Business Reports
- Committee Reports
- Compliance Reports
- Country Reports
- Draft Reports
- Feasibility Reports
- Government Reports
- Intelligence Reports
- Internal Reports
- Official Reports
- Policy Reports
- Progress Reports
- Regulatory Reports
- Site Reports
- Stockbroker Reports
- Technical Reports

Reprints
Research Memoranda
Research Notes
Research Proposals
Research Registers
Research Reports
Reviews
Risk Analyses

S
Satellite Data
Scientific Protocols
Scientific Visualizations
Show cards
Software
Specifications
Speeches
Standards
State of the Art
Statistical Surveys
Statistics
Supplements
Survey Results
Syllabus

T
Technical Documentation
Technical Notes
Tenders
Theses
Timelines
Trade Directories
Translations
Treatises
Tutorials

W
Website Reviews
WebPages
Websites
White Books
White Papers
Working Documents
Working Papers

Y
Yearbooks

Source: https://greynet.org/greysourceindex/documenttypes.html

TIB LEIBNIZ INFORMATION CENTRE FOR SCIENCE AND TECHNOLOGY UNIVERSITY LIBRARY

"AS AN INFORMATION CENTRE FOR THE DIGITISATION OF SCIENCE AND TECHNOLOGY, OUR OBJECTIVE IS TO SUPPORT RESEARCHERS AT ALL STAGES OF THEIR WORK BY PROVIDING THEM WITH OUR SERVICES."

Professor Dr. Sören Auer

WWW.TIB.EU

Preregistration of research for theses - a new standard?*

Tereza Šímová,
Czech University of Life Sciences Prague, Czech Republic

Abstract:
The reproducibility crisis is the ongoing methodological crisis, where it is difficult or impossible to reproduce the results of many scientific studies. Because the reproducibility of scientific results is an essential part of science, such failures undermine the credibility of the theories and potentially call into question a substantial part of scientific knowledge. There are several ways to strengthen the reproducibility of results, such as proper reporting and dissemination, e.g., pre-registration of research, registered reports, open data, open code, open research notes, or open access. In this paper, I propose incorporating preregistration into the theses writing process for undergraduate students, which should lead to enhanced reproducibility, transparency, and openness of research results in the context of final theses. Pre-registration is a data-marked, predetermined, read-only research roadmap that, in most cases, is created before the study and published in a public repository. Preregistration increases the credibility, transparency, openness, and robustness of students' results in writing their theses. It also serves as a tremendous educational and communicative element of the thesis writing process that raises the level of student theses and demonstrates a certain level of student knowledge and skills. In this paper, I propose a timeframe for incorporating pre-registration into theses writing processes and discuss the challenges surrounding this process from the perspective of key stakeholders - policymakers, universities, theses supervisors, and students. The article also presents practical advice on where to find support and further guidance on pre-registration aspects. This paper thus pioneers the idea of incorporating preregistration into the normal thesis writing process.
Keywords: reproducibility, undergraduate, students final work, open science

Replication crisis

The reproducibility crisis is the ongoing methodological crisis, where it is difficult or impossible to reproduce the results of many scientific studies. Because the reproducibility of scientific results is an essential part of science, such failures undermine the credibility of the theories and potentially call into question a substantial part of scientific knowledge (Nosek *et al.*, 2015, 2018; Munafò *et al.*, 2017; Alger, 2020; Grahe, 2021). Many things contribute to this, but in general, many of these issues come down to this hypothetical deductive model of science being short-circuited by questionable research practices (Center for Open Science, no date). Lack of replication, Low statistical power (p-hacking), HARKing, Publication bias, and lack of data sharing all of these and other questionable research practices have contributed to creating a reproducibility crisis (Quintana, 2015; Munafò *et al.*, 2017; Center for Open Science, no date).

There are several ways to strengthen the reproducibility of results, such as proper reporting and dissemination, e.g., pre-registration of research, registered reports, open data, open code, open research notes, or open access. Nosek et al. (2018) argue that in an ideal world, the basics of preregistration are taught in primary school. I do not go that far in my proposal. In my proposal, I discuss the possibility of incorporating preregistration into the theses writing process for undergraduate students, which should lead to enhanced reproducibility, transparency, and openness of research results in the context of final theses. I propose a timeframe for incorporating pre-registration into theses writing processes and discuss the challenges surrounding this process from the perspective of key stakeholders - policymakers, universities, theses supervisors, and students.

Preregistration

Pre-registration is documenting a research plan, which usually occurs before data collection and analysis. As Nosek et al. (2018) point out, preregistration for research is a commitment to

* First published in the GL2022 Conference Proceedings, February 2023
Video Presentation: https://av.tib.eu/media/58579

analytical steps without prior knowledge of the research results. Grahe (2021, p. 33) define preregistration as an "effort to freeze, or predetermine, those decisions before the data are collected by requiring the researcher to document the decisions and then date-stamp them using a permanent repository." Pre-registration can also be thought of as a research roadmap - a data-marked, predetermined, read-only research plan that in most cases is created before the study itself and published in a public repository. Pre-registration, in its simplest form, may involve only the registration of the primary study design but it is possible to create very detailed pre-specification of the study procedures, preliminary outcomes, and statistical analysis plan (Munafò *et al.*, 2017).

There are different types of preregistrations. For example, unreviewed preregistration, reviewed preregistration (Registered Reports), or Registered Replication Reports. However, this paper does not aim to present comprehensive information about these preregistrations. However, I think it is important to mention that when it is written about preregistration in this paper, I am referring primarily to classical unreviewed preregistrations.

Why should preregistration matter during theses writing?

Preregistration brings several benefits to research, which are discussed in several publications - see e.g. (Quintana, 2015; Munafò *et al.*, 2017; Cockburn, Gutwin and Dix, 2018; Nosek *et al.*, 2018, 2019; Lakens, 2019; Grahe, 2021). It is, therefore, not surprising that the implementation of preregistration as part of theses writing would also bring some benefits. The advantage of preregistration in both research and the proposal here is the increased credibility, transparency, and robustness of the results. As Button (2018) wrote, final theses often become an exercise in compounding the research design limitations, which can be frustrating for both the student and the supervisor. By having students preregister their research, this frustration could be alleviated. Another advantage of preregistration is its educational benefit. By getting students interested in data and analysis at an early stage of research, their knowledge of data analysis and management, as well as research practices (such as reproducibility, transparency, and open science principles), will be enhanced. Students will think about their research design right at the beginning of the thesis writing, allowing them to avoid mistakes in the research approach. Button (2018) argues that early training will bring comfort and creativity to students concerning similar approaches later in their research careers. Grahe (2021) shares this argument, describing preregistration as a way to "front-loading the writing process and reducing challenges of miscommunication between collaborators during the collection and analysis step." Preregistering can also help students for their future selves because sometimes we just forget what we planned. Preregistration can remind students what they planned, what data and analyses they wanted to use, what their sample was supposed to be, etc. This sort of reminder also reduces self-deception, which is another benefit of preregistration. The advantage is also easier communication of research, which is sometimes difficult for students. Preregistration give us and to our colleagues a clear roadmap to our research ideas, hypotheses, data collection, analysis etc. In certain cases, pre-registering research can help students to gain a greater status (or recognition) from the scientific community. By preparing a preregistration, students demonstrate that they have a certain level of skills and knowledge that will be useful not only in their theses defence, but also in their possible future careers (not only in research related jobs).

Sometimes people cheat, and no one can stop it. The problem, as Grahe (2021, p. 36) notes, is that "in science, we can cheat without knowing we are doing it. It all comes down to the reliability of the probability that a statistic is unlikely to have occurred by chance, the p-value". Pre-registration helps students to recall each of the decisions before the data appear. The student can then more clearly understand the difference between an exploratory question, for which a p-value adjustment must be made, and confirmatory research, for which it is not.

Pioneers in the implementation of preregistration in theses writing

A number of academic researchers has already incorporated the use of preregistration and other transparent research methods at various universities, such as the Collaborative Replication and

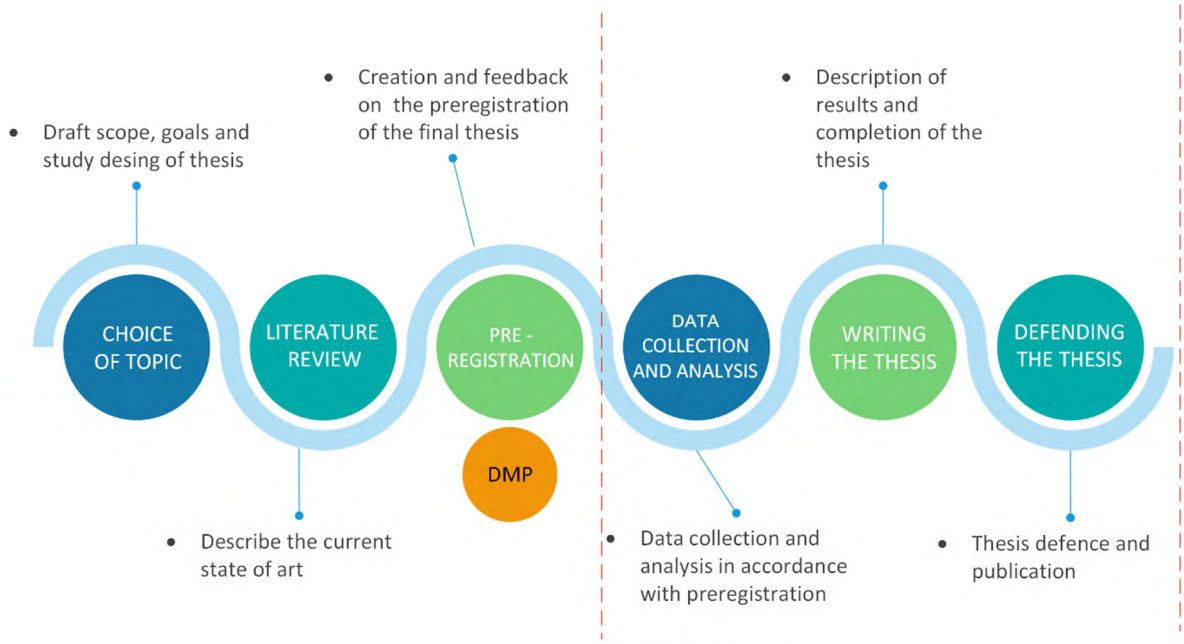
Education Project (CREP) and the Psychological Science Accelerator course (Crchartier, 2018) or the Reproducibility Education in an Undergraduate Capstone Course (*Reproducibility Education in an Undergraduate Capstone Course*, 2021), or the GW4 Undergraduate Psychology Consortium (Button, 2018).

At the same time, it is clear that this approach is not suitable for all types of research. As Button (2018) suggests, in certain types of laboratories, where laboratory equipment is expensive and/or the layout of the laboratory does not allow for standardized operating procedures, it is not so easy to pre-register. For theses topics where preregistration does not make sense, it may be possible to consider replacing preregistration with a data management plan.

Timeframe for incorporating preregistration into the theses writing process

As Grahe (2021) wrote, there is very little time for students during the process of theses writing. Thus is essential to think about the right time for incorporating preregistration into the theses writing process. Figure 1 shows my suggestion of how preregistration can be incorporated into the timeframe of writing a theses. In the circle can be seen the time period, and the text above or below the circle describes the goal of a particular period. What is important is that the students receive the first feedback on their research design in the early parts of the research (the red dashed line). This early feedback will help students avoid potential mistakes in the research approach and also will help them produce higher-quality theses. In this way, students will not only learn to do good research practice, but more importantly, they will become aware of their research and what they should look out for. Also, students will receive two pieces of feedback from the scientific community during the writing process (the first during pre-registration and the second during the defense).

Figure 1 Incorporating preregistration into the theses writing



Source: Own compilation

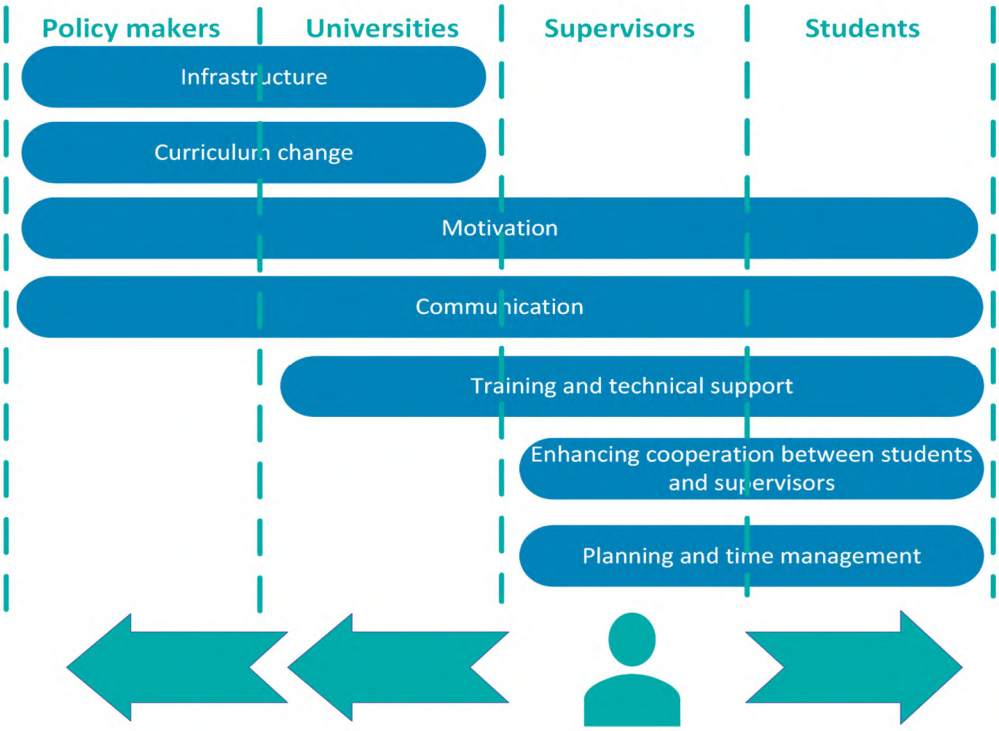
Preregistration could be complemented by a data management plan that students would create simultaneously as preregistration. This would teach students important data management practices in line with FAIR principles. At the same time, if students would collect unique data, it would be helpful to open it afterward so that other students or researchers could use it. However, data management is a very time-consuming activity, and I am not sure if the students could do it within the timeframe in which they are doing the final paper.

The exact placement in the theses writing timeframe will depend on the overall academic year setting at the institution. Button (2018), for example, offers a timeframe for the United Kingdom, where pre-registration work begins during the summer break, and then students give their first presentations of their pre-registration at the start of their final year of undergraduate study (October). Data collection then runs from November to March. In April, students discuss the main results of their studies and, after feedback, write the final version of their theses.

The challenges of incorporating preregistration into theses writing process

Every change in the educational system is a complex and long-term process. For that reason, I present some of the challenges different stakeholders would face if preregistration became an official part of theses writing (see Figure 2). I present the challenges for three levels of stakeholders – policymakers, universities, supervisors, and students.

Figure 2 Key stakeholders and challenges in the process of incorporating preregistration into theses writing



Source: Own compilation

Firstly, it is necessary to provide infrastructure to support and encourage pre-registration. It is possible to use off-the-shelf solutions, e.g., the Open Science Framework - but it is up to policymakers and universities to provide the necessary resources for those interested in preregistration. Second, if preregistration is going to become an official part of university education systems, it is necessary to introduce this change in university curricula. Such a change is unlikely to occur at the national or even global level. Therefore, I assume it is more likely that individual universities will be pioneers and begin to change their curricula.

Two challenges cut across all key stakeholders – motivation and communication. Without proper motivation to shift towards the trends of transparent and open research at the level of theses writing, the proposed change will not be possible. Students, supervisors, universities, and

policymakers must be motivated to change the perception of the thesis writing paradigm. But how to motivate such a body of stakeholders? A general shift towards open and transparent science could motivate policymakers and universities. There are calls such as the Paris Call on Research Assessment (French Open Science Committe, 2022), Plan S (cOAlition S and European Science Foundation, 2021), The Hong Kong Principles for assessing researchers: Fostering research integrity (Moher et al., 2020), Coalition for Advancing Research Assessment (COARA, 2022) or UNESCO recommendation on Open Science (UNESCO, 2021) , which provide a direction for new practices in research assessment and day-to-day scientific work in line with principles for open and transparent research. The European Commission is a significant force for open and transparent research in Europe, requiring open research practices in funded projects (European Commission, 2019). In the U.S., a recent White House memorandum directs U.S. funders to modify their policies to ensure public access policies as soon as possible and no later than the beginning of 2026 (White House Office of Science and Technology Policy (OSTP), 2022). The National Institutes of Health is even faster in this regard and will require public access to research outputs for founded projects as early as 2023 (National Institutes of Health, 2022). These steps are slower or faster to trickle down to the national and local levels of individual states, research organizations, and universities. I believe that these activities will boost the principles of open science to the level of individual organizations and will thus gradually become a natural part of scientific practice (e.g., by the management of universities promoting the principles of openness, including pre-registration - both morally and at the level of science and research assessment, and the writing of theses).

Another important aspect is proper communication, which is critical at all levels of the proposed model. It is a crucial challenge to explain the importance of pre-registration research and how it can be done. Even though I mention communication as a challenge that cuts across all the levels of stakeholders mentioned, I believe that primarily librarians and theses supervisors will play a key role by communicating the importance of preregistration to university administration and guiding students to preregister their theses

Related to communication is the need to provide proper training and technical support. Again, here would, libraries have a significant role. Librarians will serve as the big wheel that will provide the necessary energy for the process I am proposing here. With the introduction of pre-registration for theses, there will be a great demand for the technical and a knowledge base that librarians offer. Libraries must have proper support from universities so that they can provide support to theses supervisors and students.

However, the most tremendous responsibility will remain with the supervisors and students. Great importance is the reinforcement of the time allocation for supervision of theses. Theses supervisors must have sufficient time to devote to the students. Preregistration is a time-consuming activity that requires a great deal of time commitment from both the supervisor and the student. Therefore, planning and time management are key factors in incorporating preregistration into the theses writing process. Also, as for introducing preregistration into theses writing, I believe this process will begin with individual theses supervisors leading their students through examples of good practice to preregister their research (as the position of persona in Figure 2 suggest). At the same time, as I mentioned above, I see a critical role for librarians who will become guides for researchers and students in the area of preregistration.

Call for action

Instead of a summary, I offer a call for action, which I believe will be more effective than a simple summary of what has been said above. Preregistration is a research roadmap, a data-marked, predetermined, read-only research plan that, in most cases, is created before the study itself and published in a public repository. In its simplest form, pre-registration may involve only the registration of the basic study design, but it is possible to create a very detailed pre-specification of the study procedures, preliminary outcomes, and statistical analysis plan (Munafò *et al.*, 2017). A preregistration is a vital tool for promoting transparent, reproducible, and open

research (Nosek *et al.*, 2015, 2018; Munafò *et al.*, 2017; Grahe, 2021). In the paper presented, I argue that for several reasons, preregistration should become a routine part of theses writing.

First, preregistration increased the credibility, transparency, and robustness of results. Pre-registration can alleviate frustration, both on the supervisor and the student, by clarifying what the research design is in advance. Preregistration also has educational benefits - getting students interested in data and data analysis early in the research process will increase their knowledge of data analysis and management and research procedures. Students will be thinking about their research design right at the beginning of the writing process, allowing them to avoid mistakes in their research approach. It will also make it 'easier' for students in the later stages of theses writing as all decisions about the research approach will have already been made. Students can also use preregistration as a reminder in cases where they forget a step of the proposed research design. This sort of reminder also reduces self-deception, which is another benefit of preregistration. Last but not least, preregistration is an excellent tool for communicating research and demonstrating a certain level of knowledge and skills that can increase the status of students in the research community.

In addition to the benefits of preregistration, it is essential to note that several major research funders, such as the European Commission, the White House Office of Science and Technology Policy, and the National Institutes of Health require the principles of open, transparent research. Thus, there is a presumption that this will be the future of the whole research community.

For this reason, I encourage all readers, including policymakers, university management or staff, but especially theses supervisors, librarians, and students, to start re-registering research produced as part of theses writing. I also offer for consideration the idea of supplementing preregistration with a data management plan that would further expand the data work acquired by students following FAIR principles.

There are many guidelines, outlined procedures, templates, and examples that can help students and theses supervisors move towards standardizing preregistration as part of theses writing. Some of the best guidelines are those from the Center for Open Science and the Open Science Framework (Center for Open Science, no date). In addition to step-by-step instructions on how to preregister, these tutorials include templates for different types of preregistration. Tutorials are not only in text form but also in the form of YouTube videos, so even those who prefer videos over text will enjoy them. If you would prefer some more traditional resources, I recommend the book Journey into Open Science and Research Transparency in Psychology by Jon Grahe (2021), which describes in a very nice way how to make research transparent, including pre-registration. Grahe (2021) encourages readers to activity at the end of each chapter with a variety of practical exercises and provides supplementary materials on the Open Science Framework. If you find the resources overwhelming, you can always contact your university librarian, who will be happy to advise you and direct you to valuable resources to help you navigate pre-registration issues.

The present proposal has several limitations, such as the fact that it is not elaborated in detail, is not set in a specific scientific context, is not discipline-specific, and does not take into account the heavy day-to-day agenda of thesis supervisors. The paper also does not include a comprehensive review of all projects and initiatives that incorporate elements to enhance the reproducibility of science in undergraduate programmes. Despite limitation, this paper offers one of the first frameworks for incorporating preregistration into the thesis writing process.

Acknowledgement

I would like to thank the Association of Libraries of Czech Universities, which supports librarians from all over the Czech Republic not only in the field of research but also in further education and future career development. Without the support of the Association of Libraries of Czech Universities, my participation in this conference would not have been possible. The results and knowledge included herein have been also obtained owing to support from the following institutional grant. Internal grant agency of the Faculty of Economics and Management, Czech University of Life Sciences Prague, grant no. 2022A0008.

References

Alger, B.E. (2020) *Defense of the scientific hypothesis: from reproducibility crisis to big data*. New York, NY: Oxford University Press.

Button, K. (2018) 'Reboot undergraduate courses for reproducibility', *Nature*, 561(7723), pp. 287–287. Available at: https://doi.org/10.1038/d41586-018-06692-8.

Center for Open Science (no date) *Registered Reports, Details and Workflow*. Available at: https://www.cos.io/initiatives/registered-reports (Accessed: 1 December 2022).

cOAlition S and European Science Foundation (2021) *Plan S - Making Full & Immediate Open Access a Reality*. Available at: https://www.coalition-s.org/wp-content/uploads/2021/03/Plan-S_profile_March2021.pdf.

COARA (2022) *Agreement on Reforming Research Assessment*. Available at: https://coara.eu/app/uploads/2022/09/2022_07_19_rra_agreement_final.pdf (Accessed: 1 December 2022).

Cockburn, A., Gutwin, C. and Dix, A. (2018) 'HARK No More: On the Preregistration of CHI Experiments', in *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. *CHI '18: CHI Conference on Human Factors in Computing Systems*, Montreal QC Canada: ACM, pp. 1–12. Available at: https://doi.org/10.1145/3173574.3173715.

Crchartier, ~ (2018) *The Accelerated CREP*, *Psychological Science Accelerator*. Available at: https://psysciacc.org/2018/04/08/the-accelerated-crep/ (Accessed: 1 December 2022).

European Commission (2019) *Open Science*. Available at: https://research-and-innovation.ec.europa.eu/document/download/77d34a83-7ed9-4041-9fb2-3be3094f2319_en?filename=ec_rtd_factsheet-open-science_2019.pdf (Accessed: 1 December 2022).

French Open Science Committe (2022) 'Paris Call – OSEC 2022'. Available at: https://osec2022.eu/paris-call/ (Accessed: 1 December 2022).

Grahe, J. (2021) *A Journey into Open Science and Research Transparency in Psychology: A Journey through National Parks*. 1st edn. New York: Routledge. Available at: https://doi.org/10.4324/9781003033851.

Lakens, D. (2019) *The Value of Preregistration for Psychological Science: A Conceptual Analysis*. preprint. PsyArXiv. Available at: https://doi.org/10.31234/osf.io/jbh4w.

Moher, D. *et al.* (2020) 'The Hong Kong Principles for assessing researchers: Fostering research integrity', *PLOS Biology*, 18(7), p. e3000737. Available at: https://doi.org/10.1371/journal.pbio.3000737.

Munafò, M.R. *et al.* (2017) 'A manifesto for reproducible science', *Nature Human Behaviour*, 1(1), p. 0021. Available at: https://doi.org/10.1038/s41562-016-0021.

National Institutes of Health (2022) *NOT-OD-22-213: Supplemental Information to the NIH Policy for Data Management and Sharing: Protecting Privacy When Sharing Human Research Participant Data*. Available at: https://grants.nih.gov/grants/guide/notice-files/NOT-OD-22-213.html (Accessed: 1 December 2022).

Nosek, B.A. *et al.* (2015) 'Promoting an open research culture', *Science*, 348(6242), pp. 1422–1425. Available at: https://doi.org/10.1126/science.aab2374.

Nosek, B.A. *et al.* (2018) 'The preregistration revolution', *Proceedings of the National Academy of Sciences*, 115(11), pp. 2600–2606. Available at: https://doi.org/10.1073/pnas.1708274114.

Nosek, B.A. *et al.* (2019) 'Preregistration Is Hard, And Worthwhile', *Trends in Cognitive Sciences*, 23(10), pp. 815–818. Available at: https://doi.org/10.1016/j.tics.2019.07.009.

Quintana, D.S. (2015) 'From pre-registration to publication: A non-technical primer for conducting a meta-analysis to synthesize correlational data', *Frontiers in Psychology*, 6(OCT), pp. 1–9. Available at: https://doi.org/10.3389/fpsyg.2015.01549.

Reproducibility Education in an Undergraduate Capstone Course (2021). (TIER Spring Symposium on Instruction in Reproducible Research). Available at: https://www.youtube.com/watch?time_continue=1792&v=5ExuqTkNNuU&feature=emb_title (Accessed: 1 December 2022).

UNESCO (2021) *UNESCO Recommendation on Open Science*. UNESCO. Available at: https://doi.org/10.54677/MNMH8546.

White House Office of Science and Technology Policy (OSTP) (2022) *Desirable Characteristics of Data Repositories for Federally Funded Research*. Executive Office of the President of the United States. Available at: https://doi.org/10.5479/10088/113528

Zine Making as Autoethnographic Serious Leisure *

Andrea Marshall, Centre for Media and Celebrity Studies, United States

Introduction

Zines created in contemporary settings reflect the cultural practices that support a DIY (Do It Yourself) ethos and manifest as print and digital artifacts that resist construction as solely ephemeral. Hroch (2020) has observed that zines function as rebellious artifacts and that the act of making zines engage as processes that communicate radical ideas since "the post-digital situation makes us reconsider the categories of new and old media and radically remix them" (p. 22). Zines are hybrid media artifacts that demonstrate the attitudes and values of rich and varied communities of practice. The act of making zines is a counterhegemonic demonstration of resistance to orthodox principles of indexing information and collecting data since it is the pursuit of serious leisure.

Mansourian (2020) emphasizes serious leisure as a cultural practice that promotes the agency of amateurs and information seeking in serious leisure since "people involved in various forms of SL are usually passionate about what they do and it makes a big difference on the way they interact with information. They engage enthusiastically with the information they search for, find and disseminate." (p.26). Furthermore, as "DIY is an amateur and participatory mode of engagement" (Watson and Bennett 2020 p.14) zines constantly disrupt traditional categories of data, information, and art through the deployment of bricolage, collage and montage as embodied practices that are adaptable and flexible. The open source tool the Electric Zine Maker promotes itself as a digital makerspace, as a learning environment and as a creative brainstorming tool. Digital zine making as DIY data creation and autoethnographic art curation asks questions about agency, identity and community. Zines as grey literature perform as beatnik boundary objects and remixed data artifacts that invite debate with regard to their content and their creators. Grey literature supports the unconventional with regard to knowledge infrastructures as well as information ecosystems. Zines challenge us to better understand how the DIY ethos can be applied to alternate ways of knowing to the access and the curation of information, and how to build data artifacts that can thrive in digital and analog environments.

Zines as Boundary Objects and Data Artifacts

Zines as beatnik boundary objects dismantle extant power structures through surrealist critiques and bridge gaps between disparate ideologies through creating dynamic ways of understanding privilege and agency. J. Brett (2022) observes "zines are an ephemeral medium as much as any generalization can be made about zines and zine culture, they are creative endeavors of a particular time mindset and sociocultural milieu" (p.127). Zines as remixed data artifacts traverse the boundaries of digital and physical. In this way their ephemeral nature demands that we reimagine binary oppositions between the digital and the physical realms through the pursuit of serious leisure. Zines promote the practice of bricolage or learning by doing. Amateur zine makers collaborate with each other to learn about the world around them and build new understandings of the world around them. Through the application of bricolage collectively, these zine makers collectively construct new identities of expertise through the creation of zines as a communal practice.

J. Radway (2011) notes that "until zines emerged as digital forms they were generally defined as handmade non-commercial irregularly issued small run paper publications circulated by individuals participating in alternative special interest committees. Zines exploded in popularity during the 1980s when punk music fans adopted the form as part of their do-it-yourself aesthetic and is an outside way to communicate among themselves about punks defiant response to the

* First published in the GL2022 Conference Proceedings, February 2023
Video Presentation: https://av.tib.eu/media/59868

commercialism of mainstream society" (p. 148). Zines as punk rock boundary objects in montaged and collaged representations of ideologies mindsets and philosophies defy linear constructions of identity and categories of power. Zines as punk rock boundary objects resist one mode of understanding and one way of thinking. Rather, those that create zines invite those who read zines to become fellow collaborators and active participants in meaning making, while encouraging debates, discussions and differences. These interactive feedback processes evolve into varied values and perspectives within zine makers' and zine readers' communities of practice.

A. McNutt (2021) remarks that "zines are not a single monolithic genre. They are a medium which can contain countless narrative forms" (p. 1). This is because as S.M. Davidson (2022) ponders " Zines thus cross a gap between life writing as a public act of visual narrative performativity via more formal modes of mass publication while nonetheless still engaging in dialogues concerning personal experiences with a more selectively created collective" (p.17).

Zines are by their nature informal and amateur, and their creation, consumption and publication all have roots in the practice of serious leisure. J. Radway (2011) comments on research about zines, how they function, how they are created and how they are consumed as questions that lead to more questions. She states " indeed the preoccupation with what zines do and how they do it has become central to the burgeoning literature on zines a literature that has in effect created something that might usefully be termed "zine studies" and intellectual discourse about zines and zine ing that is not limited to the academic sphere" (J. Radway 2011 p.142). Zines bridge gaps by their very porous and informal montages of made meanings and collapse boundaries between privilege and resistance as well as formal knowledge structures and informal information ecosystems. Zines as serious leisure create informal expertise as a way to build communities. Zines as autoethnographic research create new information environments where the DIY ethos can be shared and become more innovative with more participation.

Zines as Grey Literature

How do zines function as grey literature? M. Hroch (2020) states that "when speaking about the possibilities of printed matter zines are the most experimental platform because they are easy to create and cheap to print. In media theory zines are positioned in the alternative media paradigm" (p.21). Grey literature contains mutable bodies of content in which preprint publications, secondary drafts, white papers and multiple hybrid models of media exist. Zines as grey literature function as digital and analog artifacts that refute linear categorizations and question formal classifications. Zines are artifacts in motion; the meanings they make continuously shift with those who create them and those who consume them. M. Hroch (2020) furthers this notion "Zine communities are very material and intermaterial as various materials and printing machines are involved in the production and zine communities are therefore an assemblage of different bodies spaces objects machines and capital" (p. 21).

These "different bodies spaces objects machine and capital" (M. Hroch 2021 p.21) impact all of the identities and the ideologies of those who create them and those who consume them. The creation of zines and the consumption of zines are acts of defiance, acts of creativity and statements of identities. The feedback between those who create zines and those who consume zines is manifested in these artifacts. Zines are artifacts in motion and as the identities and ideologies that are associated with them are constantly evolving, zines are social movements.

Zines as Social Movements

Zines are social movements that reflect the pursuit of serious leisure. A core ethos of zines as social movements is the DIY perspective. The do-it-yourself perspective of creativity and information seeking revels in informal learning, playful experimentation and the dismantling of power hierarchies that insist upon formalized modes of identity and information. Kuznetsov and Paulos (2010) define DIY perspectives as " we define DIY as any creation modification or repair of objects without the act of paid professionals. We use the term amateur not as a reflection on

a hobbyist's skills which are often quite advanced but rather to emphasize that most of DIY culture is not motivated by commercial purposes" (p.1).

Watson and Bennett (2021) also observe that "one of the core aspects of zine culture is a DIY approach to practice" (p.121). The DIY ethos that informs the creation of zines and the construction of zine communities. This ethos has also infiltrated higher education research initiatives and research practices. Baker and Cantillon (2022) have remarked that " Zine making facilitates active participation and collaboration and offers a creative affective embodied way to contribute to research. Being amateur in style zines do not require any specialist skills there is no wrong way in terms of aesthetics to make a zine page with many forms of creative practice being appropriborative but it is also reflexive and internal. Identities are remixed, repurposed and redefined within zine making. S.M. Davidson (2022) furthers this idea that "the zine artists' choice to not only refute the abstraction of limitations on creative production but also to operate themselves under a pretense of anonymity and of secrecy targeting the very technique of this expression of power. In doing so zinesters reflect the ability to create a self-sufficient literary economy existing in parallel to the culture capital machine" (p.17). Therefore, anonymity is agency in zine communities and zine identities are motivated by curiosity and playful experimentation. However this curiosity evolves with the zine creation and consumption into dynamic movements that create opportunities for reflexivity. This reflexivity generates dynamic bonds between members of zine communities and disrupt formal and social boundaries generating the potential for autoethnographic self-awareness.

Y. Mansourian (2022) furthers this notion by stating about serious leisure that " as you can see it is serious because they engaged with their chosen activity for the long term learn new skills and it can potentially form a new identity for them" (n.p.) Zine makers and readers are constantly investigating themselves, the world around them and their fellow non-conformist playful amateurs. Zine making as serious leisure, as autoethnographically reflexive participation and as learning is also a social movement. The DIY ethos is at the core of this social movement and S. Januario (2021) speculates about the DIY perspective as "once used as a means of indicating pockets of resistance to traditional forms of music and cultural production DIY has now become synonymous with a broader ethos of lifestyle policy that unites people and networks of alternative and trans local cultural production" (p.144). Zine making promotes the DIY ethos as a collaborative value that establishes recurring opportunities for information curation as creative bonding, autoethnographic reflexivity as evolving collective identities and remixed data artifacts as historical records of social change.

N. Stephens-Griffin and N. Griffin (2019) have observed that "autoethnography can be a means to amplify marginal or misrepresented voices or experiences" (p.3). Zine making as a social movement and as autoethnographic serious leisure continues to destruct barricades between both physical and digital environments. Zine making and zine reading support informal ways of knowing through creative collaboration and bricolage as a DIY practice.

Zines as Open-Source Makerspaces

The open source tool the electric zine maker is at times an online makerspace and invitation to experiment with artistic impulses and an opportunity to experiment with bridging gaps between digital and physical environments. Open-source cultures support amateur interests that are collaborative and espouse innovative ways to adapt, remix and reuse digital tools to explore creative identities and meaning making. B. Ehn (2011) has described DIY pursuits and autoethnography through creative handcrafting when he states that "this kind of DIY auto-ethnography besides being enjoyable at least to myself also has the advantage of being doubly productive you manufactured lasting things with your hands as well as produce ideas" (p.59). Zine makers and consumers pursue creativity as a social movement, amateur identities as collaborative meaning-making as disruptive, defined and resistant to formal power hierarchies. Zine making promotes the exploration of values, identities and information that can bridge gaps and produce social change through creativity, curiosity and collaboration.

Works Cited

Baker, S., & Cantillon, Z. (2022). Zines as community archive. *Archival Science*, 1-23.

Brett, J. (2022). " Zine Preservation", chapter in Zines in Libraries: Selecting, Purchasing, and Processing. American Library Association.

Davidson, S. M. (2022). Pushing at the Seams: French Zines & Bricolage as a Liberatory Act.

Ehn, B. (2011). Doing-it-yourself. *Ethnologia europaea*, *41*(1).

Electric Zine Maker https://alienmelon.itch.io/electric-zine-maker

Januário, S.(2021). What if… the History told the resistance? The unlikely odds of the Do-It-Yourself attitude–insights regarding Zines and artistic heroes from the Oral Presentation Round Table 4 chair.

Hroch, M. (2020). Not Out of Date, but Out of Time: The Materiality of Zines and Post-digital Memory. In *Forum Historiae. Časopis a portál pre históriu a príbuzné spoločenské vedy* (Vol. 14, No. 1, pp. 17-27). Historický ústav SAV.

Kuznetsov, S., & Paulos, E. (2010, October). Rise of the expert amateur: DIY projects, communities, and cultures. In *Proceedings of the 6th Nordic conference on human-computer interaction: extending boundaries* (pp. 295-304).

Mansourian, Y. (2020). How passionate people seek and share various forms of information in their serious leisure. *Journal of the Australian Library and Information Association*, *69*(1), 17-30.

Mansourian, Y. (2022). Information curation in serious leisure: How passion generates purposeful information activities.

McNutt, A. (2021, October). On the Potential of Zines as a Medium for Visualization. In *2021 IEEE Visualization Conference (VIS)* (pp. 176-180). IEEE.

Radway, J. (2011). Zines, half-lives, and afterlives: On the temporalities of social and political change. *Pmla*, *126*(1), 140-150.

Stephens-Griffin, N., & Griffin, N. (2019, September). A millennial methodology? Autoethnographic research in do-it-yourself (DIY) punk and activist communities. In *Forum: qualitative social research* (Vol. 20, No. 3, p. 3). Institute for Qualitative Research.

Watson, A., & Bennett, A. (2021). The felt value of reading zines. *American Journal of Cultural Sociology*, *9*(2), 115-149.

Slovak Centre of Scientific and Technical Information **SCSTI**

Achieve your goals with us

CENTRUM VEDECKO-TECHNICKÝCH INFORMÁCIÍ SR

INFORMATION SUPPORT OF SLOVAK SCIENCE

SCIENTIFIC LIBRARY AND INFORMATION SERVICES

- technology and selected areas of natural and economic sciences
- electronic information sources and remote access
- depository library of OECD, EBRD and WIPO

SUPPORT IN MANAGEMENT AND EVALUATION OF SCIENCE

- Central Registry of Publication Activities
- Central Registry of Art Works and Performance
- Central Registry of Theses and Dissertations and Antiplagiarism system
- Central information portal for research, development and innovation - CIP RDI >>>
- Slovak Current Research Information System

SUPPORT OF TECHNOLOGY TRANSFER

- Technology Transfer Centre at SCSTI
- PATLIB centre

POPULARISATION OF SCIENCE AND TECHNOLOGY

- National Centre for Popularisation of Science and Technology in Society

IMPLEMENTATION OF PROJECTS

- National Information System Promoting Research and Development in Slovakia – Access to electronic information resources - NISPEZ
- Infrastructure for Research and Development - the Data Centre for Research and Development - DC VaV
- National Infrastructure for Supporting Technology Transfer in Slovakia - NITT SK
- Fostering Continuous Research and Technology Application - FORT
- Boosting innovation through capacity building and networking of science centres in the SEE region - SEE Science

www.cvtisr.sk
Lamačská cesta 8/A, Bratislava

Patent files: Case study of digitalization in The National and University Library of Slovenia*

Mojca Trtnik and Veronika Potočnik, National and University Library, Slovenia

Abstract:
The Ephemera and Grey Literature Collection of the National and University Library holds patent files acquired by Slovenia in accordance with the law on legal deposit. The patent files are interesting both from a thematic point of view, as they cover various fields (from printing and bookbinding to industries), and from a historical point of view, since they date back to the time of the Kingdom of Serbs, Croats and Slovenes and later the Kingdom of Yugoslavia (from 1922 to 1942). We have recognised the importance and value of this type of material and, in order to make it most widely accessible, we developed a plan for cataloguing and digitising the patent files in the Digital Library of Slovenia. Due to staff shortages and the large-scale project (11,000 items or 71,772 pages), we decided to include about half of all the material in the first phase of the project. After reviewing the existing cataloguing rules, we decided on a new way of processing this type of material: the collective entry.
The cataloguing of the patent files was a challenging task and involved collaboration with the National Bibliographic Centre. The staff of the Collection of Ephemera and Grey Literature prepared records in the Slovenian Cobiss mutual catalogue, thus enabling users to make the first contact with the material. Cataloguing was followed by the digitisation phase and inclusion of metadata in the Digital Library of Slovenia.

Introduction

In 1970, the National and University Library launched the *Collection of Special Literature,* due to the growing influx of "special materials". The collection was named the *Collection of Special Type of Literature* which in modern times means the collection of grey literature. The collection included all materials and documents of legal deposits collected in previous years. As an increasing number of ephemeras were added to the collection, it was renamed the Ephemera and Grey Literature Collection. The collection is unique even today because it marks a certain period of time. When we look back in the past, we can appreciate the value and uniqueness of a moment when the material of countries that were emerging and disappearing was acquired due to the legal deposit. National borders have changed, but material has remained. In the past, the question of whether ephemera should be kept, has often been discussed. At the National and University Library, we have followed the fundamental principle of legal deposit, which states that "all printed materials, regardless of their content, form or size, are equally important and must be preserved – they bear witness to the time in which they were created. Therefore, the value of the legal deposit collections is not assessed in terms of the value of individual works, but in terms of the complexity of a collection" (Kodrič-Dačić, 2002). In the slovenika (1) collection, ephemera occupies a special place. “The legal deposit rules flooded the public scientific libraries with material that, at first glance, had no scientific value. However, it has gained special importance in the light of the new role of regional libraries after the March Revolution. The legal deposit has become the core mechanism for the collection of material and the creation of the most comprehensive collections in the Crown land. It contributes to the culture of the country, its cultural history, literature and the creation of a regional bibliography. Therefore, ephemera should also be included in the collection with no exceptions, just like seemingly irrelevant diaries, since they have a special value in the light of potential studies.” (Kodrič-Dačić 2001, 150)

* First published in the GL2022 Conference Proceedings, February 2023
Video Presentation: https://av.tib.eu/media/59867

One of unique collections from the time of the Kingdom of Serbs, Croats and Slovenes is also the Collection of Patent Documents, which was created in times that were important both from a historical and cultural-economic point of view.
Given the specificity of the area of the former Yugoslavia, we will present a brief historical outline of the time and the territory in which the patent files in question were created.

Patent files of the Kingdom of Serbs, Croats and Slovenes and the Kingdom of Yugoslavia
The Kingdom of Serbs, Croats and Slovenes (abbreviated SCS) was a state formed on December 1, 1918 by the unification of the State of Slovenes, Croats and Serbs and the Kingdom of Serbia. On October 3, 1929, it was renamed the Kingdom of Yugoslavia. Alexander Karađorđević, heir to the Serbian throne, announced "the unification of Serbia with the lands of the independent State of Slovenes, Croats and Serbs into a single Kingdom of Serbs, Croats and Slovenes".

The State of Slovenes, Croats and Serbs, which was created at the end of the First World War and the collapse of the Austro-Hungarian monarchy, brought a short-lived independence to Slovenes in less than a month, but the country was not internationally recognised. Its position in the international community was hampered by the fact that it was founded on part of the territory that in the past belonged to the Austro-Hungarian monarchy, which was defeated in the First World War.

In accordance with the London Agreement concluded by the Entente Powers with Italy in the middle of the World War I, the SCS was threatened by the territorial claims of Italy. The 1915 Treaty of London gave Italy territorial rights to Primorska, Istria and parts of Dalmatia in exchange for entering the war on the side of the Entente Powers.

On July 20, 1917, representatives of Slovenes, Croats and Serbs from Austria-Hungary, assembled in the Yugoslav Committee, and representatives of the Kingdom of Serbia, signed a political declaration on the establishment of a common state. The Corfu Declaration states that Serbs, Croats and Slovenes are one nation with three names, which will unite to form a kingdom under the leadership of the Karadjordjević Dynasty from Serbia that was on the side of winners at the end of the WW1. Before the proclamation, representatives of the State of Slovenes, Croats and Serbs and of the Kingdom of Serbia agreed at the Geneva Conference in November 1918 to unite the two countries on a federal basis, but later developments led towards centralisation.

Coat of arms of the Kingdom of Serbs, Croats and Slovenes

The coat of arms of the Kingdom of Serbs, Croats and Slovenes was based on the Serbian royal coat of arms with a double-headed eagle, added by Croatian chessboard with twenty fields and Slovenian half-moon, facing upwards, with a single five-pointed star above it. In 1921 the coat of arms was changed to some extent, with three hexagonal stars above the Slovenian half-moon (SI_ZAL_ŠKL/0278, Ivan and Franja Tavčar, Visoko pri Poljanah, vol. 2, a. e. 11).

On 5 January 1921, the Decree on the Protection of Industrial Property was published in the Official Gazette of the Land Government for Slovenia, the Kingdom of Serbs and Croats. The "Administration for the Protection of the Industrial Property" as an independent state office was established. It had headquarters in Belgrade, and was in charge of patents applications. Its jurisdiction covered the entire territory of the Kingdom of Serbs, Croats and Slovenes. It operated under the Ministry of Trade and Industry.

"The roots of the word 'patent' go back to the 13th century, when the term 'Letter patent' was used in England. It referred to a document - a public letter, delivered by a ruler. However, it is generally acknowledged that the system of patent law originated in the Republic of Venice. On 19 March 1474, the Republic of Venice adopted the Patent Law which was the turning point of patent law and laid the foundations for modern patent law" (Cokan, 2009).

In the SCS, the patent procedure was performed by the Administration for the Protection of Industrial Property; procedures followed the same methods that apply to patents today, such as Article 8 of the Official Journal (1921), which states that "patent right is acquired in the way specified herein, according to which its holder may, for a limited period, exclusively use and exploit the new invention in the field of handicraft or industrial production, place or sold objects produced by the invention into circulation. Article 11 of the Official Journal also states that only the inventor, his/her heir or an assignee is entitled to a patent. The patent was valid for 15 years (Article 18) and the invention was published in the Bulletin of the Board for the Protection of Industrial Property. Annex 1 provides an overview of the patent categories and their respective sections as published in the Official Journal. The same classification of subject fields was followed by the National and University Library in cataloguing patent files.

Like other materials, the National and University Library acquired the patent files as part of the legal deposit collected by the national libraries of the former Yugoslavia. Legal deposit can be considered as one of the mechanisms to promote the flow of and access to information and knowledge, and making them accessible in the common country. The notion of legal deposit appeared shortly after the invention of printing - initially, its function was to control printing. By the 17th century, it was known and legalised in most European countries.

.In the territory of today's Slovenia, the 1807 regulation was the first to introduce legal deposit of every printed publication for lyceum and university libraries. Initially, legal deposit was aimed at education, but as society changed, it was to regulate censorship, too.

In general, grey literature has a special place in the slovenika. In 1857, the Ministry of Worship of God and Learning also defined arrangement and storing of such material in libraries: the material was arranged chronologically, placed in boxes or folders and marked (classified) with place and subject headings. This method of processing the material was implemented in the National and University Library until the first cataloguing rules and international standards.

Digitisation at the National at University Library

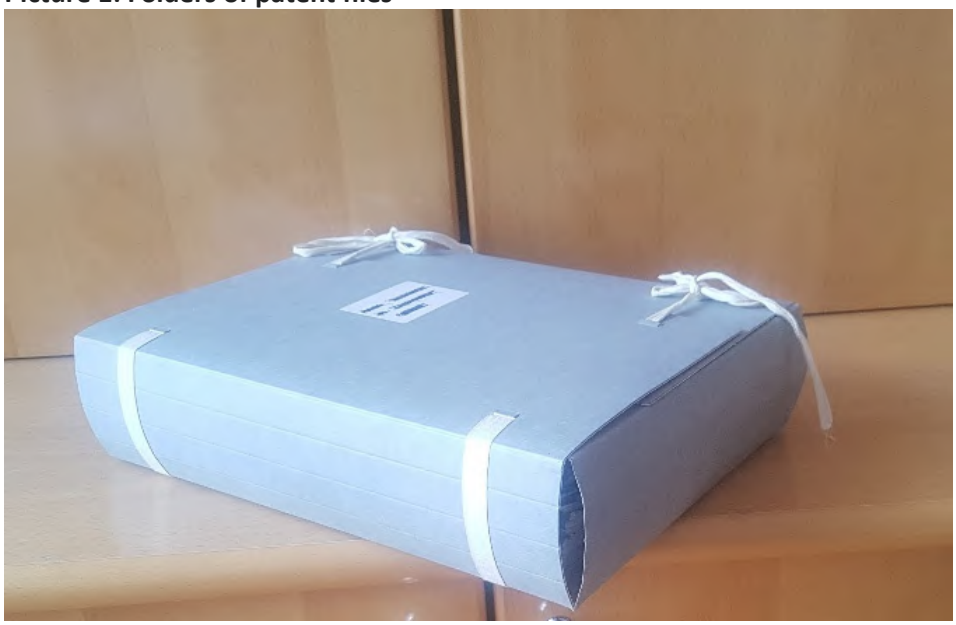
Digitisation at the National and University Library started in 1996. Between 1996 and 2003, several digitisation projects were carried out that were launched on different websites. Based on the findings of modern library and information science, the Digital Library was founded in 2003. The dLib.si portal was developed and launched and made public in November 2005. Between 2006 and 2008, several large-scale digitisation projects were carried involving digitisation of older library material. Digitised material from other libraries was also added to the dLib.si portal. The EOD service - digitisation on demand - has also been fully implemented, allowing users to order digital copies of older books from NUK collections.

In 2007, the most important project to date, "The Digital Library of Slovenia - dLib.si was launched; it was financed by the Norwegian Financial Mechanisms. Over the years, the dLib.si website has been improved several times and supplemented with additional user options.
In 2009 and 2010, the *dLib.si Plus* project was carried out, funded by the Ministry of Higher Education, Science and Technology and the European Development Funds.
During the project, new functions of the dLib.si portal were developed, tailored to the needs of the partner organisations and different user profiles. Possibilities to search for material by using a Thematic Browser, collections and geolocation have also been improved. During this period, the national aggregator of e-contents in the field of culture was also set up; it enables heritage institutions in Slovenia to submit metadata about their digital resources to Europeana, the web portal of European digital libraries (dLib, 2022).

Digitization and Cataloguing of Patent Files

The National and University Library acquired the patent files by means of legal deposit, also of the Kingdom of the SCS. The figures show that this is an impressive collection, comprising 11.000 patent files. This significant number required a thorough consideration - how to arrange and present such a remarkable "finding" to the public. Patent files were neither catalogued nor documented during the past period, due to the shortage of cataloguers. However, our predecessors had organised and protected them in suitable folders kept in depots.

Picture 1: Folders of patent files



Recognising the historical value of the collection of patent files, we decided in 2020 to digitise the collection and make it available to a wider public as a digital collection.

This paper presents the cataloguing and digitisation of the patent files.

Any large collection - in our case of the patent files, first of all requires a good work planning. In 2020, there were only two librarians employed in the Grey Literature Collection (hereafter PKG). Due to the volume of the patent files, a broader plan was required involving other colleagues and the Library's experts covering different domains, such as processing, digitisation and promotion of services as well. From a storeroom located in another area of Ljubljana, the files were transferred to the PKG's working premises. During identification process, the files were sorted according to their thematic topics, and a list of all patent files was made. The data was taken from the Official Gazette of the Kingdom of Serbs, Croats and Slovenes and of the Provincial Government for Slovenia, in which the patent groups were divided by numbers and within subclasses. This also facilitated cataloguing process and allowed processing of larger volumes of material within a single category as seen in the table below (Table 1).

Table 1: Examples of cataloguing and digitisation of patent files:

Patent class / Title in a catalogue record	Catalogued and digitised items
Colorants, lacquers, repaints, adhesives	146
Bleaching, colouring, fabric printing, finish coating	82
Grinding and ironing	12
Small products and smoking devices	28
Elevators	24
Explosion and heat engines, gas compression engines, spring motors and weight engines	296
Explosive materials and manufacture of lighters	6
Electrotechnics	1347
Electrical engineering (electrical lighting)	2
Gas production and gas lighting	33
Iron manufacturing	97
Iron manufacturing (Division 1)	19
Photography	59
Photography and cinema	87
Musical instruments	1
Fuel	170
Shipbuilding and maritime navigation	51
Construction of railways, roads and bridges	141
Construction of railways, roads and bridges (street and road cleaning)	5
Hydraulic motors and wind turbines	57
Alkali and alkaline-earth salts industry, salina solutions	20
Grease industry, candles, soaps, mineral oils	238
Soda and other large chemical industries	150
Clothing industry	1
Clothing industry, except hats and footwear industry	90
Instruments	189
Paper products, paper processing and advertisements	144
Manufacture and treatment of leather	54
Hat-making and production of felt	19
Ice and frost making, heat transfer and food storage	93
Paper production	27
Manufacture of sheet metal, metal tubes, pipe fittings and wire, as well as rolling mills	8
Chemical processes and instruments	49
Chemical processes and instruments (liquid strainers and straining presses)	4
Chemical processes and apparatus, if not classified in special classes	628
Chemical processing of metals	24
Ceramic, stone and cement industries	311
Slaughterhouses	9
Locking products and cash registers	135
Bookbinding	42
Manufacture of wooden parts for carriages, velocipedes and motor vehicles	376
Writing and drawing materials	58
Mechanical treatment of metals (except metal-rolling mills in general)	115
Mills	67
Health care	234
Wood treatment and preservation	157
Footwear	24
Fireplaces and stoves	181
Heating (general)	292
Tools and appliances not specifically indicated	170
Cutting tools, swords and daggers	36
Steam boilers with appliances (excluding fireboxes)	244

Steam engines (with circular and oscillating concrete and rotating cylinders)	1
Steam engines (permanent, locomotives and ship engines)	102
Bakery	106
Beer, brandy, wine, vinegar, yeast	102
Blast-furnace	246
Knitting, lace making, curling, trimmings	31
Agriculture and forestry, horticulture and viticulture, dairy farming, zootechnics	369
Household pots and equipment	275
Purification and preparation of ores, minerals (sludge and excreta treatment)	90
Towing	40
Tow fibres	52
Sugar and starch production	55
Control equipment, registration tools and automated cash registers	40
Lighting installations (excluding installations for electric and gas lighting)	26
Preparations for bottling	137
Making artificial fertiliser	70
Blowers and air ventilators	25
Rescue and fire-fighting equipment	90
Hand and travel devices	12
Horn, ivory, rubber, gutta-percha and other plastics	98
Mining	11
Suction and other pumps for liquids	86
Signalling (excluding railway installations of this type)	41
Sports, games, folk festivities	89
Glass	72
Compression mills	34
Firearms, ammunition, defence	640
Machine parts	351
Drying and throwing machines	44
Bristles	14
Sewing and embroidery	24
Printing, typewriters, stampings	124
Knitting	60
Tobacco	78
Water, water supply and sewerage	28
Exterior building construction	148
Ropemaking craft	12
Aircraft	220
Rail traffic	288
Food	155
TOTAL	**11.339**

The patent files were held in carton folders, which did not fully shield the files from dust particles. However, most of the patent files were preserved to the extent that no restorations were necessary, so we could start processing - cataloguing and inventorying them. Due to the size of the patent files collection and the complexity of the subject matter (classification into sections), we have decided to catalogue the files as collective entries.

Cataloguing of each individual patent file would be time-consuming. According to experience, processing of collective entries is faster, and an unlimited number of items can be processed at the same time. Collective entries also enable more creativity - a title created by a cataloguer can also be changed, if a new title more accurately describes the collection and if better meets users' search requirements. Thus, when to decide for processing in **collective entries.**

Collective entries are appropriate for material that is not linked bibliographically but has a common element - it can be an individual, an institution, an event, a process or time period, a

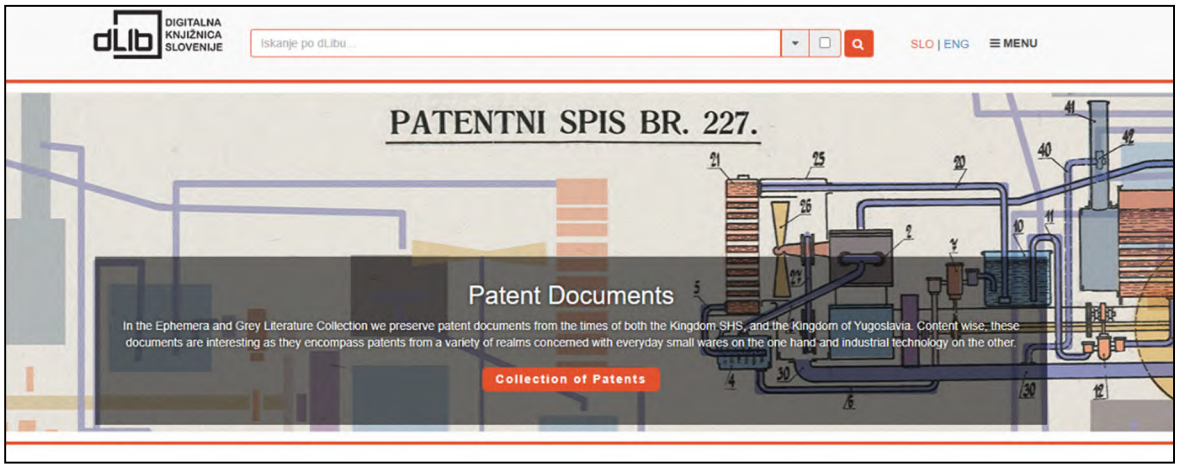
subject, a language, a genre, etc. The main types of material that are appropriate for collective entries of are grey prints and other non-literary material – which according to one or more of the above criteria, constitute a certain entity, either have a common socio-historical significance (for example, in our case, the patent files), and /or written in less commonly used languages, and/or scripts (e.g. Macedonian and Albanian primary school textbooks), and various monographs, whose content can be identified by one or a few subject headings (e.g. popular editions of Bible stories in foreign languages and/or scripts), and by type (children's picture books without text). Collective entries gather material that users usually never search for by title or even by author, but always by subject. A record for a large number of units connected in one or other way, provides a more extensive information than records for individual headings - the latter, because of their large numbers and the lack of links between them, actually lose their value. With collective entries we create our own collection and through a detailed processing of the content make the material retrievable.

Table 2: a comparison and time assessment of two cataloguing techniques

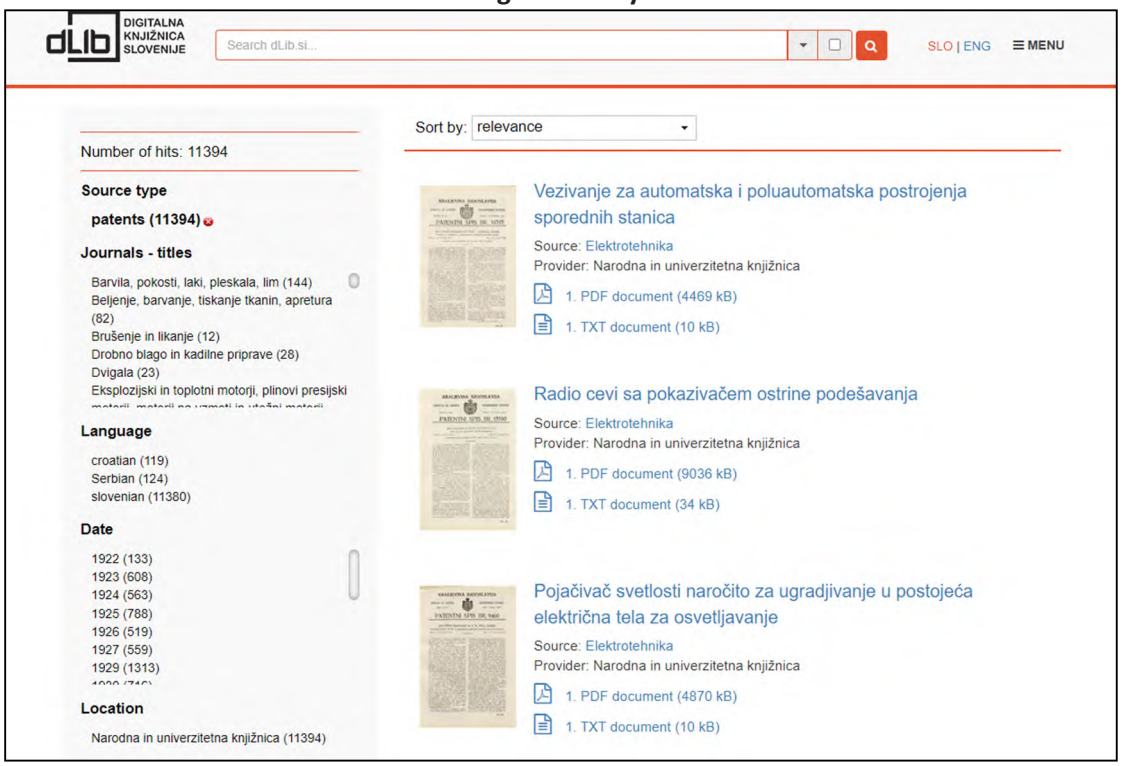
Type of record	Time of processing	Collecting period	Volume	Location	Standards	Title
Individual record	30 min	At once	1	Title, author	**Rules**	**Static**
Collection cataloguing	15 min	A period of time	Unlimited number of objects	content	**Rules + creativity**	**Changing**

During the project, a total of 61,772 pages of patent files were digitised and published on the Digital Library of Slovenia website.

Picture 2: Access to the digital collection of patent files



Picture 3: Individual documents in the Digital Library



Source: dLib, 2022

Costs

The preparation of the material, bibliographic processing, organisation of digitisation, procurement of the procedures, submission and receipt of the material, publication were carried out by the staff of the National and University Library. The digitisation of patent files and scanogram processing were performed by an external contractor.
Estimated costs: EUR 25,000.

Conclusion

Grey literature is published on an occasional basis and cannot be bought as part of the regular distribution network. To acquire as many of this material as possible, the National and University Library has decided to promote it. Grey literature is not traceable through regular book market; therefore, a correct promotion is an important step towards obtaining it. Of course, one might ask what is the purpose of collecting grey literature and ephemera. Nowadays, it is difficult to assess the value of a particular print as we don't know what the needs will be in the future. Its value increases with time, so it is important to capture the "moment" and create specific collections. Bibliographic processing of grey literature and ephemera requires a different approach and a wide knowledge of cataloguing. The best solution was to use collective entries, whose content definition is important, as it enables finding material quickly and easily.
We established that the decision on which material was suitable for processing with collective entries depended on a specific type of library and the size of its collections.
Digitalisation has completely changed the perception of grey literature and ephemera. That is the reason that the National and University Library has decided to digitise them and make as much material as possible available, while respecting copyright. This also makes the ephemera visible and valued differently.

The digitisation of patent files was in its final phase at the end of 2022 (the last 10,000 pages of patent files have been digitised). Most of the documents are currently available and accessible to the public on the Digital Library of Slovenia portal. In 2023, the project will be completed with the promotion and publication of the entire collection in the Digital Library of Slovenia.

Bibliography

Cokan, P. (2009). *Od ideje do patenta.* [Magistrsko delo]. Nova Univerza, Evropska pravna fakulteta.

dLib. from https://www.dlib.si/About.aspx

Kodrič-Dačić, E. (2002). Slovenika. *Knjižnica,* 46(4), 65-85.

Potočnik, V., Velikonja, Š. (2017). Raznovrstnost drobnih tiskov : izkušnja v Narodni in univerzitetni knjižnici. *Šolska knjižnica,* 26(3/4), 5-17.

Pred sto leti je bila razglašena Kraljevina Srbov, Hrvatov in Slovencev (2018). from: https://www.dnevnik.si/1042848618

Uradni list Kraljevina Srbov, Hrvatov in Slovencev deželne vlade za Slovenijo (1921). Ljubljana, 5. januar, letnik III.

Istituto di Scienza e Tecnologie [redacted]
Consiglio Nazionale delle Ricerche

BIBLIOTECA [redacted]
Area della ricerca di [redacted]

ISTI (Institute of Information Science and Technologies "Alessandro Faedo") is the largest institute for Computer Science of the National Research Council [redacted] important results in many Computer Science subdomains. ISTI is organized in the following thematic areas.

[redacted]

Networking Area

[redacted] This Area focuses on designing new algorithms and tools ranging from Smart Cities to Intelligent Transportation Systems and from Ambient [redacted]

Software Area

[redacted] processes and products, according to given requirements and standards and [redacted] challenges, demands, and needs in systems and software development processes drive this thematic area. [redacted]

Knowledge Area

[redacted] the Artificial Intelligence field, investigating applications to digital media and [redacted] fundamental questions about the interaction between people and [redacted] researching, experimenting, and closely connecting research and development of innovative digital infrastructures, information systems, and [redacted] research. [redacted]

[redacted] The High-Performance Computing Area researches information indexing [redacted] machine learning and artificial intelligence, mobility analysis, and semantic [redacted]

Visual Area

[redacted] image understanding, and artificial vision in theoretical and applicative contexts. The goal is achieved by studying and developing models, computer- [redacted] analyzing, and recognizing images and signals and their application in society. [redacted] geometry processing, learning, acquisition, visualization, and physical [redacted]

Flight and Structural Mechanics Area

[redacted] development, and consulting in continuum mechanics, mainly focusing on [redacted] mechanics, Mechanics of masonry structures and Structural health monitoring of historic buildings. The Area is also active in orbital debris [redacted] spacecraft and rocket bodies for civil protection applications, space [redacted] [illegible]

[redacted] Since 2000 is part of the Library and [redacted] Library offers services supporting the [redacted] Research Area of Pisa (approximately [redacted] services to support the information [redacted] The Staff is responsible for the [redacted] curation and enhancement of the [redacted] to either traditional or digital [redacted] resources.

[redacted] Among the Library's principal [redacted] supporting the principles of Open [redacted] Library is involved with national and [redacted] committees and collaborates with [redacted] various partners in grey literature, [redacted] open science, open access, and [redacted] enhancement of bibliographic and [redacted]

S. Giannini, S. Lombardi, A. Molino
[redacted]
56125 Pisa, Italy
[redacted]
Contacts: library@area.pi.cnr.it

Grey resources of the National Library and Archives of Iran: a case study of the Medical Sciences group

Reza Shahrabi Farahani and Somayeh Sadat Hashemi
National Library and Archives of Iran

Abstract
The importance of grey literature as a means of primary, nonconventional communication is accepted in almost every scientific field. Although grey literature covers a wide spectrum of nonconventional documents, both producers and users of grey literature have always considered it to be a primary source of information.
The National Library and Archives of Iran (NLAI) was founded in 1937. The main goal of this organization is collecting, preserving, organizing and disseminating information about printed and non-printed works in Iran, and taking measures and making decisions to guarantee the accuracy, ease and speed of research and study in all fields to promote national culture. In order to achieve these goals, and according to the law, all private and public publishers have to deposit a copy of their publications (book and non -book materials) to the NLAI. There are more than 1.790.000 issues in the grey literature in the NLAI, and over 170.000 of them belong to the Medicine group.
In this study, the amount of grey resources in the field of medicine, nursing, dentistry, veterinary, paramedical and pharmacology in the NLAI is surveyed. How many grey literatures are there in each medical subject's groups? How many of them have been digitized? How many articles are in the field of medicine group? How many of them are conference papers?
Keywords: Medicine, Nursing, Dentistry, Veterinary, Paramedical, Pharmacology, Grey literature, National Library and Archives of Iran

Introduction

Nowadays, along with the increasing growth of information, the development of new information technologies and the emergence of new information sources, one of the most important roles and missions of libraries is to make grey resources available to support research processes[1].

Grey literature is an important source of information due to the uniqueness of the content that gets published. Because commercial publishers are looking to make a profit on the materials they publish, they often overlook niche research areas that serve smaller populations. Grey literature is one way to search for information in emerging or less popular research areas.

Grey literature can sometimes be more current that commercially published information. It does not go through the potentially time-consuming peer-review process undertaken by commercial publishers, and therefore has a quicker turnaround time for dissemination. Other benefits are that grey literature is more likely to report studies that ceased prematurely, as well as innovative pilot projects[2].

GL collections in the National Library and Archives of Iran

The National Library and Archives of Iran (NLAI) is a scientific, research, and service-providing institution established in 1937. According to its legal duties, the NLAI is responsible for acquiring and preserving the following resources through deposit, exchange, donation, and purchase: all book and non-book material that is published in Iran or by Iranians living abroad; all materials in the field of Iranian and Islamic studies, especially about the Islamic Republic of Iran; as well as scientific, technological, and cultural works published in different countries and in different languages.

The main goal of this organization is collecting, preserving, organizing, and disseminating information in the form of printed and non-printed works in Iran, as well as taking measures and making decisions to guarantee the accuracy, ease, and speed of research and study in all fields. In order to achieve these goals, collection management is performed through various means,

such as cataloguing, classifying, documentation, indexing, and abstracting according to international standards. This policy has resulted in fast and comprehensive retrieval of library materials. There are more than 5,100,000 information resources in the NLI, of which more than 1.790.000 titles (about 35% of the total resources) are classified under grey literature[3].

Part of the grey resources available in the NLAI is included to the Medical Sciences group. This collection is about 170360 titles of grey resources, including manuscripts, theses, documents, audio-visual sources, reports, pamphlets, research plans, etc.

Medical Sciences group include Nursing, Medicine, Dentistry, Veterinary, Pharmacology and Paramedical (Laboratory sciences, Radiology, Sonography, Occupational therapy, Physiotherapy, Midwifery, Hygiene, Medical physics, Operating room technician, Nutrition science, Audiologists).

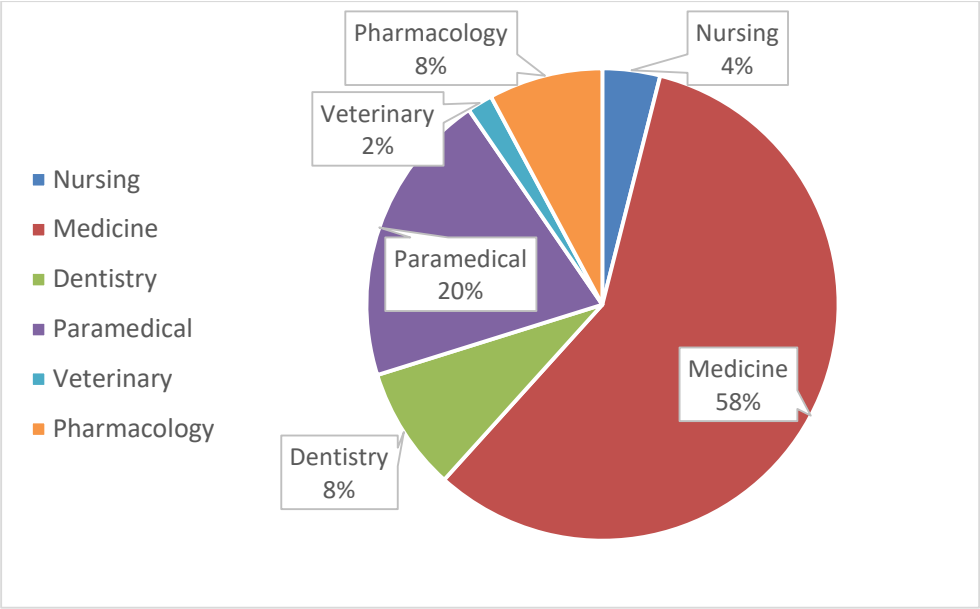


Chart 1. Frequency percentage of medical grey resources in the NLAI

As chart 1 shows 58% of medical grey resources belong to medicine. After that, paramedical with 20%, pharmacology and dentistry each with 8%, nursing with 4% and finally veterinary with 2% have the highest percentage of medical grey resources in the NLAI.

This collection is very valuable both in terms of history and content. For example, the oldest medical manuscript in the NLAI dates back to 724 A.H.

The first page of ***Zakhireye Khwarazmshahi*** (*Zakhīra-i Khwârazmshâhī*) by Zayn al-Din Gorgani

Dissemination of grey resources of the Medical Sciences group in the NLAI

Grey literature is collected and organized in the NLAI through the depository law, purchase, exchange, and donation. The depository law of non-book resources was approved in 1999. According to the law, all governmental and nongovernmental producers of non-book resources have to deliver two copies of their works to the NLAI.

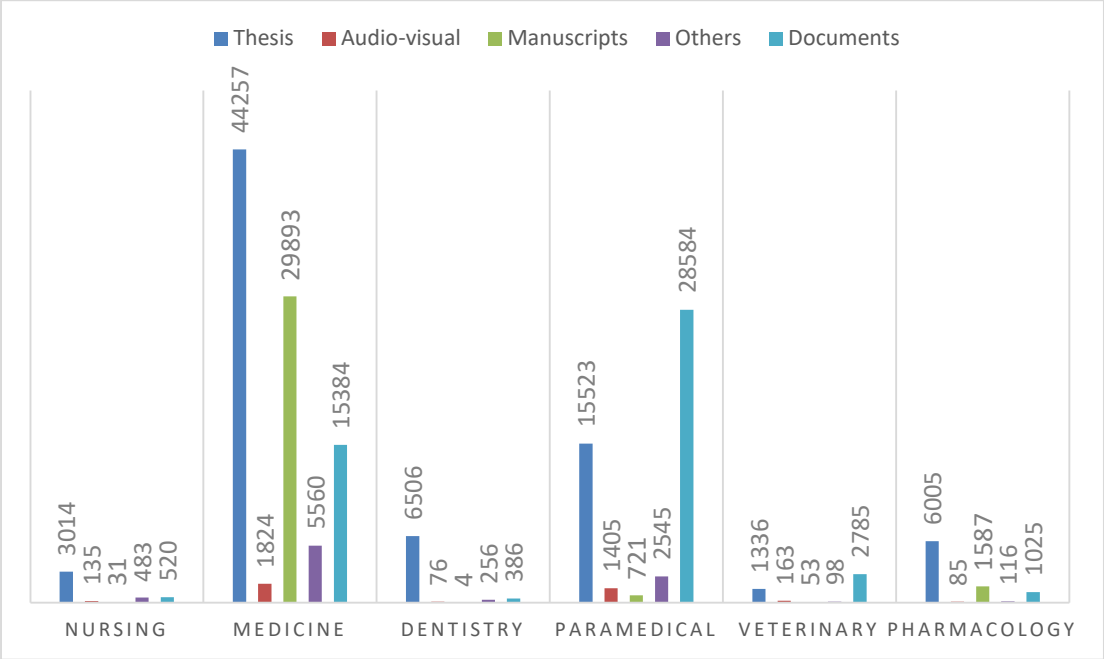


Chart 2. The rate of medical grey resources by subject and type of source

In the NLAI there are 170360 grey resource titles including 76641 theses, 32289 manuscripts, 3688 audio-visuals, 48684 documents and 9058 others such as reports, research plans, pamphlets, etc.

In recent years, digitization project has begun to facilitate users' access to resources. 71805 title of the medical grey resources are digitized of which 91.38% are theses, 6.12% are documents, 1.77% are manuscripts, 0.7% are audio-visuals and 0.03% are other grey medical resources.

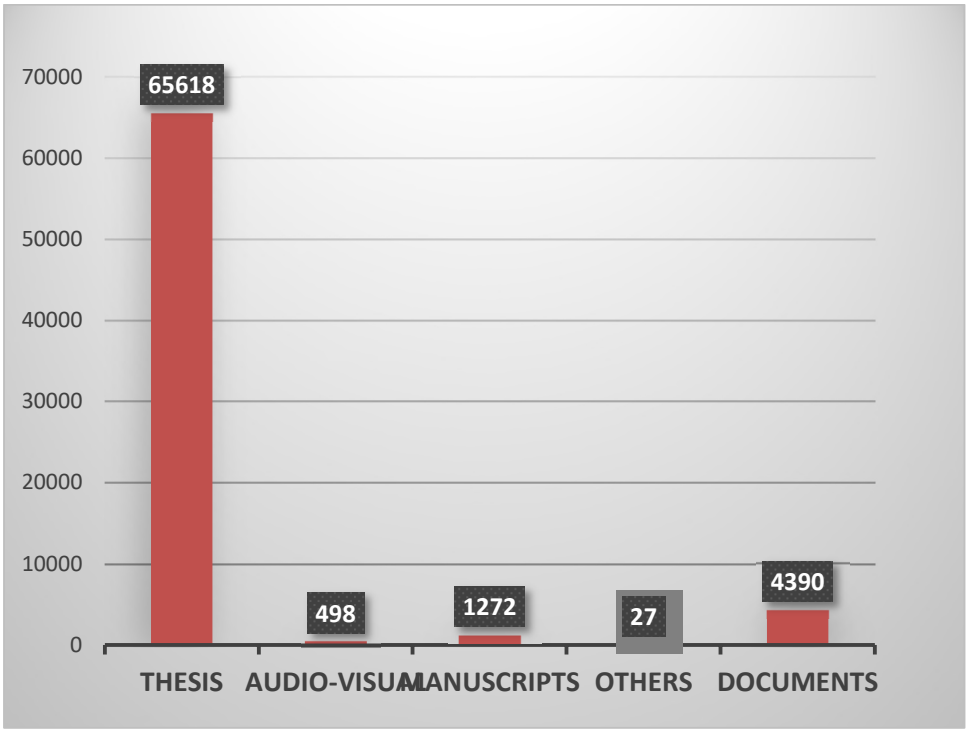
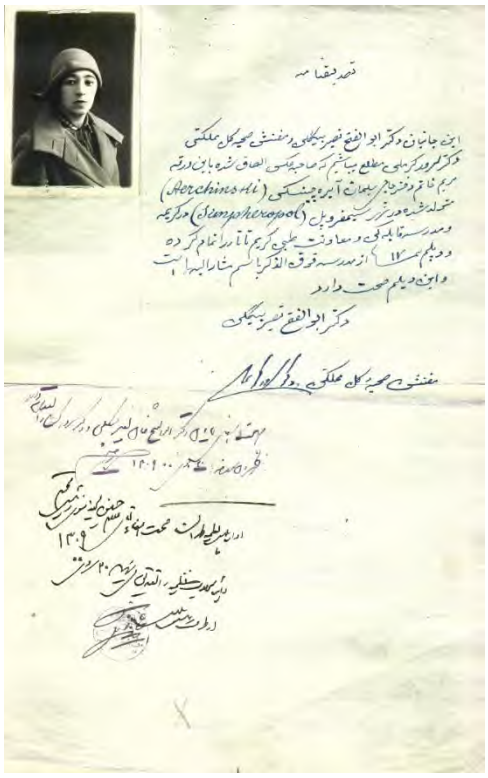
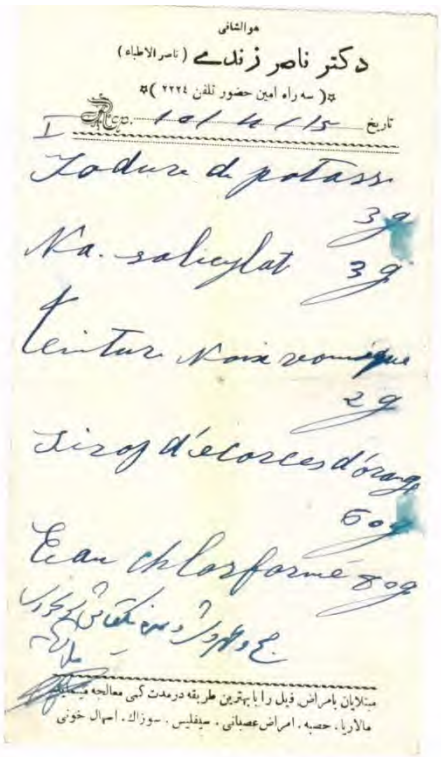


Chart 3. The rate of digitalized medical grey resources



An image of the certificate of midwifery school (1930)



A doctor's prescription (1931)

A picture of the pharmacy and laboratory (1912)

A picture of doctors and nurses in the Qajar period

Subscribed Iranian articles databases

Among the databases that continuously present the electronic form of Persian articles, "Magiran [a]", "Noormags[b]" and "Civilica[c]" have more comprehensive and subjective coverage and are better known to users.

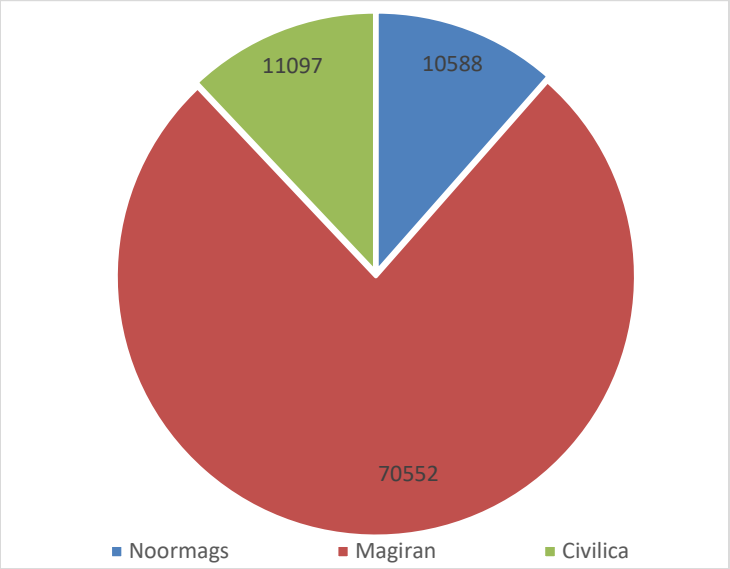


Chart 4. The rate of articles databases in medical grey resources group

As the chart above shows, 92,237 articles in the databases subscribed by the NLAI are related to medical grey resources, of which 70,552 articles (76.48%) are in the Magiran database, 11,097 articles (12.05%) in the Civilica database, and 10,588 articles (11.47%) is in Noormags database. It should be noted that the articles available in the Civilica database include conference articles.

Conclusion

Grey resources are a way to disseminate information, knowledge and expertise. These resources support research processes and provide information that is not found in most conventional resources**.**

There are more than 1,790,000 items of grey resources, including 35% of the total resources, available in the National Library and Archives of Iran. More than 170,000 items (about 10% of the total grey resources) of these resources belong to the medical sciences group. These resources are valuable both historically and informationally. The largest number of medical grey resources are theses, documents and manuscripts. In recent years, the process of digitizing grey medical resources has begun, and by examining the amount of digitized resources, it can be concluded that this process is being done slowly for some of them. Only 40% of the grey resources in the medical group have digitized, although the most digitized type of resource is theses, which are used by a large number of clients.

If the National Library and Archives of Iran intends to help medical researchers to find the resources they need, it should increase the speed of digitization of grey resources related to this group.

[a] . https://www.magiran.com
[b] . https://www.noormags.ir/
[c] . https://civilica.com/

References

[1] Doulani, A., Ansari, N., Mirezati, S.Z. and Saberi, M.K. (2021), "Grey literature management in Iranian medical science libraries", Collection and Curation, Vol. 40 No. 3, pp. 112-121. https://doi.org/10.1108/CC-11-2019-0038

[2] ShahrabiFarahani, R, Hashemi, S (2019), "Grey literature as Valuable Resources in National Library of Iran: from Organizing to Digitization", a presentation given on August 23, 2019 as part of the IFLA Satellite Meeting: Grey Satellite Literature: Scholarly Communication in a Digital Age, sponsored by the Serials and Other Continuing Resources Section and the National Library Section, and published in the IFLA Library.

[3] Hashemi, Somayeh, ShahrabiFarahani, Reza (2021), "How Accessible Is Our Collection? National Library of Iran's Strategies for Grey Literature", The Serials Librarian. https://doi.org/10.1080/0361526X.2020.1847736

Twenty-Fifth International Conference on Grey Literature

'Confronting Climate Change with Trusted Grey Resources'

OBA Congres • November 13-14, 2023

Oosterdokskade, Amsterdam, Netherlands

Day One Draft Conference Program

09:00 REGISTRATION DESK OPENS

09:30 OPENING SESSION

Welcome Address

Brian Bales, International Nuclear Information System, INIS-IAEA, Austria

Keynote Address and Opening Address

To be announced

11:30 SESSION 1 – INCREASING THE VISIBILITY OF TRUSTED GREY RESOURCES

- **Finding, Organizing, Using and Preserving Trusted Grey Literature on Climate Change**
  Toby Green, Coherent Digital, France and Julia Gelfand, University of California, Irvine, United States
- **The Contribution of Grey Literature in Achieving Sustainable Fishing: Case Studies from Cambodia, Indonesia, Philippines and Viet Nam**
  Tamsin Vicary and Maria Kalentsits, Food and Agriculture Organization, FAO of the United Nations, Italy; Daryl L. Superio, Northern Iloilo State University, Philippines
- **The Value of Grey Literature on Climate Change Research in the Philippines: A Bibliometric Analysis of Locally Published Researches**
  Daryl L. Superio, Rizzamila R. Superio, and Rolelyn B. Paredes, Northern Iloilo State University; Erish Estante-Superio, Mary Grace Oliveros, and Joy Geromiano, Southeast Asian Fisheries Development Center; Ariette De Asis, Eileen Estoque, and Edna T. Suganob, Northern Iloilo State University; Martin Floro, Capiz State University; Ethelyn Abaday-Maglangit, Mindanao State University at Naawan, Philippines
- **Realizing the Potential of Grey Literature by Recognizing its Publishers: The PUBGREY Project and the Case of Climate Change**
  Dominic Farace, GreyNet International, Netherlands; Stefania Biagioni and Carlo Carlesi, ISTI-CNR, Italy

14:00 SESSION 2 – DILEMMAS, CHALLENGES, AND ACCURACY OF GREY LITERATURE

- **Collection Development and Maintenance of Accurate Grey Literature on Climate Change: A Case Study of the Law and Policy in the United States**
  Tomas A. Lipinski, University of Wisconsin Milwaukee, United States
- **When Trusted Sources Don't Help Us Address Climate Change: A Grey Dilemma**
  Kathrine A. Henderson, LAC-Group, United States
- **Information, Public Decision-Making, and Climate Change: The Many Roles of Grey Literature**
  Bertrum H. MacDonald et al., Dalhousie University, Canada
- **A Review of French PhD Theses on Sustainable Development**
  Hélène Prost, CNRS – GERiiCO; Joachim Schöpfel, Université de Lille, France

16:00 INTRODUCTION TO CONFERENCE POSTERS AND SPONSOR SHOWCASE

Lightening style presentations of each poster in the main conference hall in advance of the Session on Day Two

Twenty-Fifth International Conference on Grey Literature

'Confronting Climate Change with Trusted Grey Resources'

OBA Congres • November 13-14, 2023

Oosterdokskade, Amsterdam, Netherlands

Day Two Draft Conference Program

09:00 REGISTRATION DESK OPENS

09:30 POSTER SESSION AND SPONSOR SHOWCASE

The Poster Session continues on the morning of Day Two, where the presenters meet with delegates and participants in an informal setting. Those presenting conference posters are eligible for the Poster Prize 2023 that will be awarded during the Closing Session. Posters will be judged by a panel of jurors on their innovative content, relevance to the conference, graphic design, and presentation.

The Call for Posters opens on May 1, 2023 and closes on October 15, 2023

11:00 SESSION 3 – CLIMATE CHANGE AND GREY LITERATURE: THE INIS-IAEA USE CASE

- **Grey literature on climate change studies at the International Nuclear Information System**
  Viet Phuong Nguyen and Brian Paul Bales, Division of Planning, Information and Knowledge Management, Department of Nuclear Energy, International Atomic Energy Agency, Austria
- **Charcoal Burning in Zambia: User Narratives for Successful and Equitable Information Services**
  Brian Paul Bales, Division of Planning, Information and Knowledge Management, Department of Nuclear Energy, International Atomic Energy Agency, Austria
- **Drops in a bucket: contributions of the IAEA Lise Meitner Library to the INIS database**
  Nicolas Rucks, Nuclear Information Section; Division of Planning, Information and Knowledge Management Department of Nuclear Energy; IAEA Lise Meitner Library, Austria

13:30 PROFESSIONAL DEVELOPMENT FORUM

The Twenty-Fifth International Conference on Grey Literature seeks to bring new content to the annual program. GL25 will provide a platform for initiatives with marked potential for grey literature. A Professional Development Forum will accompany the Plenary and Poster sessions to complete this year's conference program. Information professionals are invited to present and discuss special projects and activities in which their organization is currently engaged. https://textrelease.com/gl25forum.html

In order to participate on the Professional Development Forum, submit a working title and brief abstract to conference@textrelease.com. Placement on the conference program also depends on the time allotted presenters. Upon receipt of your submission, you will be contacted with further details.

15:15 CLOSING SESSION

Report by the Conference Moderators, Presentation of the Poster Prize, and Farewell

16:00 POST CONFERENCE TOUR OF THE AMSTERDAM CENTRAL PUBLIC LIBRARY

TextRelease
GL25 Program and Conference Bureau

Javastraat 194-HS, 1095 CP Amsterdam, Netherlands
https://textrelease.com • conference@textrelease.com
Tel.+31-20-331.2420

Twenty-Fifth International Conference on Grey Literature

'Confronting Climate Change with Trusted Grey Resources'

OBA Congres • November 13-14, 2023
Oosterdokskade, Amsterdam, Netherlands

Call for Posters

Title of Poster:	
Author Name(s):	**Phone:**
Organization(s):	**Email:**
Postal Address:	**URL:**
Postal Code – City – Country:	

Guidelines

Persons who seek to present a poster during GL25 are invited to submit an English abstract between 200-250 words. The abstract should describe the project, activity, information product or service. The abstract should likewise include a title, name(s) of the creator(s) and full address information. Abstracts are an important source of information available prior to the conference that is accessible to conference delegates and the international grey literature community.

Due Date for Submission

Timely registration is a guarantee for your placement on the conference program. Abstracts in MSWord should be emailed to conference@textrelease.com on or before **October 15th 2023**. Those submitting poster abstracts will receive verification upon their receipt followed by further guidelines for posters, conference registration, etc.

Poster Presentations

Your **digital** conference poster, its abstract and metadata along with your MP4 pre-recorded poster presentation will be published and openly accessible on the TIB AV-Portal. Your poster (.jpg or.pdf) along with the accompanying MP4 video recording (max. 5 min.) should be submitted to conference@textrelease.com no later than **November 1st 2023**.

Your **physical** conference poster (maximum size A0 (841 x 1189 mm / 33.1 x 46.8 in) will be displayed on glass panels in the conference foyer adjoining the registration desk and entrance to the conference hall. Those presenting can bring their poster with them or ship it in advance to the postal address of the conference bureau as shown below.

Poster Prize 2023

Those presenting conference posters are also eligible for the Poster Prize 2023. The winning poster will be announced during the GL25 Closing Session. Posters will be judged by a panel of jurors based on their innovative content, relevance to the conference topics, graphic design, and accompanying abstract. ***Click to view prior winners!***

Poster Prize 2020	Poster Prize 2021	Poster Prize 2022
		

TextRelease
GL25 Program and Conference Bureau

Javastraat 194-HS, 1095 CP Amsterdam, Netherlands
https://textrelease.com ▪ conference@textrelease.com
Tel.+31-20-331.2420

Twenty-Fifth International Conference on Grey Literature

'Confronting Climate Change with Trusted Grey Resources'

OBA Congres • November 13-14, 2023
Oosterdokskade, Amsterdam, Netherlands

New to the Conference Program

Professional Development Forum

The Twenty-Fifth International Conference on Grey Literature seeks to bring new content to the annual program. GL25 will provide a platform for initiatives with marked potential for grey literature. A Professional Development Forum will accompany the Plenary and Poster sessions in order to complete this year's conference program. Information professionals and practitioners are invited to present and discuss special projects and activities in which their organization is currently engaged.

In order to participate on the Professional Development Forum, submit a working title and brief abstract by October 15, 2023 to conference@textrelease.com. Placement on the conference program also depends on the time allotted presenters. Upon receipt of your submission, you will be contacted with further details.

Related Conference Topics

Climate Change • Sea Level and Coastal Environment • Fresh Water Resources • Fisheries and Aquaculture • Ecosystems • Biodiversity • Agriculture • Crops and Livestock • Food Production and Consumption • Weather Conditions • Natural Disasters • Public Health • Urbanization • Transportation • Greenhouse Gas Emissions • Energy Supply and Use • Solar Radiation • National Security • Social Policies • Climate Risks • Climate Strategies • Prioritizing Change • Climate Research • Sustainable Development • Capacity Building • Climate Science • Social Divide • Cultural Change • Vulnerable Populations • Ethical Issues • Climate Justice • Global Governance • Political Will • **Etcetera**

Conference Dateline 2023

March 31st	April 14th	April 21st	May 1st	September 30th	October 15th	November 13th - 14th
Call for Papers Closes	Program Committee Meeting	Author and Session Notifications	Call for Posters & Forum Proposals Opens	Early Registration Closes	Conference Papers, Forum Abstracts, and Posters Due	GL25 Conference Convenes

International Conference Series on Grey Literature *1992-2023*

TextRelease
GL25 Program and Conference Bureau

Javastraat 194-hs, 1095CP Amterdam, NL
https://textrelease.com
conference@textrelease.com
+31 (0) 20 331.2420

Author Information

Blake, Aleksandra
Aleksandra Blake is a subject specialist in Research Support Services at the Carleton University Library, providing research support in areas of Political Science, International Affairs, Political Economy and European and Russian Studies. Holds a Master of Library and Information Science degree from San Jose State University, and a Bachelor's degree in Political Science from Carleton University. Blake's research interests include information literacy, accessibility of government information, and qualitative research methods.
Email: aleksandra.blake@carleton.ca

Marshall, Andrea
Andrea Marshall is a librarian and feminist researcher who has published work in human computer interaction, information science, feminist approaches to maker culture and STEM education and fan studies. Her current work includes gendered analyses of online Star Wars fanfiction communities and zines as grey literature.
ORCID_ID http://orcid.org/0000-0003-1229-4694
Email: andreariethmarshall@gmail.com

Potočnik, Veronika
Veronika Potočnik: Studies of Librarianship and Information Science; graduation univ. dipl bibl. 2000; Specialist exham for Librarian Specialist (2009) ; Study of basic conduct of mediation process (2013) ; Employment at Faculty of electrical science - library (1999-2004); Emplyoment at National and University Library (2005-) ; Head of Collection of ephemeral print and grey literature (2010-2020) ; Cooperation in Association of librarians in Ljubljana as the member of the board (2011-2015) ; Regular lectures to the students in Librarianship and Information Science in University of Ljubljana about catologuing the ephemeral print (2012 -) ; Cooperation in the organization committee for library conferences ZBDS (2005 and 2007) ; Mentoring to the students in Librarianship and Information Science in University of Ljubljana (2010-2014). Main fields of research (keywords): ephemeral prints, grey literature, librarianship, cultural heritage.
ROR_ID https://ror.org/04tjx1w16
Email: veronika.potocnik@nuk.uni-lj.si

Savić, Dobrica
Dr Dobrica Savić is an information and knowledge management consultant at the IAEA. He holds a Doctorate degree from Middlesex University in London, an MPhil degree in Library and Information Science from Loughborough University, UK, an MA in International Relations from the University of Belgrade, Serbia, as well as a Graduate Diploma in Public Administration, Concordia University, Montreal, Canada. He has extensive experience in the management and operations of web, library, information and knowledge management, as well as records management and archives services across various United Nations agencies, including UNV, UNESCO, World Bank, ICAO, and the IAEA. His main interests are digital transformation, creativity, innovation, and the use of IT for successful information and documentation services.
ROR_ID https://ror.org/00gtfax65
ORCID_ID https://orcid.org/0000-0003-1123-9693
Contact: www.linkedin.com/in/dobricasavic

Shahrabi Farahani, Reza
Reza Shahrabi is currently in charge of Information Services Department of the National Library of Iran. Prior to this, he served as Director of Information Technology as well as Director of Digital Resources Department. As senior digital library expert, he has gathered valuable experience in several large-scale projects. He has Implemented processes with comprehensive library management system. He has been working in the National Library and Archives of Iran (www.nlai.ir) for the past 15 years in different positions.
Email: shahrabi@gmail.com
ORCID_ID https://orcid.org/0000-0002-6649-1610

Hashemi, Somayeh Sadat
Somayeh Hashemi is currently in charge of Information Services Department of the National Library of Iran. As senior reference librarian she has gathered valuable experience in several large-scale projects. She has implemented telegram messenger as a new virtual reference services. She has been working in the National Library and Archives of Iran for the past 18 years in different positions.
ORCID_ID http://orcid.org/0000-0002-7728-1600

Šímová, Tereza
Tereza is a PhD candidate at the Faculty of Economics and Management, Czech University of Life Science, where she is also a teaching librarian. In her research she focus on bibliometric analysis to map the research domains. She is also an Open Access Specialist at the Institute of Philosophy of the Czech Academy of Sciences. In her free time, she popularizes topics related to Open Science on Tiktok and Instagram. Tereza is on the board of the Czech Association of Doctoral Researchers, member of Information Education and Information Literacy Working Group, and member of Working group for scientific data management in the Czech Republic.
URL https://terezasimova.com/
ORCID_ID https://orcid.org/0000-0002-1774-4335

Notes for Contributors

Non-Exclusive Rights Agreement

- I/We (the Author/s) hereby provide TextRelease (the Publisher) non-exclusive rights in print, digital, and electronic formats of the manuscript. In so doing,
- I/We allow TextRelease to act on my/our behalf to publish and distribute said work in whole or part provided all republications bear notice of its initial publication.
- I/We hereby state that this manuscript, including any tables, diagrams, or photographs does not infringe existing copyright agreements; and, thus indemnifies TextRelease against any such breach.
- I/We confer these rights without monetary compensation and with the understanding that TextRelease acts on behalf of the author/s.

Submission Requirements

Manuscripts should not exceed 25 double-spaced typed pages. The size of the page can be either A-4 or 8½x11 inches. Provide the title, author(s) and affiliation(s) followed by your abstract, suggested keywords, and a brief biographical note.

A printout or PDF of the full text of your manuscript should be forwarded to the office of TextRelease. A corresponding MS Word file should either accompany the printed copy or be sent as an attachment by email.

REFERENCE GUIDELINES

General

i. All manuscripts should contain references
ii. Standardization should be maintained among the references provided
iii. The more complete and accurate a reference, the more guarantee of an article's content and subsequent review.

Specific

iv. Endnotes are preferred and should be numbered
v. Hyperlinks need the accompanying name of resource; a simple URL is not acceptable
vi. If the citation is to a corporate author, the acronym takes precedence
vii. If the document type is known, it should be stated at the close of a citation.
viii. If a citation is revised and refers to an edited and/or abridged work, the original source should also be mentioned.

Examples

Youngen, G.W. (1998), Citation patterns to traditional and electronic preprints in the published literature. - In: College & Research Libraries, 59 (5) Sep 1998, pp. 448-456. - ISSN 0010-0870

Crowe, J., G. Hodge, and D. Redmond (2010), Grey Literature Repositories: Tools for NGOs involved in public health activities in developing countries. – In: Grey Literature in Library and Information Studies, Chapter 13, pp. 199-214. – ISBN 978-3-598-11793-0

DCMI, Dublin Core Metadata Initiative Home Page http://purl.oclc.org/metadata/dublin_core/

Review Process

The Journal Editor first reviews each manuscript submitted. If the content is suited for publication and the submission requirements and guidelines complete, then the manuscript is sent to one or more Associate Editors for further review and comment. If the manuscript was previously published and there is no copyright infringement, then the Journal Editor could direct the manuscript straight away to the Technical Editor.

Journal Publication and Article Deposit

Once the journal article has completed the review process, it is scheduled for publication in The Grey Journal. If the Author indicated on the signed Rights Agreement that a preprint of the article be made available in GreyNet's Archive, then browsing and document delivery are immediately provided. Otherwise, this functionality is only available after the article's formal publication in the journal.

Contents

'A Shift in Focus on Grey Literature'