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Leveraging Diversity in Grey Literature

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Foreword

LEVERAGING DIVERSITY IN GREY LITERATURE

Scientific information, much of which is published as grey literature, can play a pivotal role in the search for solutions to global problems. Diversity invigorates problem solving and science benefits from a community that approaches problems in a variety of creative ways. Despite their diversity, the hundreds of authors and researchers across the globe involved in grey literature can be seen as part of the same community contributing to the scientific enterprise in valuable ways.

Diversity speaks directly to the effectiveness of information professionals working together as a team and is an essential ingredient for innovation. People from different backgrounds bring with them new information. If you want to build teams, communities, and organizations capable of innovating, you need diversity. It enhances creativity and encourages the search for new information and nuanced perspectives, leading to better decision making and problem solving. Diversity can improve the bottom line of companies as well as organizations, because exposure to it changes the way one thinks. A diverse community of researchers anticipate differences and understand that they will have to work harder to achieve consensus, but their diligence can lead to better outcomes. Authors in the GL-Conference Series come from different societal cultures and geographic regions; however in their research, they are united by the culture of science, which is without borders. This diverse community has over the past two decades applied research methods and offered explanations that have helped this field of information through blind spots, shedding light on what were once seen only as inherent problems. Their evidence based approaches have opened up new areas of research in grey literature. Where in the early '90s the focus was primarily on the demand side of grey literature, equal emphasis today is directed to its supply side. Speed and scale of communication are significant factors that contribute to diversity. The proliferation of technologies has allowed for an exponential growth of knowledge in information science just as in other sciences. However, the diverseness of grey literature resources has become a major challenge to its exploitation. The availability of systems for collecting and aggregating data and its semantic analysis has now become a priority.

GL18 focusses on evidence and seeks to further raise awareness among the wider public to the strength of grey literature based on a shared commitment by a diverse community of authors and researchers responsible for its production, open access, and digital preservation.

Dominic Farace — *Amsterdam,*

GREYNET INTERNATIONAL — FEBRUARY 2017

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Table of Contents

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Meg is Executive Director of the Federal Library and Information Network (FEDLINK), Library of Congress. She is the former Library Director of the National Defense University Libraries in Washington, D.C. and Norfolk, Virginia. Previously, she was the Europe Region Librarian for the U.S. Army and oversaw 26 libraries in four different countries. She has also worked as a librarian at Vanderbilt University's Walker Management Library and Kutztown University of Pennsylvania's Rohrbach Library. Much of her career has focused on how technology can assist the researcher through digital library tools, using digital materials. Additionally, Meg taught "Introduction to Poetry Writing" at the University of Virginia while a graduate student there. She holds a Masters in Library and Information Science, a Masters in Fine Arts in poetry writing, and a Bachelors in American Literature. She is currently pursuing a Doctorate of Liberal Studies from Georgetown University. Her dissertation will explore fragmented twenty-first century literature.

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Daniella is Special Projects Librarian at The New York Academy of Medicine. She received her MSLS from Catholic University of America, in Washington, DC, in 2005 while working on the AgeLine Database at AARP. She has over 20 years of experience in a variety of library settings, including academic, non-profit and museum. She has been involved with collecting, evaluating, and cataloging grey literature since 2006, first at AARP and then at the United States Department of Transportation. For the past 4 years she has been managing the Grey Literature Report in Public Health, produced by NYAM.

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Davis is Community Engagement Manager at the Metropolitan New York Library Council, where she helps make METRO a fun and friendly place to learn and try new things. Her work primarily focuses on bringing the library and tech communities together to find innovative ways to bring solid knowledge-building skills to the wider NYC citizenry. Davis received her Master of Science in Information and Library Science from Pratt Institute in 2013, a Master of Music from Western Michigan University in 2005, and a Bachelor of Music from The University of Wisconsin at Madison in 2003. Davis is super proud to have received SLA's Rising Star Award, and she is honored to have been included in Library Journal's Movers & Shakers Class of 2012.

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Collecting, organizing, and preserving diverse publication sources for the good of one community archive: Legal challenges and recommendations

Andrea Copeland, Indiana University at Indianapolis
Tomas Lipinski, University of Wisconsin at Milwaukee
Kyle Jones, Indiana University at Indianapolis, USA

Over the past several years, the bicycle movement in Indianapolis, Indiana, has gained a great deal of momentum. Bicycle lanes and trails have been designed and implemented to support commuting to work, rental stations have been installed in strategic locations across the city, and a bike hub has been built providing showers, lockers, and repair services. The 2007-2015 mayoral administration was a strong advocate for the movement, and the city has received over $60 million in private donations and federal grants to build the Indianapolis Cultural Trail, which is at the heart of the improved pedestrian and cycling infrastructure. The city has also developed 74 miles of on-street bike lanes within the metropolitan area. Representatives from other national and international municipalities have visited the city to study Indianapolis's cycling infrastructure. These changes have brought about economic growth, improvement to the general air quality, and personal health gains.[1]

Despite the extensive investment in fostering a culture of cycling, there is not yet a significant formal mechanism for documenting or analyzing the effects of these changes. A future goal of this research is to develop a community archive development processes/prototype application that will provide such a tool. Indianapolis is an ideal city for the system design as cycling infrastructure in Indianapolis is emerging and developing rapidly. continuum of cycling infrastructure development.

The prototype (archive and mobile application) will be called CHIME: Citizen-data Harvest in Motion–Everywhere. CHIME will be designed to combine the data collected in the form of the various community voices expressed in a diversity of formats (images, video, textual narratives, and geographical information), along with overlays of geographic data to provide context.

The cycling experience in Indianapolis is an ideal community issue for which to develop these processes, as the geographic and mobile nature of the phenomenon will expose the challenges of capturing both place-bound and digital history as it is happening. Most information regarding cycling is written on the landscape or in a digital form. Much like changes to the physical landscape of a city, current digital information can be difficult to grasp all at once as it is widely distributed. In this way, cycling produces both tangible and intangible cultural artifacts and provides a venue for exploring the preservation and sharing of both types of artifacts.

The perception that communities are a harmonious whole is seldom accurate. Tensions of varying degrees between different groups invariably exist. In some cases, the group divisions are based on obvious distinctions such as religious preferences, political beliefs, income, and ethnicity. In the case of the bicycle movement, these differences serve as a backdrop to the common dilemma of how to best use shared public space. In the case of Indianapolis, not all residents are supportive of the movement. Most of the dissent manifests in community news forums and in broadcast and print media. Motorists have been vocal about not wanting to share the roads. Residents in predominantly African-American neighborhoods are upset that the city chose to equip roadways in their communities with bike lanes without asking for their input.[2]

[1] Sustainable Communities. (2013). Indianapolis Cultural Trail: Improving livability in Central Indiana. www.sustainablecommunities.gov/sites/sustainablecommunities.gov/files/docs/2013_5_23_indianapolis_case_study.pdf

[2] Brown, A. (2012). Indy's bike lanes blasted by black community; Question why, the cost and the need. PraiseIndy.com. http://tinyurl.com/m6ugk66

Humanities-based practices of public scholarship and civic engagement are particularly important to the design of the prototype. Scholars in fields such as cultural studies, public history, digital humanities, and museum studies have long recognized that archives, exhibitions, and official histories have privileged the perspectives and experiences of people and institutions in positions of power. While city records and newspaper reports (among other sources) are already documenting the ways in which policy makers and commercial entities are engaging with the changes in the city's cycling infrastructure, it is harder to collect, preserve, and make known the experiences of individual cyclists, drivers, and pedestrians. For example, the public discourse taking place in the comments sections of blogs and online newspaper articles, as well as the personal snapshots and reflections published via social media platforms, are of a troublingly ephemeral nature. If we are to document a community's experience, we must look beyond official accounts and acknowledge the ways in which individuals' daily lives shape and are shaped by cycling infrastructure. Capturing a diverse array of perspectives is just one part of the task.

Even more challenging than incorporating multiple perspectives is the task of capturing individuals' experiences of space while they inhabit it. Life events are merged with objects, buildings, and places; one is not realized independent of the other.[3] To better document events that occur within a community space, the corresponding human experience needs to be captured simultaneously. This is a challenging proposition, especially when one considers the growing influence of tools and interaction in the digital realm on the human narrative.

Documentation and dialogue captured or facilitated with digital tools and platforms is our collective social history and resides mainly in the hands of corporate entities like Facebook, which could cease to exist tomorrow or choose to shut down platforms without notice. Further, corporations have no legal obligation to preserve our collective social heritage and have often demonstrated a lack of concern for users and user-created content.[4] For the most part, heritage organizations are not involved in the process of collecting and preserving born digital information generated in this everyday digital context from individuals or communities of individuals. This paper will explore the legal and ethical issues involved with the capture of the kinds of data (see Table 1 for list of data types) described in support of building the prototype archives.

Table 1. Community Archive (case study CHIME, Indianapolis, IN): Legal Issues

Document	***Copyright and Licensing Other Issues***	***Privacy***	***Zoning and Related Regulation***	***Public Domain***
Photographs – personal, community events Videos (e.g. GoPro)	Coprightability: pictorial works. *Bridgeman Art Library, Ltd. v. Corel Corp.*, 36 F.Supp.2d 191 (S.D.N.Y. 1999). Thin Copyright and fair use. Ownership: Work made for hire.	Intrusion: intrusion and appropriation.		
Photographs shared via social media platforms	CMI (17 U.S.C. § 1202): *Cable v. Agence France Presse*, 728 F.Supp.2d 977 (N.D.Ill. 2010) ("Cable created [] works ... reproduced … and attributed [] as follows 'Photos ©2009 wayne cable, selfmadephoto.com.' …." Id. at 978. "[U]nder the plain language of the statute [] plaintiff's name and hotlink fall within the scope of 'copyright management information.'" Id. at 981. Ownership and use: End User License Agreement. See below.	Privacy: intrusion and appropriation.		
Videos shared via Social Media	Ownership and Use: End User License Agreement. Some social media websites claim either ownership or non-exclusive rights to use content posted photographs so posted. See, Lipinski and Copeland (2013).	Privacy: intrusion and appropriation.		

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[3] Halbwachs, M. Space and the collective memory. In *The Collective Memory*; Harper & Row: New York, NY, 1950

[4] http://kernelmag.dailydot.com/issue-sections/features-issue-sections/16616/archive-team-saving-the-web/

Document	***Copyright and Licensing Other Issues***	***Privacy***	***Zoning and Related Regulation***	***Public Domain***
Online News Articles (e.g. Indy Star)	Thin copyright and fair use. Literary works. See, *Los Angeles Times v. Free Republic*, 29 Media L. Rep. 1028 (C.D. Cal. 2000) (online discussion board use of complete articles not fair use). Ownership: Work made for hire. Source of clippings: End User License Agreement?			
Comments contributed at the end of the articles (often document the conflict generated by motorists not wanting to share the road)	Thin copyright and fair use of literary works. Ownership and Use: End User License Agreement. Defamatory of otherwise tortious: application of 47 U.S.C. § 230?			
Newsletters of these advocacy groups	Fair use: Congress has recognized that "the scope of the fair use doctrine should be considerably narrower in the case of newsletters than in that of either mass-circulation periodicals or scientific journals….newsletters are particularly vulnerable to mass photocopying, and ... most newsletters have fairly modest circulations." H.R. No. 94–1476 at 73 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5687.			
Social media and websites cycling advocacy groups Include government documents: city reports, crime (bike theft) and accident data, routes, maps, city planning documents, minutes from the Mayors Advisory Council on Cycling	States and local governments are free to claim copyright protection subject to the standards of the copyright law. For example, the crime data are not protected by copyright as purely factual content unless selected, coordinated or arranged in some creative manner as a compilation copyright. Routes/Maps: The question would be whether "the overall manner in which [the plaintiff] selected, coordinated, and arranged the expressive elements in its map, including color, to depict the map's factual content." *Streetwise Maps, Inc. v. Vandam, Inc.*, 159 F.3d 739, 748 (2d Cir. 1998).			Works of the federal government are in the public domain. 17 U.S.C. § 105. Public policy dictates that the documentary building blocks of law and government; its cases, statutes, regulations, etc. are in the public domain: "It is well settled that judicial opinions and statutes are in the public domain and are not subject to copyright." *Veeck v. Southern Bldg. Code Congress Intern. Inc.*, 241 F.3d 398, 412 (5th Cir. 2001).
TV news Radio shows discussing cycling	Thin copyright and fair use of audiovisual works. "For the foregoing reasons, TVEyes' archiving function qualifies as fair use, and its downloading and Date–Time search functions do not qualify as fair use. Its e-mailing feature can qualify as fair use, but only if TVEyes develops and implements adequate protective measures." *Fox News Network, LLC TVEyes, Inc.*, 2015 WL 5025274, *10 (S.D. N.Y.). *Maxtone-Graham v. Burtchaell*, 803 F.2d 1253 (2d Cir. 1986), cert. denied 481 U.S. 1059 (1987). Ownership: Work made for hire.			
Comments on TV news clips posted to station website	See above, same analysis as commentary on news articles.			

Document	***Copyright and Licensing Other Issues***	***Privacy***	***Zoning and Related Regulation***	***Public Domain***
Blogs* Example: Neil Kelty blog of his commuting by bike death in a traffic accident with a school bus: https://medium.com/urban-cycling/a-novice-cycles-to-work-ad5df66c937#.jvyajrtwz	See above regarding specific content and circumstances: photographs, audiovisual works and commentary, etc. Blog posts may not be not be protected by its state shield laws as are traditional news reporters and publishers: "By contrast, defendant's comments on an online message board would resemble a ***pamphlet*** full of ***unfiltered, unscreened letters*** to the editor submitted for publication—or, in modern-day terms, ***unedited, unscreened comments posted by readers*** on NJ.com." *Too Much Media, LLC v. Hale*, 993 A.2d 845, 847 (N.J. Superior Court 2010), affirmed 20 A.3d 364, 379 (N.J. 2011).			
Ghost Bikes These bikes mark where someone was killed, see http://ghostbikes.org				Roadways, sidewalks, bike paths and other public right of ways are government property. Regulation is subject to constitutional requirements: regulation should be content neutral or strict scrutiny analysis applies. Content neutral, reasonable time, place and manner restrictions must be viewpoint neutral.
Street Art decorating city pedestrian and cycling path ways: http://www.indianatrails.com/content/trails-and-public-art	Fair use of pictorial work: *Seltzer v. Green Day, Inc.*, 725 F.3d 1170, 1173 (9th Cir. 2013): "Staub photographed a brick wall at the corner of Sunset Boulevard and Gardner Avenue in Los Angeles which was covered in graffiti and posters—including a weathered and torn copy of *Scream Icon.*" Id.			
Databases – Routes, trails, uploaded, MapMyRide and Garmin – using GPS technology.				*County of Santa Clara v. Superior Court*, 89 Cal.Rptr.3d 374, 3934 (Cal. App. Dist. 6, 2009): "Matching the GIS Basemap with orthophotographs, which are in the public domain…"
Community Cycling events – Tweed Ride, NITE Ride (etc).	See above regarding specific content and circumstances: photographs, interviews and commentary and interviews, audiovisual works, etc.			See above regarding specific content and circumstances: route map and geospatial information.

Ethical Issues Explored

CHIME has positive aims. Through data and technology, it seeks to create a socio-technical infrastructure that can speak to the experiences and interests of a broad array of stakeholders. In so doing, it will become an empowering technology that, among other things, will give individuals and groups the opportunity to have a voice in the way their city is molded and captured in history. Regardless of the good intentions, there are a number of important ethical considerations to address.

First, there is a question of whether or not the burden of documentation is justifiable given possible invasions of privacy. The public will be subject to archived documentation in perpetuity. And while documentation born from public places and spaces seems defensible from a legal standpoint, it may be that CHIME administrators have an ethical duty to provide for fair information practices should members of the public feel that their inclusion in the archive is a personal invasion of privacy.

Second, it is unclear at this point who will receive the benefits of CHIME's intended goods. On the face of it, CHIME's administrators position themselves as neutral entities, as system designers and researchers simply providing information resources for its users. But all data is "cooked" in some way, and the privileged position of technological designers always needs to be interrogated for embedded values and interests that may disenfranchise other parties.

Third, the data aggregated for and analyzed as a result of CHIME holds the potential to create significant value and create tensions around data ownership. Actors with the right technical skill set or in a position of power (e.g., city and university administrators) may claim that the datasets and resulting algorithms are a new product over which they can claim ownership and subsequently monetize. In contrast, the public has an equally powerful ownership claim on the grounds that such information products would not exist were it not for their active or passive participation in the project to begin with.

Finally, there is an open problem concerning who is or should be held responsible for CHIME's maintenance. Building an open data and community-based infrastructure like CHIME aims to do requires significant financial expenditures, and the labor involved will be highly specialized. While the project is oriented towards community needs, it would be unfair to place burden of its maintenance and future development on public volunteers.

In what follows, we briefly consider each of these four thematic ethical issues. None of the discussion definitively answers or resolves the problems; however, it lays an important foundation on which to examine how CHIME may bring to the fore moral problems related to rights, responsibilities, and benefits and burdens.

The Burdens of Documentation

CHIME seeks to aggregate a wide variety of data and information as part of a larger initiative to document and analyze Indianapolis' cycling infrastructure. The legal analysis of data sources suggests that, in most cases, information observed in public places and extracted from online sources does not trigger any specific individual right to privacy. For instance, photographs taken of cyclists on public roads or trails do not intrude in private spheres of life. Regardless of whether or not there exists a legal protection against intrusion, the CHIME project's documentation may burden members of the public. Three specific problems exist with respect to documentation: 1) the perpetuity of that which is documented, 2) the decontextualization of documentation, and 3) the ways in which documentation subjects can (or cannot) express agency.

Only through a longitudinal perspective will CHIME's primarily goals be met. That is, CHIME aims to document the changes in cycling landscape over time, which requires the ongoing documentation of cycling experiences expressed in data and information. It is imaginable that subjects caught in the data net CHIME administrators throw onto the public would have valid arguments for not wanting their cycling life archived in perpetuity, even though they might night have legal standing. Cycling can be a social experience shared between family members, friends, and acquaintances. And it is entirely plausible that individuals associating with each other on a public cycling path believe that their ride is ephemeral, that it leaves no lasting history. Now, the same individuals may willingly submit themselves to surveillant gaze of the city for the purposes of participating in a "safe cycling" campaign where police have access to trail-based cameras. But those individuals might think differently about having their association captured in a publicly available database.

Consider, also, information mined from a community Facebook group of cyclists. In this space, the members freely share their routes, experiences, and opinions on the state of cycling in their neighborhood. The information is contextualized, there are norms of reciprocity, and members develop trustworthy friendships with one another, bonding over the cycling experience and in so doing create a willingness to exchange thoughts and ideas.

Decontextualizing the information the members share and depositing it in a public archive for analysis and wider consumption is a prima facie threat to contextual integrity.[5] In other words, the migration of the information into another context immediately raises privacy issues–in the social but not the legal sense–because normative expectations about how that information should be accessed, used, and disseminated are no longer respected.

It is not to CHIME's advantage to create mechanisms by which particular sets of public information (e.g., videos capturing public individuals) can be suppressed or expunged from the archive. The more data the CHIME administrators and researchers have at their disposal, the argument goes, the wider and greater the insights they can distill from the archive. All that aside, harms the could accrue from perpetual documentation and decontextualization of public information may be manageable through fair information practices built into CHIME's information policies and technological infrastructure. Such practices may include the ability for an individual to express a privacy harm, prove her identity in relationship to CHIME's documentation, and request suppression of her identity or that the documentation be removed from the archive. By following this approach, CHIME would respect the interests of concerned individual's included in its archive without necessarily devaluing analytic findings.

Balance of Benefits

CHIME is, first and foremost, a research endeavor. Its creators aim to develop tools and insights that push the boundaries of knowledge. This requires the researchers to develop and disseminate their research in journal articles and presentations. Thus, the initial benefits of the project will redound to CHIME researchers who will reap professional and scholarly goods. But what about the data subjects who inform the project with their social media? Or the partners in city administration who provide insights into the cycling infrastructure? Or the general public who are captured in videos of cycling routes? Given that the scope of participants in the CHIME project is large, CHIME must carefully consider if its benefits will be equitably distributed.

The principle of beneficence in research maintains that the welfare of the research participant should be a guiding goal; however, it is challenging for researchers to claim who will benefit from their research and when those benefits will accrue. These types of moral calculations are always fraught with unknown variables. Regardless, researchers are burdened with conceptually mapping how their interventions or programs will create foreseeable benefits in the short and longterm and for whom.

CHIME aims to create a community platform of data and information for the public to access. While CHIME require users of the data to create accounts and agree to a terms of service, researchers will not be able to know exactly how the public will use the data and to what ends–good or bad. On one hand, it could be that a CHIME user analyzes the data to peddle erroneous information to heavily-biked areas about future city planning projects. Surely, this would be a negative use of the data in that the data is not being used to promote positive benefits in the community. On the other hand, community artists might use the data to develop place-based art to beautify heavily-biked areas and engage populated spaces. Many in the public would agree that this is a good use of the data. In both cases, however, these uses would be unknowable to CHIME's creators.

To develop equitable benefits, CHIME must strategically develop objectives that map to specific research participant groups. It is not enough to release the data into the wild via the community and hope for benefits to result and outweigh potential harms. To these ends, CHIME can develop community engagement strategies for, among others, bicyclist advocacy groups, city administrators, neighborhood businesses, and the like to share how to use CHIME and be specific about how CHIME might benefit them.

[5] Nissenbaum, H. (2010) *Privacy in Context: Technology, Policy, and the Integrity of Social Life*. Palo Alto, CA: Stanford University Press.

Data Ownership

Users of social media, like Facebook and Twitter, agree to end user license agreements (EULAs) or terms of service (TOS) upon registering for their accounts. EULAs and TOS legally bind users to a contract dictating, among other things, the rights the service provider and the use retain related to the data and information (broadly defined as content) created while interacting with the social media site. Yet, it is not clear if CHIME's action, such as aggregating social media into its databases, obligates researchers to respect TOS and EULAs users previously agreed to.

Facebook grants itself the right to use a user's data in its TOS. The company writes that its users give them "a non-exclusive, transferable, sub-licensable, royalty-free, worldwide license to use any IP content that [users] post on or in connection with Facebook" (https://www.facebook.com/terms). Moreover, users who post information publicly without using privacy restrictions "means that [users] are allowing everyone, including people off of Facebook, to access and use that information, and to associate it with [the content creator]." So, Facebook is at liberty to disclose user data and, at the same time, places no restrictions on third parties, such as CHIME, to access and manipulate user data, as long as it is public.

Twitter's TOS provides similar rights to itself, in that it retains the ability to distribute user data to third parties. For instance, Twitter can make user content available through APIs, business platforms, and by other technical routes, as long as individuals who gain access to user content agree to the terms and conditions governing content use. Where CHIME is concerned, this TOS provides less freedom to scrape publicly available sites–like Facebook groups or accounts–by requiring researchers to use Twitter approved methods to aggregate its content. Moreover, CHIME cannot distribute Twitter content to other parties via its own API: it can only distribute tweet or user IDs. It can, however, provide downloadable spreadsheets or PDFs of user content with some restrictions (https://dev.twitter.com/overview/terms/policy.html).

The Facebook and Twitter cases represent the complexity CHIME faces in not only accessing user data but also distributing it via its community platform. But, more importantly it shines light on the complicated matter of data ownership. Twitter explicitly states that users own their content, yet empowers its business partners to make use of user content for remunerative purposes without active user consent. Similarly research projects, like CHIME, can make derivative datasets of user data, again, without informing users. This is a loose and fast definition of 'data ownership."

While CHIME is not in a position to force social media companies to rethink their data ownership definitions and related policies, it should justify its position on the manner transparently to be in the clear, ethically speaking. CHIME should create information policy that discusses how it has gained access to social media content and why it has a right to do so. This policy should also state what rights CHIME has to the data as the curator of the dataset; similarly, the policy should state what rights data subjects retain. As the TOS analysis above shows, 'data ownership' is a legally complex concept. CHIME would benefit by not expressing its right to own data acquired by public means, but rather by expressing its role as a steward over the data.

Infrastructure Maintenance

CHIME is an advanced technological system that will undoubtedly require maintenance in order to maximize the informational and social goods it seeks to produce. Its database structures archive the useful data and information; its application programming interfaces (APIs) enable data access; its algorithms help to analyze the data; and its interfaces make the data and information usable for the community. All of these technical components require an advanced technical skill set to maintain into the future, which requires significant funding to pay for the labor. While CHIME may be sustainable in the near term with sufficient grant funding, its success in the future is still unknown. The ethical question here concerns who should be held responsible for the upkeep of the infrastructure. Put a different way and more specifically, we might ask who is morally obligated to maintain all of the technology once the initial funding runs out.

Only after the initial research is done will stakeholders, like community members, local businesses, and the city's administration, will be able to use the technological infrastructure for their own ends. But if the project is not sustainable in the long-term due to maintenance issues, it is less sure that these stakeholders will be able to use CHIME to, among other things, meaningfully support city planning projects or promote neighborhood cycling needs. In this scenario, CHIME's creators benefit from the data and information provided by the public without returning anything back to those who have supported their project.

To account for this issue and work towards the overarching goal of creating a sustainable archive, CHIME researchers have a responsibility to plan for extending the infrastructure's life and establishing end-of-life circumstances. Optimally, the researchers themselves will be able to find new funds or integrate CHIME into a university's technical infrastructure. But should this option not materialize, researchers need to account for the costs of CHIME's maintenance and the skill sets required to maintain for a certain period of time. Doing so will help the researcher's communicate to potential partners, like the city of Indianapolis, what resources are required to maintain CHIME. Moreover, the researchers should consider developing CHIME with sustainability in mind. This may require the researchers to think about and subsequently design for a CHIME-lite version without the technical 'bells and whistles.'

Legal Issues

The creation, preservation and use of the documentary record of the biking community of Indianapolis raise several issues including copyright and licensing, privacy and regulation of speech. Many of the copyright and licensing issues were covered in previous GL conferences and publications and are not discussed here.[6]

However, the copyrightability of local municipality official records (proceedings, minutes, etc.) and data, in specific geographic information raises new issues and are discussed in addition to the privacy (intrusion and appropriation rights) and First Amendment concerns raised by regulation of ghost bike sites.

Regulation of Ghost Bikes and other Memorials: Reasonable Time Place and Manner Restrictions

Some states and municipalities prohibited the erection of road side or curbside monuments or memorials. In the alternative some states or municipalities may allow be require removal after some time period such as thirty days. Such regulations are often a combination of state and local authority control as a municipality may have state roadways traversing its boundaries.

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[6] Tomas A. Lipinski and Katie Chamberlain Kritikos, Copyright Reform and the Library and Patron Use of Non-text or Mixed-Test Grey Literature in Digital Scholarship, 12 THE GREY JOURNAL, INTERNATIONAL JOURNAL ON GREY LITERATURE (Grey Publishing, Licensing, and Open Access), No. 2, at 67 (2016), selected by the editors (pp. 67-81).
Tomas A. Lipinski and Andrea J. Copeland, Is the Licensing of Grey Literature
Using the Full Palette of "Contractual" Colors?, 11 THE GREY JOURNAL,
INTERNATIONAL JOURNAL ON GREY LITERATURE (Grey Publishing, Licensing, and Open Access), No. 2, at 69 (2015), selected by the editors (pp. 69-87).
Tomas A. Lipinski and Andrea Copeland, Look before you License: The Use of
Public Sharing Websites in building Patron Initiated Public Library Repositories, 42(4)
PRESERVATION, DIGITAL TECHNOLOGY & CULTURE, at 174, November, 2013
(Vol. 42, No. 3, pp. 174–198). ISSN (Online) 2195-2965, ISSN (Print) 2195-2957, DOI: 10.1515/pdtc-2013-0028.
Joachim Schöpfel and Tomas A. Lipinski, Legal Aspects of Grey Literature, THE
GREY JOURNAL: INTERNATIONAL JOURNAL ON GREY LITERATURE
(Managing Change in Grey Literature), Autumn, 2012 (Issue 8, No. 3) (pp. 137-153) (ISSN 1574-1796, available at http://www.greynet.org/thegreyjournal/previousissues.html).
Tomas A. Lipinsk, Green Light for Grey Literature? Orphan Works, Web-Archiving and other Digitization Initiative—Recent Developments in U.S. Copyright Law and
Policy, THE GREY JOURNAL: AN INTERNATIONAL JOURNAL ON GREY
LITERATURE, Spring 2009, at 11 (11-21), also available at http://www.greynet.org/thegreyjournal.html (ISSN 1574-1796).

Indiana House Bill 1108 was introduced in 2009 to require that "uniform roadside memorials" be erected at the request of the "immediate family" with erection lasting no more than one year. Proposed Indiana Code § 8-23-5-10(a)(b) and (c). The statute would have required the Indiana Department of Transportation to "remove roadside memorials that are not erected or sanctioned by the department." Proposed Indiana Code § 8-23-5-109(e). A "unit" other than the Indiana Department of Transportation could erect a "uniform roadside memorials within the right-of-way alongside highways, street, or roads within the unit's jurisdiction" but the erection must comply with the above requirements, i.e., Proposed Indiana Code § 8-23-5-10. Proposed Indiana Code § 36-1-4-6.5. The bill did not pass.

Another example is found in Milwaukee proposed Ordinance § 116-7 regulating "Roadside Memorials" defined as "any of the following items including but not limited to balloons, flowers, pictures, stuffed animals and religious items commemorating the site of a fatal accident or occurrence." Milwaukee proposed Ordinance § 116-7(1). The ordinance prohibits such memorials "on or within the boundaries of any public street, sidewalk or walkway for more than 14 days from the date of a fatal accident or occurrence." Milwaukee proposed Ordinance § 116-7(2). Here the triggering date is not when the memorial was first erected but from the date of the accident the memorial is intended to commemorate. The Milwaukee ordinance requires the commissioner of public works to "dismantle and discard a roadside memorial left on or within the boundaries of any public street, sidewalk or walkway after 30 days from the date of a fatal accident or occurrence." Milwaukee proposed Ordinance § 116-7(3). City of Milwaukee, Legislative Reference Bureau File Number: 050770 (March 23, 2006).

Milwaukee City Attorney Grant F. Langley indicated that a municipality could not allow one type of sign or message or memorial but not others. This could constitute impermissible viewpoint discrimination under the First Amendment of the U.S. Constitution. Reasonable time, place and manner restrictions that do not target a specific message or speaker are allowed. Duration, e.g., 30 or 90 days, location, e.g., on the curbside but not the medium strip, not higher than 24 inches so as not to obstruct a driver's view, are likely reasonable time, place and manner restrictions. Memorandum Re: CC File 050770/An Ordinance Relating to Roadside Memorials, Grant F. Lanley (October 12, 2005). In other words, if roadside memorials and messages could be erected grieving family members then other memorials and messages would also be allowed touting or promoting any idea, perspective or opinion on similar topics or on any topic.

In Milwaukee a substitute a resolution recognized that "citizens [may] grieve by placing a memorial, at the site of a fatal accident or occurrence within the boundaries of the public street, sidewalk or walkway" and noted that the Wisconsin Department of Transportation already implemented a policy that removed memorials that "interfere[d] with roadway safety, impact the free flow of traffic or fall into disrepair." The resolution also indicated the safety hazard resulting from the interference of "pedestrian and motor vehicle traffic through illegal loitering and littering within the boundaries of the public street, sidewalk or walkway." Finally the resolution directed the Milwaukee Department of Public Works to "develop a policy regarding roadside memorials" that would provide for the "removal of all obstructions that are in violation of current ordinances, including roadside memorials, no later than 30 days of the Department of Public Works being notified of their existence." The Milwaukee Common Council adopted the Resolution on March 23, 2006 and the Mayor Tom Barrett signed the ordinance in law seven days later. City of Milwaukee, Legislative Reference Bureau File Number: 051413.

City of Milwaukee Legislative Reference Bureau Memo entitled "Legislation relating to roadside memorials in various communities" and dated September 23, 2005, indicated that at that time cities in Massachusetts (Leominster: 90 day memorial or permanent traffic safety sign requested with 6 months), Illinois (Chicago: case-by case dismantling), California (Oakland: dismantling of roadside memorials with 24 hour) and Maryland (Poolesville). Other states allow some form of memorial: Colorado (removal of uniform sign after three years), New Jersey (removal of impromptu memorial after 10 days), Alaska (allows impromptu memorials), Idaho (uniform gold stars and memorials limited by size and weight), and West Virginia (registration of permanent memorials). Legislation Relating to Roadside Memorials in Various Communities, City of Milwaukee Legislative Reference Bureau Memo (September 23, 2005).

Official Documents of State and Local Governments and Geographic Data

Considering the documents sourced from government sources and reproduced on the various social media or cycling websites issues relating to the copyright status emerge. Some countries legislate that such documentary record of the government at any level are part of the public domain. Such works are outside the subject matter of copyright and reside in the public domain.
[Vytautas Mizaras, 2 Copyright Throughout the World § 24:13 (Database updated November 2015) (§ 24:13. Works excluded from protection: "Pursuant to Article 5 of the Copyright Law, the subject matter of copyright protection does not include the following: (1) legal acts, official documents, and texts of administrative, legal, or regulative nature (decisions, rulings, regulations, norms, territorial planning, and other official documents), as well as their official translations; (2) official state symbols and insignia (flags, coat-of-arms, anthems, banknote designs, and other state symbols and insignia), the protection of which is regulated by other legal acts; (3) officially registered drafts of legal acts; (4) regular information reports on events; and (5) folklore."]
While works of the federal government are designated by statute to reside outside the subject matter of copyright ["Copyright protection under this title is not available for any work of the United States Government, but the United States Government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise." 17 U.S.C.A. § 105.], it is the courts that have made pronouncements expanding the scope of the public domain into state court, legislative and regulatory documents. "Statutes are in the public domain and cannot be copyrighted." *Wheaton v. Peters,* 33 U.S. 591 (8 Peters) (1834); "It is well settled that judicial opinions and statutes are in the public domain and are not subject to copyright." *Veeck v. Southern Bldg. Code Congress Intern. Inc.*, 241 F.3d 398, 412 (5th Cir. 2001).
Public policy dictates that the documentary building blocks of law and government; its cases, statutes, regulations, etc. are in the public domain. The rationale for this is as follows: "two considerations influence whether a particular work may be properly deemed in the public domain: (1) whether the entity or individual who created the work needs an economic incentive to create or has a proprietary interest in creating the work and (2) whether the public needs notice of this particular work to have notice of the law." *County of Suffolk, New York v. First American Real Estate Solutions*, 261 F.3d 179, 194 (2d Cir. 2001). In the case study before us the crime data are not protected by copyright as purely factual content unless selected, coordinated or arranged in some creative manner as a compilation copyright. It could be argued that the remaining documentary record of city reports, planning memorandum, meeting minutes of governmental bodies are therefore in the public domain. Both criteria are satisfied. The governmental bodies creating the documents will continue to produce these with without any economic incentive to do so or not. Second, reports, planning documents, agendas and official minutes serve to notify the public of matters of concern.

General route and map information would not appear to fall into this cluster of works.
The determining factor would be whether "the existence and content of Suffolk County's maps are purely dictated by law, [then] it is likely that Suffolk County needed no additional incentive to create them. As we have indicated that Suffolk County is entitled to present evidence whether its tax maps are original." *County of Suffolk, New York v. First American Real Estate Solutions*, 261 F.3d 179, 188 (2d Cir. 2001). Compare discussion of geographic data from two other states. The Seventh Circuit in a case involving tax assessment data from Wisconsin assumed that building block of tax assessment mapping, the "address, owner's name, the age of the property, its assessed valuation, the number and type of rooms, and so forth… [about which] municipalities collect such data in order to assess the value of the properties for property-tax purposes" were a part of the public domain beyond the

protection of the copyright tlaw. *Assessment Technologies of WI, LLC. v. Wiredata, Inc.*, 350 F.3d 640, 642 (7th Cir. 2003): "The copyright case seeks to block WIREdata from obtaining noncopyrighted data. AT claims that the data can't be extracted without infringement of its copyright. The copyright is of a compilation format, and the general issue that the appeal presents is the right of the owner of such a copyright to prevent his customers (that is, the copyright licensees) from disclosing the compiled data even if the data are in the public domain." In another case it was assumed that similar mapping data was in the public domain: "For public safety reasons, it is critical that geospatial information such as the GIS Basemap stay out of the public domain… The actual location of the Hetch Hetchy water lines are generally known, but not provided in any detail for obvious reasons—to minimize the threat of terrorist attack on the water system… The exact location of Hetch Hetchy water lines is an integral part of the GIS Basemap and not easily segregable." *County of Santa Clara v. Superior Court*, 89 Cal.Rptr.3d 374, 394 (Cal. App. Dist. 6, 2009).

The route and map information in the current case study would face a similar fate as long as no creative elements were present. As one court observed: "Thus, Suffolk County may own a copyright under the Copyright Act. The question remains whether Suffolk County has sufficiently alleged that it possesses a valid copyright in its tax maps." *County of Suffolk, New York v. First American Real Estate Solutions*, 261 F.3d 179, 188 (2d Cir. 2001).
The question would be whether "the overall manner in which [the plaintiff] selected, coordinated, and arranged the expressive elements in its map, including color, to depict the map's factual content." *Streetwise Maps, Inc. v. Vandam, Inc.,* 159 F.3d 739, 748 (2d Cir. 1998). Without further examination of each map or geospatial dataset it would be difficult to generalize whether the compilation of such crosses the low level of creativity required in its selection, coordination and arrangement to qualify for copyright protection. The data itself remains in the public domain.

The Right of Privacy: Intrusion in a Public Place?

"Indiana recognizes four separate forms of the tort of invasion of privacy: (1) appropriation; (2) intrusion; (3) public disclosure of private facts; and (4) false light in the public eye. *Cullison v. Medley*, 570 N.E.2d 27, 31 (Ind. 1991). Whether there can be an "invasion" of privacy in a public place depends on the circumstances. For example, in ***Wilkins v. National Broadcasting Co., Inc.***, 84 Cal.Rptr.2d 329, 336-337 (Cal.App. 1999), the court concluded that there was no intrusion when two defendant reporters posing as potential investors met with company representatives and surreptitiously recorded the conversation. The reporters brought two others with them, and the representatives did not question the two guests' presence. The representatives, reporters, and guests sat at table close to other tables on a crowded restaurant patio. The table was not secluded and the representatives spoke freely in sales fever pitch, even when waiters came by. In other words the circumstances revealed that the subjects did not consider the conversations to be private, moreover admitting that they provided the same pitch to hundreds of other potential investors. The court concluded: "Pursuant to our review of the videotape and consideration of the admissions of Wilkins and Scott, we conclude that Wilkins and Scott had no objective expectation of privacy in their business lunch meeting." ***Wilkins v. National Broadcasting Co., Inc.***, 84 Cal.Rptr.2d 329, 336 (Cal. App. 1999). This is in contrast to an example where a women walks over an exhaust grate and a gust of air blows her skirt to reveal her underwear and someone takes a photograph. (See, Restatement (Second) of Torts, 1977, § 652B, illustration 7) However, recording intimacies that would in the normal course of observation be perceptible would not. For example, when two individuals are observed and recorded in the throes of a passionate kiss while seated on a bench located on a pathway in a public park or the perhaps less risqué but more famous example of a photograph of then Lady Diana holding one of her nursery charges against a sun-lit background so that the outline of her legs and underwear were viewable through fabric of her sheer dress. Recording the observations of the apparent would not appear to be the sort of unexpected or unreasonable invasion the tort contemplates. Some commentators however, see less distinction: "If an action, no matter how embarrassing, is recorded or photographed in public, there can be no intrusion to seclusion because there are usually no indicia of privacy for anything that takes place in public." L.J. Kutten and Frederic M. Wilf, 4 Computer Software Protection-Liability-Law-Forms § 19.5 (2005) (Intrusion to Seclusion) (October 2016 Update), citing *Gautier v. Pro-Fooball, Inc.*, 107 N.E.2d 485 (N.Y. 1952). The resolution may depend on what measure the subject to protect their privacy: wrapping a towel around oneself while changing out of biking gear into street clothes but the subject is disrobed by an unexpected gust of wind that is captured in image or video.

It would also seem that based on this case law and discussion found in the Restatement (Second) of Torts even if a subset of the public were self-selected because of list, board, blog or chat subject matter or through password subscription, comments made by forum participants would still appear to be made in "public view" without any sense of seclusion. Given the nature of online forums if participants desire a conversation to be private, then person-to-person email, private chat or some other means of secure communication should be used. In the author's opinion a court would not conclude a comment lifted from a posting on a public or open forum such as a list, board, blog or chat is cloaked with that expectation nor would its publication in another venue be an intrusion.

The Right of Privacy: Appropriation

A second privacy right is appropriation. When another "appropriates to his own use or benefit the name or likeness of another" an invasion of privacy occurs. (Restatement (Second) of Torts, 1977, § 652C, "Appropriation of Name or Likeness") "Although the protection of his personal feelings against mental distress is an important factor leading to a recognition of the rule, the right created by it is in the nature of a property right." (Restatement (Second) of Torts, 1977, § 652C, comment a) The privacy right of appropriation, or to be more accurate to control the appropriation of one's name or likeness is related to the property right of publicity that is often associated with celebrities, public figures or other famous people. Black's Law Dictionary defines a right of publicity as "[t]he right to control the use of one's own name, picture, or likeness and to prevent another from using it for commercial benefit without one's consent."
Though a property right, the use need not be commercial or pecuniary. "It applies also when the defendant makes use of the plaintiff's name or likeness for his own purposes and benefit, even though the use is not a commercial one, and even though the benefit sought to be obtained is not a pecuniary one." (Restatement (Second) of Torts, 1977, § 652C, comment b) However, the advantage must come not from the mere use of the name, i.e., identifying the speaker of a particular comment, but from the adoption of the name or likeness for some benefit. In the present discussion the appropriation is made by the researcher for his or her personal gain: "the defendant must have appropriated to his own use or benefit the reputation, prestige, social or commercial standing, public interest or other values of the plaintiff's name or likeness." (Restatement (Second) of Torts, 1977, § 652C, comment c)

The difference is not found in the nature of person nor in the events that trigger the right of privacy appropriation versus a right of publicity, as the same event can trigger either. Rather the difference is found in the nature of the harm each victim experiences and the legal rights providing remedy. The appropriation that brings injury to the person, is subjective (though measureable as well in dollars a cents) whereas the right of publicity represents a loss of commercially exploitable opportunities in plaintiff's name, likeness or appearance. The former right is a right of personhood while the latter is a right based in property. "[T]he invasion of privacy by appropriation of name or likeness is a personal right, while the right of publicity more closely resembles a property right created to protect commercial value." *Rose v. Triple Crown Nutrition, Inc.*, 2007 WL 707348 (M.D. Pa. 2007). The cyclists whose images or likeness is appropriated may suffer either harm but more like a privacy appropriation claim would apply to individuals unfamiliar with the use of their image or persona in a commercial setting.

In online settings appropriation may also occur. But such claims are difficult to make in the ubiquitous nature of online settings: "The plaintiff, Beverly Stayart ("Stayart"), conducted search engine queries with her own name as a search term, and she didn't like the results. Her queries produced links to ***pornographic websites, online pharmacies promoting sexual dysfunction drugs, and an adult-oriented online dating service***. Stayart alleges that the defendants, Yahoo! Inc. ("Yahoo!"), Overture Services, Inc. ("Overture"), and Various, Inc. ("Various"), knowingly and intentionally used her name on the internet without authorization. *Stayart v. Yahoo! Inc.*, 651 F.Supp.2d 873 (E.D. Wis. 2009), affirmed 623 F.3d 436 (7th Cir. 2010). The plaintiff was unsuccessful. All claims were dismissed. Such uses in social media sites might likewise be deemed incidental: "The fact that the defendant is engaged in the business of publication, for example of a newspaper, out of which he makes or seeks to make a profit, is not enough to make the incidental publication a commercial use of the name or likeness. Thus a newspaper, although it is not a philanthropic institution, does not become liable under the rule stated in this Section to every person whose name or likeness it publishes." (Restatement (Second) of Torts, 1977, § 652C, comment d) Likewise the mere mention of a subject's name or known pseudonym or likeness in a newspaper, newsletter, or social media website would not appear to be an "appropriation" of the subject's name for the authoring entity's "purpose and benefit" such that it would constitute an invasion of privacy.

Conclusion

The main ethical and legal issues identified in this paper will inform the design of the community archive and the utilization of technology during its construction. As ethical considerations are less clear than legal ones, the co-creation of the archive with community members will help guide ethical decision-making about data collection, analysis, and preservation. This will be especially important when dealing with personal data or content that is contributed by citizens.

Appendix

Definitions from 17 U.S.C. § 101:

"Audiovisual works" are works that consist of a series of related images which are intrinsically intended to be shown by the use of machines, or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, if any, regardless of the nature of the material objects, such as films or tapes, in which the works are embodied.

A "compilation" is a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. The term "compilation" includes collective works.

" Literary works" are works, other than audiovisual works, expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied.

"Pictorial, graphic, and sculptural" works include two-dimensional and three-dimensional works of fine, graphic, and applied art, photographs, prints and art reproductions, maps, globes, charts, diagrams, models, and technical drawings, including architectural plans. Such works shall include works of artistic craftsmanship insofar as their form but not their mechanical or utilitarian aspects are concerned; the design of a useful article, as defined in this section, shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.

- Copyright
- Licensing
- RTPM : Regulating Ghost Bikes
- Public Domain : State and Local Governments
- Privacy Rights

The recent improvements on circulation of research results at the Japan Atomic Energy Agency (JAEA)

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Abstract
The sharing of information about scientific research results on the Internet has developed with the current global advancement of open science, including archiving and disseminating scientific papers in institutional repositories, facilitating access to and use of research data etc. Accessibility to such large volumes of information on the Internet is a very important issue. Without solving the accessibility issue, those contents may remain grey literature. This paper introduces the case study of the Japan Atomic Energy Agency (JAEA) Library as an example of its efforts to improve the circulation of research results in terms of grey literature. JAEA has disseminated information of our research results via the Internet for over decade, but three main issues remain to be solved, aimed at improving the accessibility of grey literature in the open science era; (1) to ensure accessibility of our Internet contents, (2) to consider how our target users find our contents, (3) to improve the user interface of our contents. Finally, we consider enriching the contents of the JAEA Reports and accelerating the circulation of the JAEA R&D results by paying attention to the global trend of open science.

1 Introduction

The Japan Atomic Energy Agency (JAEA) is a comprehensive R&D institute dedicated to nuclear energy in Japan. The JAEA Library is one of the largest nuclear information centers in Japan. The JAEA Library provides technical information services to researchers and engineers in the nuclear science field, including to JAEA staff members. Additionally, we also disseminate information about R&D results achieved by JAEA staff members. As part of this activity, we publish the JAEA Reports (technical reports of JAEA) and the “JAEA R&D Review” (annual publication that introduces JAEA’s R&D results). This paper describes the case study of the JAEA Library as an example of its efforts to improve the circulation of research results in terms of grey literature.

2 The JAEA Library

2.1 The Japan Atomic Energy Agency (JAEA)

JAEA’s mission is to contribute to the welfare and prosperity of human society through nuclear science and technology. JAEA has focused on issues such as the response to the accident at the Fukushima Daiichi Nuclear Power Station of the Tokyo Electric Power Company Holdings, Incorporated (the Fukushima Nuclear Accident), which is our highest priority, research for safety improvement in the field of nuclear energy, R&D toward the establishment of nuclear fuel cycle technology, and the development of technology for the treatment and disposal of radioactive wastes. In addition, to support these R&D and create new technologies, we have implemented basic nuclear science and engineering research and human resources development. JAEA’s largest site is located in Tokai-mura (approximately 150km north of Tokyo), where the Central Library is located. (Figure 1)

Figure 1 the Central Library of JAEA

2.2 Features of the JAEA Library

The JAEA Library is involved in a wide range of activities. First of all, as the largest nuclear information center in Japan, the JAEA Library holds and provides 50,000 books, 2,000 academic journals, and 770,000 technical reports in the fields of nuclear science and technology.

The JAEA Library also plays the role of the INIS National Centre for Japan. The International Nuclear Information System (INIS) is the world's largest collections of published information relating the peaceful usage of nuclear sciences and technology, and is operated by International Atomic Energy Agency (IAEA). The JAEA Library prepares bibliographic records for nuclear-related literature published in Japan, and subsequently submits these to the INIS database.

After the Fukushima Nuclear Accident (March 11, 2011), we have distributed reference information related to the accident. The Fukushima Nuclear Accident Archive (FNAA) constitutes our most recent activity. In order to collect and preserve comprehensive information regarding the accident and to utilize it anytime in the future, FNAA provides reliable information on the Internet, for example concerning the Tokyo Electric Power Company Holdings, Incorporated and the government agencies of Japan. Additionally, FNAA provides information about oral presentations at meetings of academic societies in Japan about the Fukushima Nuclear Accident. (Figure 2)

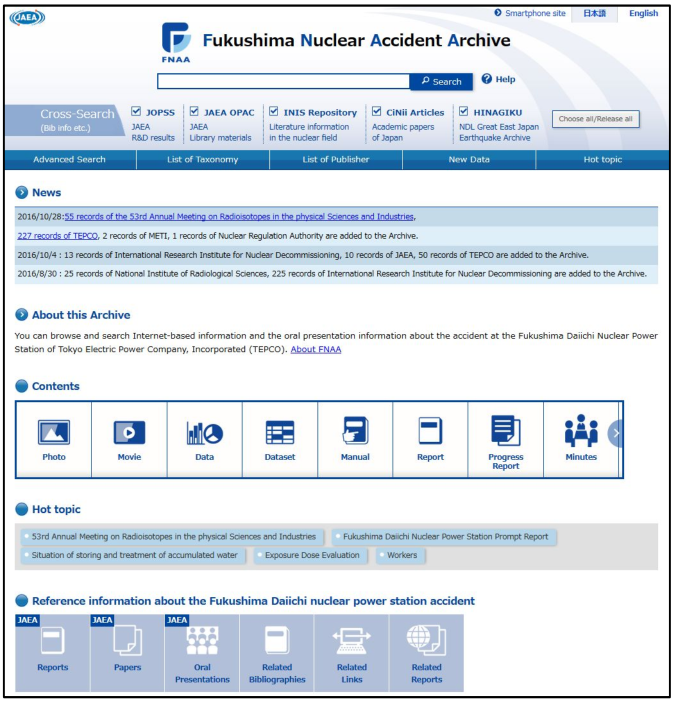

Figure 2 the Fukushima Nuclear Accident Archive (FNAA)

2.3 Dissemination of the JAEA R&D Results

One of the important missions of the JAEA Library is the dissemination of the R&D results that are achieved by JAEA staff members.

JAEA staff members submit approximately 1,800 papers that contribute to scientific journals and give approximately 2,500 oral presentations in a year. JAEA staff members have to submit a form to their directors using a web-based system when they plan to publish the JAEA Reports, submit a paper to a journal, or make a presentation at conferences. This form consists of bibliographic data (title, abstract, title of journal, name of conference, etc.). The form's data from JAEA's R&D departments is stored in the database, which is managed by the library. To maintain the data quality, the library staff members check the data and correct errors, create authority files (author names. journal title, etc.), and control the bibliographic data. After this check by the library staff members, the bibliographic data about the publications and presentations are made available on the JAEA Originated Papers Searching System (JOPSS), following the publication of JAEA Reports and journals or oral presentations at conferences. (Figure 3)

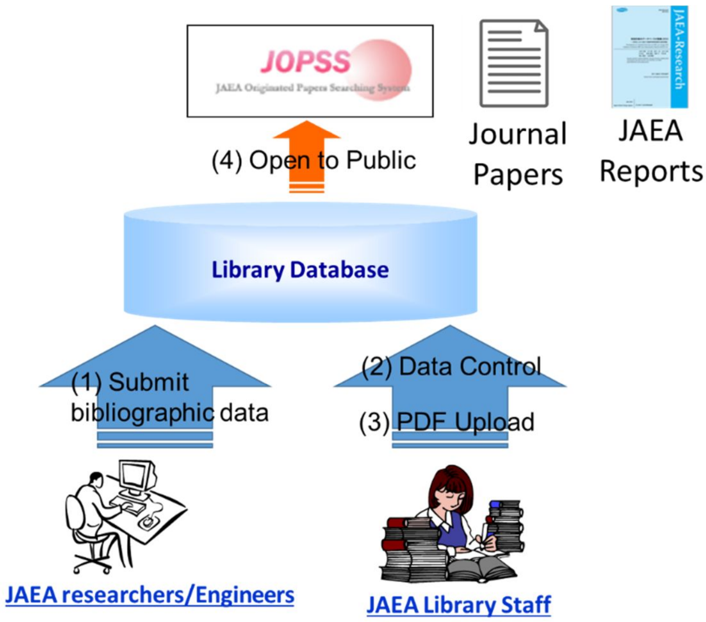

Figure 3 Management of the JAEA R&D results

2.4 The JAEA Reports

The JAEA Library publishes the JAEA Reports, which are technical reports of the JAEA and might be considered grey literature. (Figure 4) In the nuclear science field, the technical report is one of the important tools for exchanging R&D results. Nowadays, many technical reports are published on the websites of institutes or universities, which enables a better circulation of this kind of grey literature.

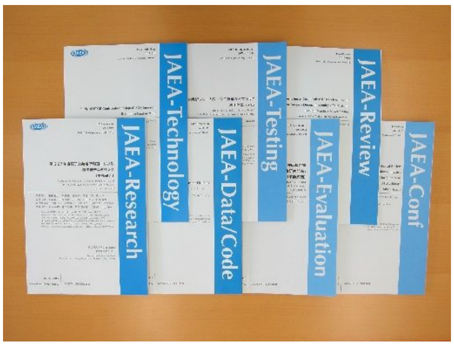

Figure 4 the JAEA Reports

The JAEA Reports are divided into seven types according to their report codes (or report prefixes). (Figure 5) The advantages of the JAEA Reports include the fact that (1) the R&D results can be described in detail because there is no limit to the number of pages, (2) the R&D results can be published while retaining their copyrights. Additionally, full-text PDF files of all JAEA Reports are provided on JOPSS, and (3) less time is required for publishing the JAEA Reports for traditional academic journals.

Report code	Definition
JAEA-Research	Research reports, Research review
JAEA-Technology	Technical reports
JAEA-Data/Code	Numerical data, Computer/Calculation code and Database
JAEA- Testing	Manuals and Experimental results
JAEA-Evaluation	Institutional evaluations, Research evaluations and Project completion report
JAEA-Review	Research review, Annual reports and Theses, etc.
JAEA-Conf	Conference Proceedings

Figure 5 Seven types of the JAEA Reports

2.5 The JAEA Originated Papers Searching System (JOPSS)

JAEA staff's R&D bibliographic information (academic papers and oral presentation) are available on JOPSS. Moreover, JOPSS provides bibliographic information and the full-text PDF files of the JAEA Reports. Approximately 22,000 full texts from the JAEA Reports are downloadable as of November 2016. (Figure 6)

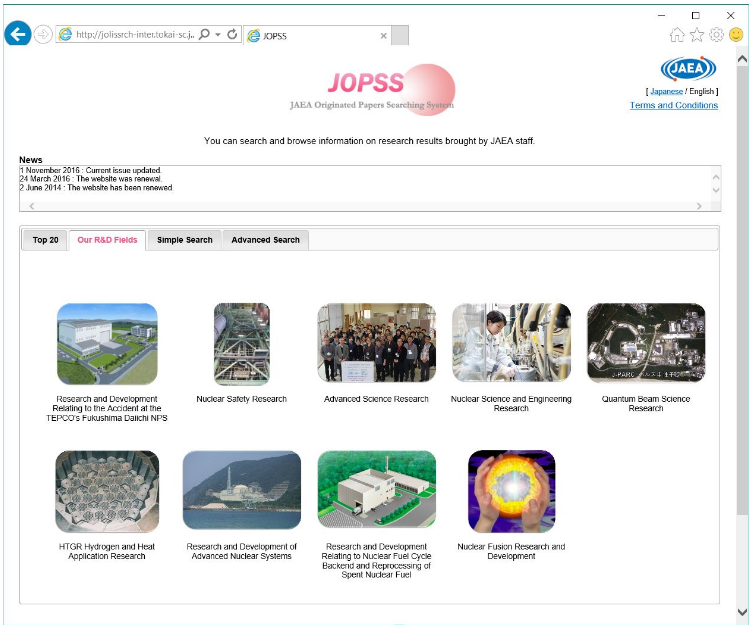

Figure 6 the JAEA Originated Paper Searching System (JOPSS)

JOPSS was launched in 2006 and is open to the public through the Internet. JAEA's R&D bibliographic information and the full texts of the JAEA Reports are available for everyone at any time. However, this accessibility is not very common and the JAEA Reports were still considered grey literature. Subsequently JOPSS was improved by means of several modifications with the aim of disseminating JAEA's research results more efficiently.

The following three main problems need to be solved if we aim to improve the accessibility of grey literature in the open science era:

(1) To ensure accessibility of the JAEA Reports
(2) To consider how our target users find our contents
(3) To improve the user interface of our contents

3 Modifications of JOPSS

3.1 To ensure accessibility of the JAEA Reports

To ensure the accessibility of the JAEA Reports, we have assigned a digital object identifier (DOI) to the JAEA Reports from 2014 onwards. (Figure 7) DOI is a persistent identifier (PID) that identifies electronic objects and provides the current location where these objects can be found. Because DOI does not change, it ensures a permanent access to the JAEA Reports on the Internet. DOI is used as reference URI (Uniform Resource Identifier). By using DOI, other databases can refer users to the JAEA Reports almost permanently. As a result, the JAEA Reports' circulation will improve.

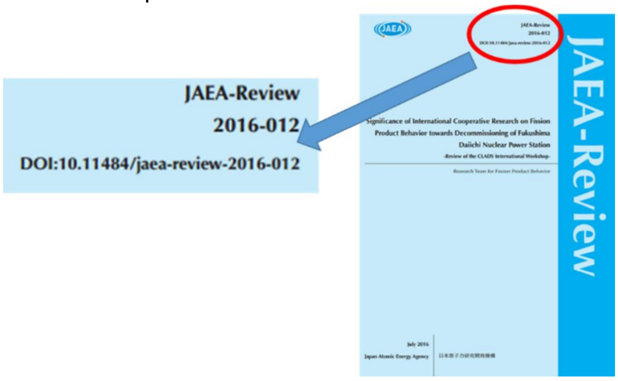

Figure 7 DOI of the JAEA Reports

3.2 To consider how our target users find our contents

To consider how our target users find our contents, we have added a direct access route to the metadata of the JOPSS contents. It is important that users can easily and correctly find what they want. Our target users are researchers and/or support staff members for researchers. They tend to use general search engines (e.g., Google) and major bibliographic databases to find information for their research activities.

However, the former JOPSS provided search results only in lists, without any independent detailed pages. Accordingly, search engines could not crawl all metadata of the contents. Therefore, we assigned a unique URL to each detailed page in JOPSS.

Additionally, JOPSS has started to connect with other major bibliographic databases. The Japanese Institutional Repositories Online (JAIRO) provides a cross searching service of institutional repositories in Japan. The contents of JOPSS are automatically harvested by JAIRO using a Web-API.

Subsequently, we provide direct access to the contents of JOPSS from search engines or other bibliographic databases. (Figure 8)

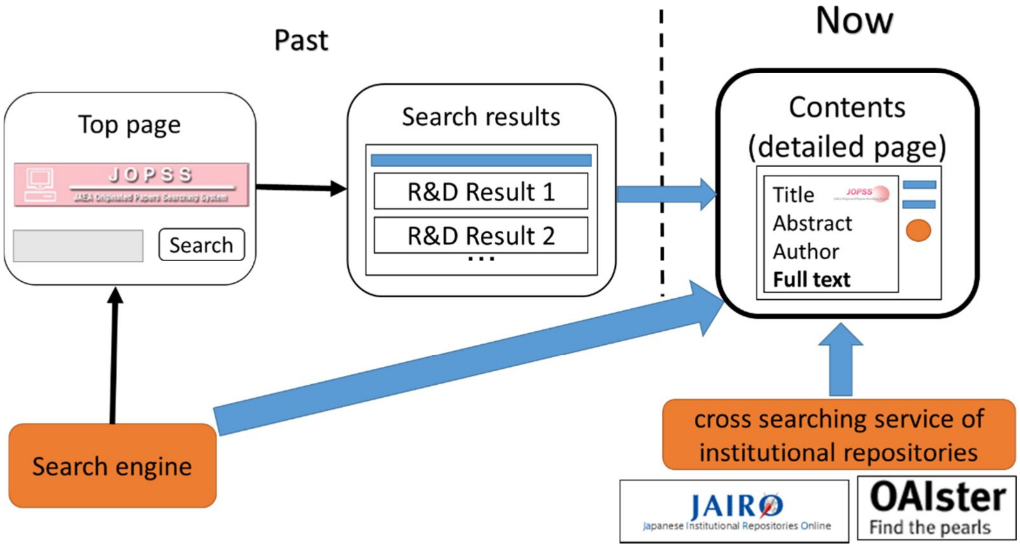

Figure 8 Direct access from search engines and cross searching services of institutional repositories

3.3 To improve user interface of our contents

To improve the user interface of our contents, we added the following functions. When using the former JOPSS, users needed to enter keywords to search the contents. This meant that they could not search intuitively. We now provide two new tabs on the top page of JOPSS, “Our R&D Fields” and “Top 20”, to indicate expectations concerning the contents. The “Our R&D Fields” tab contains photos or illustrations of our main 9 research fields. Each changes every few seconds and links to the list of contents (including bibliographic information of the research results) in the research field that is indicated by the photos or illustrations. (Figure 9) “Top 20” tab provides lists of the top 20 contents that were most frequently accessed and downloaded during the past 30 days (Figure 10), and these lists link to detailed pages about the contents. As a result, users can access such detailed pages directly from the top page with one click and without entering any keywords.

Figure 9 “Our R&D” tab

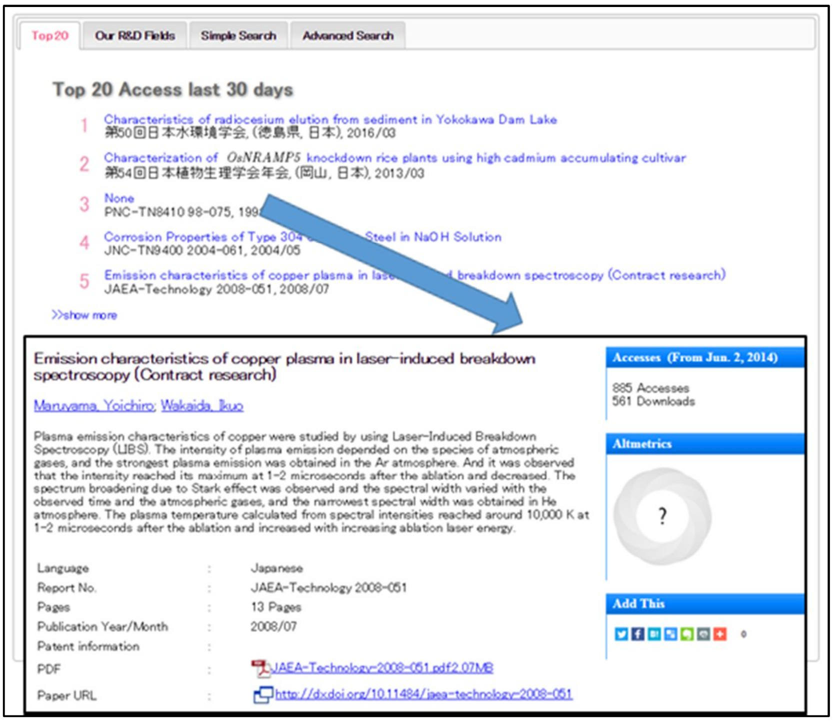

Figure 10 “Top 20” tab

To provide users with effective information, we added functions that show the contents' impact. There are two types of effective information, namely, article metrics and related information about the research results. The times of access and downloads, the Web of Science's Times Cited count, and the Altmetrics badge provide information about article metrics. (Figure 11) The Web of Science is an academic research information database that provides a citation index of the world's most important research covering scholarly journals, books, proceedings, published data sets and patents. “Times Cited” is a one of the Web of Science's features. Altmetrics is the creation and study of new metrics, based on the Social Web, for analyzing and informing scholarship. The DOI of each journal paper plays an important role in showing the Web of Science's “Times Cited” count and embedding the Altmetrics badge. We use the DOI as identifier of the article to get this information from other database/Web services. Library staff members maintain the bibliographic data to enable the exact collection of the DOI. This is an example of how the DOI is used effectively.

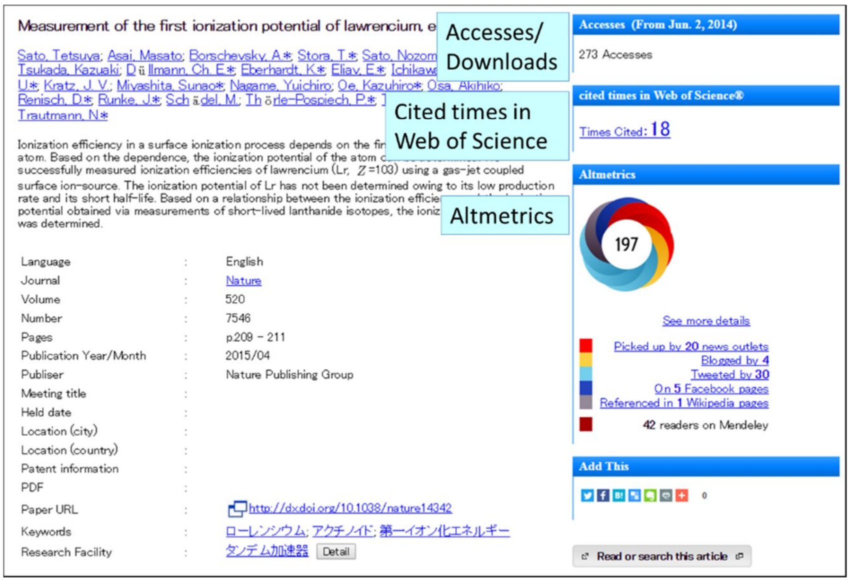

Figure 11 article metrics on the JOPSS

In addition, for related information about the research results, we provide links to the web page of the facilities that were used for the research as well as links to related patent information. (Figure 12)

Figure 12 related information on the JOPSS

4 Future Plans

The JAEA Reports have been made accessible on the Internet through JOPSS. As mentioned in chapter 3, we have improved this system to ensure its accessibility and to improve the user interface.

To improve accessibility, we assigned a DOI to the each JAEA Report to provide users with permanent access and a reference URI. Therefore, researchers who know that the JAEA Reports exist can access the full- texts through a simple search.

However, the JAEA Reports are still "grey" for some potential users, such as researchers in fields other than nuclear science, industrial fields and foreign users. The amount of published information and data on the Internet increases rapidly nowadays. As a result, information that cannot reach users equals non-existence on the Internet.

The JAEA Reports might be useful not only for researchers in the field of nuclear science, but also for potential users. Therefore, we consider promoting the JAEA R&D results for these potential users and leading to use the JAEA Reports as reference.

Additionally, the correspondence of "Open Science" needs to be examined. The movements of "Open Science" have been a point of focus all across the world. In Japan particularly, "Open Science" is a concept that encompasses open access by turning research data into open data. Therefore, opening research data to the public from JAEA is one of our future tasks.

At JAEA, we have published some research data as the JAEA Reports. However, there are some issues concerning how to disseminate them in terms of data sharing and archiving in open science. The research data in the JAEA Reports do not have a metadata format and are therefore not searchable. As a result, these data are still "grey" for potential users.

For the first step of research data dissemination, we will make guidelines that indicate how to process research data and to write descriptions for JAEA research data publication.

As described above, we plan to enrich the contents of the JAEA Reports and accelerate the circulation of the JAEA R&D results.

5 Conclusion

Scientific research results on the Internet play the important role of sharing information, such as archiving and disseminating scientific papers in institutional repositories and facilitating access to research data in open science. It may be true that it is easy for users to reach to research results because the Internet is usually open to the public. However, information on the Internet does not have permanent accessibility. Additionally, it is difficult for searchers to get access to scientific research results in the form of technical reports in fields other than their own. Without solving this accessibility issue, "grey" literature will remain on the Internet.

This paper presented our attempt to improve the circulation of the JAEA R&D results in terms of grey literature. We continue to disseminate research results by paying attention to the global trend of open science.

We hope that our work will contribute to leverage diversity on grey literature in open science.

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Sexuality Leveraged Through Diversity: Recognizing LGBT+ Communities

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Abstract
Gender studies has embraced a wide band of issues related to sexual identity, belonging, community, self-perception, transitional status, perceptions by the media and the changing political landscape of acceptance of all queer members. Recent political events such as the AIDS crisis, ability to self-define one's sexual orientation, marry and establish domestic partnerships, create families through adoption, increase in workplace accommodations, and expansion of the military, are but some of the milestones that have redefined opportunities for a significant population. The expanding gay, lesbian, bisexual, transgender, intersex, asexual communities and their allies have documented more inclusive categories of acceptance in and by society at large. This path had many diversions in the literature, media and true life experiences, leading to a more open and visible lifestyle. Elements of greyness pepper the changes as the body politik emerges into rightful social acceptance. Social and religious undertones define and defy the status quo that protects all members with legal rights and opportunities. The spectrum of grey parallels the colorful rainbow symbolizing sexuality, life, healing, sunlight, nature, magic/art, serenity/harmony and spirit that has come to depict the range of inclusivity that transforms society. Political and religious sectors globally influence the social injustices that members of this diverse community experience. Social media, news, film, literature, and the arts each chronicles life and its nuances by promoting more discourse and sharing about experiences that were once taboo public issues. The campaign for public awareness for the LGBT+ community has changed social norms redefining gender in a more plural, less polarizing context. Grey literature was once the alternative source for earlier study of these issues which has transitioned to an increasingly open and interdisciplinary range of content. This paper explores how society leverages change by defining new social practices and etiquette that translates into advocacy, civility, acceptance and a new extended definition of community, family and self. The potential for more sophisticated social media to leverage diversity remains ongoing. The celebration and embrace of these LGBT+ communities reduces the grey tinge while leveraging more candor in treating sexuality. The role of social media, once considered very grey is also mainstreaming into more common and established venues for capturing, publishing and sharing of personal and community experiences. Gender and sexuality through storytelling and other avenues of social media contributes to new understandings of complex human nature with greater openness.

Introduction
Exploring sexuality and diversity has a long history, with speculation going back to Biblical times. The focus of this research is how society came to recognize the power and strength of LGBT+ individuals and communities and the influence and challenges it brings to our current socio-economic and political landscapes via different communication strategies, flirting as grey literature yet at times illustrating how mainstream it has become. What we know best is the North American, specifically American experience of how the gay and lesbian movements developed much in response to the grand social changes initiated by World War II and the aftermath with redefining the traditional "American Family." Laws, regulations and policies dictated social norms as the sense of gay communities evolved with the early focus on gays and lesbians but soon expanded to include "bisexual, transgender, queer, questioning, and intersex organizing."[i]
Sexual identity is often divided up by how the history of gay and lesbian movements evolved giving sexual orientation a home in many camps. This includes the times when sexuality was not necessarily benign but silent, just not common dinner table conversation and was described as "in the closet" if one did not subscribe to traditional heterosexual practices and identity.

The Rainbow has become the mascot and symbol of gay pride and rights. Bright colors were used to self-identify and share information in the early days. In 1978 the first gay pride flag designed by San Francisco artist, Gilbert Baker combined eight colors each reflecting its own symbolism and remaining the iconic symbol of the LGBT community since then:

- Pink for sex
- Red for life
- Orange for healing
- Yellow for sunlight
- Green for nature
- Blue for art
- Indigo for harmony
- Violet for the human spirit

Eventually due to availability and restricting the rainbow to six colors, pink and indigo were dropped. The rainbow resonance also has symbolism from the Bible and other forms of iconography.[ii]

Due to several events, the coming out era transformed public opinion. Here in New York in the summer of 1969 Stonewall became what is recognized as the single most important event leading to the gay liberation movement and the modern fight for LGBT+ rights in the United States. Riots and uprisings defined that summer and for the first time, creating safe places for the gay community outside of traditional bars where relationships between local police and the gay community were tested. Within a year, two gay activist organizations, and three gay newspapers were established followed by gay rights organizations and later that year the first Gay Pride marches were organized in major cities to commemorate the anniversary of Stonewall and today that is a common celebration in late June of how far gay rights has come as they are common events in many cities, now worldwide.

Evolution of Terminology for Sexuality: Identity & Changing Sexual Roles

The model of gender and sexual identification that most of us are familiar with is the duality of gender (female and male) and the heterosexual or homosexual orientation. The term for this model of heterosexual identification is called, cisgender, in other words, people who are not transgender and identify with their biological sex, the majority of the human population. Transgender identification encompasses a vast range of biological, sexual, and societal expressions. Biologically, one can be born with either female or male sexual organs, or as intersexuals where duality of sexual organs is exhibited and sex characteristics that do not fit typical binary notions of bodies designated “male” or female.” Sexual orientation can include being attracted to the opposite sex (heterosexual), the same sex (homosexual), both sexes (bisexual), or no one particular sex (asexual). In terms of societal expression, one can choose to express themselves as female or male in clothing and mannerisms but be from the opposite biological gender or sexual orientation. Keeping it simple, our definition for transgender refers to people whose sense of their gender is different from their sex at birth. Contemporary examples of gender-neutral expressions are increasingly evident in daily life as challenges define privacy issues for public facilities and lifestyle choices.

This leads to difficulties in properly classifying a person’s identity and English language at this time, lacks proper pronouns to encompass the transgender identities beyond the commonly held fe/male gender model. Icons now reflect gender neutral options and common exchanges via texting has all but eliminated pronouns. We can see from tables included in the “Guide to Transgender Terms,”[iii] how language and vocabulary dictate social understanding. Due to the complex nature of transgender identification, this tends to lend itself in a grey area of classification as something not easily definable and in a dynamic state. This tends to lend itself to layers of intersectionalities[iv] not only in gender, sexual orientation, and social expression but also societal roles. For example, one can be biologically female, bisexual, express themselves as a male, and take on multiple roles of parent, sibling and profession. These intersections add to an even more complex set of interactions on top of an already complicated and often times not easily definable identity.

These multiple roles lead to new opportunities for LGBT+ persons to share common social and legal experiences of maturation through the lifespan. Today in many parts of the world, the LGBT+ population participates in marriage, military service, parenthood, durable power of health-care, beneficiary survivorship, are well represented in professional sports (hockey, tennis, American football, boxing, etc) and other roles related to the lifespan.

The issue of sexuality is complicated, very grey and constantly evolving as society evolves. The term LGBTQ+ evolved from GLBT in the late 1980s.[v] The letters "G" and "L" were switched because it was noted that the term gay, although it encompasses both men and women, next to the letter "L," the "G" really refers to "gay men." In some circles, it was thought that men are overrepresented and were overly dominant, so "L" was placed first, followed by the "G." Other groups who did not fall under, lesbian, gay, bisexual, or transgender orientations noted that they were not represented in the acronym, so more letters were added at the end. The "+" represents the inclusion of all groups for the sake of simplicity and inclusiveness.

Guide to Transgender Terms

Term	Definition
Cisgender	People who are not transgender.
Cross-dresser/ transvestite	People who wear clothes associated with the opposite sex but who do not necessarily identify with the opposite gender. (The older term "transvestite" is now widely viewed as pejorative.) Many male cross-dressers prefer female sex partners.
Gender dysphoria	Condition in which a person's birth gender and gender identity differ.
Gender identity	Internal, deeply held sense of one's gender.
Gender expression	Outward portrayal of a person's gender through name, pronouns, clothing, behavior, voice or body characteristics.
Gender nonconforming	People — not necessarily transgender — whose gender expression differs from conventional femininity or masculinity.
Sex-reassignment (or gender-confirmation) surgery	Surgery to change one's genital organs to those of the opposite sex; not undertaken by all transgender people.
Genderqueer	People who do not identify as either male or female.
Sex	Bodily characteristics — including chromosomes, hormones and reproductive organs — that define a person as male or female.
Sexual orientation	A person's enduring physical, romantic or emotional attraction to other people.
Transgender	People whose gender identity and/or gender expression differs from conventions associated with their sex at birth. Transgender people can be straight, homosexual or bisexual.
Transition	Period in which transgender people change their name and appearance.
Pronoun usage	Some transgender people prefer to be referred to by gender-neutral pronouns such as "they" and honorifics such as "Mx."

Sources: "GLAAD Media Reference Guide — Transgender Issues," undated, GLAAD, http://tinyurl.com/6u7k67c; "Gender Dysphoria," Diagnostic and Statistical Manual of Mental Disorders (DSM-5), *American Psychiatric Association, 2013, http://tinyurl.com/kxaf3m6*

Terminology has changed from the references dating from the 19th century where they were more sexology focused, using homosexual until the early-mid 20th century when gay became the accepted term reflecting the Stonewall generation and continues today. Contributions from the feminist movement, including vocabulary such as "queer" and by the 21st century, the + (plus) to illustrate more inclusive identities. Additional descriptors apply to those on the fringe as well and include Questioning, Intersex, Asexual, Allies and Pansexual.[vi]

The number of orientations span the full range of conventions and even the undefinable sexual orientations as seen below, to which are occasionally added new vocabulary and labels, extending to new meanings of the plus.[vii]

- Androgynous | Identifying and/or presenting as neither distinguishably masculine nor feminine.
- Asexual | The lack of a sexual attraction or desire for other people.
- Bisexual | A person emotionally, romantically or sexually attracted to more than one sex, gender or gender identity though not necessarily simultaneously, in the same way or to the same degree.
- Cisgender | A term used to describe a person whose gender identity aligns with those typically associated with the sex assigned to them at birth.
- Gay | A person who is emotionally, romantically or sexually attracted to members of the same gender.
- Gender dysphoria | Clinicallysignificant distress caused when a person's assigned birth gender is not the same as the one with which they identify. According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM), the term - which replaces Gender Identity Disorder - "is intended to better characterize the experiences of affected children, adolescents, and adults."
- Gender-fluid | According to the Oxford English Dictionary, a person who does not identify with a single fixed gender; of or relating to a person having or expressing a fluid or unfixed gender identity.
- Gender identity | One's innermost concept of self as male, female, a blend of both or neither – how individuals perceive themselves and what they call themselves. One's gender identity can be the same or different from their sex assigned at birth.

- Gender non-conforming | A broad term referring to people who do not behave in a way that conforms to the traditional expectations of their gender, or whose gender expression does not fit neatly into a category.
- Genderqueer | Genderqueer people typically reject notions of static categories of gender and embrace a fluidity of gender identity and often, though not always, sexual orientation. People who identify as "genderqueer" may see themselves as being both male and female, neither male nor female or as falling completely outside these categories.
- Gender transition | The process by which some people strive to more closely align their internal knowledge of gender with its outward appearance. Some people socially transition, whereby they might begin dressing, using names and pronouns and/or be socially recognized as another gender. Others undergo physical transitions in which they modify their bodies through medical interventions.
- Lesbian | A woman who is emotionally, romantically or sexually attracted to other women.
- LGBTQ | An acronym for “lesbian, gay, bisexual, transgender and queer.”
- Queer | A term people often use to express fluid identities and orientations. Often used interchangeably with "LGBTQ."
- Sexual orientation | An inherent or immutable enduring emotional, romantic or sexual attraction to other people.
- Transgender | Denoting or relating to a person whose sense of personal identity and gender does not correspond with their birth sex Therefore, transgender people may identify as straight, gay, lesbian, bisexual.
- Transphobia | The fear and hatred of, or discomfort with, transgender people.
- Transsexual |Persons who emotionally and psychologically feel that they belong to the opposite sex.

Changing hues and stereotypes: Depictions in the media and societal acceptance

The traditional depiction of LGBT characters in the popular media focuses on a two-dimensional representation of lesbians and gay males. On one side, the stereotypical gay male portrayed in the literature and media is usually characterized as Caucasian, effeminate, hedonistic, loves fashion, shopping, shallow personality, promiscuous, has a majority of female (straight) friends within his inner circle. On the other side is the stereotypical lesbian who is also White, but masculine oriented, enjoys the great outdoors, wears masculine clothing, is in a dysfunctional monogamous relationship, and has a majority of female (lesbian) friends within her inner circle. Stereotypes in any minority community contain a grain of truth and there are plenty of individuals who may have all of these traits. There are also plenty of exceptions to the rule that the media has only recently begun to acknowledge and portray. The attraction of lesbian couples often illustrate how each partner assumes traditional roles, one more male-dominant and one more feminine. However, among gay couples, the gender roles may be less visible and less obvious. It is possible that the media intends to play off of these stereotypes to draw in viewers and demonstrate extreme behaviors.

Sexual minorities often lie on the fringes of dominant society and US based television programming such as RuPaul’s *Drag Race*, *Will and Grace*, the popular sitcom, *Modern Family* that perhaps more than any one program swayed and influenced public opinion about gay marriage[viii], plus other avenues that provide a source of entertainment, spice, and exoticism that LGBT+ characters often portray. This leads to a “double edged sword” as the increase in LGBT+ programming leads to a greater familiarity of LGBT+ culture, however slanted it can be. At the same time, profits and entertainment value are the driving force for successful TV programming over actual, balanced portrayals of LGBT individuals and their stories or circumstances.

The recent release of Gregory Woods’ acclaimed work, *Homintern: How Gay Culture Liberated the Modern World* explores the role of the homintern as the international presence of lesbians and gay men in modern life, particularly in the creative fields of literature, cinema, music, dance and the arts. Predictably, it can be argued how it is likely one of the major creative forces in the cultural development of the past century.[ix] Woods illustrates how certain cities including New York's Harlem neighborhood just up the west side of Manhattan in the 1910s was a haven for the presence of lesbians and gay men in the artistic avant-garde. "By loving as they chose, they reminded the world that love is worth taking risks for. By living as they chose, they initiated a process of liberation by sleight of hand."[x]

According to the *2016-2017 GLADD Where we are on TV Report*, overall there has been an increase in the number of LGBT+ characters on broadcast TV in the US. However, more female lesbian and bisexual characters were "killed" this particular TV season indicating a greater need for representation in the future. However, there was an increase shown in trans-characters that were played by actresses that are themselves transgender.[xi]

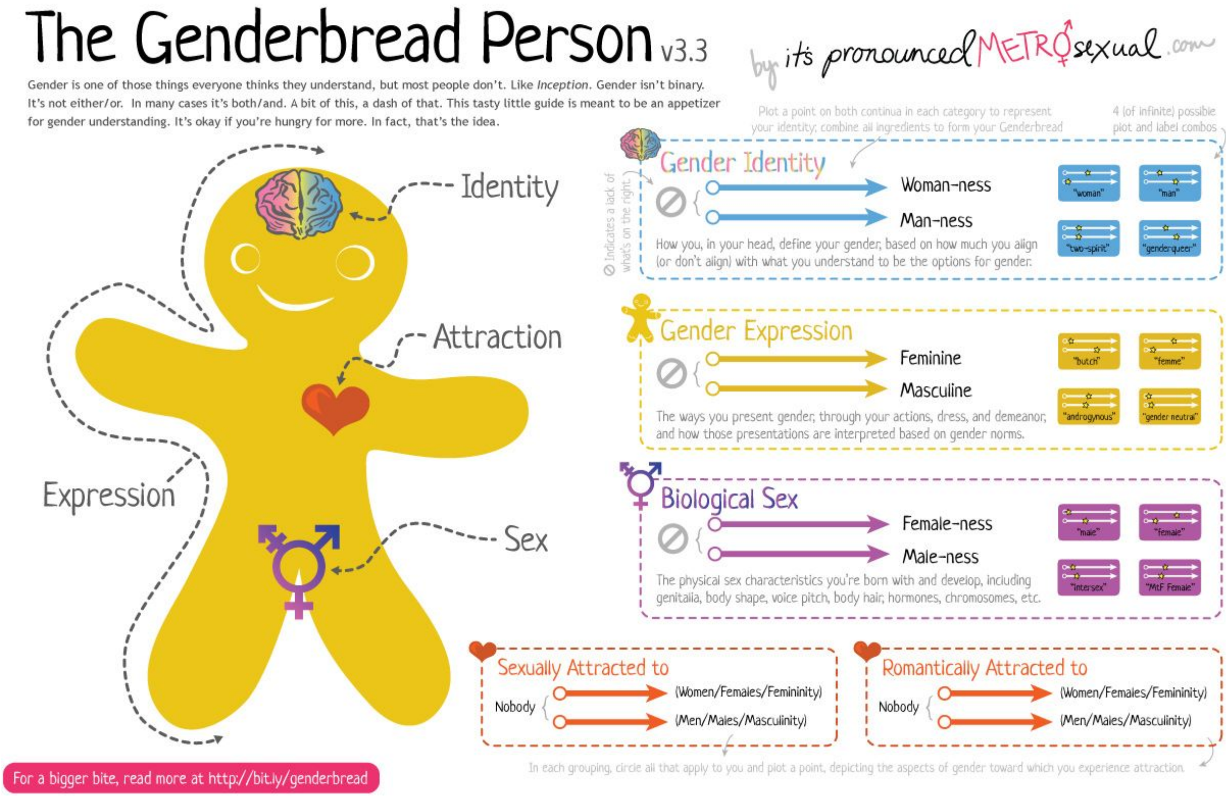
Summary of 2016 LGBT Characters						
	Broadcast TV		**Cable**		**Streaming Media**	
	Comparison to 2005	**Number of Characters %**	**Number of Characters**	**Percentage**	**Number of Characters**	**Percentage**
Lesbian	3 /19%	12 /17%	29	20%	28	43%
Gay	12 / 75%	35/ 49%	65	46%	15	23%
Bisexual Female	1 / 6%	16 /23%	35	25%	13	20%
Bisexual Male	0	5 / 7%	10	7%	3	6%
Transgender	0	3 /4%				
Transgender Female			2	1%	7	11%
Transgender Male			4	3%		

Source: 2016 Where We are on TV, GLADD; Source: 2005 Where We are on TV, GLADD

If we compare the data above to the start of the *GLADD Where We are on TV Report* from a decade earlier (the 2005-06 statistics),[xii] we can see a steady increase of LGBT+ representation over the past 10 years including the inclusion of more trans-characters in TV, cable, and streaming media formats due to more acquired scripts showcasing such roles.

With the gradual increased visibility of LGBT active life in mainstream US culture, it is probable that we will continue to see increases in all lesbian, gay, bisexual, and trans portrayals in media overall. At some point in the future, it is hopeful that LGBT+ culture may become less controversial and further assimilated into society as a whole and will follow a similar path that earlier Civil and Human Rights movements took and eventually will lead to the integration and inclusion of LGBT+ culture as part of conventional mainstream society.

Due to the constantly growing list of identities and sexual orientation terms, Sam Killerman, created the "Genderbread Person." "The Genderbread Person is an infographic that breaks down gender identity, gender expression, biological sex, and sexual orientation into an easy to understand visual." As we can see from the graphic, sexuality is divided into four main categories: identity, sexual attraction, biological sex, and expression. There is a continuum of "man-ness" and "woman-ness", female/male assigned to each category. In addition, to account for asexual individuals, there is also a "nobody" in terms of sexual and romantic attraction.



Source: Genderbread Person v3

Although it is not mentioned, there is also an "undefinable" category for individuals who do not care to be "labeled" in any particular way, even though it could be argued that "undefinable" is also a category as well. There are no clear cut explanations when discussing sexuality as it is a very grey area that reflects the complex and evolving nature of humanity.

Developing Community: Different Scenarios

Animals and people seem to have the need to be around their own. This coupling and community forming nature creates a sense of security, family and belonging. The LGBT+ communities have grown and expanded into mature self-sufficient, self-governed or self-led diverse environments. Initially not always feeling welcome in many social settings, new membership driven associations and fellowships evolved over the last half century, especially in faith-based settings when traditional synods were reluctant to offer a welcoming atmosphere for LGBT+ parishioners with full participatory rights.

More liberal Jewish communities were among the first to form new congregations serving these communities and many of those have morphed into mainstream synagogues serving LGBT+ and heterosexual members. Beth Chayim Chadishim, opened in 1972 in Los Angeles as the world's first Synagogue serving the gay community and was at the forefront of the HIV crisis ministering to a growing need. It began celebrating the Transgender Day of Remembrance in November 1978 to memorialize those who were killed due to anti-transgender hatred or prejudice and statistics indicate that at least one such casualty is noted each month.[xiii] With the exception of the orthodox denomination, ordination of LGBT+ rabbinical clergy has been well established worldwide since the latter half of the last century. When describing the transformations of Jewish and LGBT+ life, "progressive yet misunderstood, often isolated, people"[xiv] characterizes the orthodox experience but suggests that times have changed in other persuasions of Judaism.

Within the Christian Community, the Metropolitan Community Church, also known as the Universal Fellowship of Metropolitan Community Churches has been at the forefront being inclusive of and providing extensive outreach to the LGBT+ communities. The Fellowship has Official Observer status within the World Council of Churches but has been denied membership in the US National Council of Churches due to its outreach efforts. Still, many local MCC congregations are members of local ecumenical partnerships around the world and MCC currently belongs to several statewide councils of churches in the United States.

The Unitarian Church has also been actively open to members' diversity. The Episcopal Church has consecrated gay/lesbian bishops and in 2015 began performing same-sex marriages.

The evangelical fundamentalists have traditionally been less accepting of LGBT outreach and inclusion due to strict fervent interpretations of the New Testament. However the Evangelical Network (TEN) is an association of LGBT+ affirming evangelical ministries and individuals and held its national conference in Irvine, California earlier this summer. TEN's mission is focused on the LGBT+ community and its allies to:

- Provide a safe place for LGBT+ people to discover and rediscover Christianity
- Bring together people with a shared faith to worship, evangelize and disciple
- Give people from all different backgrounds an opportunity to be educated about Homosexuality and Christianity[xv]
- Afford ministry and growth opportunities to people in the LGBT+ community
- Hold an annual conference open to all that is designed for networking, fellowship, education and worship
- Offer a safe place for LGBT+ people and the evangelical church community to dialogue
- Be a voice in the public and media that supports the LGBT+ community and its struggles for equality, and to speak out against negative stereotypes.

The Catholic Church remains steadfast in dealing with marriage, family, and sexuality, and doesn't move an inch on same-sex relationships or other LGBT+ issues. Pope Francis's release of the *Joy of Love* document earlier this year reaffirms the Roman Catholic Church's opposition to same-sex relationships, saying these can never be considered the equal of heterosexual marriage. Locally, many Catholic parishes have reached out to Catholic members but equality in the Church remains impossible at this time.

Muslims for Progressive Values is a faith-based, grassroots, human rights organization that embodies and advocates for the traditional Qur'anic values of social justice and equality for all, in the 21st Century. Its principles state: "We endorse the human and civil rights of lesbian, gay, bisexual, transgender, queer, and intersex (LGBTQI) individuals. We affirm our commitment to ending discrimination based on sexual orientation and gender identity and we support full equality and inclusion of all individuals, regardless of sexual orientation or gender identity, in society and in the Muslim community."[xvi]

Religion and spirituality have come a long way in admitting that its members in every facet of religious life is reflective of the LGBT+ population and its future is inherent in how to best minister to and support its members. A more open progressive atmosphere has been created but reasons of doubt about its future always remain under the clouds of a doubting self-righteous and conservative political base.

Census Self-Identification – Issues with Accurate Data

Today, we see how every walk of life, ranging from politicians, celebrities, athletes, law enforcement, civil servants, business people, academics, clerics who have embraced their own sexual orientation and can find that self-identifying is a powerful disclosure. New laws and perceptions of harassment argue for personal civil rights and will legally challenge situations of discrimination based on sexual identification.

The Williams Institute at the UCLA Law School issued in 2011 a demographic snapshot that an estimated 3.5% of adults in the United States identify as lesbian, gay, or bisexual and an estimated 0.3% of adults are transgender. This transcribes roughly to 9 million LGBT+ Americans and population analogies match it to the equivalent of the state of New Jersey.[xvii]

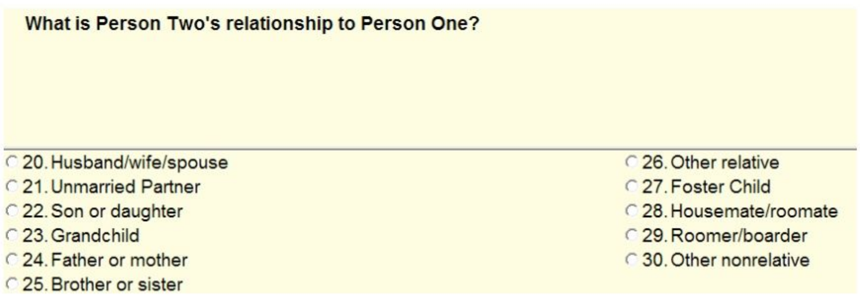
Other findings note that among adults who identify as lesbian, gay or bisexual, bisexuals comprise a slight majority (1.8% to 1.7% who identify as lesbian or gay); women are substantially more likely than men to identify as bisexual, estimates of those who report any lifetime same-sex sexual behavior and any same-sex sexual attraction are higher than estimates of those who identify as lesbian, gay or bisexual. There are also nearly 700,000 transgender individuals in the U.S. An estimated 19 million Americans (8.2%) report that they have engaged in same-sex sexual behavior and nearly 25.6 million Americans (11%) acknowledge at least some same-sex sexual attraction.[xviii] This is not inconsequential because there is no other evidence in population studies that suggests the impact of this demographic.

The concept of transgender identification is complex, varied, and much of it is beyond the scope of this paper. A demographic profile released within the last month notes that adults who identify as transgender are more racially and ethnically diverse than the U.S. general population.[xix] Extensions to the rest of the world suggest that the US census of LGBT+ may be representative as well. We see as recently as this month how transgender is increasingly breaking barriers with international competitions for beauty contests even in highly conservative and Muslim nations such as Indonesia by crowning Miss Waria (Transgender) Indonesia.[xx]

The US Census: Accuracy and Accountability

The US Census captures data for the LGBT population through the same-sex population households category in the American Community Survey (ACS) and the American Housing Survey (AHS)[xxi], a publication "sponsored by the Department of Housing and Urban Development (HUD) and conducted by the U.S. Census Bureau."[xxii] However, the same-sex households category applies to a wide range of living situations that includes heterosexual and LGBT populations, including but not limited to, family members of the same-sex living together, roommates, co-habiting life partners, and more recently married same-sex couples. This push towards collecting data on the LGBT population was started by the 2013 Supreme Court decision that made Section 3 of the Defense of Marriage Act unconstitutional.[xxiii] This piece of legislation attempted to deny same-sex married couples from receiving federal benefits. Since the act was declared unconstitutional, the Office of Personal Management required data on same-sex married couples to be collected to estimate the beneficiaries for the Federal government.[xxiv]

Despite best intentions to collect accurate information on the same-sex married couples households category, the Census noticed that significant errors existed due to discrepancies in data between the 2013 American Housing Survey and the Social Security Administration (SSA) data based on relationship and gender of the people being asked. Same-sex married couples who identified as such in the 2010 US Census, marked themselves as opposite-sex married couples in the SSA data. However, the errors were less than 1% for opposite-sex married couples who identified themselves as same-sex married couples. This issue is not unique to the US and also occurred in the Census of Canada and also the French census (Enquête annuelle de recensement, EAR).[xxv] The main reason for this mistake is the way the questions were phrased in the AHS.


What is Person Two's relationship to Person One?

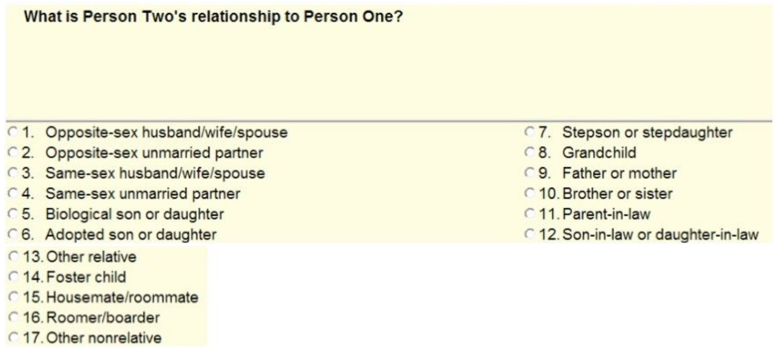
20. Husband/wife/spouse
21. Unmarried Partner
22. Son or daughter
23. Grandchild
24. Father or mother
25. Brother or sister
26. Other relative
27. Foster Child
28. Housemate/roomate
29. Roomer/boarder
30. Other nonrelative

Figure 1: Control Relationship to Householder Question from 2013 AHS

Source: Lewis, J., Bates, N., & Streeter, M. (2015)

The Census Bureau used an indirect approach to measure couple type, including same-sex couples, in the 2010 Census and other most recent Census surveys. Information from both the relationship to householder and sex items is needed to classify couples. Figure 1 shows the control relationship to householder item as it appears in the 2013 AHS. As an example of how this information is used to classify couples, if Person Two's relationship to Person One was recorded as 'Husband/wife/spouse,' and both Person One and Person Two's sex recorded as 'Male,' they would be considered a same-sex married couple.[xxvi]

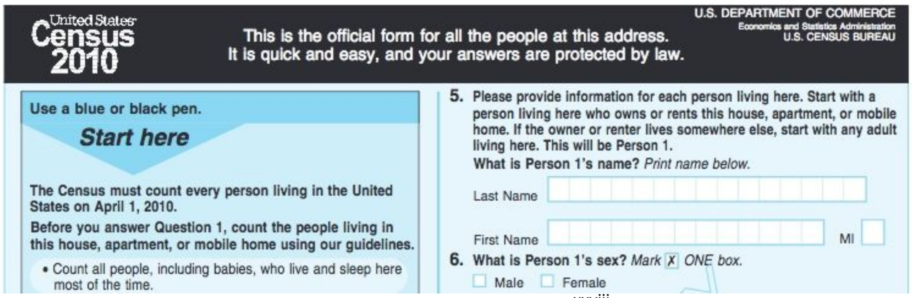
Due to the confusing nature of the above example, the US Census proposed a new question below that reduces ambiguity between the relationship between "Person One" and "Person Two's" relationship between each other as we can see below in Figure 2.


What is Person Two's relationship to Person One?

- 1. Opposite-sex husband/wife/spouse
- 2. Opposite-sex unmarried partner
- 3. Same-sex husband/wife/spouse
- 4. Same-sex unmarried partner
- 5. Biological son or daughter
- 6. Adopted son or daughter
- 7. Stepson or stepdaughter
- 8. Grandchild
- 9. Father or mother
- 10. Brother or sister
- 11. Parent-in-law
- 12. Son-in-law or daughter-in-law
- 13. Other relative
- 14. Foster child
- 15. Housemate/roommate
- 16. Roomer/boarder
- 17. Other nonrelative

Figure 2: Test Relationship to Householder Question from 2013 AHS

Transgendered individuals represent another potential difficulty in US Census accurate measurement of the LGBT+ communities. The Census recognizes that there are likely transgendered individuals that exist according to a fairly recent analysis of 2010 US Census records against Social Security (SSA) name change records based on the gender of the first name.[xxvii] However, based on the current US Census forms for the last decennial Census and the most recent American Community Survey, there are only “Male” and “Female” offered as choices.


United States Census 2010

This is the official form for all the people at this address. It is quick and easy, and your answers are protected by law.

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

Use a blue or black pen.

Start here

The Census must count every person living in the United States on April 1, 2010.

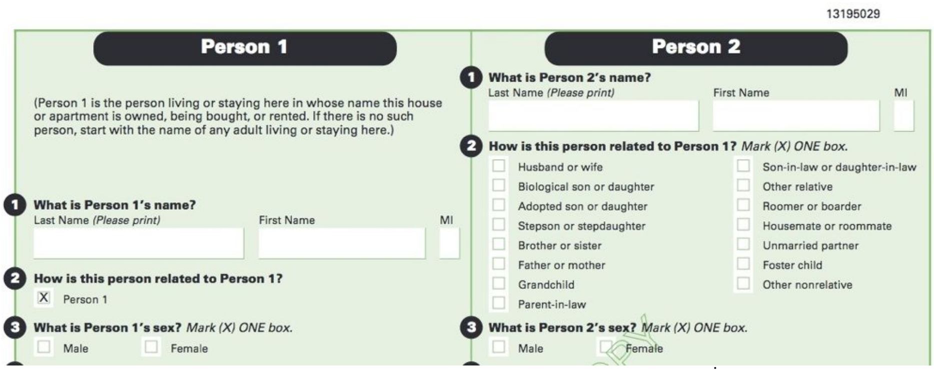
Before you answer Question 1, count the people living in this house, apartment, or mobile home using our guidelines.

- Count all people, including babies, who live and sleep here most of the time.

5. Please provide information for each person living here. Start with a person living here who owns or rents this house, apartment, or mobile home. If the owner or renter lives somewhere else, start with any adult living here. This will be Person 1.
What is Person 1's name? *Print name below.*
Last Name
First Name MI

6. What is Person 1's sex? *Mark* X *ONE box.*
☐ Male ☐ Female

Source: US 2010 Census[xxviii]


13195029

Person 1

(Person 1 is the person living or staying here in whose name this house or apartment is owned, being bought, or rented. If there is no such person, start with the name of any adult living or staying here.)

1 What is Person 1's name?
Last Name *(Please print)* First Name MI

2 How is this person related to Person 1?
X Person 1

3 What is Person 1's sex? *Mark (X) ONE box.*
☐ Male ☐ Female

Person 2

1 What is Person 2's name?
Last Name *(Please print)* First Name MI

2 How is this person related to Person 1? *Mark (X) ONE box.*
☐ Husband or wife
☐ Biological son or daughter
☐ Adopted son or daughter
☐ Stepson or stepdaughter
☐ Brother or sister
☐ Father or mother
☐ Grandchild
☐ Parent-in-law
☐ Son-in-law or daughter-in-law
☐ Other relative
☐ Roomer or boarder
☐ Housemate or roommate
☐ Unmarried partner
☐ Foster child
☐ Other nonrelative

3 What is Person 2's sex? *Mark (X) ONE box.*
☐ Male ☐ Female

Source: 2015 American Community Survey[xxix]

Since the issue of gender and sexuality is complicated it will be interesting to see the direction that the US Census takes to measure the transgender community, should it decide to do so.

Telling the Story: The power of the personal narrative

It appears that nearly every family has a member who is part of the LGBT+ community. The publishing and creative fields have depicted increasingly positive exposures resisting the stereotypes that once were the mainstay of the community. As families have become more open and welcoming of children who are expressing their sexual orientations at earlier ages, the need for public schools to accept all students regardless of circumstance on their terms, the communities have become safer. This would not have happened over the last few decades if support organizations such as PFLAG (formerly Parents and Friends of Lesbians and Gays) had not become so instrumental in educating the public, and fighting acts of intolerance and bullying.

One of the largest milestones of the LGBTQ+ community is the legalization of same sex marriage by the US Supreme Court in June 2015.[xxx] However, even with the legalization of same sex marriage, there has been pushback from individual states that are opposed to same sex marriage for largely religious and fundamentalist reasons.[xxxi]
Despite the victory of same sex marriage legalization, there are still other ways where LGBTQ+ individuals are discriminated. The ACLU (American Civil Liberties Union) is an organization that defends the individual rights and liberties guaranteed to all people in the US.[xxxii] Some of the major issues that they have identified as current issues are the following:[xxxiii]

- LGBT Parenting
- LGBT Relationships
- LGBT Youth
- LGBT Nondiscrimination Protections
- Transgender Rights
- Bullying

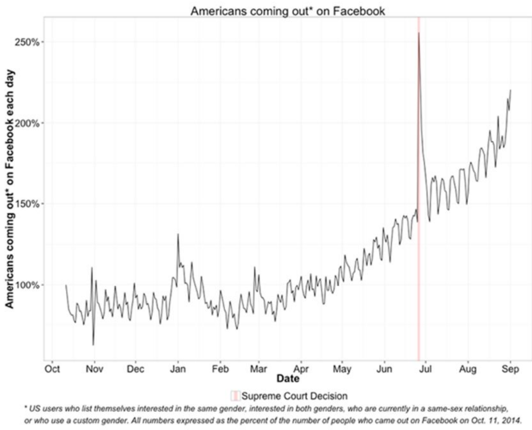
Another critical advocacy organization, Lambda Legal, founded in 1973, is the oldest and largest national legal organization whose mission is to achieve full recognition of the civil rights of **lesbians, gay men, bisexuals, transgender people** and those with **HIV** through impact litigation, education and public policy work. Examples of recent work by Lambda Legal have included:

- Influencing prisons to defend and protect incarcerated transgender inmates
- Challenging how fervent religious beliefs have allowed small business owners, from barbers to bakers, etc, to choose their clients and whether to serve them
- Defending guidelines issued by the Obama Administration calling for public schools to respect transgender students by using the right pronouns, combatting bullying and allowing students to use restrooms in line with their gender identity and creating Trans-Student Rights Watch
- Issuing a set of trans-friendly model policies for hospitals to follow, *Creating Equal Access to Quality Health Care for Transgender Patients (http://www.lambdalegal.org/publications/fs_transgender-affirming-hospital-policies)*

Families are sharing experiences that document how children as young as six year olds are confronting their sexuality and communicating that they identify with a gender other than what they are. Requests for cross-dressing and identifying sufficiently to be comfortable to ask for accommodations in school has forced parents to face these issues with younger children than earlier documented. How to offer parental support and love while knowing that their children may suffer as a result of their choices is a parenting skill many need to face. Some families have decided to be "open and honest about it, celebrating these stories instead of hiding it."[xxxiv]
Other families have found how athletics served as the focus of communicating their dilemmas. Sports teams are gender based and when a high school in Santa Monica, California honored its mission of diversity and acceptance and chose to accept a student's wish to play baseball on the boys' team. Originally enrolled as Emma, he became Jake and joined the baseball team. Never being able to find or create the right sisterhood as a girl, experiencing depression and being suicidal, but finally finding kindness at the foundation of his school community, his mother sums it up best as saying, "I would recommend to parents to look in their child's eyes, look at their smile, look beyond any gender and know this is your offspring, this is going to be your child's story, and you're going to want to be part of it."[xxxv]
Personal narratives and oral histories became increasingly visible in journals, magazines, plays, music lyrics, photography, film and other distillations of life and were captured to share experiences and reduce the stereotyping and enhance the comfort levels psychologically and emotionally of the gay population. It also bridged the gap of ordinary members of society being able to tell their story without ridicule and humiliation. Obituaries and society pages of local newspapers with growing frequency report on a subject's gender identity, contributing to another level of accuracy, objectivity in contributing to genealogy

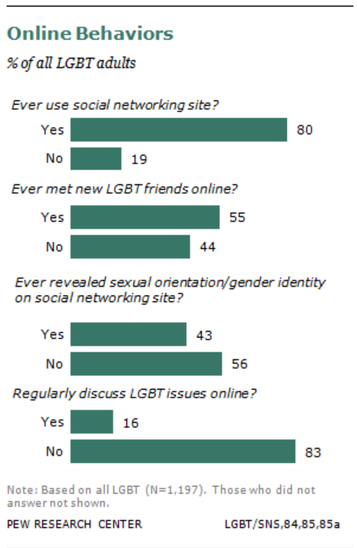
and history. Social media on different platforms enables resources such as the "Girls Like Us at the gluproject" to evolve as a mixed media project where Saira Awan explores the stories behind the faces of girls/women/ladies of all ages, races and backgrounds.[xxxvi]
Society's tolerance levels have elevated to where there is critical mass in the general population and a significant proud and visible element for whom total social acceptance is expected and can be shared. However, concerns are raised from the Gay, Lesbian and Straight Education Network's (GLSEN) 2016 report, "Teasing to Torment: School Climate Revisited"[xxxvii] about the immediate need for high school teachers and counselors to become better prepared to respond to and support LGBT+ youth in their schools and to combat the bullying and harassment that students experience and perpetrators are uneducated about.

More Social Media and LGBTs
One of the major events that sparked an increase in social media was the events leading up to and also the after effects to the passage of marriage equality in the US. Facebook, recently posted a chart that indicated the number of users "coming out" on their platform as shown in the graphic below. Although the time period only covers a one-year span, we can see a sharp increase through Facebook. We can extrapolate that similar effects happened on other social media platforms as well during this time period.



Source: Contently - How Facebook Changed LGBT Culture, in 3 Charts

The Pew Research Center published a report in 2013 that surveyed LGBT+ Americans, in particular the use of social media sites in their daily life. The results showed interesting results as most of the LGBT adults they surveyed use social networking sites, however the results conflict somewhat with the noted Facebook example in terms of revealing their sexual orientation as the Pew report stated that a slight majority chose not to reveal their orientation.[xxxviii] Part of this may be due to the timing of the report as it occurred two years before the passage of marriage equality in the US. There are scores of online social dating sites and apps for people to connect and meet likeminded friends, many of which offer choice for both LGBT+ and heterosexual members.



Source: Pew Social Trends – A Survey of LGBT Americans

Social media as a whole resonates with the youth of any sexual orientation and the LGBT+ youth is no exception. The "It gets better project" (http://www.itgetsbetter.org/) is dedicated to helping LGBT youth who faced bullying, harassment, and coming out issues that life "gets better" and that the suffering that they currently face is just a small part in their struggle for identity and meaning in their own lives. This resource with social media links and a Twitter feed of @ItGetsBetter shows a glimmer of hope and comfort to those who have little to no support in communities with less visible LGBT presence or youth who want to identify with role models but have none nearby. By providing an avenue for outreach and more social services, helplines, networking and community building, it is probable that this site and others, will ease the suffering of troubled LGBT youth and prevent suicides and the downward spiral of negative social behavior.

Recent history

On Saturday, June 28, 1969, New York City police raided the Stonewall Inn, a bar catering to gay clientele. During this time period, harassment tactics used by police for the LGBT establishments was common. However, on this particular night, the bar patrons and residents surrounding the Stonewall Inn had enough of being harassed and refused to leave the area when directed. This confrontation between protesters and police lead to six days of demonstrations and riots over "homophile rights" in the US. Despite the size and controversial political nature of the event, it was not highly publicized in the press until many years later when films and documentaries depicted its significance. This incident was credited as the "spark" that ignited the gay rights movement in the US. In June 2016, just this year, the US National Park Service commemorated the Stonewall Inn in Lower Manhattan as a National Monument in recognition of the struggle for civil rights for the LGBT community.

Another political milestone for the LGBT community was the AIDS crisis. In the early 1980s, a disease called "Gay Related Immune Deficiency" hit the gay male community in Los Angeles with full force. Gay men started to die of a mysterious illness that scientists were unable to diagnose and treat. The disease was renamed the Acquired Immune Deficiency Syndrome and the emphasis had shifted from being a "gay disease" to a disease that affected all people that were susceptible to coming in contact with the disease through high risk behaviors. Towards the late 1980s and early 1990s, the US government started a public health campaign that controlled the spread of AIDS in the US. Today, the emphasis is on addressing worldwide measures to suppress AIDS and treat the related social and family issues.

Additional Unique Health Concerns

Tobacco use, and illegal drug and substance abuse among the LGBT+ census has proven to exhibit how it is at an increased risk for the adverse effects of tobacco use, given the high prevalence of use, especially smoking among this population. This evidence-based data suggests how LGBT serving organizations should implement more aggressive tobacco dependence and substance abuse treatments that will encourage diversions from such damaging health conditions.[xxxix] Other health issues in addition to AIDS have challenged this community. Sex-change surgeries do not come without complications and are carried out via numerous procedures. Mental health services for this population vary widely and access is often dependent on individual economic abilities and local social services that vary greatly.

The Gay Press & Publishing: Capturing for the future

Two major newspapers have provided coverage and advocacy for the LGBT+ community and are based in Los Angeles and released by Regent Communications. *The Advocate*, a bi-monthly magazine issued from 1967 captures news, stories, and interviews and is a platform for social and political advocacy with a subscription of just shy of 200,000. *Out,* more of a lifestyle and consumer magazine for LGBT+ readers began publishing in 1992 and has a current subscriber base of more than 200,000. These outlets provide channels for marketing and advertising to this growing readership and along with 8 other trade publications all gaining traction.[xl]

The academic and scholarly resources that track and explore LGBT+ society have proliferated in recent years. The One Archive located at the University of Southern California Libraries claims to be the largest repository of LGBTQ materials in the world with beginnings in 1952.[xli] Subject access to resources and collections has been improved by a February 2016 update of the Library of Congress Subject Headings.[xlii] Most major publishers, the commercial trade and scholarly presses have released many series of books and journals that are both interdisciplinary and couched in specific subject fields. The citation landscape has imploded with a growth of traditional resources and a recent study published in 2012 demonstrates how from 1974-2010 the materials remain more mainstream and academic rather than popular or community and activist sources.[xliii] Databases such as Gender Studies Database, GenderWatch, Defining Gender, LBGT Life with Fulltext[xliv] and other databases that cover history, politics, women's studies, psychology and sociology all have relevant content sourced, cited and indexed from a variety of primary and secondary materials.

One of the most important resources to launch this year was the Digital Transgender Archive,[xlv] a culmination of contributions from more than 20 nonprofit agencies, libraries and institutions which are collaborating to create the world's largest transgender history digital archive. The College of the Holy Cross, a Jesuit institution is leading the project with Professor K.J Rawson as director and archivist. Academe has a first endowed chair of transgender studies in Professor Aaron Devor at the University of Victoria created by the generosity of billionaire Jennifer Pritzker of Chicago. Devor and Rawson hope the Digital Transgender Archive "will provide a more nuanced look at trans-history, and believes the research has the power to enact policy changes that help transgender people."[xlvi] One of the largest collections of grey literature this archives possesses more than a football field of archival boxes full of memorabilia, papers, correspondence, audio tapes, photos, programs, full runs of newsletters, earlier tabloids and journals that document the history of transgender experiences globally, including the forty plus year history of the Fantasia Fair, the longest running conference for transgender people held in Provincetown since 1975. The Trans Lives Matter movement has also become more visible due to the added exposure that the Black Lives Matter has generated over the last two years and Black Transgender individuals have found community and support in this community.

Grey literature has been a hallmark for different threads of gender studies reflecting mens' studies, womens' studies and trans' studies. Global coverage has also proliferated from very open cultures to those that have been less than hospitable to LGBT+ populations. Religion and politics contribute to that lack of transparency but are not the only causes. Within more of an arts and literary focus, *Vetch* captures trans-poetry and poetics since its inaugural release in 2015. Independent bookstores in urban centers and college towns were known to concentrate on offering a range of literature that served these interests. Online commerce has an example of a digital storefront (https://www.lgbtbookshop.com/) specializing in print and eBooks for and about the LGBT+ lifestyle.

Additional resources that showcase the history and contemporary lives of LGBT+ include fanfiction produced online for gay communities, participative blogs to which readers can contribute, comment and gain insights from, photo archives captured by museums and libraries and books such as the recently released *On Christopher Street: Transgender Stories*.[xlvii] There are many social media installations via Facebook, Twitter, Instagram, Tumblr, and others that capture lifestyle stories such as those revealed and shared via #GirlsLikeUs[xlviii]. Today there are many museums worldwide, including in the US, the LGBT History Museum in San Francisco in the heart of the Castro, in Washington, DC, the Smithsonian and its newest facility, the National Museum of African American History and Culture[xlix] that have rotating exhibits that chronicle the LGBT+ community's rich history, but today there are 9-10 national monuments and museums dedicated and focused on preserving the past and collecting artifacts that document sexual minorities.[l]

Sexuality Archives & Psychiatric Findings

Beginning in the 1940s, Alfred Kinsey documented the lesbian and gay subculture in *Sexual Behavior in the Human Male.* His research demonstrated that same-sex behavior was not all the same by disputing that all adults were either homosexual or heterosexual and that there was a population best described as "sexually fluid." The American Psychiatric Association removed homosexuality from its official *Diagnostic and Statistical Manual of Mental Disorders* (DSM-II) in 1973. This decision occurred in the context of momentous cultural changes brought on by the social protest movements of the 1950s to the 1970s beginning with the Civil Rights movement, then evolving on to the women's and gay rights movements. Having successfully challenged the police and government attempts to shut down public places where gay people gathered, gay activists would soon challenge psychiatric authority as well.

Before the Stonewall riots, homophile groups had accepted the medical view of homosexuality as a mental disorder. Their view had been that accepting homosexuality as disease meant treating it as a disability, rather than a moral or religious sin, and would lead to more objective and humane attitudes. The DSM-II diagnosis of Sexual Orientation Disturbance (SOD) replaced Homosexuality. Accordingly, individuals comfortable with their homosexuality were no longer considered mentally ill. Only those who were "in conflict with" their sexual orientation had a mental disorder (SOD). This compromise engendered continued controversy. Those opposing it pointed out there were no reported cases of unhappy heterosexual individuals seeking treatment to become homosexual. This problem was addressed in the revisions of the 1980's DSM-III where SOD was replaced by ego-dystonic homosexuality (EDH) and did not come without enormous controversy. The DSM-IV does not include homosexuality per se as a disorder, but still permits the diagnosis of "Sexual Disorder Not Otherwise Specified" for someone with "...persistent and marked distress about sexual orientation," while one can conclude that this latest edition was more reliant on empirical data and less influenced by the politics of the day.

Public Awareness

The 2016 US presidential election was an important event for LGBT+ politics as Democratic candidate Hillary Clinton supported upholding marriage equality for LGBT+ Americans as was stated on her campaign website[li] and Donald Trump took the opposing view by pledging to repeal marriage equality[lii] but has since accepted that it has become part of the domestic landscape and will not change it. Internationally same-sex marriage laws have expanded throughout much of Europe, however there remains staunch resistance in Asia, until the current news that in 2017 Taiwan may have sufficient votes in its legislature to pass such legislation becoming a pioneer on that continent.[liii] President-Elect Trump, also mentioned that he will "defend" LGBT+ Americans as a reaction from the Orlando nightclub massacre.[liv] Even the Log Cabin Republicans, a LGBT+ group allied with the Republican Party, did not endorse Donald Trump for president because of his anti-LGBT stance on marriage equality.[lv] With the victory of marriage equality in the US, the battleground for LGBT+ political issues shifted from the national spotlight to the individual states for LGBT+ issues. The Human Rights Campaign, a LGBT+ civil rights organization that advocates for LGBT+ rights, maintains a map of State Laws and Policies that outlines the different laws from each state.

Source: Human Rights Campaign

This shift towards state politics rather than national issues makes the individual state leadership candidates more important based on their views of LGBT+ issues. Also to complicate matters, as mentioned previously, LGBT+ individuals not only identify with their own sexuality but also maintain intersectionalities with their race/ethnicity, socioeconomic status, and other areas in their life that may influence the political viewpoints of the voter.

Conclusion: Leveraging diversity

Since we began work on this paper, much has happened in the United States with the outcome of the national election being one we could not have predicted. The media has spun many scenarios about how the results happened. One political scientist, Joseph Nye helps us understand that there are two kinds of presidencies. Those that are transformational and those that are transactional. The former seeks to change the political landscape in fundamental ways while the latter seeks to manage the landscape much as it is.[lvi] We have yet to see where on the spectrum Mr. Trump will fall. The Equality Act when passed will amend the Civil Rights Act of 1964 to include protections that ban discrimination on the basis of sexual orientation, gender identity and sex in the areas of employment, housing, public accommodations, public education, federal funding, credit, and the jury system, and is critical since LGBT+ Americans in 30 states live without fully inclusive nondiscrimination laws. We do know that since the election there has been a “big uptick in incidents of vandalism, threats, intimidation,” and expressions of hate, intolerance and fear that major human and civil rights may be removed. We have a Vice-President-Elect who last year as governor of Indiana, signed the "Religious Freedom Restoration Act," which allows companies to discriminate against LGBT+ employees and customers based on firmly held religious beliefs. And Mr. Pence proposed cutting funding for HIV treatment and using the money for “gay cure therapy,” killing off Planned Parenthood, and together with Mr. Trump will nominate Supreme Court Justices who will push the Christian Fundamentalist persuasion and potentially reverse Roe v. Wade and the ability for women to elect to have abortions. Bodies of Pence’s association such as the American Conservative Union, the appointment of a Chief Strategist leading the the pull toward the “alt-right” where white supremacists and nationalists are getting air time are disturbing and driving mainstream members of society to protest and worry about their future. Populations already marginalized within the LBGT+ community had every reason to be concerned as it remains unclear whether the Republican platform would reinstate “don’t ask, don’t tell” regarding service in the military, support for state laws limiting which public bathroom transgender people can use and support for a parent’s right to subject gay and transgender children to conversion therapy to change their sexual orientation or gender identity.[lvii] It will be an uneasy time these next few months, but we remain optimistic that the implications of going backward would set a very bad precedent and create a dark cloud under this administration before they even have a chance to try their hand at fixing healthcare, redirecting the economy and creating jobs and opportunities for all. The National Center for Transgender Equality has championed the causes important to their community and has just released its findings from the second U.S. Trans Survey conducted last year that garnered 27,000 responses. Its predecessor released in 2011 with 660 respondents is the most cited study about transgender people. This current survey demonstrated regarding the bathroom controversy that:

> **59% have avoided bathrooms** in the last year because they feared confrontations in public restrooms at work, at school, or in other places.
>
> **12% report that they have been harassed, attacked, or sexually assaulted** in a bathroom in the last year.
>
> **31% have avoided drinking or eating** so that they did not need to use the restroom in the last year.
>
> **24% report that someone told them they were using the wrong restroom** or questioned their presence in the restroom in the last year.
>
> **9% report being denied access to the appropriate restroom** in the last year.
>
> **8% report having a kidney or urinary tract infection**, or another kidney-related medical issue, from avoiding restrooms in the last year.[lviii]

A growing concern is the increase in reporting about the elderly regardless of what population of LGBT+ they represent. For those who have been distanced from family and who have experienced poverty and life under the radar, growing old and destitute has been reaffirmed as they find themselves often in unwelcome public residential communities where bias, signs of harassment and abuse have driven residents to file lawsuits against retirement facilities. If successful the current Wetzel lawsuit may establish legal precedent for the responsibility of "housing providers to actively address discrimination based on gender identity and sexual orientation under the federal Fair Housing Act where the law states that discrimination based on "sex" is prohibited."[lix]

There is much uncertainty, much angst and after accomplishing so much for human rights, leveraging grey is no longer a sufficient hue but clarity about equality for all citizens is essential. It is about legitimizing life whether it be any part of the LGBT+ population.

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Managing Diversity in the International Nuclear Information System

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Although diversity is defined as the state of having many different forms, types, ideas or properties, most often it is associated with cultural diversity or different ethnic backgrounds. Biology, religion, and political science researchers have their own view of diversity, such as biodiversity (i.e. variety of life on earth); religious pluralism (i.e. multi-confessionalism, multi-faith), or various shades of democracy (i.e. freedom of opinion or expression). Diversity is also applicable to information management, usually through the diversity of information resource formats and the variety of information users (i.e. customers or clientèle).
This paper adopts a holistic approach to information management, in particular to the management of scientific and technical information (STI), as carried out by an international repository, and attempts to identify various intrinsic and extrinsic properties which include elements of apparent diversity. In addition to the above mentioned diverse information formats and the variety of information users, intended and actual, this paper also examines the diversity of subject content, temporal distribution, geographic coverage, variety of distribution channels, search paths, and composition of the staff directly involved with the running and management of an information repository.
The data used in this research comes from the International Nuclear Information System (INIS), which has collected, processed and provided access to more than 4 million bibliographic references of publications, documents, technical reports, non-copyrighted materials, and other grey literature, as well as over a million full-texts. The INIS repository represents one of the world's largest collections of published information on the peaceful uses of nuclear science and technology. The history of INIS throughout the last 47 years represents a wealth of information on the successful management of diversity, starting with 154 member states and international organization who share and allow access to their valuable nuclear information resources while preserving them for future generations, offering nuclear information repository used annually by millions of scientists, researchers, engineers, technicians, students, managers, and government employees.

Keywords: nuclear information; information management; document repository; grey literature; diversity; INIS; IAEA

Introduction

The main topic of this paper is leveraging diversity in grey literature. However, as we can see from the title, there are two major concepts here put into one topic. The first one is ***diversity*** and the second one is ***grey literature***. Taking this into consideration, the first part of the paper concentrates on the review of conventional diversity, while the second part focuses on information diversity, more specifically on diversity related to grey literature and the way it is being managed in the International Nuclear Information System (INIS)[1].
Conventional diversity will be presented as a concept, followed by a review of challenges, and culminating with a look at values and benefits. The review of diversity in INIS will start with identifying various aspects of diversity, followed by diversity-based results, and concluding with ways that diversity is being managed.
In closing, some general observations and conclusions will be drawn. It is expected that examples given throughout will demonstrate potential strength and benefits that can be achieved through diversity.

[1] The International Nuclear Information System (INIS) hosts one of the world's largest collections of published information on the peaceful uses of nuclear science and technology. INIS is operated by the International Atomic Energy Agency (IAEA) in collaboration with 154 Member States and international organizations. There are over 4 million bibliographic references to publications, documents, technical reports, non-copyrighted documentation and other 'grey literature', as well as 350,000 full-texts. INIS offers free and open online access to this unique collection of non-conventional literature through its search application (http://inis.iaea.org/search/).

In diversity there is beauty and there is strength* - *Maya Angelou

Grey literature

There are several definitions of grey literature, the most common being the so-called "Luxembourg definition," which was discussed and approved during the Third International Conference on Grey Literature in 1997: "[Grey literature is] that which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers." In 2004, at the 6th Grey Literature conference in New York, a postscript was added for purposes of clarification "...not controlled by commercial publishers, i.e., where publishing is not the primary activity of the producing body" (Schöpfel, 2010). As a synonym for grey literature, INIS uses the term 'non-conventional literature' or NCL, which will be mentioned later in this paper.

Diversity concept

Diversity is usually defined as the state of having many different forms, types, ideas or properties[2]. It encompasses acceptance and respect.

Diversity is most often associated with cultural diversity or different ethnic backgrounds. Keeping in mind, diversity also refers to human qualities that are different from our own and those of groups to which we belong; but that are manifested in other individuals and groups. Biology, religion, and political science researchers have their own view of diversity, such as biodiversity (i.e. variety of life on earth); religious pluralism (i.e. multi-confessionalism, multi-faith), or various shades of democracy (i.e. freedom of opinion or expression).

There are many papers written on these types of diversity, but not so many on 'information diversity'. For example, Google Search offers only 42,000 hits for 'information diversity' and over 11 million hits for 'cultural diversity'.

Diversity is also applicable to information management, usually through the diversity of information resource formats, the variety of information users (i.e. customers or clientèle), or a number of different information services.

Diversity challenges

Diversity comes with a number of inherited challenges. The most common ones are stereotypes, bias, generalizations, beliefs and resistance to change.

A ***stereotype*** is a generalized view or popular belief about a particular group of people, usually inaccurate and sometimes offensive (Kanahara, 2006). As the picture on the right shows, we can easily assume the nationality of the character, its characteristics, and other attributes. However, that might be completely wrong and coincidental. A very important lesson here is to connect with the individual, not with the stereotype and not by applying a label, whether positive or negative. Stereotyping is most often related to people or nations, but it can also be related to ideas and things. It should be kept in mind that stereotyping is not necessarily something wrong. It could be quite useful, since it allows us to condense information and make quicker decisions.

Another example of stereotypes is age. This is a big challenge, especially when dealing with and trying to benefit from diversity in the work place. Some research suggests that age related stereotypes bring particularly unfavourable consequences for women and minorities (Shultz & Adams, 2007). A common stereotype related to age is that older generations have poor IT skills, which is often not correct. Being 'too young' or 'too old' is often seen as negative, rather than an opportunity to bridge a gap between generations. Gender is another example of stereotypes, reflected in unequal pay, different career development opportunities, female vs. male jobs, etc.

Age stereotype
- Less motivated
- Not interested in training
- Resistant to change
- Not trusting
- Having health problems
- Vulnerable to work-family conflicts

(Ng & Feldman, 2012)

[2] Merrian-Webster Online Dictionary. https://www.merriam-webster.com/dictionary/diversity

Bias and stereotype are somewhat related. While stereotype is a preconceived idea that attributes certain characteristics to all the members of a class or set, bias is an individual or personal preference[3]. For example, a statement such as - I think that grey literature has no academic or scientific merit - is a stereotype. However, if we have in front of us two equally valid documents, one published in a journal and the other in a personal blog, and we decide to use only the one from the journal – that is bias.

A ***belief*** is an internal feeling that something is true, even though that belief may be unproven or irrational. For example, I believe that tweeting is the best way to quickly exchange information, although that is probably far from the truth. However, changing beliefs is a very difficult task. Often, in order to change beliefs, people need to change their experiences first.

Resistance to change and resistance to diversity are attributed, in part, to the natural fear of change, which often brings with uncertainty, discomfort and loss of control. There are some who outright oppose the concept of diversity (e.g. We've always done it this way), but in practice, this resistance usually manifests itself as a challenge expressed at the very beginning of a diversity based project or program. Some examples of diversity resistance include:

- discrediting information provided by people with diverse backgrounds;
- unwillingness to acknowledge and recognize the contributions of people with diverse backgrounds;
- delaying consideration/implementation of diversity issues;
- rejecting diversity as being too time consuming or complex.

In addition, the frequency of change undergone by a person at the work place is connected to the frequency of the negative emotions reported, which leads to a lowering of trust, lack of engagement, and a decrease in performance (Rafferty & Griffin, 2008). In order to achieve efficient change, all involved need to fulfil the commitments undertaken and not have hidden interests (Grama & Todericiu, 2016).

Diversity values and benefits

It is evident that diversity has very strong ethical, personal, business and social implications.

Ethics – a code of moral principles that set standards of conduct about what is right and wrong, moral and immoral, fair and unfair, and proper and improper in one's behaviour (Seid & Venkataram, 2016). Globalization and an increasingly interconnected world have created tension between universal ethics and local values and norms. What one culture perceives as an ethical action, another culture may not. Organizations need to invest resources and time to train their staff and leaders to properly manage diversity and make ethical decisions. Diversity training is often used as a tool to improve current situations in an organization.

From a ***personal*** aspect, diversity can create curiosity. By being exposed to different people and cultures, we may want to learn more about a particular group which can give us insight into how and why things work as they do and possibly a way to change them for the better.

In ***business***, employing a diverse workforce enables the of use a wider range of talents and skills. This leads to creativity and innovation. Businesses need to mirror the communities and cultures in which they work in order to understand and anticipate the diverse needs of their customers. In ***society***, diversity brings richness and variety. There are always new and interesting things to learn from each other.

Diversity at INIS

When dealing with aspects of diversity within INIS, a number of facets come to mind. Namely, diversity can be related to subject content, information formats, temporal distribution, geographic coverage, distribution channels, and also to the representation of INIS staff. Striving on its diversity, INIS throughout its history has achieved a number of

[3] A list of cognitive biases can be found at http://rationalwiki.org/wiki/List_of_cognitive_biases

remarkable milestones, marking its commitment to the efficient and effective collection, processing and dissemination of nuclear information, as well as its contribution and support for open access to scientific information, with global benefits.

Subject content of the INIS repository covers around 50 well defined categories (IAEA, 2010) which are regularly maintained by INIS, and provides scope descriptions used by national and regional centres to categorize nuclear literature for INIS input. The INIS Joint Reference Series publications are also available on the INIS website.

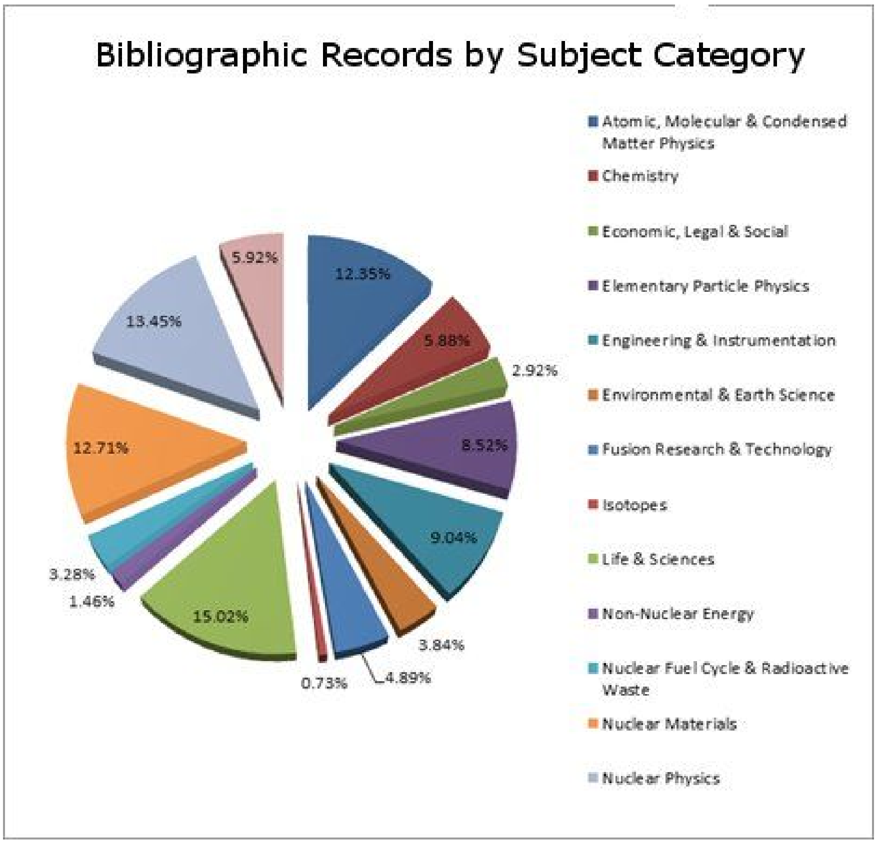


Figure 1: Bibliographic Records by Subject Category

The INIS repository covers all aspects of the peaceful uses of nuclear science and technology, such as nuclear reactors, reactor safety, nuclear fusion, applications of radiation and radioisotopes in medicine, agriculture, industry and pest control, as well as related fields of nuclear chemistry, nuclear physics and materials science. Special emphasis is placed on the environmental, economic and health effects of nuclear energy. Legal and social aspects associated with nuclear energy are also covered. Figure 5 lists a complete set of INIS Subject Categories.

Regarding ***information formats***, the INIS repository consists of seven types of literature – computer media, patents, books, reports, journal articles, miscellaneous and audio-visuals. The main purpose and goal of INIS is to collect non-conventional or grey literature on nuclear science and technology from around the world. This includes various technical reports, project documents, feasibility studies, government reports and any other publications which are not commercially available. However, as shown in the figure below, the INIS repository also contains a number of other forms of conventional literature. Still, it should be noted that while the INIS repository includes links to commercially available journal articles, a great majority of full-texts are, in fact, grey, or non-conventional literature.

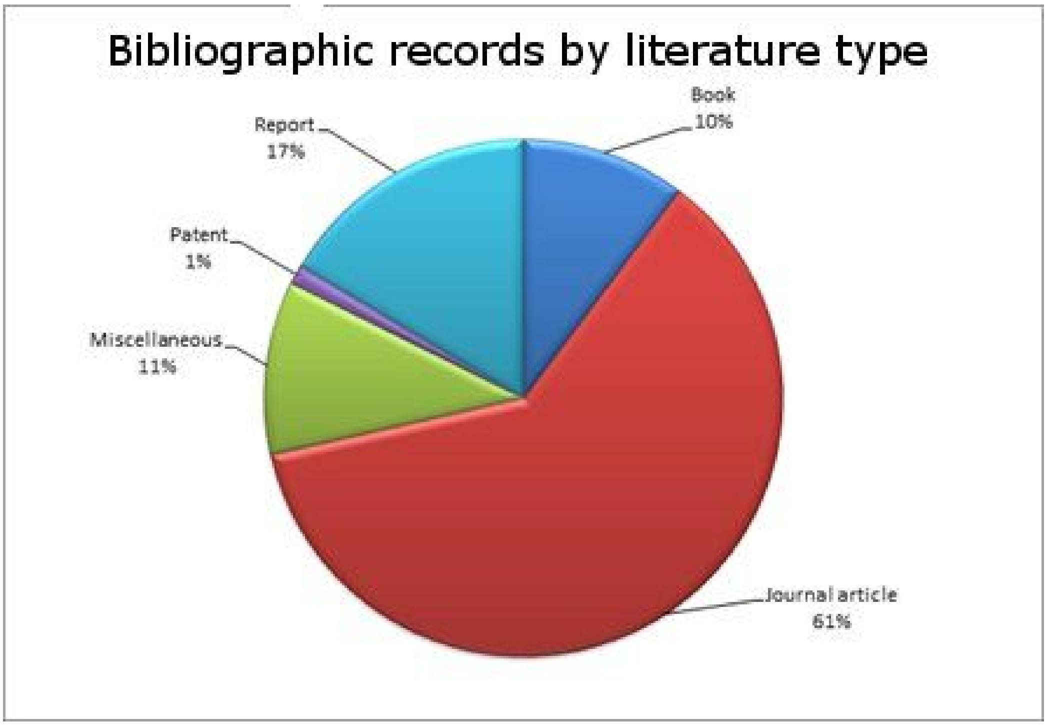


Figure 2: Bibliographic Records by Literature Type

INIS repository

Conventional literature 71%

- Journal articles 61%
- Books 10%

Non-conventional Literature 29%

- Reports 17%
- Miscellaneous 11%
- Patents 1%

Temporal distribution of records in the INIS repository is another aspect of its diversity. As of 31 December 2016, the INIS repository contained 4,000,361 bibliographic metadata records. Of those, 1,093,004 are full-text documents, 761,910 of which are directly available from INIS, with the remaining 331,094 NCLs available from other sources. Only a small portion of the full text documents is restricted and kept for internal use.

During the last 10 years, INIS has added to its repository over 120,000 bibliographic records and 13,000 full text PDF documents annually. The repository is accessible from the INIS website (www.iaea.org/inis).

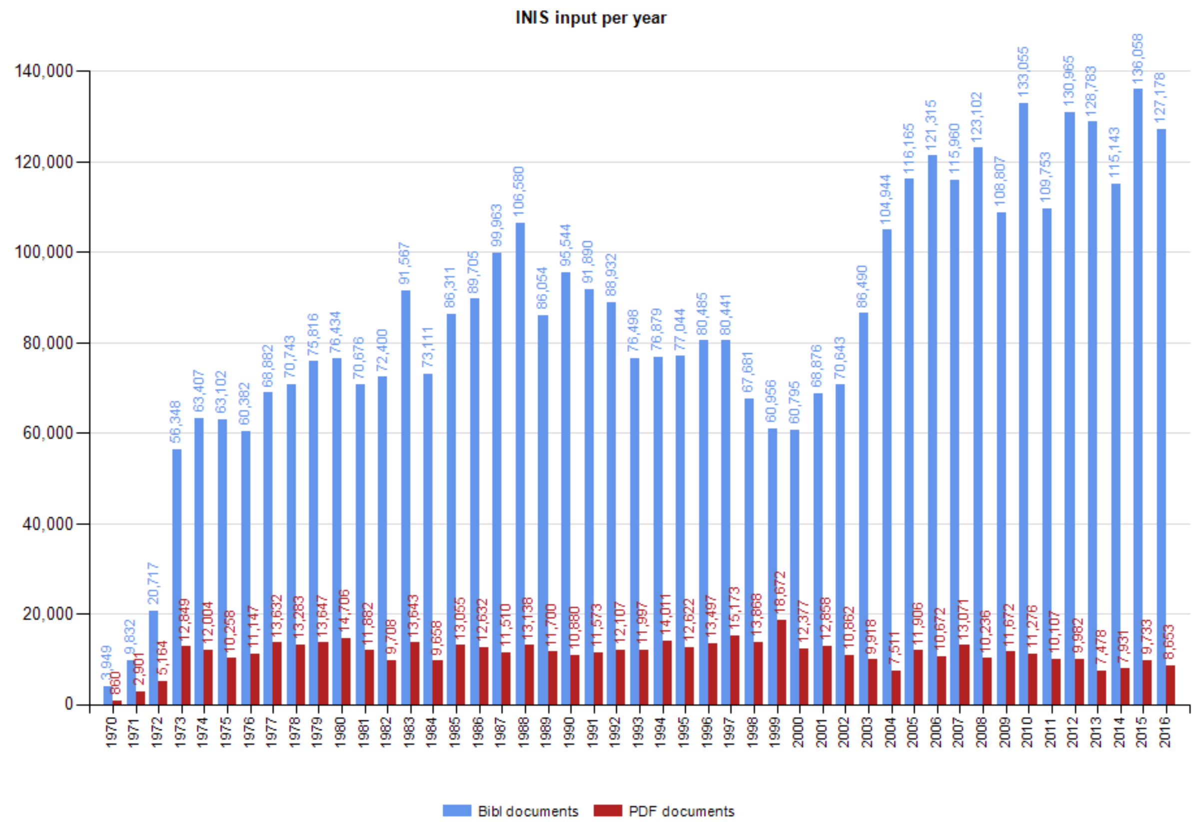


Figure 3: INIS Input per Year

INIS ***geographical coverage*** is almost universal. Currently it includes 150 countries and 24 international organizations. The figure below shows the growth of INIS membership since its creation in 1969.

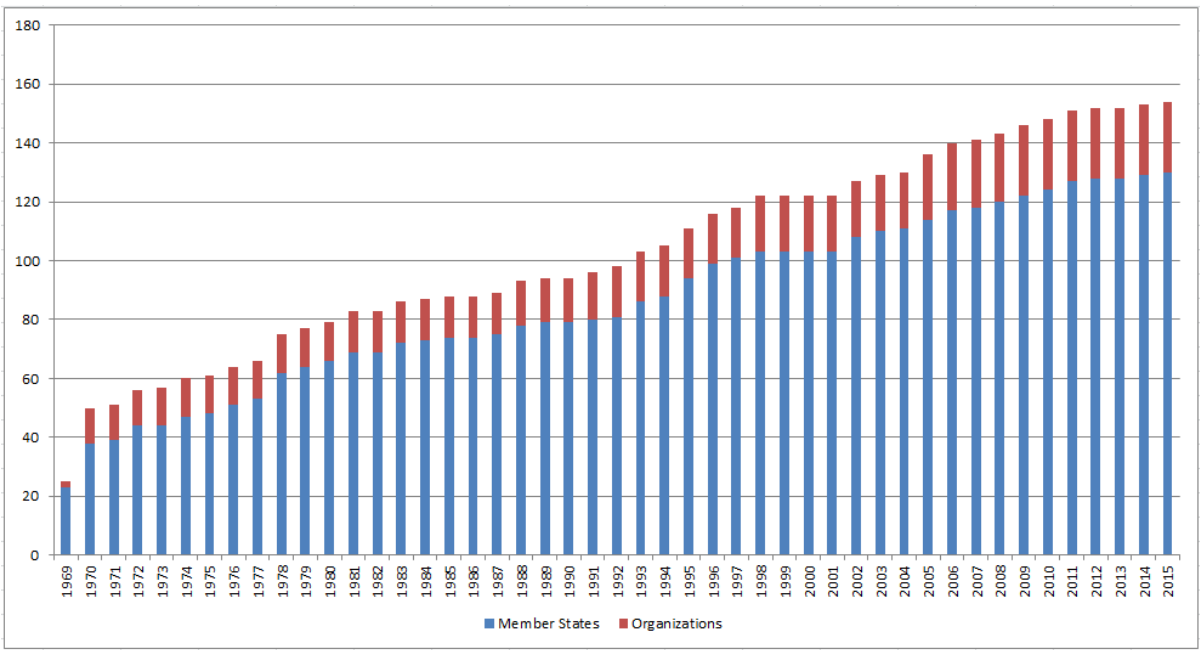


Figure 4: INIS Membership Growth

Besides the geographical coverage of input, that is much diversified as shown above, access and usage of the INIS repository is even more diversified. According to INIS statistics obtained from Google Analytics, users from 229 countries and territories (as defined by

Google) accessed the INIS repository in 2016. A list of the 10 countries with the most visits is given below.

	Country	Sessions	% Sessions
1.	United States	233,928	18.06%
2.	India	137,130	10.59%
3.	United Kingdom	68,701	5.30%
4.	Japan	55,635	4.30%
5.	Germany	51,724	3.99%
6.	South Korea	47,543	3.67%
7.	Canada	43,037	3.32%
8.	France	41,748	3.22%
9.	Brazil	35,167	2.72%
10.	Iran	33,513	2.59%

Figure 5: Visits to INIS

Distribution channels for information and documentation available from INIS include the INIS repository search, which is the main channel, as well as Google and Google Scholar, WorldWideScience.org and various widgets developed for use by outside websites.
IAEA ***staff*** represent a world-class, diverse and multi-disciplinary workforce of more than 2,500 employees working in a wide range of nuclear and related disciplines, coming from over 100 countries. The Nuclear Information Section of the IAEA is made up of 30 staff members from 17 countries and 5 continents.

Since its creation in 1969, INIS progress has been marked by a number of very important ***milestones***, which have left a mark on INIS, on the work of the IAEA, and on the increasing importance of grey literature and nuclear information. Some major milestones are listed below.

1970 INIS - the first nuclear database at the IAEA
1979 INIS - the first IAEA database with online access
1991 INIS & AGRIS - the first IAEA databases on CD-ROM
1996 INIS Web Site - the first Web Site at the IAEA
1998 INIS - the first IAEA database available on the Internet
2009 All Internet users given free and open access to the INIS database
2009 INIS database becomes accessible via WorldWideScience.org
2010 INIS offers the first repository search widget
2011 INIS launches new web search interface using Google-based technology
2012 INIS multilingual Thesaurus integrated with the INIS repository search
2012 INIS repository search includes the IAEA Library catalogue
2013 Browse INIS repository by Subject Category
2014 INIS repository becomes searchable through Google and Google Scholar
2015 Launched Open Nuclear Information eXchange System (ONIXS)
First harvesting program based on Open Access Interface-Protocol for Harvesting Metadata (OAI-PMH)

In 2009, INIS announced that access to the INIS database was open to Internet users around the world. Free, unrestricted and ***open access*** was made available from the INIS Homepage. This provided easy access to reliable nuclear information on the peaceful uses of nuclear science and technology, including nonconventional literature, and made nuclear knowledge readily available worldwide.

Managing diversity at INIS

Managing diversity is a complex process with a number of practical requirements and challenges. Not every element can be fully and successfully addressed, so it is important to take a strategic approach. With INIS, the most important element is international collaboration, followed by the successful diversification of formats, services, and ways to collect bibliographic information and the full-text of related nuclear documents. Demographic diversity is already a given since INIS is part of the United Nations (UN). Everything the UN does is based on two fundamental principles: respect for people and continuous improvement.

The impact of diversity on performance was studied by researchers who identified two impacts: the impact on people and the impact on organizations. According to the cognitive resource diversity theory, which advocates that the cognitive resources of each team member contribute to the overall success of the team, a diversity of cognitive resources promotes creativity and decision making capacity (Simons & Rowland, 2011).

Another group of authors (Cox & Blake, 1991) proposed that cultural diversity impacts six direct aspects of organizational effectiveness, including the capability to attract human resources, cost, the issues of innovation, creativity, and problem solving, the marketing advantages of a diverse workforce, and organizational flexibility. My long experience working with the United Nations, and particularly with the IAEA and INIS, tells me that both aspects have had a positive impact on the success of INIS.

Empowering staff members is much easier than rewarding them in institutions, such as international organizations, since flexibility for rewards usually ends with non-monetary awards and praise. Empowering is encountered more often, usually by encouraging staff to demonstrate their interests, propose new ideas, innovate, be creative, and feel in charge or fully responsible for a particular task. Appreciation often shows remarkable results.

Flexible work environments have a real impact on morale, giving employees a feeling of being empowered and trusted to manage their own workloads. Research shows that flexible work hours are related to higher organizational commitment and job satisfaction (Scandura & Lankau, 1997).

Training and mentoring practices in diversity management should continue, to ensure that there is continuous learning and adaptation. Diversified learning that encompasses technical, as well as soft skills, is important for overall success and special attention is given to that, too. It should be mentioned that besides training its own staff members, INIS regularly offers training to its Member States in the form of a training seminar or in the form of ad hoc and e-learning.

Communication is a never ending story. It includes internal, as well as external means and targets. There are many different ways of communicating today, and INIS is using a good variety of them.

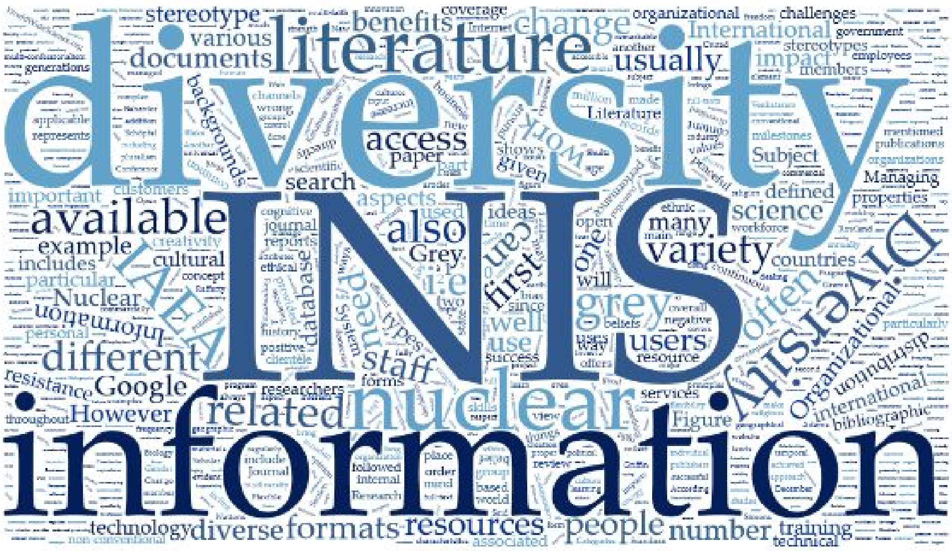
Conclusions

Diversity, defined as the state of having many different forms, types, ideas or properties, is most often associated with cultural diversity or a variety of ethnic backgrounds. However, it is also applicable to information management, usually through the diversity of information resource formats and the variety of information users (i.e. customers or clientèle). INIS represents a very good example of this and its long history of success is proof of that.

Diversity in the work place, and in information management in particular, should be regarded as positive. There is no need to fear diversity. Rather, it should be embraced and used to our benefit. To obtain maximum benefits from diversity, we need to invest time and effort to get to know our customer's needs and to diversify our information base and services. In other words, we need to leverage all available information resources.

It is also evident that diversity, in itself, does not directly bring about benefits. We need to engage in getting those benefits and we need to promote information services, the use of available information resources, and increase visibility and accessibility, particularly of grey literature, as it is not the type familiar to all users. This could be done through continuous training, education and persistent efforts to increase information literacy.

In summary, proper use of diversity in information management can increase the use of available information resources and therefore, impact creativity and improve overall productivity and staff attitudes.



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Looking for Information that is not Easy to Find: An Inventory of LibGuides in Canadian Post-Secondary Institutions Devoted to Grey Literature

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In today's academic society, one of the most popular web-publishing mediums is a university or college LibGuide. Succinctly defined as a content management and publishing system (Giustini, 2016), these sources of information promote knowledge and learning, and are often seen as the perfect solution for busy librarians and subject specialists. Founded in 2007 by Slaven Zivkovic (Springshare, 2013), an entrepreneur with several years' experience working in libraries, and currently hosted by Springshare, a library technology vendor, LibGuides are presently used by 65,000 librarians and subject specialists across more than 5,000 libraries in 78 countries (Springshare, 2016). A key feature of LibGuides is that anyone can create, use, and learn from them (Giustini, 2016); as a collaborative venture, these guides not only enrich one's knowledge, they also connect with information creators and seekers worldwide. Further, information produced and available on LibGuides is often material that may not be seen anywhere else; this unique content thus supplements any research pursuit.

Libraries use LibGuides to create curricula on a specific subject for a course, promote library collections, and share information within one's faculty, either locally, nationally, or internationally. As an information portal, content within LibGuides can be seen as a living document, constantly being updated, changed, or enriched. Via the use of a WYSIWYG (What You See Is What You Get) content creation approach, users can select templates, copy from existing LibGuides or start from a blank page (Giustini, 2016). Due to its flexibility and adaptability, virtually any LibGuide available on the web can function as a template for a new or existing subject guide. Various pages are linked together via the creation of tabs, functioning in much the same way as the tabs present in an Internet browser. Further, due to the web 2.0 nature of LibGuides, users are able to integrate multimedia content, such as embedding YouTube videos, Twitter feeds, or Chat widgets directly into their pages (Hamilton, 2010). As a collaborative tool, LibGuides can be set up to allow co-owners, even multiple users, to edit content within a guide.

One cannot stress enough that grey literature is a vital source of unique information, often far more current than commercially published material, and circulating at a much faster pace than conventional academic journals. Further, due to its almost unrestricted character, grey literature helps to prevent bias, opening doors to new and emerging research. We believe that LibGuides are a type of grey literature and have a valid place among grey literature supporters, believers, and researchers. In our view, LibGuides should be considered for inclusion into the grey literature typology (GreyNet, 2016), as they are published online, easily accessible, provide up-to-date information, promote self-learning, and contain information that is often overlooked and neglected.

In our paper, we aim to investigate grey literature LibGuides within university and college communities across Canada, documenting categories of areas and disciplines, showcasing how grey literature LibGuides play a pivotal role in research pursuits at academic institutions.

LibGuides: A Brief History

Whether searching through a card catalogue or "flipping" through pages on an iPad, research aids fulfill their role in improving the discoverability of information. This quest for information has resulted in more and more educational institutions resorting to LibGuides, "a simple-to-use, cloud-based web-content management system…to improve the patron experience in finding information" (Dobbs et al., 2013). While the current definition of LibGuides may lead one to believe that this information-rich resource has only existed over the past few years, as a result of enhanced Internet and content creation possibilities, precursors to LibGuides existed decades earlier, most notably print bibliographical pamphlets in the late 19th century, recommended reading booklets from the 1950s (Dalton & Pan, 2014), culminating in print pathfinders, which appeared on the library scene in the early 1970s (Dobbs et al., 2013). Attributed to Eloise Harbeson, a librarian from Florida State University, pathfinders were considered to be research aids and checklists for seeking out diverse sources of information on a particular topic. Harbeson's pathfinder adhered to a 12-step process, including discussion of the topic on which the guide was created, description of the scope, relevant subject headings, and perhaps most importantly, "emphasis on the process of searching." (Dobbs et al., 2013) Today, these pathfinders or LibGuides are often created locally by the subject librarian, with the purpose of increasing information literacy of the clients they serve. (Bowen, 2014)

In the library world, we often speak of the need to collaborate, to develop connections between the information seeker and the information provider. Regardless of the format that a LibGuide may take, the ultimate premise or goal remains universal: "to connect users with library resources" (Dobbs et al., 2013). Thus, emphasis is placed on library staff to create effective learning content and objectives that are desired by the user and most relevant to his/her information seeking needs (Bowen, 2014).

The current rendition of LibGuides is associated with Springshare, the dominant hosting platform for LibGuides that was launched in 2007 by Slaven Zivkovic, an ed.-tech entrepreneur (Springshare, 2013). With no limit on the number of subject librarians that can use LibGuides, SpringShare closely adheres to its mandate of developing "engaging web applications for libraries and educational institutions" (Springshare, 2013). Despite the endorsement for LibGuides by librarians such as Buffy Hamilton, along with more than 5,000 libraries worldwide, the transition from pathfinders and other precursors has not gone smoothly for all. In 2013, a Google Group was formed to discuss the trials and tribulations of this platform, with users "encountering jargon, inconsistent language, and visual clutter" (Giustini, 2016). As a result, usability testing along with a style guide was implemented. Further, with a notable distinction of being "the primary proprietary guide-creation platform within the library world" (Bowen, 2014), LibGuides permit libraries to customize and alter the standard template with their institutional logos, motto, and other branding methods.

Time is a precious commodity; improving "patrons' experience in finding information" (Dobbs et al., 2013) is a trait that cannot be overlooked if LibGuides are to be successful. With so many decisions regarding the acquisition of library resources dependent on budgetary constraints, presenting evidence-based cases documenting reasons behind a LibGuide's value must be considered at all times. Dean Giustini, a biomedical librarian at the University of British Columbia in Canada, has created a page specific to SpringShare LibGuides on his international HLWIKI (Giustini, 2016). LibGuides are able to detect when a user is accessing a guide on a mobile device, and thus present the content in a refined way that makes it easily accessible and viewable on a smaller screen (Mokia & Rolen, 2012). The continuous need to evolve and present "the latest incarnations of the traditional subject or help guide" (Dalton & Pan, 2014) led to the release of LibGuides v2 in 2014. This new version was recently adopted by both the Knowledge Resource Service and the University of Calgary.

LibGuides as a Grey Literature Document Type

Since launching in 2004, GreyNet, the international grey literature network service has identified 150 document types that are considered to fall within the realm of grey literature (GreyNet, 2016). The latest document type, LibGuides, was added to the GreyNet repository in May 2016. As a living document, a LibGuide is continuously being updated, edited, and enriched, whether it is the addition of a new link, embedding a video, or removing an expired RSS feed. As has often been mentioned in the grey literature community and elsewhere, enhancements in technology, namely the rise of the Internet, has been a direct contributor in unveiling grey resources that were previously hidden. As with grey literature, LibGuides "seamlessly push [students] to other streams of information, including blogs, databases, and other essential library resources" (Hamilton, 2010).

At both the University of Calgary and the Knowledge Resource Service (KRS), it can be difficult to convince the overworked researcher or clinician of the importance of considering grey literature in a research endeavour. Leading by example, however, may help to get the point across. A number of institutions, including the Health Sciences Library System (HSLS) at the Universty of Pittsburgh have implemented courses on responsible literature searching, integrating grey literature as supplementary to mainstream database retrieval (Gerberi et al., 2012). This strongly supports the inclusion of a grey literature section in a LibGuide devoted to material that goes beyond the core databases.

Ever since grey literature gained acceptance as a wealth of resources that supplements the traditional database search, numerous arguments have arisen highlighting the impact and value of the grey. Along with features such as innovative, unique, current content, rapid publication, and freely accessible via an Internet connection, it is no wonder that many researchers see this material as complimentary, "fill[ing] gaps of traditional publishers" (Giustini, 2016). In addition, enhanced web 2.0 features, mobile-optimized content, direct integration with social media outlets such as Facebook and Twitter, customizable interfaces, and perhaps most importantly, excellent customer service, LibGuides brings together "a vibrant user community and a dedicated community website…to share ideas, tips, best practices [and] feature requests" (Giustini, 2016). Table 1 describes core features akin to both grey literature resources and thus, by their nature as a grey literature document type, LibGuides as well.

Feature	**Grey Literature**	**LibGuides**	**Comments**
Innovative, unique content	√	√	Ease and flexibility of creating content to serve a particular nuance in time of need
Rapid publication	√	√	Peer-review process for academic journals can be extremely time-consuming
Currency	√	√	Information available almost instantaneously once it is created
Freely available	√	√	Free, open, immediate access in most cases
Unconventional formats (blogs and other social media)	√	√	Register and receive e-mail updates as soon as new content on a top is available

Table 1: Features pertaining to grey literature and LibGuides

When the 2009 H1N1 pandemic occurred, an alternate use for Twitter, at that time a relatively new social media tool, was discovered. News regarding outbreaks and vaccination locations were instantaneously shared amongst the community at much faster rates than could be reported by news agencies. This fact supports the belief that the emphasis on the inclusion of grey literature is dependent on the discipline. The field of health sciences, perhaps more than most other subject areas, is heavily reliant on traditional publishing methods to secure research grants and buy-in with a proposed idea or methodology (Royal Roads University, 2016). An interesting anomaly when one considers how valuable a non-traditional means of information dissemination was with the H1N1 case study described above.

One of the challenges experienced by many who consult the grey literature is the lack of bibliographic control, thus potentially hindering the discoverability of this material. LibGuides rise above this challenge by allowing the creator to implement and organize categories in LibGuides with virtually limitless possibilities. This ease of usage is a direct correlation to users returning time and time again. To keep track of unique visitors, LibGuides allow the creator to generate statistical reports to see the immediate effect that a guide has on its users and why some sections of a guide are consulted more frequently than others. Many institutional repositories in place today, in and of itself collections of grey literature, allow content contributors to view the number of times their thesis has been viewed and from where.

Many libraries, in both academia and the government sector, are trending towards more of a virtual presence in lieu of a physical location. With communication occurring electronically rather than in person, a sound collaborative structure is needed in order to accomplish what is required in a short amount of time. Just as certain grey literature document types, such as blogs, may involve multiple editors, the same holds true for LibGuides. This enables the guide to maintain a dynamic presence on the web instead of a static document that is soon discarded. A well-maintained LibGuide can, in the words of Buffy Hamilton, “improve the quality of library instruction and service” (Hamilton, 2010).

When pathfinder subject guides were introduced in the 1970s, they were never intended to be comprehensive, all-encompassing repositories containing all of the information available on a topic. Further, they were not intended for experienced researchers who were already well-versed in finding information in their subject area by themselves. In reference to a document on library pathfinders written in 1973, Dalton and Pan agree with this assessment, viewing these guides as intended “for beginners who seek instruction in gathering the fundamental literature of a field new to them in every respect” (Dalton & Pan, 2014). In many ways, this same methodology is used when introducing grey literature. Baring a few organizations, such as the Canadian Agency of Drugs and Technologies in Health (CADTH), which has produced an exhaustive checklist of grey literature resources in virtually all aspects of the health sector, many instances of grey literature inclusion in LibGuides, in particular those seen in the environmental scan of LibGuide use across Canadian post-secondary institutions, reveals a trend to focus on core grey literature resources only, letting the inquisitive mind explore beyond if desired.

How Libraries use LibGuides

According to Springshare, there are presently more than 400,000 LibGuides in existence; this number continues to grow on an almost daily basis (Springshare, 2016). While health sciences disciplines may seem as a logical first choice in which to develop a LibGuide, usability studies have shown that several subject areas, including business, education, humanities, engineering, and social sciences, all contain LibGuides in their respective fields (Quintel, 2016). Due to the ease of creation and maintenance, many libraries have expanded the original subject guide purpose to include courses, e-book collections, documentation on the research process, raising awareness of new technologies, training platforms, and library home pages (Dobbs et al., 2013). With the possibility of creation in a manner of minutes, and minimal requirements for maintenance and updates, LibGuides have also been used to trend worldwide current events (Dobbs et al., 2013).

Be it from students, faculty, investors, or the community at large, receiving acceptance and buy-in from all parties is essential in determining a LibGuide’s success. As a case in point, staff working within the Knowledge Resource Service (KRS) department in Alberta Health Services (AHS), are cognizant of time constraints and geographic barriers that may prevent in-person learning. As a virtual learning environment providing library services to all AHS staff in the province of Alberta, KRS staff advocate a flexible blended learning approach, promoting “use of multiple instructional formats such as face-to-face and online activities” (Dobbs et al., 2013). This flexibility, following in the footsteps of an approach vindicated by Dobbs, Sittler, and Cook (Dobbs et al., 2013) is in essence an adaptation of the American Society for Training and Development, offering the best of both worlds, presenting opportunities and challenges associated with in-person and online training.

Once a LibGuide has been launched, it can function as a powerful teaching tool. In order to maintain a stronghold among numerous library resources competing for a client’s attention, LibGuides must be regularly updated. Baker (2014) cautions against aggressive and excessive addition of content (the ‘kitchen sink’ approach); despite one’s best intentions, too much content “results in ‘cognitive overload” (Baker, 2014).

In a seminal article discussing the implementation of LibGuides at an academic institution, Duncan et al. (2015) introduce four best practices that should be present in all LibGuides: labels and language, layout and uniformity, website integration, and usability. While LibGuides is the dominant term used to describe these information resources used amongst libraries, Duncan and colleagues are quick to point out that this is actually the brand name of the Springshare company; should the SpringShare company change ownership, the LibGuides name would likely become defunct. This distinction is essential and had led to numerous synonyms presently in use at various institutions to describe these information repositories. For instance, KRS has settled on subject guides, while the University of Calgary uses research guides, terminology favoured by 77% of respondents (Duncan et al., 2015). Further, Duncan et al.'s study gives considerable mention to the importance of consistently labeling tabs, menu items, and headings in LibGuides from the viewpoint of the user rather than the librarian. This is undoubtedly an important recommendation, however, just as importantly, "research guides should use clear, consistent language that is meaningful to the target audience" (Duncan et al., 2015). Since LibGuides are or should be equally represented in the humanities, it would bode well for a discipline advocating the learning of a second language to present a LibGuide in that language of study.

Both KRS and the University of Calgary recently overhauled the layout of their LibGuides to meet user needs and maintain consistency in the content presented. This principle follows Duncan et al's (2015) best practice of layout and uniformity. Minimizing scrolling, documenting the scope and purpose of a guide, providing contact information of either the guide creator or the institution are key, adhering to the recommendation that "guides should be designed to meet patrons' information needs" (Duncan et al., 2015). Focusing on core content within a page is more important than including all of the information that may be available.

Prior to embarking on subject guide creation within KRS, a handout was produced to guide all aspects of implementation, including content requirements and liaising with subject matter experts. Duncan et al. (2015) share this sentiment by emphasizing the necessity of a template guide regarding navigation, standardization, and content management. This iterative process ensures that despite some variation that may be present across LibGuides, the overall website design remains consistent. This notion of consistency bodes well with integrating the guides into curriculum content to ensure they are easily accessible and regularly used. As a case in point, staff at both KRS and the University of Calgary are cognizant of the need to make the LibGuides mobile friendly (since many may be accessing the guides from a mobile device), and possibly explore the presentation of core content from the guide via a mobile app.

Usability, the final best practice advocated by Duncan and colleagues (2015) stresses the importance of feedback regarding navigation experience of LibGuides directly by the users who consult them. A user-centered design and usability testing is important throughout all "stages of the design process" (Duncan et al., 2015). Regardless of the approach taken, perhaps the primary take-home point is communication and consultation between guide owners, subject experts (liaisons) and the institution.

Danielle Becker, a seasoned law librarian in the United States presents LibGuides as entities that rebuild existing content from a website rather than a separate standalone product. While some of her reasoning surrounding the choice of LibGuides may seem self-explanatory, in particular the user-friendly design, social media integration, and elimination of downloads that the SpringShare platform provides, the focus of her case study is on optimizing LibGuides to suit a mobile device environment. (Becker, 2014) Since we live in an ever-connected society, Becker recognizes that an increasing number of tasks are being completed on mobile devices while commuting to work or school (Becker, 2014). While Becker acknowledges the limitations of content on mobile devices, namely the visual appeal and scrolling requirements, with a few modifications, including streamlining content and, above all, usability testing, LibGuides can effectively "repurpose…existing website for acceptable performance on mobile devices" (Becker, 2014).

As perhaps any librarian or subject specialist working in academia can attest to, it can be difficult to maintain a regular in-person presence in a course beyond the 'one-shot instruction lesson. As library instruction sessions are often scheduled at the beginning of term, the skills presented to students are often not put to use until considerably later, when the deadline for a research assignment is looming. Therefore, LibGuides' strength lies in the time-of-need learning approach, guiding "students through a specific assignment" (Baker, 2014) as stand-alone tutorials. Thus, while the librarian is not physically present when the student consults the guide, he/she maintains a virtual presence by the means of which the information required is presented.

Without downplaying the technical expertise that some librarians and information professionals may indeed possess, Dalton and Pan (2014) also acknowledge the fact that librarian's skills are best utilized when they share their knowledge and expertise with their users by creating, organizing, and disseminating content. They should not be hindered in this endeavour by overtly complicated information technology (IT) procedures. As Dalton and Pan further explain, lack of programming skills is not a hindrance in LibGuides, as even those with limited IT skills will be able to create rudimentary guides pertaining to their subject fields. Further, the library world today often emphasizes the need to collaborate and share one's knowledge with the community. LibGuides content is often re-used within guides and even across guides, adhering closely to the old adage, why reinvent the wheel? Although not necessarily an intent of LibGuides, Dalton and Pan recognize that self-mediated and self-directed learning is a new trend. The multidisciplinary nature of today's programs (shying away from traditional structured formats) has led to increased personalization and individualization. LibGuides embraces this philosophy, supporting self-directed learning and stressing that "the way in which content is presented, not just the volume of information, can determine if it is manageable or overwhelming" (Dalton & Pan, 2014)

In their paper on LibGuides for international students, Han and Hall (2012) describe the creation and maintenance of LibGuides via a demographic group that may seem to be overlooked, but which should never be forgotten: international students. The authors thus present the advantages of LibGuides with this diverse clientele group in mind. First, the consistent user interface presented across LibGuides allows for a high degree of familiarity. As such, Han and Hall mention how several international students studying in the United States have continued to use LibGuides in their home countries (China, Canada, South Korea, Japan, and others) upon their return. Second, the LibGuides interface is diverse and ever-changing, far exceeding the capabilities of a stand-alone webpage. Third, LibGuides have been optimized for display on mobile devices. As Han and Hall go on to explain, these feature is of tremendous benefit to international students, who often access content (both academic and social media) on the go from their iPad or iPhone. Finally, many students, whether or not they study abroad, may never have the opportunity to meet their subject librarian in person; the majority of communication is thus done in a virtual setting (chat, Lync, Skype, etc.) LibGuide's interactive features, including a photo of the librarian along with his/her contact details ensures students will continue to receive support for their research needs wherever they may be.

The Investigation: Grey Literature LibGuides within Canadian Universities and Colleges

Despite the ease within one can create, adapt, and reuse instructional material in LibGuides (Bowen, 2014), few studies exist on the benefits of this information commodity to the intended target audience, namely students. In order to obtain a representative sample of the use of grey literature in LibGuides across Canadian post-secondary institutions, we conducted an environmental scan, identifying 17 colleges or universities where grey literature resources were directly mentioned and included alongside academic databases (Table 2)

College/University	City	Province/Territory
Bow Valley College	Calgary	Alberta
University of Alberta	Edmonton	Alberta
University of Calgary	Calgary	Alberta
Simon Fraser University	Burnaby	British Columbia
University of British Columbia	Vancouver	British Columbia
University of Victoria	Victoria	British Columbia
University of Manitoba	Winnipeg	Manitoba
Dalhousie University	Halifax	Nova Scotia
Carleton University	Ottawa	Ontario
Lakehead University	Thunder Bay	Ontario
University of Toronto	Toronto	Ontario
University of Waterloo	Waterloo	Ontario

University of Western Ontario	London	Ontario
York University	Toronto	Ontario
University of Prince Edward Island	Charlottetown	Prince Edward Island
McGill University	Montreal	Quebec
University of Saskatchewan	Saskatoon	Saskatchewan

Table 2: Canadian Post-Secondary Institutions Containing Grey Literature Resources in LibGuides

After viewing the LibGuides within each of the post-secondary institutions listed in Table 2, 52 library staff (librarians and information specialists) were identified. A brief online survey was sent to each of the 52 library staff members, to uncover how students and researchers use grey literature, and perhaps most importantly, to verify from the participant responses whether or not sections of existing LibGuides have been devoted to including the grey literature in information-seeking pursuits (Table 3).

1. Is grey literature mentioned in subject guides/research guides/LibGuides within your institution?
2. If your response to question #1 is yes, please list the top 3 grey literature resources that are mentioned in the subject guide(s)/research guide(s)/LibGuide(s).
3. Do you encourage your students to consult grey literature resources in their research? (if not, please explain why not)
4. What is your discipline/area of study?

Table 3: Use of Grey Literature in Canadian Post-Secondary LibGuides: Survey Questions Results:

Nine of the 17 institutions polled participated in the survey, yielding a response rate of 52.9%. All respondents confirmed that grey literature was mentioned in the research guides/subject guides/LibGuides used within their institution. Further, all respondents strongly believed that it was important to encourage students to consult grey literature in their research, particularly if conducting scoping or systematic reviews. With the rigorous methodology required in these publications, the prevalence of grey literature and its stance as a supplement to searching in the databases cannot be overlooked. In a recent seminal paper quantifying grey literature search trends in systematic reviews, Saleh et al. (2014) indicate that grey literature comprises 27% (an average of 6.5) hours of total searching time across all resources. While this figure is specific to research conducted in the health sciences, one survey respondent explained that grey literature plays a key role in both Masters of Education and PhD in Education programs.

One respondent emphasized the importance of grey literature in the Canadian context, especially with regards to public policy questions. As we can attest to, there is no true mainstream research database used in academia focusing only on Canadian publications; the majority of articles retrieved from a literature search are published in the United States, and thus the need to supplement these resources with Canadian content wherever possible is increasingly important.

When questioned why librarians and information specialists encourage the use of grey literature in research pursuits, one participant elaborated in detail on the numerous benefits of introducing grey literature in a search strategy, including currency of information, rapid publication, contains unpublished research, is produced by experts in the field, and has a wide geographic scope, from municipality to province and beyond.

Beginning in the early 1990s, grey literature was cited in the “white literature” (i.e. medical journals), consisting mainly of technical reports that provided reliable data on research in progress. (Alberani, De Castro Pietrangeli, & Mazza, 1990) It thus came as no surprise to the authors of this paper, following both the environmental scan and online survey, that the majority of respondents maintained LibGuides within various domains of the health sciences. Nevertheless, three respondents were adamant about the value of grey literature in their subject specialties, including education, international affairs, and political science.

When asked to list the top three grey literature resources most frequently mentioned in their research guides/subject guides/LibGuides, we were pleased that 1/3 of respondents mentioned either GreyNet, OpenGrey or the New York Academy of Medicine's monthly grey literature reports. Further, it was interesting to see many of the 150 grey literature document types identified by GreyNet represented (Table 4).

Agency for Healthcare Research and Quality (AHRQ)
Canadian Council on Learning
Canadian Government Documents
Canadian Health Research Collection
Canadian Public Policy Collection
Columbia International Affairs Online
DocuTicker
eLibrary: Conference Board of Canada
ERIC Education Documents
Grey Literature Report (New York Academy of Medicine)
Grey Matters: Canadian Agency for Drugs and Technologies in Health (CADTH)
GreyNet
Health Technology Assessment (HTA)
Institute of Health Economics
Ontario Public Health Libraries Association (OPHLA)
OpenGrey
Registry of Open Access Repositories (ROAR)

Table 4: Different Types of Grey Literature Resources Identified

Ideas on Promoting Grey Literature in LibGuides

With a switch in philosophy from library-mediated to self-mediated, the success achieved by LibGuides lends to its core benefits, namely saving "the time of users by allowing them to assist themselves", and saving "the time of librarians by allowing users to answer their own commonly asked questions" (Dobbs et al., 2013). This is particularly relevant in a distance education environment, where learners are located in different corners across the globe. Rather than specify that the user must come to the library, the library waits for the user; with a reliable Internet connection, students can access content within LibGuides at their convenience, day or night, "without any librarian mediation" (Dobbs et al., 2013).

While there are undoubtedly many different methods available to convey information in lieu of a LibGuide, these one-stop information shopping centres have grown exponentially since their creation less than a decade ago. With the ability to customize particular sections more easily and with less required technical knowledge than most web pages, LibGuides reduce "technical and temporal barriers" (Bowen, 2014) to producing and publishing information as quickly as possible, an endearing value.

While it may seem self-explanatory to many, Denise FitzGerald Quintel, a web applications librarian at the University of Alabama libraries, stresses the importance of usability studies to determine if a LibGuide is benefitting the intended audience and is actually what a user wants. According to the literature, LibGuides may be used as an instructional aid to introduce curriculum concepts, they are above all, tools "means for independent learning and resource discovery" (Quintel, 2016). Quintel further elaborates that LibGuides should be viewed not only as a quantitative measure to present evidence-based information to users, but also as a qualitative exercise to determine a user's gut reaction to a guide: is there awareness that the guide exists, is it useful, and will it help achieve a desired goal? In her study, Quintel found that 63% of students had no knowledge that a LibGuide existed for their course until they attended a library instruction session.

Quintel concludes her usability case study with several suggestions that anyone considering a LibGuide for his/her institution would do well to adhere to. Within each of the 6 recommendations presented, the underlying factor is to cater the guide to the user's needs and expectations, not to the content creator's. The long-held adage that the customer is always right bodes well for the creation of a LibGuide, and for the inclusion of grey literature content within that LibGuide. Perhaps Quintel says it best with her proclamation that “the beauty of usability testing is that with small and iterative changes, we have a certain freedom to enact solutions” (Quintel, 2016).

While there are countless benefits supporting in-person library instruction and training, students, researchers, and healthcare professionals residing in remote rural areas may never have the opportunity to “meet” beyond a computer screen. Librarians must thus put themselves into the mindset of their learners, questioning what engages them to learn, and modifying the content within their LibGuides to address this need. Collaborating with stakeholders, be it faculty, students, and other professionals is key, a requirement exemplified by Baker: “what we need to do as educators is develop a way to give students the information skills they need, when they need them, and in a way that fits their learning styles and preferences” (Baker, 2014).

Looking into the Future

According to Bowen (2014), LibGuides are a unique entity, and “no other proprietary products have entered the market” to compete with these online information repositories. Despite not even existing in their current form a decade ago, LibGuides are rapidly replacing static library webpages. As illustrated in Bowen’s case studies, ease of use and a relatively low learning curve are essential in ensuring sustainability of LibGuides for years to come. While mention is often made of the busy and never-ending workload of health professionals, and for that matter, researchers in all disciplines, the same can be said for library personnel. Producing and maintaining webpages takes a considerable amount of work; “Libguides greatly reduces the technical and temporal barriers to completing that work” (Bowen, 2014).

In their article advocating LibGuides as a content management system for busy librarians, Verbit and Kline (Verbit & Kline, 2011) advocate for content management systems created specifically for libraries, since these resources need to be flexible to consider the far-reaching visions at libraries within academic institutions. While LibGuides does not try to promote itself as the be-all-to-end-all only solution for organizing library resources in a logical manner, the ability to reuse and easily transfer content across multiple guides, coupled with the integration of statistics, images and videos, catalogue records, and optimization for mobile devices are highly touted benefits that cannot be ignored. Looking into the future of library services, librarians considering the implementation of LibGuides as a means of advertising the library resources available at their institutions would do well to adhere to LibGuides’ strengths “for information literacy instruction and just-in-time online learning modules” (Verbit & Kline, 2011).

While LibGuides have been seen in a positive light whenever they are introduced as the new primary content management system to showcase a library’s resources, the importance of pilot testing and evaluation should never be taken lightly. Lack of bibliographic control is one of the primary reasons that grey literature can be difficult to locate; as such a grey literature search can take considerable longer to conduct than running a search through an academic database, which due to the search filters working in the background, is more streamlined and efficient. Dalton and Pam (2014) acknowledge this challenging and time-consuming aspect, yet feel it can be overcome by streamlining a subject guide in much the same manner as a database. As a case in point, we are often astounded that Google continues to be the go-to information source for students on a regular basis, despite the thousands of dollars invested each year into ensuring that high-quality evidence-based information is available at one’s fingertips. Perhaps this is why many LibGuide creators have increasingly adapted a “one stop shopping” approach, a theme that is likely to be particularly useful for students, who “often report feeling overwhelmed by the volume of resources and information available” (Dalton & Pan, 2014).

Due to the considerable time commitment that LibGuides require, they are seen as living documents that will exist for years to come, constantly adapting according to client requests and needs. With this comes a strategic management plan, ensuring that LibGuides continue to be managed and updated on a regular basis. This maintenance correlates well with the next stage of implementation, namely promotion and marketing. A hidden guide or one that no one is aware exists will not generate the traffic required to justify its continued maintenance and use. Part of this may be confusion with what is meant by the term

LibGuides, as according to the literature, it is often used interchangeably with subject guides, research guides, and general guides. Further, social media is accepted as a legitimate means of creating awareness, and thus Dalton and Pan (2014) advocate for numerous channels at one's disposal to ensure the guide will become a known entity. In addition to social media, e-mail, printed flyers, and word of mouth (as well as other forms of informational communication) should all be considered.

Finally, the pilot LibGuide must be evaluated, not only via quantitative means (usage statistics), but rather qualitatively as well, ensuring that the vices of all potential users of the LibGuide (students, faculty, staff) are represented and receive the opportunity to share their feedback and provide comments. While LibGuides can be created and presented as independent identities with no institutional affiliation, they are seen as most effective "when embedded within an overall support framework and strategy" (Dalton & Pan, 2014). A benefit of consulting these resources is that they often contain society publications or author manuscripts that are available almost instantaneously.

In their paper on the sustainability and future of online research guides, Giullian and Zitser (2015) acknowledge LibGuides' many benefits, including engagement of students in their own learning and marketing by librarians to raise awareness of this online information repository. Despite the valiant efforts of subject librarians, students will, on a consistently regular basis, look up information on a topic in Google before even considering another possible source. This phenomenon of strictly sticking to web-based resources as a search methodology is akin to the "impossible task of drinking from a fire hose" (Giullian & Zitser, 2015). Within a seemingly infinite number of libraries turning to LibGuides, the uptake has seemed almost too quick at times, and there is concern that it has become oversaturated in the past few years. With so many LibGuides arising from a paper version, Giullian and Zitser (2015) question whether home-grown born-digital guides, which due to several competing factors, namely time, server space, and money can be modified to ensure LibGuides sustainability for many generations to come.

One of the primary benefits of LibGuides is the ability to re-use content across various guides within one's home institution. Further, while various aspects of a LibGuide can be customized to a creator's desires, the underlying principle is that LibGuides are essential a rod-sourced community of research guides that can be used as discovery tools by virtually anyone on the planet" (Giullian & Zitser, 2015). This can be either a welcome feature or a potential drawback. With the Open Access movement gaining more and more momentum, creators of LibGuides have jumped on the proverbial bandwagon and articles, theses, and guidelines that can be accessed from anyone around the world via a few clicks of a mouse button. However, this sharing notion does not extend to individual databases or journals. Academic institutions pay hundreds of thousands (even millions) of dollars annually to ensure that their intellectual property is protected and accessible only via an individual affiliated with that institution. With any economic crisis, smaller academic institutions are affected, and perhaps echo the sentiments of Giullian and Zitser in that they "can admire the merchandise on display, marveling at its opulence and availability, but cannot actually afford to use it" (Giullian & Zitser, 2015).

How does the library community sustain LibGudies for many future generations? Both authors of this paper align in their thinking with Giullian and Zitser's thoughts on customizing content specific to a specific assignment or time of need rather than presenting a haphazard collection of seemingly random resources. Further, the importance of engaging the user, whether it is a student who will be using the LibGuide for a few random intervals during a term, or a faculty member that refers to it daily, or even a patient who requires more information on his/her condition, the user has a right to have his/her say in the content being created for LibGuides and voice his/her opinion should he/she disagree with what is being presented. In the brief survey around which this paper is based, respondents, whether explicitly or implicitly, acknowledged the importance of a collaborative relationship between the librarian and teaching faculty at their institution. In Giullian and Zitser's words, this allows "professional librarians to do what they do best: organize, educate, and inspire" (Giullian & Zitser, 2015).

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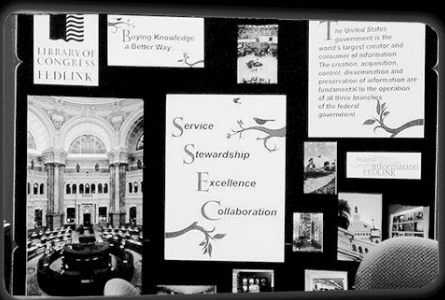

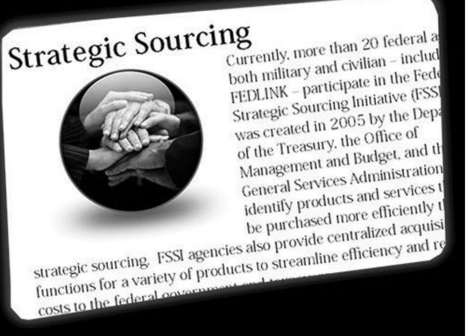

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Bridging the Knowledge Gaps: What Grey Literature does for the Library of Congress' Indigenous Law Portal

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Abstract

In 2014, the Library of Congress launched the Indigenous Law Portal, an open-access platform with digital resources about how indigenous peoples of the Americas govern themselves. A new classification schedule is being written, *Law of the Indigenous Peoples in the Americas (Class KIA-KIX)*, organizing resources by country and region, legal area, and tribal entity. The classification guides the structure of the online Portal, which includes Canada, the United States, and Mexico to date. The paper will cover the creation of the Portal, the current resources, and the ongoing research on indigenous groups of Central America. Grey literature has been vital to the creation of the name authority records, the classification schedule, and the Portal, whose open access resources serve a diverse global public.

Introduction

In reference to indigenous law, the Law Librarian of Congress' observed that "the subject matter is increasingly important globally but has not received much attention." Dr. Jolande Goldberg is paying attention. In her capacity at the Library of Congress' Policy and Standards Division, she is writing a classification schedule called the *Law of the Indigenous Peoples in the Americas (Class KIA-KIX)*. This schedule organizes resources by nation and region, legal area, and tribal entities. The emphasis on indigenous law is not to set it above or apart from other bodies of law but so it can be made more visible among humanity's laws.

The new classification coincides with broader developments like the *United Nations Declaration on the Rights of Indigenous Peoples* adopted in 2007 and the *American Declaration on the Rights of Indigenous Peoples* adopted June 2016, which outline global and hemispheric indigenous rights, respectively. The challenge for information professionals is to recover and share resources within library collections which constitute the legal record of sovereign tribal governments. For over a decade, the Law Library of Congress has been tracking and analyzing indigenous law sources from its rare book vaults to the far corners of the Web, which along with digitization projects, have increased visibility of indigenous sources.

In response to global trends, user frustration regarding lack of accessibility, and flawed access practices, the Library of Congress (LC) launched the Indigenous Law Portal in 2014 to share digital indigenous law resources. The open access Portal is available on the Law Library of Congress homepage at http://www.loc.gov/law/help/indigenous-law-guide/index.php and links to legal documents, tribal websites, global, national and regional advocacy organizations, and over 400 digitized materials from Law Library of Congress, and general resources. "The huge joy about the Portal is that it brings in cultural, political, and social aspects but also mapping shows how geography affects interpersonal relationships and intrapersonal development" the Law Librarian of Congress said.

The author's paper is enriched by the reflections of 11 colleagues who work or have worked on the Indigenous Law Portal. Quotations from the interviews are shared throughout the paper. As a disclaimer, while interviewees expressed their professional opinions, they may also be personal opinions and do not reflect the official policies of the Library of Congress. As the Portal is a work in progress and the cause of some debate, interviewees spoke freely because their names would not be included with their quotations.

Finding Grey Literature

Political trends complicate the availability and discovery of indigenous legal material and at the same time make the Indigenous Law Portal's mission urgent. Much of the work of the Portal has been shouldered by a few permanent employees at LC. Extensive contributions have been made by retired librarians, three interns, and one short-term employee. One project manager remarked “we always thought there would be partners like universities and tribal organizations.” While many have expressed admiration, LC has found no partners for the Portal thus far. This means that the grey literature available on the Portal either comes from the physical collections of LC or what is freely available online.

Finding relevant resources to include on the Portal is circuitous. One researcher asserted “I have found Canadian documents in Germany. We are as close to Indiana Jones as you can get from behind a computer. We are really hunting this information down.” With few direct informational paths it is sometimes necessary to find nontraditional resources: student theses, project statements from nonprofit partners, and social media accounts. These diverse grey literature sources contribute heavily to the Portal’s resources for well-known and lesser-known tribes alike.

Cultural respect tempers the quest for comprehensive information on the Indigenous Law Portal. Information seeking has limits as “secret and sacred aspects of Indigenous knowledge have no place in the public domain and should remain outside of LIS systems.” [1] For example, the researchers have been cautious in the areas of medical and religious law. While librarians are trained to search for information, the people behind the Portal understand that some information is not meant for public dissemination.

Name Authority Records and Grey Literature

Name authority records (NARs) are the building blocks of the classification, which organizes the Indigenous Law Portal content. However, organization is not straight forward because, as one LC legal information specialist noted, “it can be difficult to find and there can sometimes be a variety of names for a tribe so the work on the Name Authority Records is important.” Grey literature frequently supports NAR creation for the Portal.

The first major hurdle is that entangled indigenous names affect NAR creation. Extensive research is necessary because in many countries there has been ethnic cleansing, civil war, constitutional or geopolitical boundary changes, which make it hard to track the changing name(s) of an indigenous group. Over time, names have been lost, recovered, borrowed, reconstructed, and filtered through foreign languages. Sometimes it is not easy to distinguish between a place name, a people’s name, and a people’s language. As one law librarian explains “we have to be careful about superimposing. You may have the community of people and the village with the same name [i.e.] two different jurisdictions running simultaneously.” Qualifiers can be used distinguish different entities with the same name. Kesler writes that “many Indigenous people prefer to identify themselves by specific local terms based on family and community location and traditional names” [2] and in accordance with this notion, the name authority records attempt to include modern and historical names, spelling variations, commonly-used and lesser known names. Some names for indigenous peoples are pejorative but are still included in the NAR because it appears in information sources which may contain other valuable evidence. One example from Mexico are the Ngi-iva/ngiba who were called “popoloca” by Mexica invaders, which can be translated as “mute,” “not intelligent,” or “barbarian” according to one grey literature resource.[3] This unflattering name has stuck for centuries, was adopted by the Spanish colonizers, and is even the title of the resource. In the case of names, it can be difficult to determine when there is enough evidence to justify a NAR for an indigenous group or how to reconcile differing sources.

As name authority work moves through the continent, more puzzles emerge in trying to understand tribal connections. There are myriad examples of displacement like the Seminole and Kickapoo groups of the state of Coahuila in northern Mexico. These particular communities went south in the nineteenth century, breaking off from their relatives who currently reside in the United States (mainly Florida and Oklahoma for the Seminole while the Kickapoo are principally in Texas and Oklahoma). The challenge was ensuring that the NARs reflect the links between these geographically dispersed yet related communities. Diverse grey literature sources played a role in establishing these critical connections.

On a separate note, the type of name authority used for indigenous nations has recently changed. In 2005, LC decided to move tribal entities from corporate entities to autonomous jurisdictions. “This meant that they had a status like nations,” according to one librarian who spent her career at LC. This required changes to existing NARs and has changed the category for the new ones being created for the Portal.

The significance of the name authority work cannot be overstated as over 2,000 records were created for North America alone, literally putting people on the map. A classification specialist remembered “surfing the web together with my Canadian colleagues” in 2009 and relying on a Canadian resource saying, “When I started looking at how I could build a portal, I started looking at AANDC’s (Aboriginal Affairs and Northern Development Canada) gateway to thousands of websites. It has been our major authority on names.” Looking outside of the United States for professional assistance helped provide a model for the Portal as well as a treasure trove of grey literature.

Diverse resources are leveraged to build the authority files, a specialty of the Library of Congress. One librarian expands on this idea, “In Latin America, projects are based on who’s in office; librarians are political appointees. There are very few authority files in the world and they don’t exist in the same way in Latin America and are not easily shareable. It is a contribution that we [at LC] make to the community at large.” This contribution is understood by other librarians involved in the Portal where one said “Names are important for identity, showing what the federal government calls them, what they call themselves, what they used to call themselves.” Naming what has been historically erased and forgotten is meaningful work and as one librarian said, “It gives groups a certain legitimacy, certain recognition.” Fortunately, NARs are also flexible as “names can be changed as more research is conducted, as laws change. The beauty of the authority file and the Portal is that you can navigate through those changes. The Portal is an excellent, amazing view into these entities and their development and their position within their communities.” This flexibility means that the NARs associated with the Indigenous Law Portal can respond to changes in the world.

While NARs are established one by one, together they can help organize a global body of knowledge. The Portal is valuable, said one law librarian, because “it’s going to organize the records of the communities of our nation and if other countries don’t use this method that’s OK but we have to have a method for our citizens to do research about foreign countries and the native peoples who reside there.” While Americans are the majority of the users using the Portal, a librarian reminds us that “our information goes worldwide, there are no borders.” Usage statistics, which are discussed later, show that the audience is indeed worldwide.

Classification and Grey Literature

The Indigenous Law Portal as it appears today is not the final product since the classification schedule is expanding southward throughout the hemisphere. A digital resources librarian expressed her appreciation for “how the Library of Congress classification and name authorities provide a strong foundation for such an ambitious and global project.” Another librarian emphasized that such a foundation will serve the Portal into the future because “embedding the classification system is something we can build on later.” As the Portal is structured according to the classification, the former will mirror the growth of the latter.

While classification has traditionally been applied to books and other media, a researcher excitedly believed “we are bringing classification into the 21st century…it is now being applied to the Internet. As opposed to an inefficient word search generating 20,000-page response, we are organizing this knowledge in a hierarchical fashion.” A classification specialist agreed that “just because it’s not sitting on the shelf doesn’t mean LC doesn’t have it digitally or have access to it.” The Law Librarian of Congress echoes this sentiment when she said “on so many levels within the Library of Congress, [the Portal] is a model or example for future classification on the web.” This application of classification to digital resources could mean easier access to grey literature.

The Portal leverages the classification for access but also as a research tool. As one librarian expressed it “by making indigenous laws accessible online, they are more easily researched, compared, and studied, bringing more recognition and scholarship to these fields.” There is research being done in Central America, for example, much of it by an upcoming generation of scholars writing theses. This body of grey literature examines a plethora of topics: language revitalization, pluricultural and multilingual school curricula, holistic medical centers, the creation of indigenous territories with their own governments, and emerging models of multicultural legal systems. While there are many ways to access these digital materials, the Portal uses class KIA-KIX to guide users to this unique grey literature.

National Bibliographies and Grey Literature

The name authority records and the classification together help shape the digital resources available on the Indigneous Law Portal. A bibliography of digital resources is created in the form of a spreadsheet for each nation state; the author is responsible for the national bibliographies of Central America which is the next region that will be added to the Portal. These national bibliographies are heavily populated by grey literature documents as evidenced by the following table:

National Bibliographies of Indigenous Law			
Country	Grey Lit	Total	% Grey Lit
Mexico	90	97	93%
Guatemala	175	177	99%
El Salvador	14	19	74%
Honduras	31	31	100%
Nicaragua	65	65	100%
ALL	**375**	**389**	96%

As the numbers demonstrate, the Central American section of the Portal depends upon and leverages diverse grey literature sources to share indigenous law with users.

Recognition and Grey Literature

Recognition by a government is not a prerequisite for including an indigenous group on the Indigenous Law Portal. The librarians rely on self-identification as best as can be determined by information sources at their disposal. Grey literature is often the only resource type that fills this niche and is especially valuable if it includes firsthand accounts of indigenous community members.

On the other hand, external recognition comes in many forms. A community may be recognized by their neighbors, the international community, or another institution. According to one librarian the Portal "is giving a certain weight and validity to indigenous peoples' perspectives. Classification is a huge recognition." For some communities, it may be the first time an outside institution acknowledges them. Upon conducting trainings, some responses to the Portal included sentiments such as "this is the first time these peoples have been evidenced" and "with the name of LC behind it." It remains to be seen what such information-based recognition will mean for indigenous communities in the future.

Collections and Grey Literature

One could spend lifetimes discovering the extensive collections of the Library of Congress and it grows every day, including collections of grey literature. While working on the Indigenous Law Portal, a cartographer remarked, "What surprised me was how comprehensive the website is, and the extent of legal resources it provides for these indigenous Americans." The goal of the Portal is to become equally comprehensive for North, Central, and South America.

While the author conducts research for the Portal, she has the opportunity to observe broad patterns and uniquely local cases in indigenous law. Some legal patterns define the Central American region such as councils of elders which have decision making power in many indigenous communities. Within that there are local particulars such as the number of leaders, the length of their terms, the gender ratios and whether they are elected by votes or selected by consensus. The richness of the many existing legal systems cannot be described adequately here but the following examples highlight grey literature digital resources culled from the growing national bibliographies of Mexico, Guatemala, El Salvador, Honduras, and Nicaragua.

Example: Mexico

Image is a screenshot from the General Law of Indigenous Peoples' Linguistic Rights' *webpage provided by Mexico's National Institute of Indigenous Tongues*

The *Presentation of the General Law of Indigenous Peoples' Linguistic Rights* was published in 2015 by the National Institute of Indigenous Tongues, which uses the acronym INALI in Spanish.[4] The law itself was published in the Mexican national gazette, *Diario Oficial de la Federación*, several years prior in 2003 but INALI provides the added value of interpreted recordings of the law in 65 indigenous languages. Most of the digital resources on the Portal are written sources but this one is unique because it is mainly an oral resource.

The law, of course, is not an indigenous law but instead a national law. Federal or national governments are prodigious publishers of grey literature and the Portal includes many examples because national laws touch indigenous citizens. All of the countries of the Western Hemisphere have instances of legal pluralism. There may be a national government, regional governments for states or departments as they are commonly called in Central America, local or municipal governments in addition to local and/or regional indigenous governments. These overlapping jurisdictions mean that indigenous peoples are affected by various legal systems and while the Portal focuses on indigenous law, the communities live within a larger national context so some resources such as this one are included. Also, the audio format respects the many unwritten indigenous languages within the country by addressing groups in their native languages in addition to the Castilian (Spanish) of the original law.

Example: Guatemala

Image appears on the Mancomunidad de Municipios Garífunas de Honduras (MAMUGAH) blog [*http://mamugah.blogspot.com/*](http://mamugah.blogspot.com/)

Student research from institutions of higher learning provides another rich source of grey literature that is found frequently among the national bibliographies. Stacey Caron Castillo Lewis's 2005 social work thesis from the Universidad de San Carlos can be translated as "The impact of migration on Garifuna cultural identity loss." [5]

As the title indicates, the focus is on this Caribbean people descended from Arawak, French, English, Spanish, and West African peoples. Specifically, it includes information about two Garifuna organizations active in Guatemala: the Black Guatemalan Organization (Organización Negra Guatemalteca ONEGUA) and the Organization of Guatemalan Garifuna Women (Organización de Mujeres Garífunas Guatemaltecas ASOMUGAGUA). Written by a self-identified Garinagu (singular form of Garifuna), she interviewed leaders of these indigenous organizations and examined the ways in which they can fight against the detrimental effects of emigration and subsequent cultural loss. The Portal is enriched by such grey literature that shares findings from research conducted on the ground.

Example: El Salvador

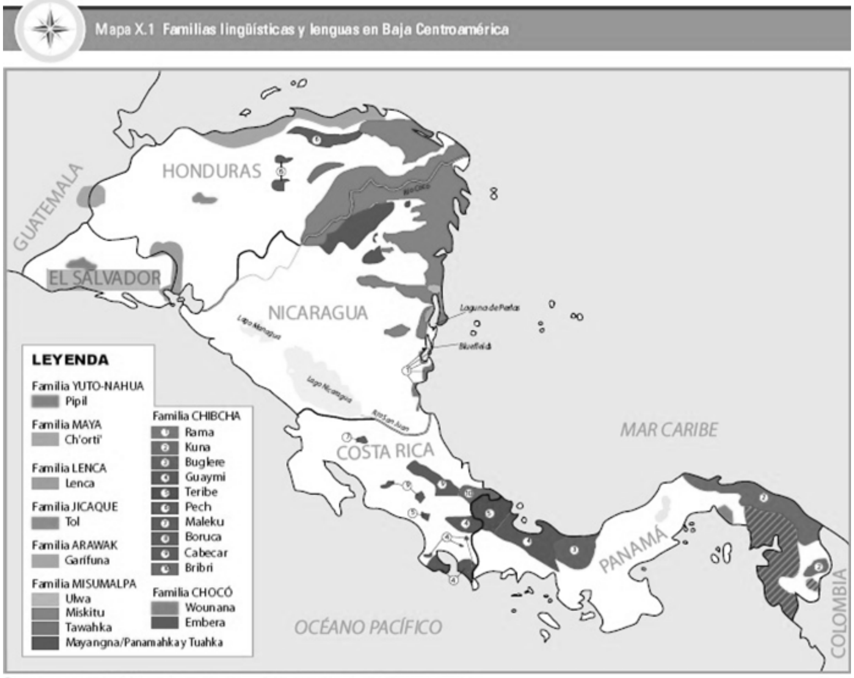


Image shows map of indigenous linguistic families in Central America from UNICEF's Atlas sociolingüístico de Pueblos Indígenas de América Latina, tomo II

Large nonprofit organizations have resources to provide comprehensive, regional studies that allow for comparison and high-level statistics. In 2009 the United Nations International Children's Emergency Fund, better known as UNICEF, and the Foundation for Education in Multilingual and Pluricultural Contexts-Andes published a two-volume work entitled “Sociolinguistic atlas of indigenous peoples of Latin America.” [6]

This hefty grey literature source provides important contextual information about dozens of indigenous communities under the heading “research guides,” which appears both in the classification and on the Portal. This is an example of a digital resource that does not fall into a national bibliography but rather a regional one. While the Central American national bibliographies are being created, the author is simultaneously collecting global and hemispheric resources or the regions of North America, Central and South America (the term Latin America is not being used), and Central America and South America separately. Again, this digital resource is not explicitly about indigenous law but it does provide contextual information about the Nahua-Pipil, Lenca, and Cacaopera of El Salvador. Furthermore, during the twentieth and twenty-first centuries, many international policymaking bodies, like UNICEF’s parent body the United Nations, have created a space for indigenous peoples to express their political will.

Example: Honduras

Image is from Diagnóstico participativo en el pueblo indígena Pech Honduras C.A. *of a meeting of Pech women discussing gender violence in Subirana, no page number provided*

Nonprofit publications are a font of information on indigenous communities. The International Forum on Indigenous Women and the Indigenous Lenca Movement of Honduras published “Participative diagnostics of the indigenous people of Pech, Honduras C.A.” where the last letters refer to “Central America.” [7] This grey literature resource does not include page numbers or a publication year, which are crucial metadata that the Portal librarians would like to include. Nonetheless, this publication provides valuable insight into the Pech women’s understanding of gender violence.

One Pech interviewee referenced a punishment that used to be applied to men who abused their female partners. To paraphrase, some of the leaders believe that the Pech should go back to the traditional punishment of building a fire and tying the man to a wooden frame over the fire to breathe in the smoke. If he could not stay there long enough, he was beaten until he couldn’t move.[8] This example of an indigenous punishment for gender violence tells us something about how the Pech responded to this human rights issue as expressed by their law.

Example: Nicaragua

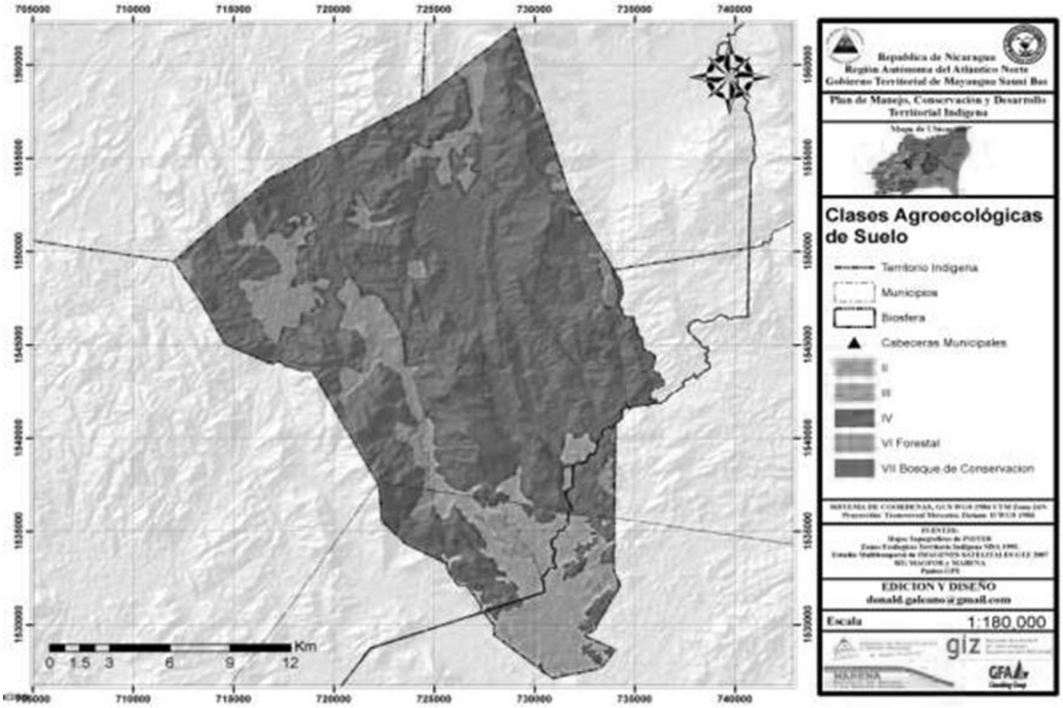


Image shows a map of soil types within Miskitu lands from Plan de Manejo, Conservación, y Desarrollo Territorial Indígena

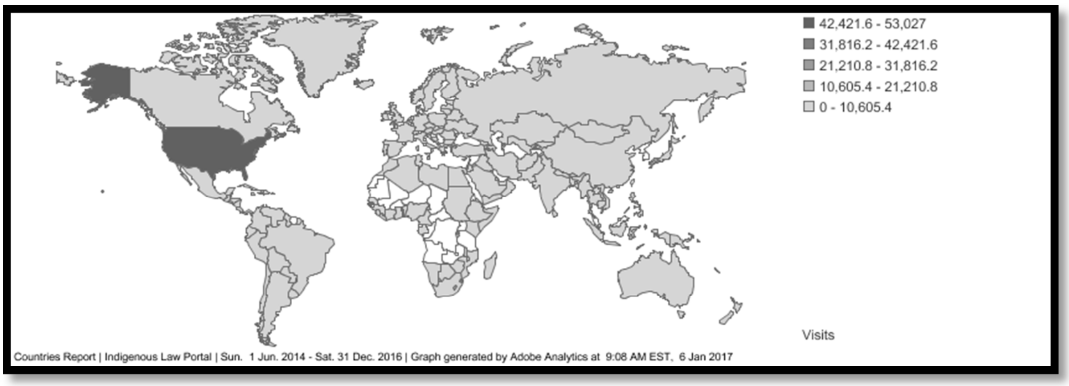
The Miskitu is a large nation with several areas run by tribal territorial governments in Nicaragua. The Territorial Government of Mayangna Sauni Bas together with the Nicaraguan Ministry of Environment and Natural Resources and the German Technical Cooperation published "The Administration, Conservation, and Indigenous Territorial Development Plan" in 2011. [9]

This grey literature source is especially valuable as it comes from indigenous leadership and speaks directly to the people's concerns for their land today and in the future. The multi-faceted resource describes the evolution of the Plan, lists other indigenous territories in the region, analyzes biological diversity, and outlines local tribal governance structures. Maps included in the Plan range from hydrology to annual temperatures to changes in land usage since 1980.

The establishment of territorial tribal governments flow from the Inter-American Court of Human Rights' 2001 decision regarding *Mayagna (Sumo) Community of Awas Tingni v. Nicaragua*. As described by the University of Arizona College of Law, it "is the first case in which an international tribunal with legally binding authority has found a government in violation of the collective land rights of an indigenous group, setting an important precedent for the rights of indigenous peoples in international law." [10] The court's decision obligated the state of Nicaragua to secure land titles not only for the Awas Tingni community but all indigenous peoples within the country. This decision, together with Nicaragua's Law 25 about regional autonomy[11] and Law 445 about communal land ownership,[12] are changing the map and governmental structures, which the Portal will track via resources like this one.

Impact

In 2015, the Portal was honored with an ALA (American Library Association) Choice Reviews 2015 Outstanding Academic Title (Internet resource). Hard feedback in the way of web metrics was gathered by the Library of Congress to examine the usage of the Indigenous Law Portal in the two years since it launched. The Portal represents a service for and about diverse communities and the table below confirms that users come from all continents of the globe with the great majority coming from the United States. The following world map illustrates the concentration of users by country:



More specifically, the top 10 country users are on four continents. Users hail from 174 nations; as a point of reference, the United Nations has 193 member states.[13]

Top 10 Countries	# of users	% of users
United States	53,027	87.10%
Canada	1,292	2.10%
United Kingdom	840	1.40%
India	497	0.80%
Australia	493	0.80%
Germany	486	0.80%
Japan	353	0.60%
Poland	259	0.40%
France	216	0.40%
China	194	0.30%

What these users do and seek is illuminated below. The average user looks at two pages of the Portal during a visit. Users have downloaded close to 600 different documents, almost entirely grey literature products. The three most downloaded documents are classification schedules yet these are less than 17% of the 30 most popular downloads. The majority of downloads are constitutions and bylaws from a variety of tribes. Such feedback is encouraging.

Indigenous Law Portal Usage Statistics	
June 2014-December 2016	
Total Page Views	126,045
Total Visits	60,849
Total Hours	1842
Total File Downloads	3,340

Conclusion

The story of the Indigenous Law Portal is in good measure the story of diverse grey literature sources being leveraged via the classification, which is itself a grey literature resource. The librarians work collaboratively to build the Portal but it takes more than academic training and good will to create a space for indigenous law among humanity's legal systems. With respect to the Portal, the author and her colleagues at LC look to other professionals and especially indigenous peoples to voice their thoughts. All contributions can be shared with the world via the Portal in a virtuous circle of legal knowledge.

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[8] Ibid. No page number. Quotation as published ""Los líderes caciques dicen: "hay que regresar aplicar castigos severos como aplicaban nuestros antepasados, para que se den cuenta los hombres de hoy lo duro que son los castigos y no maltraten a sus compañeras de hogar." A continuación nos describieron un castigo que lo aplicaban que consta de hacer una fogata y poner en la parte alta palos en forma de cortina (Tabanco) y subirlo ahí para que trague todo el humo y si no es capaz de aguantar todo el tiempo necesario pues le dan una paliza hasta dejarlo inmóvil. "Este es un castigo que lo aplicaban nuestros antepasados" explica el cacique."

[9] Gobierno Territorial Mayangna Sauni Bas, Ministerio del Ambiente y Recursos Naturales, Cooperación Técnica Alemana (GTZ), *Plan de Manejo, Conservación, y Desarrollo Territorial Indígena*, 2011, https://perma.cc/3HUD-6VNS

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Transition to Open Access and its Implications on Grey Literature Resources

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Abstract
This paper describes the transition to Open Access and its implications on grey literature resources. In this paper we will present current Open Access models, known as "offsetting deals", which main intention is to avoid "double dipping". This part will also review the role of library consortia in this process, as well as current Open Access policies in Europe.
The second part of this paper will explore the role of grey literature in transition process to Open Access. Grey literature is an important source of original research and up to date information, although the lack of peer review and formal publication standards must be taken into account during an evaluation process. Grey literature plays an important role in the rapid and timely distribution of in-depth, recent, scientific and technical information, and also provides access to a broad range of information and often contains new ideas. Research that is not published in journals but available in other formats (such as reports, theses or conference proceedings) is often more detailed, more recent and sometimes more rapidly disseminated. Due to the competitive and time consuming nature of publishing in peer-reviewed academic journals, some research may never make into journals and would, therefore, be inaccessible to interested parties without the grey literature. We will present possible ways of increasing the visibility of grey literature repositories, their inclusion in open access databases, and how to connect these institutional grey literature repositories with current research information systems.

Introduction
The term Open Access (OA) broadly refers to the accessibility of various documents, research outputs and other literature free of any charges and having fewer restrictions on their use, citation, reproduction and onward transmission.

In recent years Open Access has become a new focus of information resource innovation. Whereas premium scholarly content was formerly available only through expensive print subscriptions or proprietary databases, the open access movement promises to realize one of the fundamental aspirations of the public library movement, which is to make information in all its forms available to any interested citizen, without regard for ability to pay.

In its most elemental form, Open Access can be defined as providing free access for all Internet users to materials that have traditionally been published in scholarly journals. The more formal phrasing from the Scholarly Publishing and Academic Resources Coalition (SPARC), modeled after the Budapest Open Access Initiative's definition, states:

"By Open Access, we mean the immediate, free availability on the public internet… permitting any user to read, download, copy, distribute, print, search or link to the full text of these articles, crawl them for indexing, pass them as data to software or use them for any other lawful purpose."[1]

In line with the Berlin Declaration on Open Access of 22 October 2003, Science Europe defines Open Access as: "unrestricted, online access to scholarly research publications (including books, monographs and non-traditional research materials) for reading and productive re-use, not impeded by any financial, organisational, legal or technical barriers".[2]

[1] http://www.budapestopenaccessinitiative.org/read
[2] http://www.scienceeurope.org/policy/working-groups/open-access-to-scientific-publications/

Fig. 1: Benefits of Open Access (Source: SPARC, right to research, Kingsley & Brown 2012)

1. Open Access Policies

The growth of OA has been dramatic, but nowhere has this been more obvious than in the area of OA policies. This can only be understood when OA is seen in the context of wider political and policy issues. In this paper we will give an overview of some most significant European OA policies and policy statements starting with the Budapest Open Access Initiative.

1.1. The Budapest Open Access Initiative

In February 2002 the Budapest Open Access Initiative outlined two complementary routes to OA. The 'green' route was for researchers to deposit their peer-reviewed papers in open, interoperable electronic archives or repositories The 'gold' route was to publish in OA journals. In either case, there should be no financial, legal, or technical barriers between the author and the interested reader.

Definition of OA according to the Budapest Open Access Initiative - By "open access" to this literature, we mean its free availability on the public Internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited."[3]

The 16 original signatories of the Budapest Open Access Initiative . As of 20th January 2017, more than 6014 individuals and 916 organizations have signed it.

1.2. The Bethesda Statement on Open Access Publishing

Along with the *Budapest Open Access Initiative (BOAI)* and *the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities*, the *Bethesda Statement* established "open access" as the term to describe initiatives to make information more widely and easily

[3] Budapest Open Access Initiative, http://www.budapestopenaccessinitiative.org/read

available. On 11 April 2003, the Howard Hughes Medical Institute held a meeting attemded by 24 people to discuss better access to scholarly literature. The group created a definition of an open access journal as one which grants a "free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit, and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship" and from which every article is "deposited immediately upon initial publication in at least one online repository".[4]

1.3. The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities in October 2003

The **Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities** is a major international statement on open access and access to knowledge. Following the Budapest Open Access Initiative in 2002 and the Bethesda Statement on Open Access Publishing in 2003, the Berlin Declaration was a third influential event in the establishment of the open access movement. Peter Suber has referred to the three events combined as the "BBB definition" of open access (Suber, 2012).

The declaration was drafted at October 2003 conference held by the Max Planck Society and the European Cultural Heritage Online (ECHO) project. More than 120 cultural and political organizations from around the world attended. The statement itself was published on 22 October 2003. Acknowledging the increasing importance of the Internet and the previous discussions on the need for open access, it offered the following definition of an open access contribution:

"Open access contributions must satisfy two conditions: The author(s) and right holder(s) of such contributions grant(s) to all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship (community standards, will continue to provide the mechanism for enforcement of proper attribution and responsible use of the published work, as they do now), as well as the right to make small numbers of printed copies for their personal use. A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in an appropriate standard electronic format is deposited (and thus published) in at least one online repository using suitable technical standards (such as the Open Archive definitions) that is supported and maintained by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, inter operability, and long-term archiving."[5]

It also encouraged researchers and institutions to publish their work in accordance with these principles, advocate for open access and help in the development and assessment of open access related tools and measures.

1.4 Policy Guidelines for the Development and Promotion of Open Access by Alma Swan, commissioned by UNESCO, 2012

These Guidelines provide an account of the development of Open Access, why it is important and desirable, how to attain it, and the design of effective policies. Open Access is a new way of disseminating research information, made possible because of the World Wide Web.
The benefits of Open Access are summarized as follows:

- Open Access improves the speed, efficiency and efficacy of research
- Open Access is an enabling factor in interdisciplinary research
- Open Access enables computation upon the research literature
- Open Access increases the visibility, usage and impact of research
- Open Access allows the professional, practitioner and business communities, and the interested public, to benefit from research

[4] http://legacy.earlham.edu/~peters/fos/bethesda.htm
[5] https://openaccess.mpg.de/Berlin-Declaration

- As Open Access has grown, new business models have been developed – for journal publishing, for Open Access repositories, book publishing and services built to provide for new needs, processes and systems associated with the new methods of dissemination [6]

1.5 Science Europe Principles on Open Access to Research Publications, April, 2013

Principles on the Transition to Open Access to Research Publications adopted in April 2013 by the Science Europe Member Organisations share the following view:

- Publication and dissemination of results are an integral part of the research process. The allocation of resources within the research system must take this into account.
- Open Access to the published results of publicly-funded research will have huge value for the research community and will offer significant social and economic benefits to potential users in industry, charitable and public sectors, to individual professionals, and to the general public.
- Open Access, as defined in the Berlin Declaration, is not only about the right of access, but also about the opportunity to re-use information with as few restrictions as possible, subject to proper attribution.
- The common goal of Science Europe Members is to shift to a research publication system in which free access to research publications is guaranteed, and which avoids undue publication barriers. This involves a move towards Open Access, replacing the present subscription system with other publication models whilst redirecting and reorganising the current resources according to Grey Literature.
- Science Europe is committed to playing a role in accomplishing the transition to Open Access as quickly as possible, in an efficient and sustainable way, and thus avoiding unnecessary costs. This transition process must be as co-ordinated and transparent as possible."[7]

1.6 ROARMAP (The Registry of Open Access Repository Mandates and Policies)

The ROAR is a searchable international Registry of Open Access Repositories indexing the creation, location and growth of open access institutional repositories and their contents. It was created by ePrints at University of Southampton in 2003. To date, over 3,000 institutional and cross-institutional repositories have been registered in the ROAR.

The ROAR's companion database, the Registry of Open Access Repositories Mandatory Archiving Policies (ROARMAP), is a searchable international registry charting the growth of open access mandates adopted by universities, research institutions and research funders that require their researchers to provide open access to their peer-reviewed research article output by depositing it in an open access repository.

1.7 Amsterdam Call for Action on Open Science

The Amsterdam Call for Action on Open Science is a document that advocates for "full open access for all scientific publications", and endorses an environment where "data sharing and stewardship is the default approach for all publicly funded research". The Amsterdam Call for Action on Open Science was first produced as a draft at an Open Science meeting organized by the Dutch Presidency of the Council of the European Union on 4-5 April 2016, in Amsterdam.

The finalised Call for Action was input to the Competitiveness Council on the 27th of May, led by the Dutch State Secretary for Education, Culture and Science Sander Dekker. In the main results of this meeting a reference was made to the Call for Action in the document called "Outcome of the Council Meeting". It was also referred to in the Draft Council conclusions on the transition towards an Open Science system, point 3 under the section on Open Science. In the press comments on the meeting of the Competitiveness Council, the focus was mainly on the fact that European leaders call for 'immediate' open access to all scientific papers by 2020.[8]

[6] http://www.unesco.org/new/en/communication-and-information/resources/publications-and-communication-materials/publications/full-list/policy-guidelines-for-the-development-and-promotion-of-open-access/

[7] http://www.scienceeurope.org/policy/working-groups/open-access-to-scientific-publications/

[8] (https://enGreyLiteratureish.eu2016.nl/documents/reports/2016/04/04/amsterdam-call-for-action-on-open-science)

2. Transition to Open Access – Global level view

The Max Planck Digital Library has put forward a study on the transformation of the subscription-driven system for scientific publications to an Open Access model. For the first time, quantitative parameters were presented showing that the liberation of scholarly literature is possible at no extra costs. "According to market analyses, annual turnovers of academic publishers amount to approximately EUR 7.6 billion. This money comes predominantly from publicly funded scientific libraries as they purchase subscriptions or licenses in order to provide access to scientific journals for their customers. Since more than a decade the Open Access movement, in which the Max Planck Society plays a major role, has been demanding free and immediate access to the results of academic research on the Internet.

Open Access publishers ensure their financial sustainability through charging publication fees: Not readers but rather authors or their institutions or funders are supposed to pay for publications. While numerous publishers have already adopted an Open Access business model during the last few years, the share of openly available scientific articles is still only at a level of some 13%." (Schimmer, 2015)

"We need to create an efficient and widely budget-neutral transition which offers fresh incentives to traditional publishers to cooperate and transfer established journals to Open Access," says Martin Stratmann, President of the Max Planck Society.

The study which has been presented by the Max Planck Digital Library is investigating the question whether the previously used subscription budgets would be sufficient to fund the Open Access publication charges and thus bring about a complete transition of academic publishing. The paper, entitled *Disrupting the subscription journal's business model for the necessary large-scale transformation to open access,* concludes that such a transition would be possible at no extra costs. "An internationally concerted shifting of subscription budgets is possible at no financial risk, maybe even at lower overall costs", says main author Ralf Schimmer.[9]

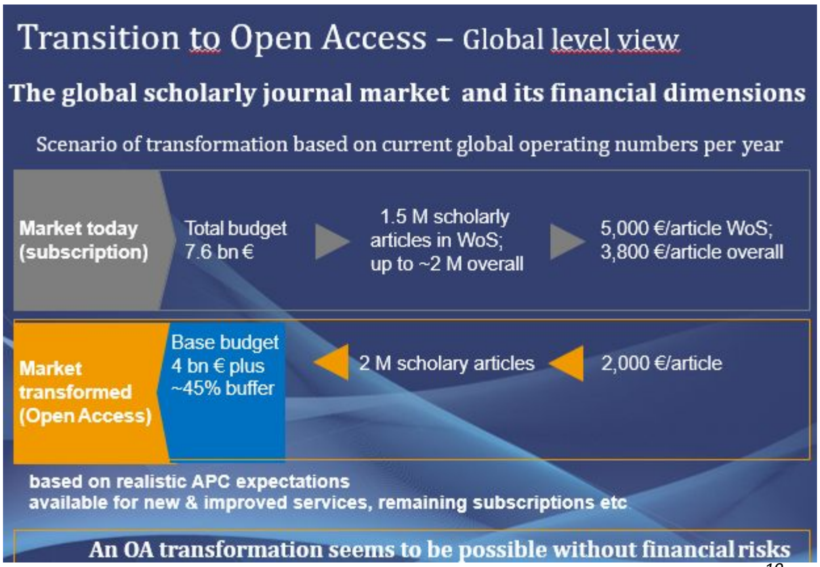

Fig. 2: Ralf Schimmer, Transition to Open Access – Global level view[10]

3. Transition to Open Access in Austria

The Austrian Science Fund (FWF) supports Open Access both conceptually and financially since 2003. The Council of Research and Technology Development (RFTE) explicitly affirmed the concept of Open Access in its 2009 *Strategy 2020*. The 50 member organisations of the Open Access Network Austria (OANA), initiated by Universities Austria (uniko) and the FWF and supported by the Federal Ministry of Science, Research and Economy (BMWFW), are advancing Open Access significantly. Besides, Open Access and Open Science are core

[9] http://pubman.mpdl.mpg.de/pubman/item/escidoc:2148961:7/component/escidoc:2149096/MPDL_OA-Transition_White_Paper.pdf

[10] http://liber2016.org/wp-content/uploads/2015/10/1400-1420_Schimmer_Open_Access_2020.pdf

elements of the Alliance for Responsible Science, Open Innovation, the Digital Austria platform, and the ERA Roadmap 2016 of the Austrian Federal Government. Based on these principles, efforts should be made to achieve the following goal:

"By 2025, a large part of all scholarly publication activity in Austria should be Open Access. In other words, the final versions of most scholarly publications (in particular all refereed journal articles and conference proceedings) resulting from the support of public resources must be freely accessible on the Internet without delay (Gold Open Access). This goal should be pursued by taking into account the different disciplinary practices and under consideration of the different disciplinary priorisations of Open Access. The resources required to meet this obligation shall be provided to the authors, or the cost of the publication venues shall be borne directly by the research organisations. The necessary funding must be brought in line with the overall funding priorities for research."[11]

In Austria, a number of closely collaborating bottom-up initiatives have been established through the FWF, the Open Access Network Austria (OANA), the Austrian Academic Library Consortium (KEMÖ), and e-infrastructures Austria. Given appropriate research-policy-based support, these initiatives could serve as a basis for positioning Austria as an innovation leader for Open Access in Europe and throughout the world.

3.1. Austrian Academic Library Consortium (KEMÖ) in a Nutshell

The Austrian Academic Library Consortium currently consists of 58 institutional libraries, among them 18 universities, 8 private universities, 18 universities of applied sciences, and 14 other institutions. The central purpose of the KEMO is:

- the coordinated acquisition and management of electronic resources (primarily databases and e-journals), and the usage rights of these resources within the consortia
- coordinated resource administration
- a unified voice to represent the consortia members both internationally and within library consortia, such as GASCO (German, Austrian and Swiss Consortia Organisation), ICOLC (International Coalition of Library Consortia), and other interest groups,
- joint collaboration for national and international Open Access initiatives. The Head Office of Kooperation E-Medien (Austrian Academic Library Consortium) is a department of the Austrian Library Network and Services Ltd (Österr. Bibliothekenverbund und Service GmbH), which also oversees operative support.[12]

3.2. FWF Austrian Science Fund

The Austrian Science Fund (FWF) is Austria's central funding organization for basic research. The purpose of the FWF is to support the ongoing development of Austrian science and basic research at a high international level. In this way, the FWF makes a significant contribution to cultural development, to the advancement of the knowledge-based society, and thus to the creation of value and wealth in Austria.

3.3. OANA – Open Access Network Austria

Open Access Network Austria (OANA) was established in 2012 as a joint activity under the organisational umbrella of the Austrian Science Fund (FWF) and Universities Austria (UNIKO). The network ties in with the uniko Open-Access Recommendation (12.01.2010) and the FWF-Position Paper (17.01.2012) and develops specific recommendations for the implementation of Open Access in Austria:

- Coordination of and recommendations for the Austrian OA-task/ activities of research institutions, funding organisations and research policies (including international developments)
- Positioning towards the information providers (mainly publishing houses)
- Contact persons and resource of information for scientists, research institutions and (research-) policies. [13]

[11] https://zenodo.org/record/34079#.WITSHIz3gfI
[12] https://konsortien.at/default-en.asp

[13] http://www.oana.at/

3.4. UNIKO - Universities Austria

Universities Austria is a non-profit association under private law. Its purpose is to assist the Austrian universities in the fulfilment of their tasks and responsibilities and thus to foster scholarship and research.[14]

3.5. Recommendations for the Transition to Open Access in Austria

In order to achieve the goal that by 2025, a large part of all scholarly publication activity in Austria should be Open Access, a set of 16 coordinated measures are recommended:

(1) Introduce Open Access policy
(2) Create cost transparency
(3) Reorganise publishing contracts
(4) Introduce publication funds
(5) Reorganise publication venues
(6) Merging the publication infrastructure
(7) Support international cooperation
(8) Provide start-up capital
(9) Registration of repositories
(10) Support self-archiving
(11) Offer training programmes
(12) Acknowledging Open Access / Open Science
(13) Expand the scope of the copyright reform of 2015
(14) Opening the inventories
(15) Monitoring during implementation
(16) Set targets for Open Science

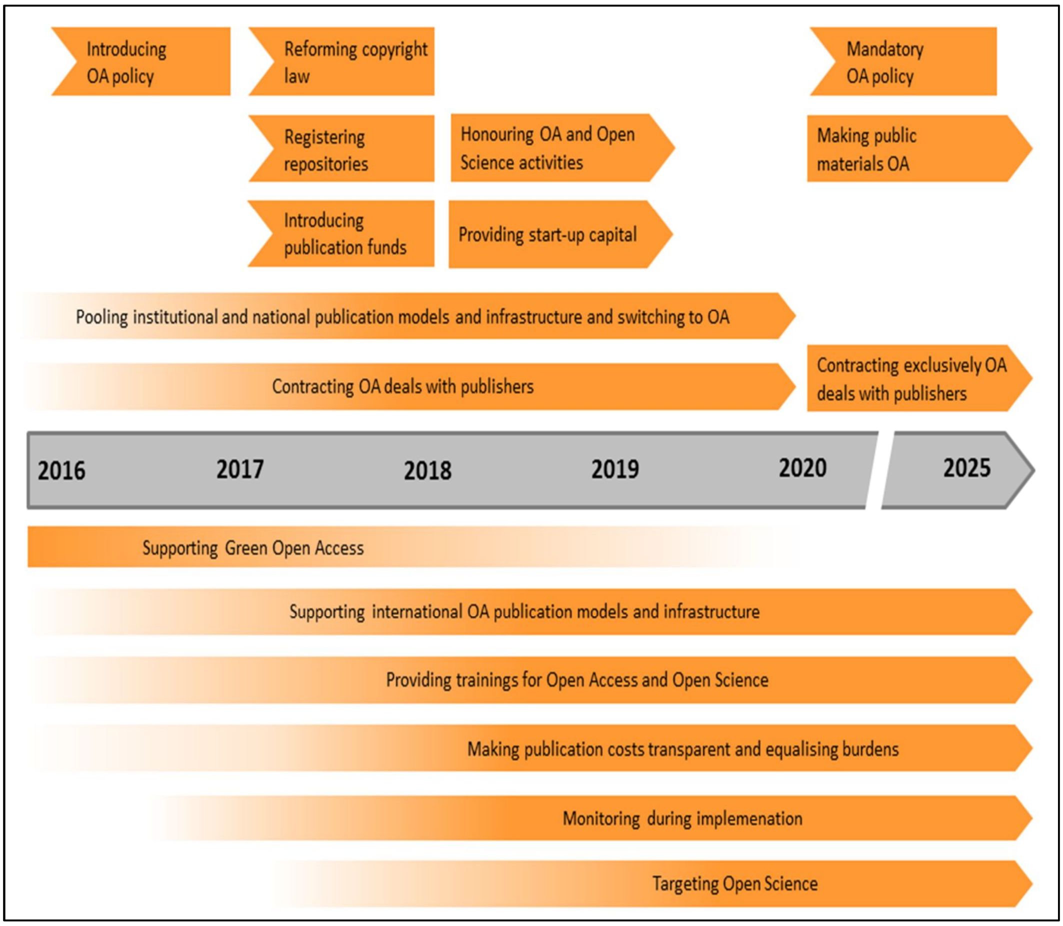

Fig. 3: Timeline of the Open Access Recommendations

[14] https://uniko.ac.at/index.php?lang=EN

3.6 Open Access Deals in Austria

Scholarly journals are the core of the current publication system. Scholarly journals are purchased by the libraries of research institutions in large packages, especially from large publishers, to enable their staff to access the publications. In Austria, libraries are currently purchasing packages exceeding 30 million Euros per year through the consortium network known as the Austrian Academic Library Consortium (KEMÖ). It is suggested that this model will be transformed to Open Access in three temporally coordinated steps:

Offsetting models - This term refers to the implementation of models that function on the following basis: payments for Open Access in subscription journals (Hybrid Open Access) should be offset against the subscription prices of the journals or should cause a high discount. KEMÖ and the FWF have concluded preliminary global agreements of this nature with publishers like IOP Publishing and Taylor & Francis in 2014. For 2017 KEMÖ closed three Offsetting deals, with IOP Publishing, Taylor&Francis and Emerald Publishing Group. Negotiations with other publishers are under way. However, these can only serve as entry-level models into a transitional phase.

Read & Publish models - In a mid-term step, attempts should be made to implement models that include access permission for the subscribing institutions as well as an Open Access publication option for scholars of the institutions. Such "Read & Publish models" were closed with Springer (Springer Compact 2016-2018) and with Royal Society of Chemistry (Read & Publish Deal 2017-2018).

Open Access service-based models - In the long term, i.e. from 2020 onward, contracts should be concluded in a manner that the price is no longer derived from the subscription package but from the costs of the individual published articles. Based on this suggestion the Max Planck Society assumes that the former resources would not only be sufficient for a model of this type, but would also permit competitive pricing which could reduce costs.[15]
Based on experience obtained in the Netherlands and in Austria, such substantial modifications of contracts, especially with large multinational enterprises, would be successful only if the Austrian Academic Library Consortium (KEMÖ) (a) was strengthened, and (b) negotiations were supported even more actively by the heads of research institutions.

4. The role of Grey Literature and inclusion the GL resources in Open Access Databases

Grey literature is commonly described as a field in library and Information science that deals with the production, distribution, and access to multiple document types produced on all levels of government, academics, business, and organizations in electronic and print formats not controlled by commercial publishing, i.e. where publishing is not the primary activity of the producing body. Examples of grey literature include patents, technical reports from government agencies or scientific research groups, working papers from research groups or committees, white papers, and preprints.

> "Grey literature stands for manifold document types produced on all levels of government, academics, business and industry in print and electronic formats that are protected by intellectual property rights, of sufficient quality to be collected and preserved by library holdings or institutional repositories, but not controlled by commercial publishers i.e., where publishing is not the primary activity of the producing body " (Schöpfel, 2011)

In the time of fast information exchange, grey literature has an important role and offers to scientists faster and free access to the knowledge. We should use the opportunity to underline that role, by including grey literature resources in open access databases. In that sense, we will increase the visibility of grey literature. We should put our efforts to improve metadata standards and protocols of grey literature.

[15] https://zenodo.org/record/34079#.WITSHlz3gfI

Grey literature should become part of packages and different databases, but with no additional costs to the end-users. The most important task is to include grey literature in open access databases, in order to increase recognition of grey literature for open access to research, open science and knowledge transfer. Including the grey literature resources in the following Open Access Databases will increase their usage and visibility:

- DOAJ – Directory of Open Access Journals[16]
- Sherpa Romeo Database [17]
- OAPEN Library [18]
- OAFindr 1science [19]

In Austria there is a database "STICHWORT Bibliothek" which defines the grey literature as following: "Grey literature are publications which are not published in the traditional way, e.g. research reports, brochures, typescripts, business reports, project concepts, and more." The "STICHWORT Bibliothek" contains a relatively large proportion of Grey Literature. These are mostly research documents, which are not preserved otherwise.

5. Conclusions

Although the Open Access movement is one of the major subjects in the academic publishing in the last 15 years, we are still in the period of transition to the pure Open Access world. The necessary switch from the subscription based models to the pure OA models didn't happen yet. According to ROARMAP, there are more than 270 OA Policies only in Europe, but this switch done globally, so that we could step into the new OA era. Many European countries are making their efforts develop national strategies and policies and different models of scholarly publishing in this transition period. Austria is one of them. According to the *Recommendations for the Transition to Open Access in Austria*, "by 2025, a large part of all scholarly publication activity in Austria should be Open Access". In order to achieve this goal, one of the measures is developing transformation models for scholarly journals, known as *Offsetting Deals, Read&Publish Deals,* and in the last phase of transition, *Open Access Service-Based Models*. Grey Literature is the part of scholarly research, and it should be included in these suggested transformation models.

Open Access promotes transparency and public insight into scientific outcomes, and including the Grey Literature resources in OA Databases will increase the visibility and usage of Grey Literature. If we say that Open Access is a prerequisite for Open Science, where all research data will be open and transparent, the Grey Literature should be already included in these transformation models, which will increase the visibility, usage and significance of Grey Literature resources in the scholarly publishing.

[16] https://doaj.org/
[17] http://www.sherpa.ac.uk/romeo/index.php
[18] http://www.oapen.org/home
[19] http://www.1science.com/oafindr.html

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