Digital Research Infrastructure for the Humanities and Social Sciences in Canada: A Landscape Analysis

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1. Executive Summary

Digital Research Infrastructure for the Humanities and Social Sciences in Canada: A Landscape Analysis aims to survey the main organizations and initiatives that make up humanities and social sciences digital research infrastructure (HSS DRI) in Canada today. The goal of this landscape analysis is to provide an overview of HSS DRI, as well as to draw attention to areas of confluence or of opportunity. The analysis does not outline a set of recommendations for the development of HSS DRI, as it intends to offer more of a birds-eye-view perspective than a roadmap to follow.

The initial draft of this landscape analysis was undertaken from April to July 2024 and revised thereafter. The methodology included a scoping review of comparable reports and analyses from different international jurisdictions; research into HSS DRI; and a set of conversations with 22 key stakeholders in the Canadian HSS DRI landscape. This landscape analysis surveys 11 key DRI organizations connected to the humanities and social sciences (to varying degrees), as well as an additional 23 related initiatives. Stakeholders were asked to provide details on the DRI organizations or initiatives they are affiliated with as well as to comment more generally on DRI in Canada, especially pertaining to the humanities and social sciences.

Most of those who engaged in conversation consider DRI as the tools, technologies, hardware, software, and people who facilitate digital research. Some respondents emphasize the “invisible but critical” nature of DRI, while others are steadfast in their assertion of how vast DRI is, or the importance of considering DRI throughout the whole research lifecycle, from the conception of an idea to its eventual publication and preservation as a research output. Although this landscape analysis specifically focuses on the humanities and social sciences, most stakeholders suggest that the *concept* of DRI is discipline agnostic at its core. In *practice,* however, DRI works differently for different disciplines, who have varying, unique methodological and community needs—acknowledging the overlaps and connections between HSS DRI and STEM DRI. These conversations included a consideration of HSS DRI challenges. Perhaps unsurprisingly, many cite ongoing sustainability as a core concern, with a focus on funding competitions, resource allocation, training, highly qualified personnel, and researcher engagement.

The landscape analysis finds that there is substantial coverage of the HSS DRI landscape, with clusters of organizations and activity around specific areas (e.g. open access, libraries, publishing, repositories, research data management, and preservation). As priorities for HSS DRI development in Canada are agreed on and set, these overviews may be useful to reference regarding additional support, development, and opportunities for collective approaches.

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3. Digital Research Infrastructure for the Humanities and Social Sciences in Canada

3.a. Introduction

In Canada, digital research infrastructure has evolved over decades following policy developments, asserted researcher needs, and strategic priorities. This infrastructure, however, serves different disciplines in different ways. *Digital research infrastructure,* as a term, carries technical, built, or engineered implications. Those are not necessarily adjectives that most people would use to describe the work of the humanities and social sciences, in general. Humanities research infrastructure, however, has played a historical, foundational role for all research disciplines—including the most technical. As the authors of *Facing the Future: European Research Infrastructure for Humanities and Social Sciences* (Duşa, Nelle, Stock, and Wagner 2014) and the European Strategy Forum on Research Infrastructures (ESFRI) Report argue, the earliest research infrastructure was the ancient library, dedicated to philosophical thought and speculation: humanities "archives, libraries, and collections of artefacts are the oldest infrastructures of all, dating back to ancient times"(Farago 2014, 21). Given this millenia-long history, it is unsurprising that libraries continue to play a central role in digital research infrastructure today. The concept of foundational support for academic endeavour is as old as the inception of academia itself; research and its infrastructure are fundamentally intertwined in the service of knowledge production.

Moving more fully into the concept of *digital* research infrastructure for both the humanities *and* the social sciences, one must broaden their conception of infrastructure from the brick and mortar buildings that house collections to the many interconnecting digital structures that facilitate research in the 21st century. "Building" metaphors remain apt; many consider the term *digital research infrastructure* to represent the foundational and often invisible frameworks that facilitate research—much like the underground pipes that carry water to one's kitchen sink. In her book *How Infrastructure Works: Inside the Systems that Shape our World* (2023), engineering researcher Deb Chachra suggests, blithely, that infrastructure is "all of the stuff you don't think about" (10). She goes on to argue that "for something to be considered infrastructure, its presence and characteristics are taken as a given" (10). In 2009, Janet Halliwell, adapting a report from David Moorman, provides the following definition: "Research infrastructure is characterized as the physical, informational and human resources

essential for researchers to conduct high quality research" (3). Moreover, she enumerates infrastructure as including:

> (1) tools, equipment, instrumentation, platforms and facilities, (2) software and information resources, including enabling computer systems, databases, data analysis and data interpretation systems, and communication networks, (3) the technical support (human or automated) and services needed to operate the infrastructure and keep it working effectively, and (4) the special environments and installations (such as buildings and research space) necessary to effectively create, deploy, access and use research tools. (3)

For the purposes of this landscape analysis, one can visualize Chachra's "given" infrastructure of digital research infrastructure as the tools, technologies, hardware, software, and people who facilitate digital research, as Halliwell (drawing from Moorman) notes.[1]

In Canada, digital research infrastructure for the humanities and social sciences is multifaceted, but the way it interlocks—or could interlock—to form one cohesive, efficient structure is not always obvious. Humanities and social sciences data is also disciplinary-specific, and its infrastructure reflects this. Moreover, in some cases humanities and social sciences data norms can be unique to subdisciplines or fields; according to the Federation for the Humanities and Social Sciences, there are 91,000 humanities and social sciences researchers in Canada (n.d.), and all of those researchers follow established, field-specific methodologies. Much humanities and social sciences data is text-based, for instance, and constitutes both digitized materials as well as born digital objects. But humanities and social sciences data may also include non-textual formats such as maps, photographs, 3-D models, or other datasets. Humanities and social sciences data may be (and are) used in other disciplines, too; regardless, there are disciplinary-specific norms regarding form and format. These digital assets and the infrastructure that supports them are crucial to the ongoing growth and development of humanities and social sciences in Canada.

The following landscape analysis aims to survey the many organizations and initiatives that make up humanities and social sciences digital research infrastructure in Canada today (hereafter referred to as "HSS DRI"). The goal is to provide an overview of HSS

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[1] Of note, this terminology has evolved over time and in different contexts. In the 2006 report from the American Council of Learned Societies titled *Our Cultural Commonwealth,* the authors articulate a similar concept as *cyberinfrastructure*. "The term cyberinfrastructure," they explain, "is meant to denote the layer of information, expertise, standards, policies, tools, and services that are shared broadly across communities of inquiry but developed for specific scholarly purposes: cyberinfrastructure is something more specific than the network itself, but it is something more general than a tool or a resource developed for a particular project, a range of projects, or, even more broadly, for a particular discipline" (American Council of Learned Societies 2006, 1).

DRI, as well as to point out any areas of overlap or of opportunity. The analysis stops short of making recommendations for HSS DRI, as it intends to offer more of a birds-eye-view perspective than a roadmap to follow. Of note, although much HSS DRI enables open scholarship practices, the DRI organizations and initiatives surveyed here are not necessarily or exclusively in service of the Open Access movement or its offspring (open sciences, open education, open data, et cetera). As the Invest in Open Infrastructure group explains, where DRI pertains largely to the tools, technology, and people who facilitate academic research in the digital world and throughout the research lifecycle, open infrastructure pertains to "the narrower sets of services, protocols, standards and software that can empower communities to collectively build the systems and infrastructures that deliver new improved collective benefits without restrictions, and for a healthy global interrelated infrastructure system" (n.d.).

Canada has developed generalized DRI over the past several years, evinced in organizations such as the Canadian Network for the Advancement of Research, Industry and Education (CANARIE) and the Digital Research Alliance of Canada (the Alliance), as well as the latter's forebearer, Compute Canada. The Government of Canada Ministry of Innovation, Science and Economic Development (ISED) defines DRI as "the collection of tools and services that allow researchers to turn big data into scientific breakthroughs" (2021). Moreover, they indicate that there are four key elements to national DRI: 1) a digital network for research and education, 2) data management, 3) research software, and 4) advanced research computing. ISED further indicates that these key elements must be supported by highly qualified personnel and cybersecurity.[2] ISED's continued support of DRI is evident in their ongoing commitment to Canada's Digital Research Infrastructure Strategy, as espoused in their 2024-25 departmental plan.[3] There, they outline support for the Alliance for the

> planning, procurement, installation, operation and allocation of computing infrastructure to increase computing capacity for AI researchers. In 2024–25, [the Alliance] will continue to coordinate and deliver national services in advanced research computing, research data management and research software, while also promoting innovation and expanding the network of support and resources that are available to academic and research communities. (2024)

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[2] See https://ised-isde.canada.ca/site/digital-research-infrastructure/en for more information on ISED's approach to DRI, including diagrams of the recent (as of 2021) and future national DRI landscape. With the establishment of the Alliance as the "New DRI Organization" noted, the *future* diagram can be considered as representative of the current, planned state of the landscape.

[3] Available at https://ised-isde.canada.ca/site/planning-performance-reporting/en/departmental-plans/innovation-science-and-economic-development-canadas-2024-2025-departmental-plan.

ISED also indicates their support for CANARIE in the same plan, specifically for CANARIE's work on the National Research and Education Network and Digital Accelerator for Innovation and Research program.

Despite this national level definition and commitment, as well as coordination and investment over time via CANARIE, Compute Canada, ISED, and the Alliance, the more disciplinarily-specific *HSS* DRI in Canada is not comparable to peer countries. For instance, the European Union established the Digital Research Infrastructure for the Arts and Humanities (DARIAH) over a decade ago; the Australian Research Data Commons was formed in 2018 and subsequently launched a Humanities, Arts, and Social Sciences + Indigenous Research Data Commons.[4] Canadian HSS DRI has not followed one single, overarching plan; rather, it is made up of many constituent parts that have evolved based on individual community's passions, visions, and needs. Such organic evolution is not necessarily or wholly negative. In fact, this sort of development can be perceived as a strength of the Canadian HSS DRI ecosystem: it has emerged from the ground up in response to real, articulated needs, and has been built by individuals and organizations who are confident in the veracity of those needs. This development approach has also resulted in substantial coverage of DRI activities for the humanities and social sciences. But the organic evolution of a complicated system also means that there is no distinct leadership, overarching plan, or set of agreed upon guiding principles that can be returned to at critical junctures. The Academy of the Social Sciences in Australia addresses similar concerns in their own decadal plan for building digital research infrastructure, with a focus on the social sciences. The authors of *Connected, Innovative and Responsive: Decadal Plan for Social Science Research Infrastructure 2024-33* articulate five principles to select and build fit-for-purpose social science research infrastructure: 1. Design for diversity; 2. First Nations-led; 3. Streamline ethical and responsible research; 4. Open to partners and community; 5. Enable equitable access (Academy of the Social Sciences in Australia 2024). One can see how articulating these principles provides a decision-making framework so that, moving forward, each solution and strategy can be weighed against these values-based priorities.

In Canada, various organizations assert needs and values on behalf of their constituencies. As a whole, these articulated needs were brought together most recently in the Alliance's 2021 researcher needs assessment (Pérez-Jvostov, Iron, Khair, Sahrakorpi, and Zhang 2021). Humanities and social sciences position papers asserted infrastructural support needs around Indigenous data sovereignty (including Ownership, Control, Access, and Possession [OCAP] and Collective Benefit, Authority to Control,

[4] See https://www.dariah.eu/ and https://ardc.edu.au/, respectively.

Responsibility, and Ethics [CARE] principles);[5] equity, diversity, and inclusion; open scholarship standards; highly qualified personnel training; and staff employment and retention. The authors of the summative report also gloss the Canadian Association of Research Libraries' position paper as suggesting "The need for interoperability between data repositories, institutional repositories, open educational resources, and other platforms supporting open scholarship" (26). The relevant sections of the Alliance's assessment can be considered as an early step toward a cohesive articulation of needs to be addressed in the ongoing development of HSS DRI in Canada.[6]

3.b. This Analysis: Scope & Methods

The initial draft of this landscape analysis was undertaken from April to July 2024, and revised thereafter. The methodology included a scoping review of comparable reports and analyses from different international jurisdictions; research into HSS DRI; and a set of conversations with 22 key stakeholders in the Canadian HSS DRI landscape. (For a list of these individuals, please see *Appendix 3: Individuals Consulted in the Development of this Landscape Analysis*.) The majority of the conversations were held via videoconference, save for one in-person and one email discussion. Stakeholders were asked to provide details on the DRI organizations or initiatives they are affiliated with (to ensure the accuracy of this analysis), as well as to comment more generally on DRI in Canada, especially pertaining to the humanities and social sciences. This analysis includes the current summary, as well as descriptive entries of 11 key DRI organizations connected to the humanities and social sciences (to varying degrees; see section 4), an additional 23 related initiatives (see section 5), and appendices.

3.c. Overview of Conversations

Beyond detailed, organization- or initiative-focused discussion, the conversations with key stakeholders revolved around the concept of HSS DRI, in general, as well as challenges to the current ecosystem and potential future directions. Future directions will be discussed in more detail in the conclusion to this analysis, below.

Most of those who engaged in conversation coalesce around the conception of DRI as the tools, technologies, hardware, software, and people who facilitate digital research (which, in 2024, encapsulates most research). Some respondents emphasize the "invisible but critical" nature of DRI or how vast DRI is. Other respondents assert the

[5] See https://fnigc.ca/ocap-training/ and https://www.gida-global.org/care, respectively.
[6] See https://alliancecan.ca/en/initiatives/position-paper-submissions for all position papers submitted to the Alliance for consideration in their 2021 researcher needs assessment. Many of these papers are written by members of the Canadian humanities and social sciences community.

importance of considering DRI throughout the whole research lifecycle, from the conception of an idea to its eventual publication and preservation as a research output, as well as its potential use and re-use. Although this landscape analysis is specifically focused on the humanities and social sciences, most stakeholders considered the *concept* of DRI to be discipline agnostic at its core, but that in *practice* DRI works differently for different disciplines, who have varying, unique methodological and community needs.

These conversations included a consideration of HSS DRI challenges and needs. Perhaps unsurprisingly, many cite sustainability as a core concern. This includes basic questions such as “who will fund HSS DRI now and in the future?” and “why should any one organization or institution be responsible for infrastructure contributed to and used by many across the country”? More detailed reflections include the importance of recognizing that HSS DRI does not fit easily into the mold of current research funding schemes in Canada. Moreover, funding DRI through competitions means that organizations are spending substantial time and energy in fundraising and jockeying for the same resources, as individuals, rather than being supported in a more collective, coordinated fashion. Underinvestment in DRI that is specifically geared toward the humanities and social sciences will undoubtedly widen the research development and success gap between disciplines in Canada.

Since most of the national funding opportunities are focused on research, rather than on infrastructure, these opportunities are often “one-off” injections of money. Single funding awards may help to facilitate a piece of HSS DRI but ignore the reality that DRI will only be useful if it is updated, dependable, and persistent for years—if not decades—to come. The Canada Foundation for Innovation (CFI) has historically been the most prominent funder of DRI in Canada. Currently, CFI funds one Major Science Initiative in the humanities (Coalition Publica) and one in the social sciences (Canadian Research Data Centre Network). According to the CFI website, the Major Science Initiative Fund “provides support for the ongoing operating and maintenance needs of research facilities of national importance” (n.d.). CFI also funded some humanities and social sciences projects through its cyberinfrastructure initiative in 2015 and 2017. Most recently, CFI announced a humanities, arts, and social sciences-specific stream of its core infrastructure funding mechanism, the Innovation Fund. As a relatively recently mandated DRI funder in Canada, the Alliance has limited humanities and social sciences support to initiatives available to all researchers generically (for example, by funding persistent identifier and research data management activities and by supporting institutional and data repositories). The Social Sciences and Humanities Research Council does not have a mandate to fund DRI. Of note, some organizations have successfully sought funding or other support outside of standard funding

competitions, but these paths to resources are not always clear or open to other groups.[7]

The 2023 *Report of the Advisory Panel on the Federal Research Support System* proposes the creation of the Canadian Knowledge and Science Foundation, a "new, complementary governance mechanism to work alongside the existing system" of research funding in Canada (Bouchard et al. 2023). Based on this report, the introduction of a new governance mechanism seems unlikely to improve HSS DRI funding in particular. The report does acknowledge issues in accessing infrastructure funding in Canada—namely, that researchers must take a fragmented, multi-agency approach to this. They write:

> To be successful, Canadian researchers need access not only to research funding but also to state-of-the-art research tools, instruments, and facilities. Several stakeholders have emphasized the importance of better coordinating infrastructure, operating and research funding. The proposed [Canadian Knowledge and Science Foundation] would be tasked with working with the granting councils and Canada Foundation for Innovation (CFI) to address this fragmentation and identify opportunities for streamlining processes. (n.p.)

This is a promising statement, especially as it acknowledges the multifaceted reality of DRI, that is, funding, tools, instruments, and facilities; one would readily add skilled people to this list, too. Further on in the report, however, Bouchard et al. focus this infrastructure attention on the value of ongoing, lifecycle support for Major Research Facilities (e.g. large, complex science labs or costly, shared tools such as particle accelerators). Most HSS DRI does not qualify or make sense as a Major Research Facility, since the hardware needs for HSS DRI are markedly different than those in the sciences.

In fact, a much more pressing need for HSS DRI is appropriately resourced highly qualified personnel to develop, implement, and support DRI initiatives, as asserted in the responses to the Alliance's 2021 researcher needs assessment (see Antoniuk and Brown 2021, Estill 2021, Evalyn et al. 2021, Rockwell et al. 2021). There are serious challenges for HSS DRI around recruitment, training, and retention of skilled staff to undertake this type of work. Limited staffing support severely hampers the capacity of HSS DRI to operate at scale, never mind to evolve in response to emergent needs of researchers, moving forward. This reflects another way in which HSS DRI does not fit the expectations for DRI set out and perpetuated by the funding agencies and other national bodies.

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[7] A future inquiry into how the HSS DRI landscape has been funded to date would be interesting data to consider, especially as organizations look toward sustainable development, moving forward.

Appropriate, sustainable resourcing is not the only concern expressed by those working to advance HSS DRI. Some respondents feel that there is a collaborative leadership gap in the area of HSS DRI, especially on a national level; among other challenges, this results in a lack of representative, single-source, convincing messaging to policy influencers, funders, and the federal government. Relatedly, there is a problematic disconnect between national DRI funding and support schemes and the asserted needs of humanities and social sciences practitioners, as acknowledged above. Others indicate that standardization initiatives (e.g. research data management or persistent identifiers) will only be truly successful if they are accepted and implemented across all academic disciplines and institutions in Canada and are not considered the sole responsibility of any one organization or institution. Still others point out that *nuanced* access, related to sensitive cultural or personal data, is not fully developed and implemented yet. Organizations witness a lack of researcher knowledge as to how to engage with HSS DRI effectively. As Sheila Anderson writes in her own consideration of research infrastructure,

> if research infrastructures are to contribute to the transformation of research then it is important that researchers working on histories, literature, culture and other aspects of what makes us human understand the value of these infrastructures for their own practices and how they operate to facilitate and to enhance the production of their research. (2013, 7)

From a more technical perspective, this could be characterized as a lack of ongoing, informed user engagement or collaborative development. This also suggests that the pathways to larger national infrastructure initiatives and supports are not always obvious. Finally, there are concerns about optimizing current digital objects to ensure their present and future interoperability, especially across different systems and as technology continues to develop and change over time.

These concerns are grouped and visualized in the following chart, where common challenges are listed on the y-axis and number of respondents who mentioned this concern are marked on the x-axis.[8] Note that challenges that were only cited by one individual have not been included on the chart, as they are not representative of mutually stated concern. Moreover, a specified survey with delineated options that respondents could rank may provide more accurate data regarding shared concerns or challenges than the thoughts shared in a more unstructured way in discussion.

[8] Of note, many of these concerns were also expressed during the Tri-Agencies' review of their Open Access Policy on Publications, and can be reviewed in the resulting report (Government of Canada 2024).

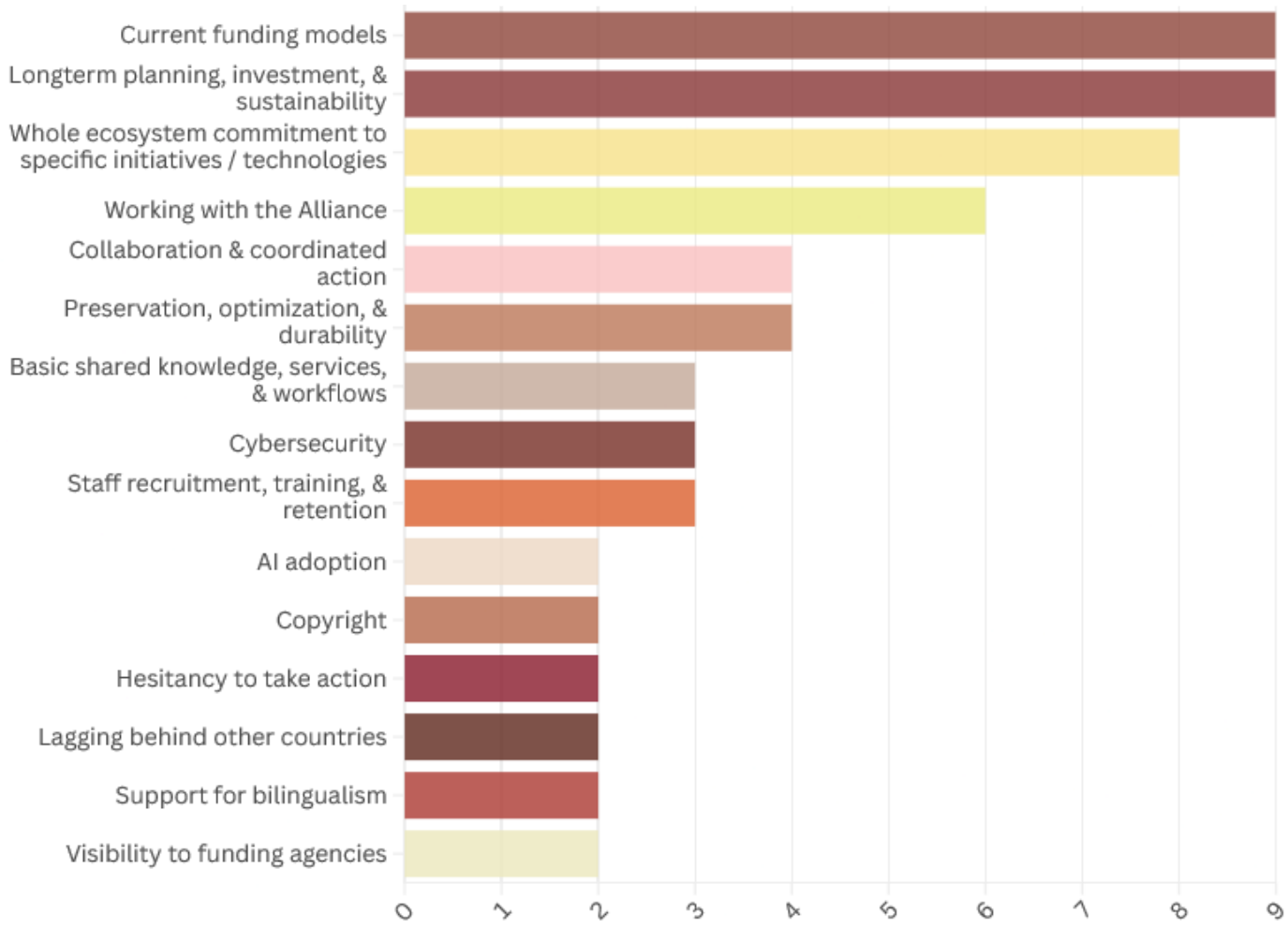

Figure 1: Challenges to HSS DRI in Canada, as cited in discussion

3.d. Where We Are Today

This landscape analysis surveys 11 key DRI organizations connected to the humanities and social sciences, as well as an additional 23 related initiatives. This analysis aims to strike a balance between accurately representing the HSS DRI landscape and remaining focused on key actors and projects. Thus, organizations and initiatives were selected based on their prominence in the landscape at a national level. These organizations and initiatives play different roles in the HSS DRI ecosystem depending on mission, mandate, history, and need. In general, the organizations seek to coordinate and sustain different parts of HSS DRI in support of the research ecosystem; they are more broadly mandated and thus differ from initiatives and smaller projects in scope and approach.

In review of the organizations and initiatives surveyed in this analysis, it is important to emphasize two things: firstly, this analysis should be considered as a snapshot of a particular moment in time. Especially given the rate of technological change, the landscape this analysis surveys will evolve in the months and years to come. Secondly, it is likely that some relevant organizations and initiatives have been inadvertently overlooked in this analysis and the document will benefit from further consultation and regular updating. The organizations and initiatives included at this time are surveyed in sections 4 and 5, and alphabetical lists of both may be found in *Appendix 1* and *Appendix 2,* respectively.

Of note, the wealth of humanities and social sciences labs in Canada—including digital humanities labs such as the Centre de recherche interuniversitaire sur les humanités numériques (Université de Montreal), Electronic Textual Cultures Lab (University of Victoria), Humanities Data Lab (University of Ottawa), and The Humanities Interdisciplinary Collaboration Lab (University of Guelph)—have not been explicitly surveyed as standalone organizations or initiatives. Neither have SSHRC-funded Partnership projects that are clearly digital humanities projects but are not explicitly HSS DRI initiatives, such as SpokenWeb (led by Jason Camlot, Concordia University) or Revue3.0 : Écrire, Transmettre, Découvrir (led by Marcello Vitali Rosati, Université de Montreal). Rather, this landscape analysis focuses on any specific digital research infrastructure initiatives that are connected to these labs and projects and / or directed by their leads. This is not to suggest that such labs and projects are not key players in HSS DRI writ large; in fact, they are often primary frequent users of and contributors ro such infrastructure. Rather, this landscape analysis is tightly scoped on HSS DRI organizations and initiatives instead of on the critical research they support. In fact, if one was to review all of the research labs and projects that HSS DRI in Canada supports, this document would be gargantuan; there no doubt hundreds of examples of such work from around the country, given the centrality of technology to humanities and social sciences research today and its 91,000 member community.

The 11 key DRI organizations are responsible (as leads) for—or else participate in—16 of the 23 related initiatives, as per Figure 2 below. There is a red dot marked for initiatives that organizations are currently leading; an orange dot for initiatives that organizations are engaged in, but do not lead; a yellow dot for initiatives that were led by an organization previously but are now led by a different organization; and a green dot for initiatives that were led by an organization previously, but which they still participate in substantially. Due to space limitations, organization names have been abbreviated as follows in Figure 2 and subsequent figures:

Organization Name	**Abbreviation**

Bibliothèque et Archives nationales du Québec (BAnQ)	BAnQ
Canadian Association of Research Libraries / Association des bibliothèques de recherche du Canada (CARL / ABCR)	CARL
Canadian Research Data Centre Network / Réseau canadien des Centres de données de recherche (CRDCN / RCCDR)	CRDCN
Canadian Research Knowledge Network / Réseau canadien de documentation pour la recherche (CRKN / RCDR)	CRKN
Digital Research Alliance of Canada / Alliance de recherche numérique du Canada (The Alliance / L'Alliance)	Alliance
Érudit	Érudit
Internet Archive Canada	IAC
Library and Archives Canada / Bibliothèque et Archives Canada (LAC / BAC)	LAC
Public Knowledge Project (PKP)	PKP
Regional Library Associations (full list in section 4, below)	Reg. Lib.
Scholars Portal	SP

The 16 initiatives indicated in Figure 2 are also abbreviated, when needed, as follows:

Initiative Name	**Abbreviation**
Borealis	Borealis
Canadian Persistent Identifiers Advisory Committee	CPIDAC
Canadiana collections (Canadiana and Héritage)	Canadiana
Coalition for Canadian Digital Heritage	CCDH
Coalition Publica	Coalition Publica
Cyberinfrastructure ouverte pour les sciences humaines et sociales	CO.SHS
Data Management Plan (DMP) Assistant	DMP
DataCite Canada Consortium	DCAN
Federated Research Data Repository / Le Dépôt fédéré de données de recherche	FRDR
Lunaris	Lunaris
Open Journal Systems	OJS
Open Monograph Press	OMP
Open Preprint Systems	OPS
ORCID Canada Consortium	ORCID-CA
Partnership for Open Access	POA
Scholaris	Scholaris

Figure 2: Key DRI organizations (on the y-axis) and their related initiatives (on the x-axis). Red dot = initiatives organizations currently lead; orange dot = initiatives organizations engage with (do not lead); yellow dot = initiatives organizations previously led, now led by a different organization; green dot = initiatives organizations previously led, still participate in substantially.

As evinced in Figure 2, several initiatives are undertaken jointly by more than one organization: the Coalition for Canadian Digital Heritage, Coalition Publica, DataCite Canada Consortium, ORCID Canada Consortium, Partnership for Open Access, and Scholaris. In addition to these multi-leader initiatives, many organizations participate in initiatives they do not lead, including Borealis, Canadian Persistent Identifiers Advisory Committee, Cyberinfrastructure ouverte pour les sciences humaines et sociales, Federated Research Data Repository, and Open Journal Systems.

To aid in this analysis, a set of commonly used research, library, and scholarly communication keywords were selected to tag and group organizations and initiatives. Organization keywords were assigned after review and evaluation of each group's core digital research infrastructure role and initiatives. These keywords are listed below, along with the number of organizations tagged with each keyword.

<u>Keywords (Organizations)</u>

- advanced research computing (1)
- archives (1)
- cultural heritage (3)
- digitization (3)
- geospatial data (1)
- interlibrary loan (1)
- journals (3)
- licensing (1)
- libraries (5)
- microdata (1)
- monographs (1)
- open access (7)

- open source software (1)
- persistent identifiers (2)
- population health data (1)
- pre-prints (1)
- preservation (5)
- publishing (3)
- quantitative analysis (1)
- repositories (4)
- research data management (4)
- social sciences (1)

These keywords can be represented as follows, with the most used keywords near the centre of the visualization and the lesser used keywords surrounding them:

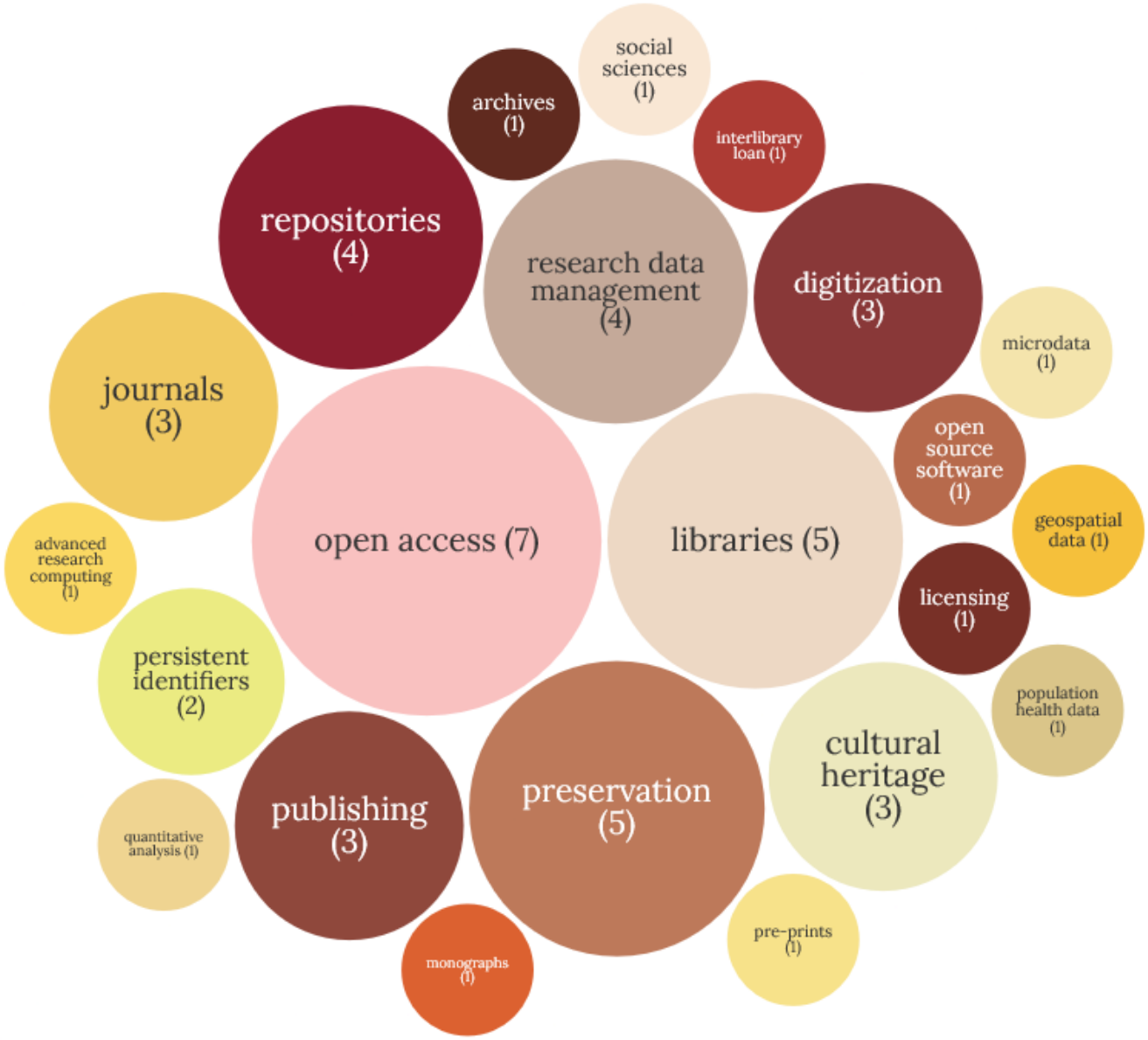

Figure 3: A map of relevant keywords, with frequency indicated.

Organizations are then plotted on a scatterplot, connected to their assigned keywords, in an attempt to visually map their relative area of activity in the landscape as well as to present areas of confluence and areas of lesser activity.

Figure 4: HSS DRI organizations plotted with their corresponding keywords, with frequency of keywords represented numerically on the y-axis as well as by size of dot.

As Figures 3 and 4 demonstrate, the 11 DRI organizations included in this landscape analysis can be mapped across 22 keywords. Trends emerge in review of this plotting. For instance, open access, as a term, broaches both clusters and is, indeed, the keyword with the highest frequency as evinced by its span across organizations and the weight of its dots. By separating out the data further (and removing open access, given its dominance), a general cluster of organizations appear around the “preservation and findability” keywords (e.g. libraries, repositories, preservation, research data management, persistent identifiers, et cetera) and another around the “publishing” keywords (e.g. journals, monographs, pre-prints, publishing, et cetera). See Figures 5 and 6, below. This distinction is not overly firm, as there are activities that readily span both such as persistent identifiers.

Figure 5: The same plot as Figure 4, above, with "preservation and findability" keywords and related organizations isolated (and the open access keyword removed).

Figure 6: The same plot as Figure 4, above, with "publishing" keywords and related organizations isolated (and the open access keyword removed).

Isolating the data in this way is not intended to suggest that there is more activity in the “preservation and findability” space than the “publishing” space, nor to assign any relative value to any one activity in the larger ecosystem. It does, however, reflect where multiple organizations are working in the same space (as represented above, in Figure 2, as well). These collaborations are acknowledged in greater detail in the summaries, below, where many of the key DRI initiatives are undertaken by multiple organizations in collaboration or else responsibility for the initiatives transitions from one organization to another over time.

For reference, one can also consider the “preservation and findability” and “publishing” tagged organizations together in Figure 7, below.

Figure 7: A combination of the "preservation and findability" and "publishing" tagged organizations

Keywords are listed in the organization summaries in the next section, but can also be viewed in this table for quick reference:

Organization	Keywords						
Bibliothèque et Archives nationales du Québec (BAnQ)	archives	cultural heritage	libraries				
Canadian Association of Research Libraries / Association des bibliothèques de recherche du Canada (CARL / ABCR)	libraries	open access	persistent identifiers	persistent identifiers	repositories		
Canadian Research Data Centre Network (CRDCN)	microdata	population health data	quantitative analysis	research data management	social sciences		
Canadian Research Knowledge Network / Réseau canadien de documentation pour la recherche (CRKN / RCDR)	libraries	digitization	persistent identifiers	cultural heritage	preservation	open access	licensing
Digital Research Alliance of Canada / Alliance de recherche numérique du Canada (The Alliance / L'Alliance)	advanced research computing	repositories	research data management				
Érudit	open access	journals	publishing				
Internet Archive Canada	digitization	open access	preservation				
Library and Archives Canada / Bibliothèque et archives du Canada (LAC / BAC)	cultural heritage	digitization	open access	preservation			
Public Knowledge Project (PKP)	journals	monographs	open access	open source software	pre-prints	publishing	
Regional Library Associations (full list in doc)	interlibrary loan	libraries	open access	preservation	publishing	repositories	research data management
Scholars Portal	geospatial data	journals	journals	libraries	preservation	repositories	

Figure 8: A table listing the 11 HSS DRI organizations and their relevant keywords.

It is interesting to note how the initiatives related to DRI in the humanities and social sciences map onto this same framework. The set of keywords employed above for organizations was expanded for initiatives, which are often more tightly scoped in areas of activity. Below is an expanded keyword list with the number of initiatives tagged with each keyword listed:

Keywords (Initiatives)

- archives: 2
- cultural heritage: 2
- data curation: 1
- data visualization: 2
- digitization: 2
- discovery: 2
- digital humanities: 4
- history: 1
- journals: 2
- libraries: 1
- linked open data: 2
- literary studies: 1
- monographs: 1
- open access: 10
- open education: 1
- open educational resources: 1
- open social scholarship: 1
- open source software: 4
- persistent identifiers: 3
- preprints: 1
- preservation: 1
- publishing: 8
- repositories: 5
- research data management: 5
- semantic web: 1
- social sciences: 1
- sustainability: 1
- terminology: 1
- text analysis: 2

Below, initiatives have been overlaid on the original keyword scatterplot, in place of organization names. Due to space limitations, initiative names have been coded as follows:

Initiative Name	**Code**
Borealis	B
Canadian Persistent Identifiers Advisory Committee (CPIDAC)	C1
Canadian Writing Research Collaboratory / Le Collaboratoire scientifique des écrits du Canada (CWRC /CSÉC); Collaboratory for Writing and Research on Culture	C2
Canadiana collections (Canadiana and Héritage)	C3
Coalition for Canadian Digital Heritage (CCDH)	C4
Coalition Publica	C5
Cyberinfrastructure ouverte pour les sciences humaines et sociales (CO.SHS)	C6
Data Management Plan (DMP) Assistant	D1

DataCite Canada Consortium	D2
Federated Research Data Repository / Le Dépôt fédéré de données de recherche (FRDR/DFDR)	F
Implementing New Knowledge Environments (INKE) Partnership	I
Linked Editing Academic Framework (LEAF)	L1
Linked Infrastructure for Networked Cultural Scholarship (LINCS)	L2
Lunaris	L3
National Indigenous Knowledge & Language Alliance / Alliance nationale des connaissances et des langues autochtones (NIKLA/ANCLA)	N
Open Journal Systems (OJS)	O1
Open Monograph Press (OMP)	O2
Open Preprint Systems (OPS)	O3
ORCID Canada Consortium (ORCID-CA)	O4
Partnership for Open Access (POA)	P1
Pressbooks	P2
Scholaris	S
Voyant Tools	V

Of note, some of the keywords from Figures 3 and 4 are not tagged onto any of the initiatives. This may indicate a gap between the more general classification of a DRI organization and its initiatives specifically connected to the humanities and social sciences. There are also several new keywords in Figure 9 that are not present in Figures 3-7. Most of these additional keywords are much more specialized. It is of course expected that delineated initiatives would be more focused on specific disciplines, subdisciplines, or activities. Some initiatives are also not connected to the DRI organizations at all; rather, they are standalone interventions often conceived of initially as researcher-led digital scholarship initiatives (e.g. CWRC, INKE, LEAF, LINCS, and Voyant). Regardless, it is interesting to consider that some of these more specific, initiative-based keywords would not map easily back onto any of the 11 DRI organizations considered in this analysis as undertaking work specifically connected to the humanities and social sciences.

As with the organizations, relevant keywords are listed in the initiative summaries in the next section, but can be viewed in this table for quick reference:

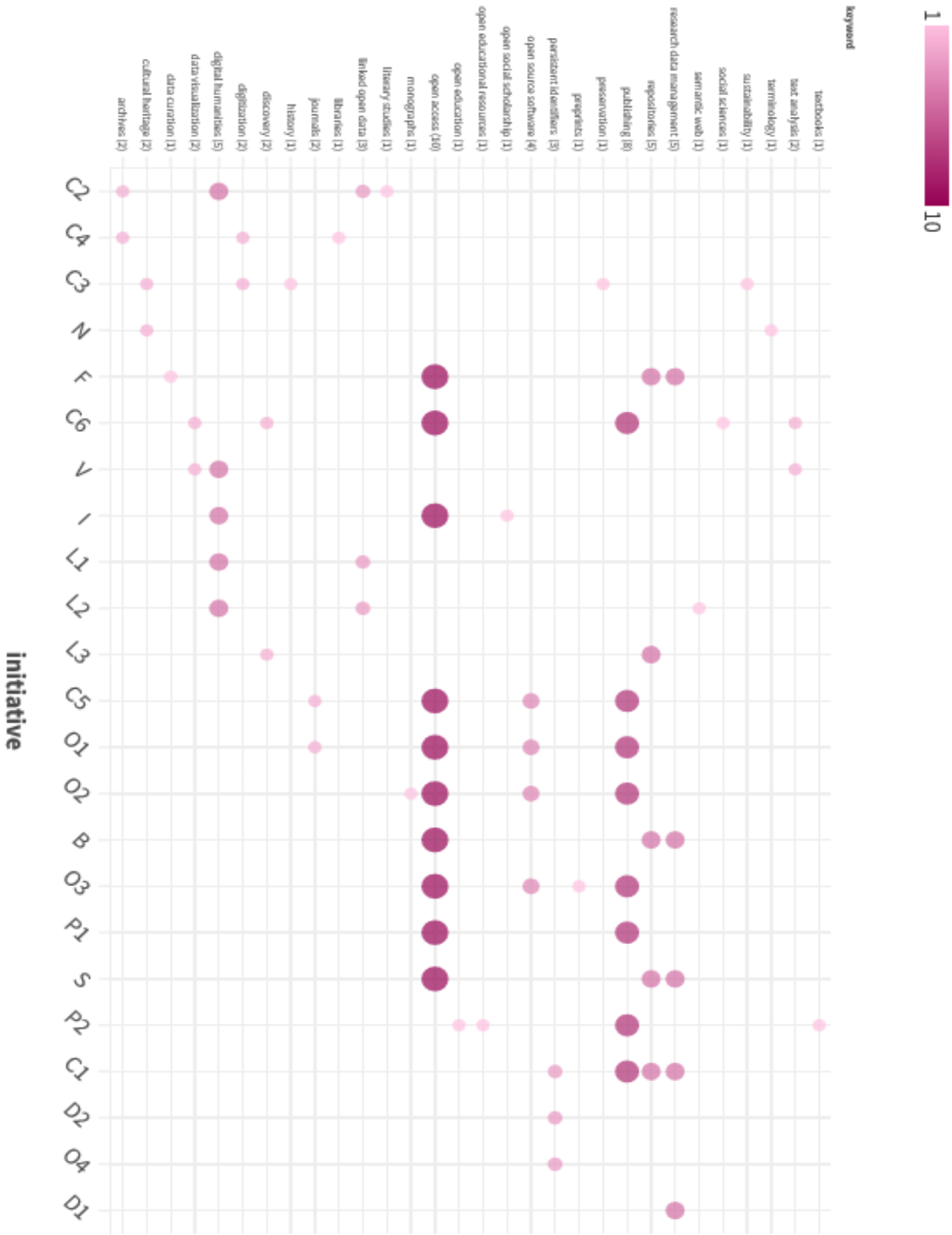

Figure 9: HSS DRI initiatives represented on the keyword scatterplot.

Initiative	Keywords					
Borealis	open access	repositories	research data management			
Canadian Persistent Identifiers Advisory Committee (CPIDAC)	persistent identifiers	publishing	repositories	research data management		
Canadian Writing Research Collaboratory / Le Collaboratoire scientifique des écrits du Canada (CWRC /CSÉC); Collaboratory for Writing and Research on Culture	archives	digital humanities	linked open data	literary studies		
Canadiana collections (Canadiana and Héritage)	cultural heritage	digitization	history	preservation	sustainability	
Coalition for Canadian Digital Heritage (CCDH)	archives	digitization	libraries			
Coalition Publica	journals	open access	open source software	publishing		
Cyberinfrastructure ouverte pour les sciences humaines et sociales (CO.SHS)	data visualization	discovery	open access	publishing	social sciences	text analysis
Data Management Plan (DMP) Assistant	research data management					
DataCite Canada Consortium	persistent identifiers					
Federated Research Data Repository / Le Dépôt fédéré de données de recherche (FRDR/DFDR)	data curation	open access	repositories	research data management		
Implementing New Knowledge Environments (INKE) Partnership	digital humanities	open access	open social scholarship			
Linked Editing Academic Framework (LEAF)	digital humanities	linked open data				
Linked Infrastructure for Networked Cultural Scholarship	digital humanities	linked open data	semantic web			
Lunaris	discovery	repositories				
National Indigenous Knowledge & Language Alliance / Alliance nationale des connaissances et des langues autochtones (NIKLA/ANCLA)	cultural heritage	terminology				
Open Journal Systems (OJS)	journals	open access	open source software	publishing		
Open Monograph Press (OMP)	monographs	open access	open source software	publishing		
Open Preprint Systems (OPS)	preprints	open access	open source software	publishing		
ORCID Canada Consortium (ORCID-CA)	persistent identifiers					
Partnership for Open Access	open access	publishing				
Pressbooks	open education	open educational resources	publishing	textbooks		
Scholaris	open access	repositories	research data management			
Voyant Tools	data visualization	digital humanities	text analysis			

Figure 10: A table listing the 23 HSS DRI initiatives and their relevant keywords

Taken together, all of these figures demonstrate that there is significant coverage of the HSS DRI landscape, with clusters around specific areas (e.g. open access, libraries, publishing, repositories, research data management, and preservation). There is a substantial breadth and depth of active engagement in HSS DRI in Canada. The data also demonstrates which areas have emerged as a shared priority across multiple organizations. Open access, for instance, is so commonly associated with the organizations and initiatives listed here that it verges on redundancy to separate it out as an individual aspect of digital research infrastructure. Another example is persistent identifiers, which is affiliated strongly with 2 organizations and 3 initiatives, but is also coordinated by an advisory body (the Canadian Persistent Identifiers Advisory Committee [CPIDAC]) that includes an additional 6 organizations surveyed here and many others as well. As priorities for HSS DRI development in Canada are agreed on and set, these overviews may be useful to reference where additional support and development may be needed, and how collective approaches to such support and development can prove effective.

3.e. Conclusion: Looking Forward

Canadian HSS DRI enables critical research across the country and ensures that such research and its published output will be findable and accessible for generations of knowledge creation and creators to come. HSS research in Canada will falter without the standardization and support of DRI; in an overwhelmingly digital knowledge environment, research and data that are not discoverable (or optimized for machine learning) are not read, never mind reused. This is not a new argument; 15 years ago, Halliwell (adapted from Moorman) asserted:

> As we have seen in the natural and health sciences, access to appropriate infrastructure changes the way researchers structure their activities, allowing them to tackle larger, more fundamental questions in new ways and to aggressively push the frontiers of knowledge. Appropriate infrastructure allows researchers to be more efficient and more effective, while shared resources facilitate collaboration between disciplines and the re-formulation of research questions. (2009, 3)

As a community of practice, the organizations and initiatives surveyed in this landscape analysis share a commitment to the perpetual value of humanities and social sciences research in Canada—to its capacity to "aggressively push the frontiers of knowledge." To uphold this commitment, many organizations already incorporate global standards like the FAIR (Findable, Accessible, Interoperable, Reusable) guidelines, which ensure that Canadian HSS DRI is in line with international research development and expectations. This ensures that the impact of humanities and social sciences research—on the study of our shared past, current context, and evolving future—is fostered conscientiously.

Strong HSS DRI does not solely benefit the humanities and social sciences research community, however. Ensuring that this type of work is broadly accessible, in perpetuity, guarantees that all of those who are interested in, work with, and benefit from humanities and social sciences data and publications can engage with and rely on this shared knowledge trust. The impact of humanities and social sciences research on national, regional, local, and personal levels cannot be overstated. Consider one of the organizations included in this analysis, the Canadian Research Data Centre Network. This organization's commitment to securing access to Statistics Canada data ensures that those who are seeking further information about demographics in a certain time period are able to work with trustworthy, reliable data. Demographic data is key for regional policy decisions—both to understand their impact, in hindsight, and to undertake them with informed, data-backed confidence now and moving forward. Another initiative surveyed here, the Linked Infrastructure for Networked Cultural Scholarship project, actively enriches cultural data online, to provide more accurate and more contextualized information to knowledge seekers. This contributes to a data rich environment that shores up trustworthy and verified information in the sea of fabricated data points all too prevalent on the Internet today. In addition, the National Indigenous Knowledge & Language Alliance focuses on creating a dynamic, multilingual set of terminologies applied to Indigenous Peoples, places, heritage, tradition, knowledge, and cultures to remediate the historical classification of data, which is often outdated and even racist. Such a commitment to truthful information and classification is central to reconciliation work in Canada; as stated by the Truth and Reconciliation Commission of Canada in their final report, "without truth, justice is not served, healing cannot happen, and there can be no genuine reconciliation between Aboriginal and non-Aboriginal peoples in Canada" (2015, 12). Humanities and social sciences research contributes to a truthful reckoning with Canadian history and its knowledge products. These critical initiatives actively contribute to an improved, accurate, and robust public knowledge ecosystem in Canada.

While in conversation with key stakeholders in preparation of this landscape analysis, many individuals urged the importance of *looking forward.* Short of forecasting the unknowable, they acknowledged the critical importance of anticipating technological change (e.g. the evolution of artificial intelligence and machine learning) and considering how current HSS DRI work can be developed with future interoperability and innovation in mind. These topics are ripe for further study and discussion. There are other questions and areas of inquiry that would benefit from deeper reflection, too; for example, an assessment of the skills needed to build, maintain, and leverage digital research infrastructure for the humanities and social sciences in particular. There are also weighty questions around preservation of digital assets, now and in the future, as well as what decommissioning of a piece of infrastructure looks like after it has reached the end of its

useful life. Although open access is, in many ways, considered to be a given in the Canadian HSS DRI landscape, the community might also think further on how this particular disciplinary infrastructure can not only support open access research and publishing, but even more strategically meet and advance open science goals on a national and international level. These topics may prove to be guiding questions for an addition to or extension of this present analysis.

As Deb Chachra writes, “the kinds of systems we have today depend on the characteristics of the systems that came before” (2023, 8)—by extension, the kinds of systems we will have in the future depend on the systems we create now. These systems will evolve over time, but only based on who is involved in their development; Sheila Anderson writes, “infrastructure becomes *research* infrastructure as part of a process of change, collaboration, and engagement” (2013, 20; *emphasis mine*). Looking forward also means considering how this community of practice shapes its own future, including through standards adherence, policy development, training and skill progression, government and funder advocacy, and strategic collective governance. This landscape analysis was developed, in part, to spur on conversations on how best HSS DRI organizations and initiatives can look forward, together.

4. Key Digital Research Infrastructure Organizations Connected to the Humanities and Social Sciences

This section surveys 11 key digital research infrastructure organizations that are strongly connected to the humanities and social sciences. Each entry includes organization-specific information on mission, lead, major digital research infrastructure initiatives, and keywords. Note that the organization may not lead the digital research infrastructure initiatives listed, but rather play a pivotal role in them either currently or in the past. For a mapping of which organizations lead, contribute to / engage with, or previously led an initiative, please see Figure 2 in section 3.d., above.

1. **Bibliothèque et Archives nationales du Québec (BAnQ)**
   https://www.banq.qc.ca/

Mission: BAnQ offers democratic access to culture and knowledge. It collects, processes, preserves and promotes Québec's documentary heritage and a vast collection of documents in all fields. It also provides the services of a major public library to the entire population of Québec.

Lead: Marie Grégoire, President and Chief Executive Officer

Major Digital Research Infrastructure initiatives

- BAnQ numérique

Digital Research Infrastructure Role Summary: As a national library and national archives, BAnQ stewards, preserves, and provides access to cultural heritage materials specifically related to Québec. Primarily, this is facilitated through BAnQ numérique (which can be translated as "Digital BAnQ"), a collection of documentary heritage artifacts.

Keywords: libraries, archives, cultural heritage

2. **Canadian Association of Research Libraries / Association des bibliothèques de recherche du Canada (CARL / ABCR)**
   https://www.carl-abrc.ca/

Mission: CARL provides leadership on behalf of Canada's research libraries and enhances capacity to advance research and higher education. It promotes effective and sustainable knowledge creation, dissemination, and preservation, and advocates for public policy that enables broad access to scholarly information.

Lead: Susan Haigh, Executive Director

Major Digital Research Infrastructure Initiatives

- DataCite Canada Consortium, with CRKN; transitioned to the Alliance (and CRKN)
- Research Data Management, including Portage; transitioned to the Alliance
- Institutional Repositories
    - Scholaris, with Scholars Portal and OCUL

Federated Research Data Repository (FRDR); transitioned to the Alliance

Digital Research Infrastructure Role Summary: CARL's role in the Canadian digital research infrastructure ecosystem is as a conjoiner and representative of Canada's research libraries. CARL's support of institutional repositories in Canada, including through the 2018-2022 Open Repositories Working Group and the Canadian Repositories Community of Practice, has contributed to today's robust network of repositories in Canadian libraries. This work is furthered with the development of Scholaris and the Federated Research Data Repository (FRDR), which will, eventually, provide more streamlined access to various research data collections (including journal articles, dissertations, bibliographic records, and datasets) that are either housed centrally (in the case of FRDR) or at various institutions across the country (as with Scholaris).[9] CARL's development of the Portage network, now integrated into the Digital Research Alliance of Canada, reflects the organization's long commitment to developing and supporting robust research data management practices in Canada.

Keywords: libraries, research data management, repositories, persistent identifiers, open access

3. **Canadian Research Data Centre Network / Réseau canadien des Centres de données de recherche (CRDCN / RCCDR))**
   https://crdcn.ca/

Mission: To facilitate access to trustworthy data, enabling a diverse pool of researchers to advance knowledge at the forefront of their disciplines; to foster a professional community of emerging and established researchers and assist them to develop skills in quantitative research and in the responsible and skilled use of data; and to contribute to evidence-informed policy that addresses vital societal issues by connecting researchers with decision-makers and advocating for related improvements in the research ecosystem.

Lead: Natalie Harrower, Executive Director

[9] Note that these initiatives are in varying states of development. FRDR is fully launched, where Scholaris is still in development (at time of writing) and is not currently serving as a discovery service. See the relevant summaries for these initiatives in section 5, below.

Major Digital Research Infrastructure Initiatives

- vRDC (Virtual Research Data Centre)
- Collaborative Research Programme

Digital Research Infrastructure Role Summary: CRDCN is a national research infrastructure for the quantitative social and population health sciences that provides unique access to Statistics Canada microdata to over 2,000 researchers annually to advance knowledge and inform policy. CRDCN also connects research findings to policy and supports researchers through training, knowledge mobilization and advocacy. Funded by the Canada Foundation for Innovation as a Major Science Initiative, as well as by both the Canadian Institutes of Health Research and Social Sciences and Humanities Research Council as a strategic research platform, CRDCN is a collaboration between Statistics Canada and 42 universities across the country, headquartered at McMaster University.

Keywords: microdata, social sciences, population health data, research data management, quantitative analysis

4. **Canadian Research Knowledge Network / Réseau canadien de documentation pour la recherche (CRKN / RCDR**)
   https://www.crkn-rcdr.ca/

Mission: CRKN advances interconnected, sustainable access to the world's research and to Canada's documentary heritage content.

Lead: Clare Appavoo, Executive Director

Major Digital Research Infrastructure initiatives

- Canadiana collections, including Héritage
- DataCite Canada Consortium, with the Alliance; transitioned from CARL
- Licensing
- ORCID Canada Consortium (ORCID-CA), with CARL
- Canadian Persistent Identifier Advisory Committee (CPIDAC), with the Alliance
- Partnership for Open Access, with Érudit

Digital Research Infrastructure Role Summary: As a member organization comprised of libraries and research institutions, CRKN's role in the Canadian digital research infrastructure ecosystem is to convene its members and facilitate ongoing access to research content. CRKN strengthens digital research infrastructure by administering an interoperable persistent identifier program that includes ORCID-CA (for researcher-level

identifiers) and DataCite Canada (for digital object identifiers [DOIs]), as well as convening the Canadian Persistent Identifiers Advisory Committee (CPIDAC), which supports the development and implementation of a national Persistent Identifier (PID) Strategy for Canada. CRKN is responsible for building, maintaining, and preserving the Canadiana collections, made up of 65 million cultural heritage records used by researchers across the country, and is Trusted Digital Repository certified. CRKN negotiates the major licenses to academic resources—including open access and read-and-publish agreements—on behalf of its member constituency. With Érudit, CRKN is an initiating member of the Partnership for Open Access.

Keywords: libraries, licensing, persistent identifiers, cultural heritage, preservation, open access, digitization

5. **Digital Research Alliance of Canada / Alliance de recherche numérique du Canada (The Alliance / L'Alliance)**
   https://alliancecan.ca

Mission: The Alliance fosters national and global collaboration to provide researcher-centric, sustainable, and integrated digital research infrastructure.

Lead: George Ross, Executive Director

Major Digital Research Infrastructure initiatives

- Advanced Research Computing infrastructure
- Alliance Cloud Connect Pilot Borealis, with Scholars Portal and Regional Library Associations (including OCUL, CAAL, COPPUL, and PBUQ)
- Controlled Access Management for Research Data (Sensitive Data Repository Project)
- DataCite Canada Consortium, with CRKN; transitioned from CARL
- Data Management Plan (DMP) Assistant Portage; transitioned from CARL
- Federated Research Data Repository / Le Dépôt fédéré de données de recherche (FRDR/DFDR); transitioned from CARL
- Lunaris

Digital Research Infrastructure Role Summary: The Alliance is responsible for bringing together and supporting cross-country digital research infrastructure, with a focus on the three pillars of advanced research computing, research data management, and research software, as well as additional support for research platforms and portals and cybersecurity. The Alliance is empowered and mandated to do this work at a national scale. Current core capacity is in providing the hardware and software needs for

advanced research computing and coordinating research data management across disciplines. The Alliance coordinates or contributes to a number of digital research initiatives with utility for the humanities and social sciences; most notably Borealis, the DataCite Canada Consortium, DMP Assistant, and FRDR. It hosts and maintains essential tools for humanities and social sciences research, such as Voyant Tools. As a representative of the federal government, the Alliance also acts as a funder and coordinates a variety of funding programs and opportunities (shared with the provinces and academic institutions).

Keywords: research data management, advanced research computing, repositories

6. **Érudit**

https://www.erudit.org/

Mission: to support open digital publishing and research in the arts, humanities, and social sciences.

Lead: Tanja Niemann (Executive Director)

Major Digital Research Infrastructure initiatives

- Coalition Publica, with PKP
- Érudit.org
- Partnership for Open Access, with CRKN

Cyberinfrastructure ouverte pour les sciences humaines et sociales (CO.SHS)
Digital Research Infrastructure Role Summary: As a publication platform, Érudit hosts and shares 344 scholarly and cultural journals; 134 books and proceedings; 145,214 theses and dissertations; and 5,624 grey literature documents. As such, Érudit's role in the Canadian digital research infrastructure ecosystem is to centralize and provide access to this corpora of largely open access research material as well as to support Canadian authors in their digital publishing activities, especially in diamond open access and with the support of the Partnership for Open Access. Through Coalition Publica, Érudit facilitates a journal production pipeline and serves in a leadership role for not for profit, open access publishing in Canada.

Keywords: publishing, open access, journals

7. **Internet Archive Canada**

https://archive.org/

Mission: to provide universal access to all knowledge.

Lead: Andrea Mills (Executive Director)

Major Digital Research Infrastructure initiatives:

- Archive-It
- Digitization project with Library and Archives Canada
- National Heritage Digitization Strategy, now Coalition for Canadian Digital Heritage (with Library and Archives Canada)

Digital Research Infrastructure Role Summary: Internet Archive Canada is a not-for-profit digital library that has digitized more than 650,000 books, micro-reproductions, archival fonds, and maps, supported by more than 300 libraries and memory institutions from across Canada. As a partner to cultural heritage organizations in the country, Internet Archive Canada provides critical access to and preservation of cultural heritage materials—both through the digitization of analog or microfilm materials and the archival of born digital materials and web content. Internet Archive Canada also hosts academic journal content and digitizes back lists of journals when their partners wish to move journal content to offsite storage.

Keywords: open access, preservation, digitization

8. **Library and Archives Canada / Bibliothèque et Archives Canada (LAC / BAC)**
   https://library-archives.canada.ca/eng/Pages/Home.aspx

Mandate:

- to preserve the documentary heritage of Canada for the benefit of present and future generations;
- to be a source of enduring knowledge accessible to all, contributing to the cultural, social and economic advancement of Canada as a free and democratic society;
- to facilitate in Canada co-operation among communities involved in the acquisition, preservation and diffusion of knowledge;
- to serve as the continuing memory of the Government of Canada and its institutions.

Lead: Leslie Weir (Librarian and Archivist of Canada)

Major Digital Research Infrastructure initiatives:

- Collection Search
- Digitization project with Internet Archive Canada
- National Heritage Digitization Strategy, now Coalition for Canadian Digital Heritage (with Internet Archive Canada)

- Open Data from LAC

Digital Research Infrastructure Role Summary: LAC is responsible for preserving Canada's documentary heritage on a national scale. LAC provides persistent research access to cultural heritage materials via their Collection Search and open data initiatives, as well as partners with other groups on digitization initiatives. This access is extended through focused work that raises the profile of First Nations, Indigenous, and Metis-related materials, including through the Day Schools Project and We Are Here: Sharing Stories initiative. It also has launched a pilot project with Transkribus, which uses artificial intelligence to transcribe and digitize materials that are then made available online. An additional LAC initiative is the Archive Party, an event which aims to help people manage their digital records. LAC holds one of the top 5 collections in the world in terms of size of heritage collections; they digitize ~5 million pages per year, and tens of thousands of audio files have been digitized as well.

Keywords: preservation, cultural heritage, documentary heritage, digitization, open access

9. Public Knowledge Project (PKP)
https://pkp.sfu.ca/

Mission: to improve the quality, access, and bibliodiversity of scholarly communication toward a global public good.

Leads: Juan Pablo Alperin (Scientific Director) and Kevin Stranack (Director of Operations)

Major Digital Research Infrastructure initiatives

- Coalition Publica
- Open Journal Systems (OJS)
- Open Monograph Press (OMP)
- Open Preprint Systems (OPS)

Digital Research Infrastructure Role Summary: PKP is a well-established open source publishing project that furnishes thousands of journals in Canada and worldwide, as well as monographs and preprints. Through the provision of these free to use applications, PKP supports academic publishing writ large as well as community engagement around academic publishing. With Érudit, PKP is a key partner of Coalition Publica, which facilitates open access journal publishing and hosting in Canada. Through Coalition

Publica, PKP is exploring Crossref integration with OJS journals as a pilot project in incorporating Digital Object Identifiers.

Keywords: publishing, open access, journals, pre-prints, monographs, open source software

10. **Regional Library Associations: [10] British Columbia Electronic Library Network (BC ELN),[11] Council of Atlantic Academic Libraries / Conseil des bibliothèques postsecondaires de l'Atlantique (CAAL / CBPA),[12] Council of Prairie and Pacific University Libraries (COPPUL),[13] Ontario Council of University Libraries (OCUL),[14] Partenariat des bibliothèques universitaires du Québec (PBUQ)[15]**

Mission: Regional library consortia connect member libraries to leverage resources, expertise, and infrastructure in order to meet shared goals.

Leads: various

Major Digital Research Infrastructure initiatives

- Arca (BC ELN)
- Archivematica-as-a-Service (COPPUL)
- Borealis (OCUL, CAAL, COPPUL, PBUQ), with Scholars Portal and the Alliance
- Digital resource licensing (BC ELN, CAAL, OCUL)
- Fonds de soutien à l'édition savante (PBUQ)
- Illume Interlibrary Loan Service Support Centre (BC ELN)
- Omni (OCUL)
- Open Journal System Hosting (BC ELN)
- Scholars Portal, including GeoPortal, Books, and Journals (OCUL)
- Shared Service Platform / Plateforme partagée de services and Sofia Discovery Tool (PBUQ)
- WestVault (COPPUL, BC ELN)

Digital Research Infrastructure Role Summary: Regional library consortia provide streamlined access to digital research infrastructure for their member libraries.

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[10] These regional library associations form Consortia Canada, with other entities. Consortia Canada manages resource licensing for libraries across the country, and different consortia assume different negotiations to share the workload. See https://www.concan.ca/ for more details.
[11] https://bceln.ca/
[12] https://caul-cbua.ca/
[13] https://coppul.ca/
[14] https://ocul.on.ca/
[15] https://pbuq.ca/

Depending on their members' needs, they build or seek out initiatives that support institutional repositories, collections, publishing, and / or access. Regional consortia connect libraries across a specified jurisdiction as well as represent them in more national fora. Different consortia undertake digital research infrastructure work to different extents (see initiatives list above), but consortia partner with each other on initiatives of shared interest as well.

Keywords: libraries, repositories, preservation, open access, publishing

11. Scholars Portal

https://scholarsportal.info/

Lead: Kate Davis, Director

Major Digital Research Infrastructure initiatives

- Accessible Content E-Portal
- Borealis (Canadian Dataverse Repository), with the Alliance and Regional Library Associations (including OCUL, CAAL, COPPUL, and PBUQ)
- GeoPortal
- Odesi
- Scholaris, with CARL, Ontario Council of University Libraries, and University of Toronto Libraries
- Scholars Portal Journals & Scholars Portal Books
- Ontario Library Research Cloud (Openstack, Horizon, Duracloud, Archivematica)
- Permafrost digital preservation

Digital Research Infrastructure Role Summary: As a digital research infrastructure service of the Ontario Council of University Libraries (OCUL), Scholars Portal provides shared technology and collections for the 21 university libraries in Ontario. This infrastructure is divided into content, preservation, and access streams, and includes a collection of accessible content, journals, e-books, social science and geospatial data. Notably, Scholars Portal is a service provider to *libraries* as they manage their digital collections, not to researchers. OCUL has recently released their *OCUL Artificial Intelligence / Machine Learning Report and Strategy* (Asberg et al. 2024), and Scholars Portal will play a significant role in the 5 key AI / ML projects outlined therein (audio to text transcription; government documents; accessibility; virtual reference; capacity building).

Keywords: repositories, journals, interlibrary loan, geospatial data

5. Key Digital Research Infrastructure Initiatives Related to the Humanities and Social Sciences

This section surveys 23 key digital research infrastructure initiatives that are strongly related to the humanities and social sciences. Each entry includes organization-specific information on lead, purpose, impact on Canadian digital research infrastructure, and keywords.

1. **Borealis**

https://borealisdata.ca/

Organizational Lead: The Alliance, Scholars Portal, and Regional Library Associations (including OCUL, CAAL, COPPUL, and PBUQ)

Purpose: to serve as a research data repository.

Impact on Canadian Digital Research Infrastructure: Borealis is a bilingual, multidisciplinary, Canadian research network of Dataverse-based institutional data repositories. Borealis supports open discovery, management, sharing, and preservation of research data via institutionally-hosted and supported collections. It also contains national collections such as Odesi: a curated, Canadian social science data repository and online exploration and analysis tool. Borealis's common software is maintained by Scholars Portal. Compared to the Federated Research Data Repository (FRDR), the datasets deposited in Borealis are relatively small. Its service model differs from FRDR as well; Borealis has many different service points owned and operated by many individual academic institutions.

Keywords: research data management, repositories, open access

2. **Canadian Persistent Identifiers Advisory Committee (CPIDAC)**

https://www.crkn-rcdr.ca/en/persistent-identifier-pid-governance

Organizational Leads: CRKN and the Alliance; transitioned from CARL

Purpose: to provide expertise and advice on persistent identifiers (PIDs).

Impact on Canadian Digital Research Infrastructure: Persistent identifiers (PIDs) connect information together across the digital research infrastructure ecosystem. Currently, CPIDAC focuses on 2 PID programs: ORCID-CA (the Canadian ORCID community of practice) and the DataCite Canada Consortium (a collective of Canadian organizations managing some Digital Object Identifier [DOI] registration). This multi-organization committee convenes and advises the ORCID-CA Governing Committee and the DataCite

Canada Consortium Governing Committee on leveraging maximum benefits through national adoption and use of PIDs. This advisory work extends to educating government research and infrastructure funding bodies on international trends and emergent best practices; developing and championing a national PIDs implementation strategy; and providing advice to key stakeholders on national opportunities to leverage the benefits of DataCite Canada Consortium and ORCID-CA membership.

Keywords: persistent identifiers, publishing, repositories, research data management

3. **Canadian Writing Research Collaboratory / Le Collaboratoire scientifique des écrits du Canada (CWRC / CSÉC)**; transitioning to **Collaboratory for Writing and Research on Culture**

https://cwrc.ca/

Lead: Susan Brown (University of Guelph)

Purpose: to serve as an editorial environment for open collaboration and publication across the humanities and social sciences. Previously, CWRC's purpose was to provide an online platform for researching Canadian literary studies specifically.

Impact on Canadian Digital Research Infrastructure: CWRC is a platform for creating, storing, editing, and sharing collections of digital research artifacts that have been digitized or are born digital, including video, audio, and textual media. CWRC enables collaboration and sharing of data at the human or user level and aims to support collaboration through machines by fostering best practices with data formats, metadata standards, and shared vocabulary for interoperability. CWRC enables FAIR (Findable, Accessible, Interoperable, Reusable) research data that is suitable to the humanities and social sciences and is web accessible. This data is not archived in a static form, but rather dynamically updated, used, and shared in the ways that most humanities and social sciences scholars interact with data. Initially, CWRC was a specific resource for those researching and creating digital archives on literary studies in Canada, whereas the new iteration will span the humanities and social sciences.

Keywords: digital humanities, linked open data, archives, literary studies

4. **Canadiana collections (Canadiana and Héritage)**

https://www.canadiana.ca/

Organizational Lead: CRKN

Purpose: to develop, maintain, and provide access to a massive collection of datasets related to Canadian history.

Impact on Canadian Digital Research Infrastructure: Canadiana provides a documentary historical corpus that supports research about Canada with a historical dimension. Canadiana serves, among others, academic historians, genealogical researchers, legal researchers, and claims researchers. The Canadiana collections include Canadiana and Héritage, which together comprise 64 million pages of digitized heritage content (at the time of writing). The Canadiana collections are open access and preserved in the Canadian Research Knowledge Network Trustworthy Digital Repository for researchers to access and work with this large corpora.

Keywords: cultural heritage, digitization, preservation, history

5. **Coalition for Canadian Digital Heritage (CCDH)**

https://ccdh-cnpc.ca/

Organizational Leads: CRKN, LAC, Internet Archive Canada, and others

Purpose: to enable digitization, access, and preservation of heritage content for discovery and innovation.

Impact on Canadian Digital Research Infrastructure: CCDH emerged from the National Heritage Digitization Strategy (NHDS), a previous organization of Canadian libraries seeking support for digitization efforts. Now, CCDH aims to provide a collaborative framework for cultural heritage digitization in Canada across the Galleries, Libraries, Archives, and Museums (GLAM) sector. In this way, digitization projects are undertaken in a somewhat more streamlined way, expertise and resources are shared, and digitization efforts are not duplicated by various individuals and organizations. CCDH does not handle long term preservation, data management, or perpetual access; rather, CCDH aims to increase the amount of heritage material in Canada available digitally by linking, coordinating, and supporting across GLAM organizations.

Keywords: digitization, libraries, archives

6. **Coalition Publica**

https://www.coalition-publi.ca/

Organizational Leads: Érudit (Tanja Niemann) and PKP (Kevin Stranack)

Purpose: to provide an open national infrastructure to support Canadian digital scholarly publishing.

Digital Research Infrastructure Role Summary: As a collaboration between open source publishing software provider PKP and journal publisher Érudit, Coalition Publica streamlines publishing in Canada—particularly non-commercial, open access, academic publishing. Coalition Publica makes digital research infrastructure in Canada more efficient by simplifying and supporting journal publishing. Coalition Publica currently hosts and supports over 200 French and English academic journals in Canada; provides access to textual and bibliometric data for research purposes; and shares Open Journal Systems (OJS) as open source software via Github. Coalition Publica supports the humanities and social sciences journal community in the transition toward sustainable open access.

Keywords: publishing, open access, journals, open source software

7. **Cyberinfrastructure ouverte pour les sciences humaines et sociales / Open Cyberinfrastructure for the Humanities and Social Sciences (CO.SHS)**
   https://co-shs.ca/fr/

Organizational Lead: Érudit

Purpose: to support humanities and social sciences research through improved production, discovery, and exploration.

Impact on Canadian Digital Research Infrastructure: CO.SHS comprises three components of humanities and social sciences research: production, discovery, and exploration. The production side focuses on strengthening the capacity of digital publishing. The discovery element increases the discoverability of research results on the Érudit platform. And the exploration component facilitates search of a vast textual corpora, incorporating both analysis and visualization tools.

Keywords: data visualization, discovery, open access, publishing, social sciences, text analysis

8. **Data Management Plan (DMP) Assistant**
   https://dmp-pgd.ca/

Organizational Lead: The Alliance; transitioned from CARL

Purpose: to supplement researchers with a tool to prepare data management plans.

Impact on Canadian Digital Research Infrastructure: The DMP Assistant supports researchers in developing more sustainable plans for their research projects, thus contributing to a more viable and robust research ecosystem.

Keywords: research data management

9. **DataCite Canada Consortium**

https://www.crkn-rcdr.ca/en/datacite-canada-consortium

Organizational Leads: CRKN and the Alliance; transitioned from CARL

Purpose: to support Canadian institutions who have integrated DataCite into their own research infrastructure for Digital Object Identifier (DOI) provision.

Impact on Canadian Digital Research Infrastructure: DataCite Canada makes the implementation of persistent identifiers for research outputs more efficient, which in turn ensures Canadian research is aligned with international research publication and open access standards.

Keywords: persistent identifiers

10. **Federated Research Data Repository / Le Dépôt fédéré de données de recherche (FRDR/DFDR)**

https://www.frdr-dfdr.ca

Organizational Lead: The Alliance; transitioned from CARL

Purpose: to act as a general purpose research data repository for large datasets.

Impact on Canadian Digital Research Infrastructure: As a bilingual platform for sharing and preserving Canadian research data, FRDR is open to all Canadian researchers, across disciplines. FRDR provides a sustainable data deposit option for researchers to store, manage, and preserve their data – all in line with open access journal and funder data sharing requirements. Technically speaking, FRDR runs on compute clusters with much larger capacity than any one individual institution has; it is accustomed to large datasets and large data needs (e.g. datasets that are hundreds of terabytes). FRDR differs from Borealis in the size of the data it supports as well as in its service model: FRDR is administered centrally by the Alliance, working directly with researchers—many of whom have significant existing experience with high performance computing.

Keywords: research data management, repositories, open access, data curation

11. Implementing New Knowledge Environments (INKE) Partnership
https://inke.ca
Lead: Ray Siemens (University of Victoria)

Purpose: to foster open social scholarship through a collection of partnered research initiatives.

Impact on Canadian Digital Research Infrastructure: The INKE Partnership is a research group that coordinates the Canadian Humanities and Social Sciences Commons, Open Scholarship Policy Observatory, Digital Humanities Summer Institute training stream, Canadian-Australian Partnership for Open Scholarship, and various other open social scholarship community projects. These initiatives provide multiple angles for humanities and social sciences researchers in Canada to undertake more open and more social scholarship. Funded by a SSHRC Partnership grant, the INKE Partnership's contributions to digital research infrastructure are necessarily in concert with academic-aligned partners in this space.

Keywords: digital humanities, open access, open social scholarship

12. Linked Editing Academic Framework (LEAF)
https://www.leaf-vre.org/
Lead: Susan Brown (University of Guelph)

Purpose: to serve as an editorial environment for open collaboration and publication.

Impact on Canadian Digital Research Infrastructure: LEAF is research software that provides web-based tools and online spaces for collaborative digital knowledge production. Built on an extended and adapted basic Islandora framework, LEAF supports workflows and embeds Extensible Markup Language (XML) markup and linked open data tools. These tools include LEAF-Writer, a modular XML and Resources Description Framework (RDF) online editor, and LEAF Commons, which facilitates lightweight editorial workflows for the text markup community.

Keywords: digital humanities, linked open data

13. Linked Infrastructure for Networked Cultural Scholarship (LINCS)
https://lincsproject.ca/
Lead: Susan Brown (University of Guelph)

Purpose: to make cultural data more readily available, shareable, searchable, and reusable via Linked Open Data.

Impact on Canadian Digital Research Infrastructure: LINCS enables researchers to create interoperable, interlinked, and contextualized online data about culture to benefit scholars and the public. LINCS does so by converting cultural datasets to Linked Open Data (LOD), providing access to a suite of LOD tools, and algorithmically converting and poising datasets for further validation and enhancement, among other activities. By employing a common data model and vocabulary, sets of Linked Open Data become broadly usable in the global knowledge graph. Additionally, the LINCS browser plug-in can embed into a webpage to incorporate LOD into the content. Better linked and more contextualized data enriches the research landscape.

Keywords: digital humanities, linked open data, semantic web

14. **Lunaris**

https://www.lunaris.ca

Organizational Lead: The Alliance

Purpose: to serve as a national discovery service for multidisciplinary data.

Impact on Canadian Digital Research Infrastructure: Lunaris is an openly available bilingual interface for searching across academic, government, and research repositories across Canada. It harvests metadata from these repositories and makes their content discoverable in a central platform that allows combined text- and map-based search.

Keywords: discovery, repositories

15. **National Indigenous Knowledge & Language Alliance / Alliance nationale des connaissances et des langues autochtones (NIKLA / ANCLA)**

https://www.nikla-ancla.com/

Lead: Camille Callison (University of the Fraser Valley)

Purpose: to unify and amplify Indigenous voices in a community of practice related to cultural memory and heritage.

Impact on Canadian Digital Research Infrastructure: NIKLA's current area of focus is on the Respectful Terminology Platform Project. This project will result in an open, online platform to enable a dynamic, multilingual set of terminologies applied to Indigenous Peoples, places, heritage, tradition, knowledge, and cultures.

Keywords: cultural heritage, terminology

16. Open Journal Systems (OJS)
https://pkp.sfu.ca/software/ojs/
Organizational Lead: PKP

Purpose: to provide no-cost, open source software for journal publishing and management.

Impact on Canadian Digital Research Infrastructure: OJS is used by thousands of journals around the world, including many in Canada. OJS provides support throughout a journal's production lifecycle, from article submission through peer review to publication and distribution. OJS is discipline agnostic and has multilingual capacity.

Keywords: publishing, open access, open source software, journals

17. Open Monograph Press (OMP)
https://pkp.sfu.ca/software/omp/
Organizational Lead: PKP

Purpose: to provide no-cost, open source software for monograph publishing and management.

Impact on Canadian Digital Research Infrastructure: OMP facilitates digital monograph publishing for publishers in Canada and beyond. It has multilingual capacity and can integrate persistent identifiers such as ORCID or digital object identifiers (DOIs).

Keywords: publishing, open access, open source software, monographs

18. Open Preprint Systems (OPS)
https://pkp.sfu.ca/software/ops/
Organizational Lead: PKP

Purpose: to provide no-cost, open source software for preprint servers.

Impact on Canadian Digital Research Infrastructure: As software for developing a preprint server, OPS supports the open, pre-publication of research results. OPS is currently used by SciELO for their preprint server; currently, there is not a Canadian-based preprint server running off of OPS although the capacity exists to do so.

Keywords: publishing, open access, open source software, preprints

19. ORCID Canada Consortium (ORCID-CA)
https://www.crkn-rcdr.ca/en/orcid-ca-home
Organizational Leads: CRKN

Purpose: to support an ORCID community of practice in Canada.

Impact on Canadian Digital Research Infrastructure: ORCID-CA encourages the Canadian research community to use ORCID iDs and to take advantage of the ORCID API in local institutional systems. When scholars select an ORCID iD as a unique identifier, it provides a digital record of that scholar's activities as well as facilitates streamlined data transfer between different digital research infrastructure tools and platforms.

Keywords: persistent identifiers

20. Partnership for Open Access (POA)
https://partnership.erudit.org/
Organizational Leads: Érudit and CRKN

Purpose: to provide ongoing financial support to humanities and social sciences publishers in an equitable and sustainable open access environment.

Impact on Canadian Digital Research Infrastructure: The POA is a mechanism through with Canadian libraries support open access publishing in Canada. Partner libraries, through CRKN, gain access to the articles of journals on Érudit.org that are currently transitioning to open access, as well as to the plain text of the Érudit corpus for text and data mining purposes. This provides a sustainable revenue source for journals as they shift their business and publication model to open access.

Keywords: open access, publishing

21. Pressbooks
https://pressbooks.com/
Lead: Hugh McGuire

Purpose: to provide software for the development of open educational resources (primarily digital textbooks).

Impact on Canadian Digital Research Infrastructure: Pressbooks is a straightforward content management system that can be used to create open educational resources. In Canada, it is supported by BCcampus as the open authoring platform for those employed by postsecondary institutions in British Columbia and Yukon.

Keywords: open access, open education, open educational resources, publishing

22. Scholaris

https://scholaris.ca/

Organizational Leads: CARL, Ontario Council of University Libraries, University of Toronto Libraries, and Scholars Portal

Purpose: to provide a robust and scalable multi-institutional national repository service.

Impact on Canadian Digital Research Infrastructure: At the time of writing, Scholaris is currently in development. Ultimately, Scholaris will become a national DSpace-based service that links repositories across Canada. Currently, it centralizes the management of institutional repository software, thereby making it more efficient. In future, Scholaris will be more connected to Borealis and will ideally serve as a discovery service for users to find information across multiple interoperable institutional repositories.

Keywords: repositories, research data management, open access, libraries

23. Voyant Tools

http://www.voyant-tools.org/

Leads: Geoffrey Rockwell (University of Alberta); previously with Stéfan Sinclair (McGill University; now deceased)

Purpose: to serve as a tool for researchers to analyze and visualize text.

Impact on Canadian Digital Research Infrastructure: An easy to use and widespread text analysis and visualization tool, Voyant is central to many digital humanities researchers' work in Canada. Voyant is integrated into other digital research infrastructure initiatives such as LINCS.

Keywords: digital humanities, text analysis, data visualization

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7. Appendices

7.a. Appendix 1: List of Key Digital Research Infrastructure Organizations Connected to the Humanities and Social Sciences

- Bibliothèque et Archives nationales du Québec (BAnQ)
- Canadian Association of Research Libraries / Association des bibliothèques de recherche du Canada (CARL / ABCR)
- Canadian Research Data Centre Network / Réseau canadien des Centres de données de recherche (CRDCN / RCCDR)
- Canadian Research Knowledge Network / Réseau canadien de documentation pour la recherche (CRKN / RCDR)
- Digital Research Alliance of Canada / Alliance de recherche numérique du Canada (The Alliance / L'Alliance)
- Érudit
- Internet Archive Canada
- Library and Archives Canada / Bibliothèque et Archives Canada (LAC / BAC)
- Public Knowledge Project (PKP)
- Regional Library Associations: British Columbia Electronic Library Network (BC ELN), Council of Atlantic Academic Libraries / Conseil des bibliothèques postsecondaires de l'Atlantique (CAAL / CBPA),

7.b. Appendix 2: List of Key Digital Research Infrastructure Initiatives Connected to the Humanities and Social Sciences

- Borealis
- Canadian Persistent Identifiers Advisory Committee (CPIDAC)
- Canadian Writing Research Collaboratory / Le Collaboratoire scientifique des écrits du Canada (CWRC / CSÉC); transitioning to Collaboratory for Writing and Research on Culture
- Canadiana collections (Canadiana and Héritage)
- Coalition for Canadian Digital Heritage (CCDH)
- Coalition Publica
- Cyberinfrastructure ouverte pour les sciences humaines et sociales (CO.SHS)
- Data Management Plan (DMP) Assistant
- DataCite Canada Consortium
- Federated Research Data Repository / Le Dépôt fédéré de données de recherche (FRDR/DFDR)

- Implementing New Knowledge Environments (INKE) Partnership
- Linked Editing Academic Framework (LEAF)
- Linked Infrastructure for Networked Cultural Scholarship (LINCS)
- Lunaris
- National Indigenous Knowledge & Language Alliance / Alliance nationale des connaissances et des langues autochtones (NIKLA / ANKLA)
- Open Journal Systems (OJS)
- Open Monograph Press (OMP)
- Open Preprint Systems (OPS)
- ORCID Canada Consortium (ORCID-CA)
- Partnership for Open Access (POA)
- Pressbooks
- Scholaris
- Voyant Tools

7.c. Appendix 3: Individuals Consulted in the Development of this Landscape Analysis

- Clare Appavoo (CRKN)
- John Aspler (CRKN)
- Davin Baragiotta (Érudit)
- Jonathan Bengtson (University of Victoria Libraries, CCDH)
- Élise Bergeron (Érudit)
- Susan Brown (University of Guelph, LINCS, CWRC, LEAF)
- Amy Buckland (Concordia University Library)
- Kate Davis (Scholars Portal)
- Jason Friedman (CRKN)
- Jean-François Gauvin (BAnQ)
- Susan Haigh (CARL)
- Geoff Harder (University of Alberta Library)
- Natalie Harrower (McMaster University, CRDCN)
- Meghan Landry (The Alliance)
- James MacGregor (CRKN)
- Andrea Mills (Internet Archive Canada)
- Pascale Montmartin (BAnQ)
- Tanja Niemann (Érudit)
- Ray Siemens (University of Victoria, INKE Partnership)

- Kevin Stranack (PKP)
- Leslie Weir (LAC)
- Lee Wilson (The Alliance)