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Revisiting the digital humanities through the lens of Indigenous studies—or how to question the cultural blindness of our technologies and practices

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Email: coppelie.cocq@umu.se**Abstract**

This article examines the benefits of putting Indigenous perspectives and the digital humanities (DH) in conversation with each other in order to elaborate a DH approach that is suitable for Indigenous research and to suggest critical perspectives for a more sustainable DH. For this purpose, the article examines practices of data harvesting, categorizing, and sharing from the perspectives of groups in the margin, more specifically in relation to Sámi research. Previous research has emphasized the role of cultural and social contexts in the design, use, and adaptation of technologies in general, and digital technologies in particular (Douglas, 1987. *Inventing American broadcasting*; Nissenbaum, 2001. *Computer*, 34, 118–120; Powell & Aitken, 2011. *The American literature scholar in the digital age*) and several scholars have argued for how the application of critical studies make a fruitful contribution to the DH (Liu, 2012. *Debates in the digital humanities*; McPherson, 2012. *Debates in the digital humanities*). This article suggests an approach that addresses a need to acknowledge the diversity of technoscientific traditions. The perspectives of Indigenous groups bring this matter to a head. In order to make the DH more sustainable and inclusive, the development of the DH should be driven by cultural studies to a greater extent than it has been so far. A sustainable DH also means a better rendering of the plurality of the cultural values, perspectives, and ethics that characterize our fieldwork and research subjects.

1 | INTRODUCTION

Building on current debates calling for decolonizing perspectives in digital research, computing, AI, and so on, this article examines the need for Indigenous perspectives in the digital humanities (DH).¹ In other words, it strives to put Indigenous research and the DH in conversation with each other to elaborate a DH approach that is

suitable for Indigenous research and to suggest critical perspectives for a more sustainable DH. For this purpose, the article examines examples of digital technologies and practices, and their implementation from the perspectives of Sámi research. Based on this, it suggests how scholars in digital research who work with Indigenous communities can avoid pitfalls and develop an approach that is culturally sensitive, ethically valid and relevant to the

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communities. However, the relevance and validity of such an approach are not limited to digital Indigenous studies, but also have a bearing for researchers in minority studies who are interested in culturally sensitive research practices.

Previous research has emphasized the role of cultural and social contexts in the design, use, application, and adaptation of technologies in general, and digital technologies in particular (see, e.g., Douglas, 1987; Nissenbaum, 2001; Powell & Aitken, 2011). Traditional modes of communication, networks, kinship, and relationships, or socio-linguistic preconditions (Dyson et al., 2007; Dyson et al., 2016; Haf Gruffydd Jones & Uribe-Jongbloed, 2013) are examples of premises that influence the processes of meaning-making when local communities adopt and adapt technologies into their practices.

Still, digital humanities research has not always succeeded (some would say that it has failed) to acknowledge the importance of cultural contexts and the heterogeneity of contexts and users of technologies (Liu, 2012; McPherson, 2012). For example, Risam (2019), observing the imbalance of representations and voices between Western countries and the Global South in the digital record, calls for an urgent need for a “postcolonial intervention” in the DH (p. 4).

In parallel and in contrast to this blindness in digital research, multiple epistemologies for digital knowledge production emerge online. From this perspective, this article scrutinizes knowledge production in a digital age from the perspective of contemporary Indigenous research in general and, in a Nordic context, Sámi research in particular. Informed by a body of research addressing a need for community-groundedness and for ethically valid and relevant research that addresses community needs and efforts, this article attempts to highlight the biases and the inheritance from former (colonial) practices and emphasizes practices that better meet the needs of Indigenous research.

While the two interdisciplinary fields of digital humanities and Indigenous studies are rapidly developing, and their approaches and methods gain new terrains, research at the intersection between the two remains scarce—and needed. As Roopika Risam (2019) observes:

[The] “new” methodologies [...] are not conjured out of thin air by digital humanities practitioners, but are built on the histories and traditions of humanities knowledge production that have been deeply implicated in both colonialism and neocolonialism. (Risam, 2019, p. 4)

She goes further and claims that:

Colonialism within the cultural record is not only being reproduced but is also being amplified by virtue of the fact that the digital cultural record is constructed and disseminated publicly, online, in a digital milieu beset with its own politics of identity. (Risam, 2019, p. 6)

In the light of the historical and cultural contexts in which we conduct our research, we need to drastically question and decenter research practices that could contribute to reiterating, maintaining, and amplifying colonial practices and perspectives. Thus, indigenous DH is informed by postcolonial DH, but includes and acknowledges the processes and efforts of decolonization, a political and social movement (Duara, 2003; Sandström, 2020) taking place in contemporary Sápmi and in the academy (Kuokkanen, 2008b), and aims to bring in perspectives and examples from Indigenous contexts into the academic context of the DH and its implications.

Putting Indigenous research in dialogue with the digital humanities highlights a critical point of intersection: here, humanities’ perspectives can help us gain a deeper understanding of the cultural and social aspects of technology and research—and how these technologies can support Indigenous studies and be relevant to Indigenous groups. This intersection also allows us to acknowledge a knowledge gap that requires collaboration between information science and technologies and the digital humanities scholars in order to understand key issues and research questions. Beyond this, such an approach is essential because it is linked to broader issues of data governance, visibility, and the recognition of linguistic and cultural pluralism, and, further, democratization.

Considering the heterogeneity of local and disciplinary contexts, it is not possible to design a universal approach that could address the diversity and multiplicity of the situations, questions and considerations that emerge. Rather, this article should be read as a reminder of the need for multiple, diverse, and flexible ways to address ethical challenges.

2 | CULTURAL BLINDNESS AND TECHNOSCIENTIFIC TRADITIONS

As Nissenbaum pertinently reminds us, “[v]alues affect the shape of technologies” (Nissenbaum, 2001, p. 120). “Systems and devices will embody values whether or not we intend or want them to. Ignoring values risks surrendering the determination of this important dimension to

chance or some other force” (Nissenbaum, 2001, p. 119). Critical studies perspectives on technology are, in this context, a necessary contribution.

Other scholars have argued for how the application of critical studies would make a fruitful contribution to the digital humanities. Tara McPherson, for instance, asks “Why are the digital humanities so white?” (McPherson, 2012) and Alan Liu wonders: “Where is cultural criticism in the DH?” (Liu, 2012), emphasizing the need for digital humanists to engage in cultural critique and work with issues of difference. Already in 2012, Liu suggested that:

Digital humanists should [...] enter into dialogue with science-technology studies. On reflection, it is remarkable how little the field draws on contemporary science-technology studies to enrich its discussion of tools, building, and instrumentality through new understandings of the way researchers, technicians, processes, communication media, and literal instruments come together in what Andrew Pickering calls the “mangle of practice” that is inextricably linked to society and culture. (Liu, 2012, p. 490)

Since then, the debate has continued, the critique is still valid—but over the years has also been addressed by several other scholars, for instance, from the perspective of postcolonial studies (Noble, 2018; Risam, 2019). It is not surprising that researchers from the field of postcolonial studies play a significant role in the debate. With its radical critique of Western cultural domination, postcolonial studies has highlighted how hegemonic narratives have excluded heterogeneity, subaltern voices, and forms of knowledge. These power dynamics are very much present in our contemporary digital realities.

The internet has been claimed to be a commodified place (Isaacman et al., 2005; Risam, 2019)—a commodification that is implied and enabled by information technologies (Christie, 2008, p. 281) and that, in Indigenous contexts, reveal the complexities of data use (see, e.g., Guiliano & Heitman, 2019). Couldry and Mejias (2019) go as far as talking about “data colonialism,” describing how “What is going on with data [is] a form of fundamental appropriation (Greene & Joseph, 2015; Thatcher et al., 2016, drawing on Harvey, 2004), or extraction (Mezzadra & Neilson, 2017) of resources” (p. 338). “Data colonialism combines the predatory extractive practices of historical colonialism with the abstract quantification methods of computing” (Couldry & Mejias, 2019, p. 337). They compare the discourse of a terra nullius with how data are perceived

today, that is, data as something “natural” (described, e.g., through the metaphor of “the new oil”). For many Indigenous groups, discourses of terra nullius have resulted in the legitimization and completion of the exploitation of traditional lands, resulting in those who had lived on the land being relocated, losing their traditional modes of livelihood, often with deep consequences on the health, social and economic situations of individuals and groups. Thus, parallels with colonial practices of exploitation create a strong metaphor and, with it, a fear of the impact of the use and risk of misuse of Indigenous data.

This perspective on data and data use is mainly aimed at raising awareness, and, as Couldry and Mejias observe, “[r]ejecting data colonialism does not mean rejecting data collection and use in all its forms.” Rather, they explain that “it does mean rejecting the form of resource appropriation and accompanying social order that most contemporary data practice represents. A useful first step is to name such practice as the colonial process that it surely is” (Couldry & Mejias, 2019, p. 346).

In a similar line, Ricaurte (2019) is one example of the increasing number of scholars and bodies of research in critical studies of data epistemologies (in addition to Couldry and Mejias above, but also, e.g., Boyd and Crawford (2012) about Big Data as a socio-technological phenomenon). Ricaurte (2019, p. 352) reminds us that “data-driven narratives guide our imaginaries and govern what it means to live in contemporary urban societies.” In these narratives, minorities and marginalized voices are often neglected. Indeed, “[t]he perspectives of indigenous nations and communities are rarely considered in debates surrounding digital agendas” (id. 357), and Ricaurte provides examples of citizen projects that offer data that are otherwise lacking or neglected, more specifically, the example of a map of femicides in the Mexican context. The lack of data (about femicides) can be interpreted as a form of structural violence (id. 361) and, in this context, a map becomes a way of generating counternarratives.

This previous research presents some examples and perspectives that bring to our attention some of the cultural dimensions carried by the digital (as a place, a practice and an outcome). With this in mind, it is of immediate relevance to scrutinize how this comes to expression in Indigenous contexts.

3 | DIGITAL TECHNOLOGIES IN INDIGENOUS LANDS

Understanding perspectives and attitudes to technologies in Indigenous contexts also requires taking into account

the colonial past and its long-term implications for these groups. In Sápmi, the traditional land of the heterogeneous Sámi population, which extends over parts of Norway, Sweden, Finland, and Russia (Kola Peninsula), assimilation and segregation policies from the mid-19th century up to WW2 have had a tremendous impact on the traditional livelihoods, religious and cultural practices, languages, and identities of the Sámi. More positive contemporary ideological and political ideologies toward minorities in the Nordic countries (since the 1970s) have resulted in a strengthening of minority rights regarding cultural heritage and languages. Language loss, conflicts over land rights and a lack of self-determination are long-lasting challenges with which contemporary Sámi communities struggle.

Although in recent decades, Indigenous groups have benefited from recognition and strengthened rights through international conventions (e.g., the UNDRIP²) and in several countries at national levels,³ processes of marginalization, discrimination, and stigmatization have left their mark and have had serious consequences—in various forms and to a various extent in the many different Indigenous communities around the globe.

Ideological contexts have naturally had an impact on Indigenous research, and societal changes toward decolonization and self-determination have drastically influenced how researchers—Indigenous and allied—describe and conduct research with communities. Indigenous studies have emerged as the result of several leading initiatives and actors in various parts of the world (e.g., Chilisa, 2012; Kovach, 2009; Tuhiwai Smith, 2008), with the intention of creating an arena for Indigenous people in academic contexts. Key to these methodologies are the values of respect, relevance, reciprocity, and responsibility in research. In line with international Indigenous research (see, e.g., Chilisa, 2012; Kovach, 2009; Louis, 2007; Tuhiwai Smith, 2008), Sámi research aims to challenge the existing views of knowledge and argues for a high degree of participation and community-groundedness (Kuokkanen, 2000, 2008a; Porsanger, 2004; Sehlin MacNeil, 2014). It is an interdisciplinary field that has developed in relation to the establishment of the first Sámi institutions (Junka-Aikio, 2019; Keskitalo, 1994; Korhonen, 2002; Lehtola, 2017; Müller-Wille, 1977) and to criticism of the lack of reflexivity and positionality of researchers.

Thus far, the application of Indigenous methodologies to digital contexts is scarce but indicates the need for a deeper understanding of the dynamics and strategies at play in digital environments and on social media platforms. Efforts are already being made in this direction, for instance, Mukurtu,⁴ a platform for sharing and managing Indigenous cultural heritage (Christen, 2011;

Montenegro, 2019; Senier, 2014) that hosts a variety of projects with the possibility of using traditional heritage labels and adjusting hosted projects according to cultural protocols. For instance, projects on Mukurtu require membership for full access, giving control to the communities over the data and knowledge shared and curated on the platform. Another example of project supporting the curation of Indigenous cultural heritage is Indigitization⁵—a project that offers tools for digitization projects, based on a collaboration between BC Aboriginal groups and academics at the University of British Columbia and the University of Northern British Columbia. There are other local examples about digitalized (historical) documents, for instance, the Omeka Indigenous data archives (New Mexico), or the Genoa Indian School Digital Reconciliation Project (Nebraska).

Examples from Sápmi are scarce, but digital initiatives that support language learning and revitalization, as well as private projects on gaming and online literature (Outakoski et al., 2018), bear witness to the vitality of digital practices across Sápmi. Campaigns that support language use on social media, for instance, have been organized by the Language Centre of the Sámi parliaments (Sametinget, 2017), involving young persons as ambassadors for language revitalization. The role of technology for teaching and learning has also been emphasized on several occasions (e.g., the conference series DigiGiella⁶; see also Domej et al., 2019) with, for instance, efforts to develop language technologies for grammar, spelling, and translations in various Sámi languages. Less has been done thus far regarding the digital curation of cultural heritage, although Sámi users meet in groups on Facebook to collect and exchange knowledge about old photographs or genealogy, for example.

A few scholarly works have given attention to the use of technology in Sámi contexts, for instance, the use of GPS technology in reindeer herding (Kuoljok, 2020; Sandström & Wedin, 2010) not only as a tool for making the work of herders more effective, but also as a way of mapping how reindeer migration routes and choice of grazing land could be affected by infrastructure such as roads, railways and wind farms. A few case studies have examined social media as a channel for language revitalization projects and networking (Cocq, 2016; Ní Bhroin, 2015; Outakoski et al., 2018), as well as in relation to other technologies (Cocq & DuBois, 2019).

Based on what has been assessed in previous research, it is important that we examine how the critique and fears about the biases and shortcomings of digital technologies apply to Indigenous settings. The next section presents the challenges faced by digital practices in Indigenous (Sámi) contexts and highlight the aspects that need to be addressed from the perspective of critical DH studies and Indigenous DH.

4 | REVISITING RESEARCH PRACTICES

This section introduces and discusses three examples in order to problematize how research practices might need to be revised and adapted in relation to Indigenous research: data harvesting, categorizing, and sharing. These practices have been studied based on research literature, close readings of policy documents, examination of digital initiatives, as well as participation to and coordination of conferences and seminars in order to get deeper knowledge in the state of the current debates, and, in some cases, personal communication with experts.

The choice to focus on these three specific practices is grounded in international and local scholarship. The question of ownership of data and what might happen with it in the future raises concerns in Sámi communities and among researchers. The risks of the colonial inheritance of categorizing have been discussed in research (e.g., Senier, 2014) and, for instance, Nobles (2018) recently emphasized the consequences and effects of the misrepresentation and stereotyping of the way in which knowledge is organized. This aspect has not been addressed in the Indigenous context of the Nordic countries, and the expanding field on Indigenous studies calls for a need to address this matter in our local contexts. The key role of sharing in Indigenous research (Christen, 2018; Tuhiwai Smith, 2008) motivates the choice to examine this practice in relation to Sámi research, since it is emphasized by Indigenous studies scholars as central to an ethically valid research approach and is a central aspect of efforts to establish trust and respect between academia and the communities.

4.1 | Data harvesting practices

One issue that has been prioritized on the agenda of Indigenous researchers and allies is data governance. Two primary problems are often referred to in relation to data and Indigenous groups. First, most Indigenous groups have limited control over data collection decisions. Authorities, institutions, and research groups are often those bodies that initiate the collection of such data, and the presence, participation and influence of Indigenous community members are often limited or nonexistent.⁷

Second, data gaps mean that communities very often lack sufficient information to identify, analyze, and resolve problems. Looking at the situation in Sápmi, such a data gap can be best illustrated by the lack of official statistics on the Sámi population, motivated by the legislated interdiction to collect data based on ethnicity. As an

example, due to this statistical erasure in Sweden (as well as in other Nordic countries inhabited by the Sámi), the government cannot provide any comprehensive understanding of the well-being of the Sámi population (Axelsson, 2015). The question of data ownership in Sápmi has only been discussed to a very limited extent. One exception is Axelsson and Storm Mienna (2020) who, based on 11 focus group interviews, show that there are multiple perspectives on the ownership of data (in this case, about health research). The historical legacy of the misuse of research and research data, as well as contemporary processes of repatriation (which have slowly started in Sweden but are a topic of immediate interest discussed and debated at several levels of Sámi society), influence the way that Sámi participants consider the question of the ownership of Sámi health data. The importance of consent and ethical approval was—as could be expected—highlighted in the focus group interviews and the participants consistently “thought that data should be owned and managed by Sami themselves, but recognized that no such system was currently in place to make that happen” (p. 105).

Data, in this context, are not neutral and needs to be dealt with carefully, that is, in an ethically valid and culturally sensitive manner, in order to be used as a useful tool—not as a potential weapon. The fear of misuse and the lack of defined ownership and clear distribution of power and influence in decision-making are currently a barrier to what could be achieved. In this context, the role of research is crucial for understanding the cultural context and for revising assumptions that data are neutral, accessible, and ready to be harvested without further consideration.

Concerns raised by practices of data harvesting are widely discussed by scholars across a range of disciplines, for instance, in relation to commercial actors and patterns of consumption (Ball, 2017; Zuboff, 2019). The “surveillance culture” (Lyon, 2017) that imbues our societies and the extent to which we leave digital footprints, raise concerns about personal integrity. In addition, in the case of Indigenous groups, the inheritance of colonial structures and the vulnerability of certain communities—as a consequence of marginalization and oppression—motivates careful consideration of the issue of the use and ownership of digital data. As requirements regarding data management plans by funding bodies and research institutes are becoming more widespread, and as ethical guidelines for Sámi research (Kvernmo et al., 2018; Svenska Samernas Riksförbund, 2019)⁸ are developing in the Nordic countries, it is important to address the question of data governance. Collective consent has been suggested as a way of regulating health data about Sámi individuals, for instance. Free, prior, and informed

consent (FPIC) is a way of ensuring that Indigenous communities are consulted before the development and implementation of projects and initiatives that could impact the community or the land. It has already been implemented in many Indigenous contexts and is a key principle of research policies and ethical guidelines in Indigenous research.

In Indigenous contexts, Indigenous data sovereignty is being promoted as a step toward the right of self-determination and as a way of preventing the misuse of data, and, in relation to this, contributing to establishing a basis for trust between research institutions and Indigenous communities. Indigenous data sovereignty is defined as “the right of Indigenous peoples to govern the collection, ownership, and application of data about Indigenous communities, peoples, lands, and resources” (Rainie et al., 2019, p. 301). Not least, it implies the right to determine who has access to data and how it can be used.

In turn, the monitoring of data requires the establishment or strengthening of community-grounded authoritative bodies, that is, driven by the communities or that community members trust. In order to achieve this, the need for action, support and resources at governmental levels must be addressed. In Norway, the Norwegian Sámi Parliament has taken responsibility and developed a group of experts with specific responsibility for this matter. This illustrates how efforts—initiated by Indigenous scholars and institutes—are taking place, questioning the taken-for-granted modes of accessing and using digital data. However, the current technological hegemony, for example, the prominent role of a limited number of global media companies, means that the voices and efforts of minority and Indigenous groups risk remaining in the margin, and would need support from a larger international community of researchers and other (hopefully, many) citizens concerned about issues of personal integrity. Qualitative and reflexive approaches to data—in the tradition of the humanities and informed by critical studies, for example—can support DH projects in this context. The main benefit of this approach is a repositioning from less data-centered toward more human-centered perspectives.

4.2 | Categorization practices

Another area identified here that needs to be problematized concerns categorization systems. Ali (2016), for instance, observes “the persistence of certain ‘sedimented’ colonial ways of knowing and being—that is, colonial epistemology and ontology—based on systems of categorization, classification, and

taxonomization and the ways that these are manifested in practices, artifacts, and technologies” (p. 18). Indeed, the way in which materials, publications, and so on are categorized and classified influences how information and knowledge can be accessed. A certain way of knowing can be coherent in one context, but incoherent in another. The terms used to describe things, places, and people can be established and unquestioned in one context, but inappropriate in another—as the use of exonyms when naming Indigenous people illustrates. Thus, the heritage from older classification systems can imply that discriminatory terms and structures imbue recent digital systems and structures.

Categories and categorization in library systems are one example of this and have been addressed in previous research. According to Olson, classification is a social construct in that “classificatory structures are developed by the most powerful discourses in a society. The result is the marginalization of concepts outside the mainstream” (Olson, 1998, p. 235). Furner (2007), for instance, depicts classification schemes as an “information institution” and observes how “[b]ibliographic classification schemes like the Dewey Decimal Classification (DDC) occupy an ambiguous territory between description and prescription” (Furner, 2007, p. 26). Other more recent works on digital and digitized classification systems highlight the need to problematize categorization, algorithm agnosticism and propose ways of achieving equity in taxonomy and using taxonomy in order to (re)discover the peripheral and the marginalized (Ecklund & Grazevich, 2020; Littletree & Metoyer, 2015; Powell & Aitken, 2011).

Sámi studies in the Nordic countries, and Indigenous studies in several countries around the world, are scientific disciplines with their own scientific journals, conferences, study programs, professors, and so on. However, they are not recognized disciplines to the same extent as comparative literature, religious studies, or ethnology (to mention a few). Thus, it is interesting to scrutinize the status—and consequently, the visibility—of these more recent disciplines in larger global classification systems. For instance, because Sámi studies is a discipline taught at the University of Umeå, Sweden, it is interesting to note how PhD dissertations are classified and searchable in the university library.

University libraries in Sweden apply DDC (Dewey Decimal Classification), a US system that classifies books according to subject (defined main “classes”) but allows the inclusion of details (called “aspects”) of the subject. The cultural and historical context of the development of the DDC permeates the distribution and hierarchies across categories. Although the system has developed and is applied globally, Western views on, for instance, religion, politics, or geographies are present and not only

affect how resources are categorized, but also how they are located in relation to other categories (Furner, 2007; Noble, 2018; Olson, 1998).

The classification system could help increase the visibility of local research themes, since the classification of a local Indigenous language, for instance, will be visible for all users on a global scale. The complexity of the system, however, might make it difficult for a library user to find the specific classification code that would lead to the resources about the specific local Indigenous language. In terms of classification, DDC allows research that addresses minority and marginalized groups to be included—albeit within a defined hierarchy. From the perspective of the user, however, the visibility of this research might be compromised by the complexity of the system (Anders Lennver, Umeå University Librarian, personal communication, 26 November, 2020).

In the case of Sámi studies in Swedish university libraries, the discipline remains invisible, and volumes on the subject are scattered across various categories, for instance, the arts, languages, and so on. The advantage of such a classification is that it avoids the risk of isolating an interdisciplinary field of study; its main disadvantage is that it makes it difficult for a student of Sámi studies to browse through publications and PhD dissertations.

Groups and communities, for instance, Sámi people, can be included in the code assigned to a publication as an “aspect.” In other words, people are included as aspects of research within a subject or a “class” (e.g., religion, languages, or social sciences). This mode of classification implies that people are classified as *objects* of study. Thus, a book in the field of Sámi studies risks being classified as “a study about Sámi people.” Taking into account the development of Sámi studies, this is highly problematic. A major paradigm in Sámi studies (and likewise in other Indigenous contexts internationally) that already took place in the 1970s (Junka-Aikio, 2019; Keskitalo, 1994; Korhonen, 2008; Lehtola, 2017) is the radical change of focus (and consequently a rejection of previous colonial perspectives) from research *about* to research *with*. Thus, this major shift and core aspect of contemporary Sámi research have been ignored in the current classification system. Instead of highlighting the discipline with its methods, ethics, and so on, the DDC system constrains Sámi research within a colonial discourse.

The dilemma, which does not solely concern Indigenous groups, is how to increase the visibility of a marginalized topic without emphasizing its marginalization. University librarian Anders Lennver suggests that a potential compromise could be topic-based bookshelves that could contribute to making a topic, language or discipline visible in the physical space of the library. How to

create visibility in the digital space within the framework of the classification also requires additional modes of presentation and representation. Virtual bookshelves and information feeds with updates about new acquisitions of books, journals, and articles about specific topics are accessible ways of increasing visibility that could quite easily be integrated into library websites.

However, this dilemma in representation is not restricted to the DDC classification system and similar dilemmas can be observed in other classification systems. Universal Decimal Classification (UDC), a system based on DDC but that offers more flexibility, is no less complicated for librarians and users. It is one of the classification systems applied by the main university library of the University of Helsinki that offers courses and study programs in Sámi studies and Indigenous studies. With UDC, it is possible to first highlight an “aspect” in the classification code, while the main “class” will appear second in the code. But here too, “Sámi,” for instance, will be an aspect, and the field of Sámi studies is not visible in the classification system. The Library of Congress Classification (LCC), another classification system applied by the same library, classifies different ethnic minorities in various ways: sometimes as an ethnic group, sometimes as a topic (e.g., music) related to a specific place (e.g., Lapland). Thus, “Sámi” might appear in some cases in the classification code when the region in which Sámi communities traditionally live is coded (Librarian, Kaisa Library, University of Helsinki, personal communication, 17 December, 2020). In the case of Sámi groups, a classification based on location might be problematic since such a classification neglects historical and contemporary processes of (forced) relocation and migration. Also, many Sámi do not live in the traditional areas of settlement and have moved to larger cities for educational and professional reasons, following a general pattern of urbanization that can be observed elsewhere in the Nordic countries (as in many other places around the globe).

In all the systems, index or subject headings play a significant role. As a matter of fact, UDC is not primarily actively used by the Kaisa Library for the description of content in publications; subject headings are prioritized for this purpose. For users, it is the easiest way of browsing publications by topic. For librarians, it is a way of including themes that cannot be included in the defined classes and subclasses.

Classification systems also reflect the ways that libraries work and how library practices are becoming more and more digital. These days, many books acquired by libraries are e-books and the contact by library users with a physical library collection often takes place via a database or another search system. Students or other

university library users are directed to a computer for searches based on keywords—rather than to a physical bookshelf. However, as a consequence, the visibility of specific areas of research such as Sámi or Indigenous studies is absent in the physical library. Current categorization systems also illustrate how digital classification systems are a result of the longer development of modes of categorization—modes of categorization that might have changed format and interface, but in which historical, cultural, and ideological norms and values are very much present, influencing the outcomes of how and where books (for instance) are presented and made accessible. The digitalization of cataloguing, browsing, and reading practices influences the development of these systems, presenting many challenges for library work that is caught in between the materiality of libraries, digital infrastructures, and the multiple expectations of a broad range of users.

It is therefore crucial to find ways of approaching, understanding and highlighting library classification systems as a form of knowledge production—not only about the items being classified and/or searched for but also about how, through these systems, we organize the world and the phenomena we study, and so on. Thus, what is needed is an awareness of how classification systems are developed and are developing, and a contextualization of these systems. The humanistic tradition of critically examining the construction of representations and hegemonies is beneficial here when scrutinizing the implications of the digitalization of classification practices.

Also, as a librarian at Helsinki University Kaisa Library reminded me in our conversation (personal communication, 17 December, 2020), new classes are constantly being created, old classes are regularly updated, following scientific developments and scholarly debates. A group of important actors to be considered in this context are librarians who apply (i.e., make sense of, question and contribute to developing) the classification systems. A critical approach to this aspect of the technology needs to include the role of librarians for problematizing, suggesting and making improvements, and so on. After our conversation and reflections on DDC and the position of Sámi research, Anders Lennvæ and colleagues at the university library started investigating ways of making Sámi research more easily searchable and visible. This resulted in testing a mode of filtering categorizations in which “Sámi studies” (following the name of the discipline at Umeå University) is a specific filter that the user can apply when browsing for publications. Beside filters such as publication type, publication date, language, and so on, a “selection” filter offers the option “Sámi studies” and shows the number of results for a search (by title, keyword, name, etc.) that addresses

publications within the disciplines. This filter option is compatible with other ways of browsing publications, that is, it does not display or separate these publications from other categories. However, it makes a search for research related to the field easier, enhances research output from this field, without following the obsolete categories of place or object of research.

The contribution of libraries, librarians, and library studies to the digital humanities leaves no doubt. University libraries have been driving forces in the development of DH in many countries and have made a significant contribution, not least with the extensive digitization of resources. Here, as shown by the scrutinization of the position and findability of Sámi (and Indigenous) studies in library classifications and categorization, Indigenous digital humanities can add yet another (critical) layer to the work of libraries as our practices and resources are becoming increasingly digital.

This example of research practice—its limitations and how it can be improved—illustrates how classification practices are not merely to be understood within the frame of library studies, but rather as benefiting from the perspectives of other disciplines, in this case, when scrutinized and challenged at the intersection between Sámi and Indigenous research, and the digital humanities.

4.3 | Sharing practices

Yet another common practice in our digital age worth scrutinizing from the perspective of Indigenous research is *sharing*. The increased use of social media has given rise to a form of “sharing culture,” that is, the widespread use of digital practices for providing updates about our feelings, opinions, doings, or whereabouts. This form of communication is not only supported but is also encouraged by social media platforms for sharing our state of mind, thoughts, and so on. Despite the global aspect of this phenomenon, communication is a cultural practice that needs to be approached in context.

The possibilities, potentials, and practices of sharing updates via social media have been embraced by academia and it has become common practice for universities and funding agencies to strongly encourage researchers to have a digital presence and communicate their projects via social media platforms, scientific videos, webpages, and so on as a way or a wish of increasing visibility, knowledge exchange, as well as the societal value of research (Cocq, 2021). Duffy (2000), for instance, observes the professionalization of dissemination practices and how it has become an integrated part of the research process. In

another study about research dissemination and social media, Cawcutt et al. (2019, p. 849) conclude that “social media can be used strategically to increase the dissemination of research articles and collect solution-focused feedback.”

The significance and importance of sharing research beyond an academic readership are seldom questioned. However, from the perspective of Indigenous methodologies, it is not (only) a merit or an added value, but is also a key principle for ensuring ethically sound and relevant research. One aspect of this is the sharing of results and knowledge, that is, the dissemination and communication of the outcomes of a research project with the community involved, concerned by, and/or affected by the research. Another aspect, more closely related to participatory modes of research, is sharing at different stages of the research process, something that has been emphasized by Indigenous scholars such as Tuhiwai Smith in her seminal work *Decolonizing methodologies*:

Sharing is a responsibility of research. The technical term for this is the dissemination of results, usually very boring to non-researchers, very technical and very cold. For indigenous researchers sharing is about demystifying knowledge and information and speaking in plain terms to the community. (Tuhiwai Smith, 2008, p. 161)

The modes of sharing recommended by Tuhiwai Smith are preferably oral presentations since they better conform to cultural protocols. Not only is this true in Maori contexts (in the case of Tuhiwai Smith), but the heterogeneity of the communities means that multiple places and mediums for communication are to be identified.

The rapid development of the web 2.0 and participatory media has implied that a few global social media platforms have taken a central role in our societies and our everyday lives. This development has been at the expense of smaller, local, or community-specific platforms and channels. In the Sámi context, the communication platform Samenet, a FirstClass server-based solution that was established as early as 1997 and had at most 7,000 users, was a safe space for Sámi users where information of interest and relevance for Sámi groups would be shared. It was designed and driven by community members based on identified specific needs: to be able to easily find and communicate with other members of the community, create a place to distribute relevant information, and be able to write and chat in the Sámi languages. However, Samenet could not cover the costs of maintenance and development, nor meet the pace of

development of global platforms such as Facebook, and was closed in 2011, after several years of financial difficulties (Cocq & DuBois, 2019, pp. 219–221). The lack of community-specific platforms does not prevent Indigenous groups from creating networks, finding ways of making use of digital tools in order to serve their needs and to perform their lives online (Petray, 2011). According to Carlson and Frazer (2015), “Indigenous people are overrepresented on social media” and accounts on Instagram, Twitter, TikTok, and so on illustrate how Indigenous youths, among others, in social media have found a place where they can be, speak and engage in various discussions. At the same time, social media is also a “stage on which users’ online interactions might be observed by others” (Carlson & Frazer, 2020, p. 5), something that Indigenous users are aware of, causing them to adapt their speech. It is also important to remember in this context how modes and contents for transmission might vary across groups: for some, keeping knowledge for themselves and kin is important, whereas others are willing to share and commercialize (Christie, 2008).

Digital media are used for the communication and dissemination of research, but, of course, they only represent one way of communication and dissemination among many. Audience-specific communication online can be challenging, and offline modes of sharing can be more appropriate for reaching out to specific stakeholders (Cocq, 2021). Thus, the use of digital media for the communication of research should be carefully considered in order to identify culturally sensitive modes of sharing in order reach the intended audience and to respect the potential limitations of the dissemination of community-specific knowledge. Similar to examining data harvesting, we can also recognize here the benefits of perspectives that put users at the center and tone down technology and media. Such non-media-centric perspectives (cf. Krajina et al., 2014; Pink et al., 2016) and critical studies can support scholars in the digital humanities to identify culturally sensitive modes of communication when considering the various modes of sharing and communication research.

5 | CONCLUDING REMARKS

Examining data harvesting, categorizing, and sharing in a digital age reveals how we are currently meeting the challenge of adjusting and adapting practices that carry Eurocentric and hegemonic values or are based on Western norms. Other practices would have been as relevant to study here, for instance, databasing or mapping, in which blind spots reveal marginalized topics, groups, and

geographical areas. In this sense, and considering the vivid ongoing discussions and initiatives currently taking place in many Indigenous communities, this article only scratches the surface of the issue. However, the three practices in focus in this article convincingly illustrate the historical and cultural legacy of perspectives that we might (more or less subconsciously) take with us into the digital—that is, in how we design, shape, apply, and use digital tools, products, and spaces. These examples of practices are therefore a basis for us to revisit our digital practices in research.

Bringing Indigenous research perspectives into the DH is a necessary contribution to the critical study of the role of technologies in society. Such an approach addresses the need to acknowledge cultural diversity and how it is reflected in the uses and applications of technologies, as well as how this diversity is often bypassed by producers and developers of technologies, algorithms, and so on. The perspectives of Indigenous groups bring this matter to a head. Data sovereignty, visibility, and representations, as well as transparency and ownership of knowledge, are key issues in Indigenous research. This article is an attempt to warn about the risk of overlooking these aspects when we collect our data, when publications are sorted into categorization systems, and when we communicate our research. It suggests ways of addressing these issues by acknowledging the multiplicity of cultural contexts and the key role of these contexts—their localities, histories, stories, and epistemologies—in our research practices, and through increased collaborations across disciplines, professions, and communities.

As digital technology provides possibilities to collaborate, there are greater opportunities for different individuals and groups to work together and contribute with different forms of knowledge. Developments in participatory research, utilizing the benefits of digital tools and methods, are promising ways of diversifying modes of knowing and understanding. Crowdsourcing and forms of co-production of knowledge, for instance, offer alternative ways of defining what should be collected, produced, and communicated. The politics of representation can be examined and challenged together with communities; folksonomies—created by user-generated hashtags, for instance (rather than hierarchic taxonomies)—might suggest alternative structures for organizing knowledge, and so on. The inherent disciplinary diversity within the broad area of the DH and the central collaborative aspects of many DH projects (e.g., between system developers and researchers) make the DH well suited for finding pathways for community-engaged research.

In the same way that the field of Indigenous research has brought to the fore the need for reconsidering how, by whom and for whom academia is shaped, this article

identifies the need for a framework for Indigenous digital humanities that challenges, decenters, and thereby fills a gap in the broad area of study of digital media and technologies. At the heart of such an IDH approach, we find core issues of governance, ownership, and sovereignty—here in relation to data, results, and knowledge. At the intersection between these two fields, we also find solutions for developing sustainable digital humanities' perspectives. Thus, combining approaches from Indigenous research and digital humanities offers a successful framework for addressing core issues in Indigenous research at a time when the digital—as a tool, a meeting place, and a phenomenon—is omnipresent in Indigenous everyday lives, and lands.

CONFLICT OF INTEREST

The author declares no potential conflict of interest.

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ENDNOTES

- ¹ Digital humanities is used here in the sense of both the application of digital tools and methods from subject-specific theoretical and methodological perspectives, and an approach that inspires critical discussions about digital tools and methods.
- ² UNESCO Declaration on the Rights of Indigenous Peoples.
- ³ For instance, in S  mi contexts, the ratification of the European Charter for Regional or Minority Languages by Norway, Sweden, and Finland, and national legislations for protecting and promoting national minority languages.
- ⁴ <https://mukurtu.org> (Center for Digital Scholarship and Curation, n.d.)
- ⁵ <https://www.indigitization.ca> (Irving & Barber Learning Centre, n.d.).
- ⁶ <https://sverigesradio.se/artikel/6646383> (Sveriges Radio (Swedish Broadcasting Company, 2017).
- ⁷ <https://gijn.org/indigenous-data-sovereignty/> (Global Investigative Journalism Network, n.d.).
- ⁸ https://www.samediggi.fi/wp-content/uploads/2019/04/FPIC-principles_S  mi-Parliament-in-Finland-1.pdf (S  mediggii, 2016); <https://www.ulapland.fi/FI/Kotisivut/Saamelaisia-koskevan-tutkimuksen-eettiset-ohjeet-> (University of Lapland, 2021).

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