Centering Relationality and CARE for Stewardship of Indigenous Research Data

RESEARCH PAPER

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ABSTRACT

The CARE Principles for Indigenous Data Governance are a seminal advance in the stewardship of Indigenous data. The Data Services for Indigenous Scholarship and Sovereignty (DSISS) project is working to guide how research libraries and data repositories can apply the CARE principles to support scholars of Indigenous culture and language. Building on a set of foundational case studies of Indigenous scholarship, this paper reports on analysis of formal engagement activities with scholars, Indigenous community members, and information and data professionals. We discuss three prominent themes—ownership, trust, and relational accountability—and their implications for concrete steps toward implementation of the CARE principles in research data services (RDS). The results show that sustaining and furthering Indigenous scholarship and data sovereignty in alignment with CARE requires infrastructure and services that attend to a mix of interrelated, and potentially divergent, interests of scholars, Indigenous communities, and institutions. RDS professionals need to build expertise in Indigenous research methods and the sensitivities and distinctiveness inherent in Indigenous ways of knowing. Stewarding institutions will need to make significant investments in restoring trust as genuine extensions of relational accountability.

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INTRODUCTION

A groundswell of activity has emerged on the ethical care of Indigenous data in response to Indigenous data sovereignty imperatives and the history of unethical research practices, data collection, and governance of Indigenous data. The CARE Principles for Indigenous Data Governance have been a seminal advance in guiding Indigenous data stewardship (Research Data Alliance 2019). CARE complements the FAIR Principles for Scientific Data Management and Stewardship (Carroll et al. 2021; Wilkinson et al. 2016), which have been highly effective in raising awareness of data management best practices and supporting the open data movement. The catch phrase, "Be FAIR and CARE", has worked well as an aspirational statement that balances the FAIR (Findable, Accessible, Interoperable, Reusable) emphasis on metadata and machine-actionability with the CARE (Collective Benefit, Authority to Control, Responsibility, Ethics) focus on Indigenous data sovereignty goals. Information and data professionals, however, still have much to learn about how to put the CARE Principles into practice.

To inform implementation of CARE for research data services (RDS) in libraries and repositories, the Data Services for Indigenous Scholarship and Sovereignty (DSISS) project is developing an Indigenous Data Services framework (DSISS 2024). The strong base of work underpinning the CARE principles has been instrumental in guiding RDS for Indigenous data to date (Carroll et al. 2020; Carroll et al. 2021; Carroll; et al. 2022; Carroll, Rodriguez-Lonebear & Martinez 2019). Much of the discourse relevant to professional RDS has emerged from scientific and health domains where data sharing and open research are often an underlying objective, and the FAIR Principles serve as an increasingly normative guide to practice. DSISS is focusing on RDS for scholars of Indigenous culture and language, contributing to understanding of stewardship for a broader range of Indigenous research data. The domain is particularly challenging since it requires RDS professionals to develop new expertise on Indigenous qualitative research methods and the data sensitivities related to Indigenous experiences and ways of knowing. It also brings into relief the needs of scholars and Indigenous communities that prioritize contextual description, preservation, and governance over data sharing or open research.

Based at the Information School at the University of Washington (UW), DSISS is led by two Indigenous researchers (Zuni/Tlingit and Navajo/Eastern Shoshone) who specialize in Indigenous knowledge, culture, and libraries and two settler researchers who specialize in qualitative data curation and repository services. Key collaborators include researchers and curators from the Qualitative Data Repository (QDR), professionals in data services librarianship from UW Libraries, and Indigenous scholars from the UW American Indian Studies department. We are consulting scholars with the *Local Contexts* initiative and building on their extensive experience collaborating with Indigenous communities to manage intellectual property for digital cultural heritage (Anderson & Christen 2013), to explore application of their TK (Traditional Knowledge) and Collections Care notices to digital qualitative Indigenous research data (Local Contexts 2023). Indigenous librarians from the X̱wi7x̱wa Library at the University of British Columbia have been active contributors, drawing on their *Indigitization* initiative, an exemplar partnership with First Nations communities to co-create resources for digitization and management of digital heritage (University of British Columbia 2022), including an Indigenous-led, locally developed taxonomy and classification system (Doyle, Lawson & Dupont 2015).

The DSISS team applies a collaborative curation approach to repository practice (Karcher et al. 2021), informed by a humanities orientation to data stewardship (Cremer et al. 2021; Tóth Czifra 2020). Most importantly, in articulating CARE implications for RDS practice, we center the concept of relationality, prominent in Indigenous research (Kovach 2009; Smith 2012; Wilson 2008) and Indigenous community interests and values. Centering relationality requires an understanding that relationships exist not only through human interactions; they extend out to create a web of respect, responsibility, and relational accountability to land, water, plants, and animals, as well as to ideas, languages, ceremonies, ancestors, and future generations (Littletree, Belarde-Lewis & Duarte 2020).

An invaluable body of applied work on Indigenous archiving and librarianship underpins our orientation to data stewardship. For example, the groundbreaking *Aboriginal and Torres Strait Islander Protocols for Libraries, Archives, and Information Services* (Aboriginal and Torres Strait Islander Library, 2012) and the *Protocols for Native American Archival Materials* (First Archivists Circle 2007) have provided long-standing, authoritative guidance for culturally

responsive care and use of Indigenous archival materials. With libraries and archives moving forward with adoption of these protocols (Carpenter 2019; Marsh et al. 2020; Pringle 2019; Sanchez et al. 2021), there is an opportunity for adaptation and integration with new efforts on CARE implementation in RDS. Important CARE advances specific to research data include phased frameworks, data maturity models, self-assessment tools, and measurable indicators (Taitingfong 2023), as well as checklists to support researchers creating documentation of Indigenous knowledge and data curators responsible for repository ingest processes (Barness et al. 2023).

This paper examines how specific sub-principles of CARE relate to current scholarly practices, foregrounding the relational methods inherent in Indigenous research and prioritizing the values of Indigenous communities. We begin by describing our workshop engagement activities as a form of inquiry congruent with Indigenous research methodologies, which we consider central to determining how to apply CARE in the stewardship of qualitative research data. The results show that sustaining and furthering Indigenous scholarship and data sovereignty in alignment with CARE requires infrastructure and services that attend to the interrelated, and potentially divergent, interests of scholars, Indigenous communities, and institutions. The different scholarly perspectives demonstrate the need for multi-faceted and flexible data services to support Indigenous scholarship. The analysis also suggests a need for CARE-responsive operations beyond RDS, within special collections and other areas of academic librarianship. We conclude with discussion of the careful work required to translate CARE into practice to account for, and repair, problematic conditions embedded in our institutions.

MATERIALS AND METHODS

The DSISS framework is being developed through iterative phases of participatory engagement, extending our previous work showing the need to sustain contextual integrity and relational accountability in the stewardship of Indigenous qualitative research data (Palmer et al. 2022). We engage with active scholars individually and in groups to document the different kinds of data sources they produce and use, and to identify their data stewardship needs and expectations for those materials. Our engagement approach is also based in imperatives of Indigenous self-determination that privileges Indigenous knowledge, voices, and experiences, with recognition that research contributes to the thriving and survival of Indigenous people, languages, and cultural practices (Smith 2012; Wilson 2008).

DSISS methods build on our previous experience studying research processes and data practices (Cragin et al. 2010; Chao, Cragin, & Palmer 2015) with techniques drawn from natural resource management, where there is a similar prioritization of mutual benefits and application to practice (Grimble 1997; Reed et al. 2009). The approach works to integrate needs and perspectives from multiple interest groups to produce relatively rapid results for prototyping or proof-of-concept pilots for further iterative input. Engagement is customized for key participants to serve as collaborators, similar to methods applied in related participatory and co-design work for development of language and culture archives (Huvila 2008; Garrett 2014; Wasson 2021).

WORKSHOP AS METHOD

A milestone DSISS workshop brought together 24 participants with a vital range of expertise and perspectives: Indigenous scholars and local tribal experts in language revitalization; librarians specializing in data services, digital scholarly publishing, special collections, and ethnic studies; collaborators with expertise in Indigenous academic library services, qualitative data curation and repository development, and Indigenous content management and metadata; with team members specializing in Indigenous knowledges, Indigenous libraries, and knowledge infrastructures. The workshop activities were built around a set of foundational case studies of Indigenous scholarship that document current perspectives, priorities, and practices of scholars committed to ethical work with Indigenous tribes, communities, and families.

The four case studies that underpinned the workshop were shared with participants in written synopsis form and presented in plenary sessions by the scholars. Three of the cases originated with the Privacy Encodings for Sensitive Data project, funded by the Sloan Foundation, which illustrated a 'contextual integrity profiling' approach for developing data description for CARE

compliant curation of qualitative research data (Palmer et al. 2022). An additional case was developed as part of a new phase of work to include non-Native scholars who practice ethical Indigenous research with deep relationality. While all four cases contributed to the workshop, the results presented here draw on the three most uniform cases, outlined below. The one excluded case was based on research conducted by the first author of this paper, and its analytical contribution varied in several ways. Most notably, it served as a test case for a preliminary data description design (see Palmer et al. 2022, pp. 20–27), which is outside the scope of this paper.

- **Case 1**. Salish Language Research Guide. Native scholar. Documents the critically endangered Southern Lushootseed language and other Salish languages, curated across multiple tribal jurisdictions through a living document of links, words, translations, citable sources, and traditional memory. Produced in collaboration with the UW Library Special Collections.
- **Case 2**. Indigenous Cultural History. Native scholar. Constructs Cherokee ecological knowledge through storytelling traditions and oral history–narrative forms essential to Cherokee selfhood and cultural belonging, developed through the author's long-standing collaboration with a Cherokee elder and family. Designed for dissemination in both print and digital format.
- **Case 3**. Reconnecting Archives to Indigenous Communities. Non-Native scholar. Interactive, media-rich scholarship that explores the locating and reclamation of Kwakwa̱ka̱'wakw customary dance traditions, as documented historically in museum collections, and as current cultural expressions enacted by the community. Designed for dissemination in both print and digital format.

The objectives of the 2-day workshop were to identify: (1) scholar priorities based on their research methods and data practices, and (2) challenges and tractable steps for libraries and repositories to support scholar priorities through the CARE principles. All presentations and conversations were recorded for documentation and analysis, with informed consent confirmed for all participants. The analysis of coded transcripts from the small-group sessions was supplemented with context from workshop presentations and related DSISS materials. In alignment with the DSISS informed consent agreement, participants approved use of their statements from the transcripts within the context of this narrative. The full transcripts remain confidential, and the data generated for this project is only available to research collaborators. (Review by the University of Washington, Human Subjects Division, STUDY00015479, determined that the 'proposed activity is human subjects research that qualifies for exempt status').

The formats of engagement were crafted to be consistent with Indigenous methods. The event was held on the UW Seattle campus in June 2022 on ancestral Duwamish and Suquamish homelands. Most sessions were held in the Indigenous-designed wəɬəbʔaltxʷ, a longhouse-style facility on campus, also known as the Intellectual House. It is a gathering place and 'welcoming environment to share knowledge' for American Indian and Alaska Native members of the UW community. A locally sourced Indigenous dinner, hosted at the Burke Museum of Natural History and Culture on the UW campus, provided additional time for participants to build relationships in an informal setting.

Parts of the program were modeled on Indigenous modes of interaction. For example, the first day began with a welcome to the territory by a Puyallup tribal citizen. Indigenous team members also initiated a relationship-focused introduction, building on an Indigenous approach to relationality. Each participant introduced themselves and briefly talked about their background, the institution they were representing, and their interests in the initiative. They ended their personal introduction by turning their remarks to another participant they knew personally or professionally, as a transition to the next introduction. Some participants told a brief story of how they met the other person or shared other personal anecdotes to illustrate knowing each other. The movement of introductions throughout the group revealed some long-standing connections and more casual or distant associations. The narrative path of the process clarified the range of people and professional perspectives in the room. It also established that group members were highly connected through a variety of channels and networks and opened up the opportunity to build new connections based on shared expertise or interests.

CASE-BASED INTERACTIVE ACTIVITIES

Scholars presented their cases in plenary sessions to build a shared awareness of a range of Indigenous research methods and data practices. The activities that followed were conducted in four subgroups aligned with the individual cases. Groups were composed to include Native and non-Native peoples and participants with varying professional roles. Anchored by the scholar presenter, each group included at least one professional librarian, one project collaborator, and a core DSISS team member.

Discussions were guided by project objectives and a set of probes designed to generate further case details associated with data stewardship:

- What data and other materials need to be preserved?
- What context needs to be documented?
- How can critical governance considerations be determined and communicated?

The probes were not explicitly framed with the CARE principles. Instead, they emphasized research materials, their contexts, and governance implications to draw attention to aspects of CARE in practice and retain the dynamics and epistemologies of scholarly intent and meaning.

The cases grounded the workshop in the primary issues of relational accountability–the need for research outputs to maintain and accurately represent interpersonal relationships with research collaborators and Indigenous communities. Relational accountability also extends to responsibility for maintaining the well-being of the natural world, stories, objects, ancestors, and future generations. The variation among the cases was instrumental in seeding session conversations that surfaced complex issues related to relationality, as well as issues of governance and control of research data.

RESULTS

The rich stories presented by the scholars on their research with Indigenous communities and materials revealed significant considerations for the implementation of the CARE Principles in RDS. Prominent themes emerged that foregrounded the priorities of Indigenous scholars and Indigenous communities and underscored the ethical and practical challenges of balancing the dual imperative to 'Be FAIR and CARE.' In addition to the three themes discussed below, two overarching dimensions were evident in the analysis. First, all the key thematic results relate to multiple CARE principles, suggesting the need for an integrative approach to CARE. The highly interdependent elements (Collective Benefit, Authority to Control, Responsibility, and Ethics) cannot be, and should not be, readily disentangled. Second, the themes bring into relief the need to confront the colonial legacy of knowledge extraction and, above all else, the necessity of partnership and reciprocity with key interest groups in development of CARE-based data stewardship.

Three primary themes are discussed: (1) Ownership: complications in the determination of 'ownership,' (2) Institutional trust: a prevailing distrust of knowledge institutions tasked with stewarding Indigenous information and knowledge, and (3) Relational accountability: the primacy of the scholars' positionality and accountability to the community of origin. The discussion of each theme includes illustrative excerpts from the workshop small group discussions and closes with a summary that lists key considerations and associated CARE sub-principles. The excerpts have been lightly edited for readability, framed by additional case context and interpretive discussion. The speakers represented in the excerpts include scholars of American Indian studies; language revitalization; culture and communication; Northwest art; and professionals with expertise in Indigenous services, regional collections, and qualitative data curation and stewardship.

THEME 1: OWNERSHIP

The importance of worldview as a fundamental philosophy of many Indigenous people was surfaced in Case 1 by a Native library staff member from Canada. Indigenous worldviews are holistic or 'wholistic' in the sense that the whole person (physical, emotional, spiritual, and intellectual) is interconnected to land and through relationships with others, including family members, communities, and tribal nations (Archibald 2008).

Indigenous Library Services Staff:

... Indigenous communities' ethics and protocol are so much more in depth and more profound than what the university and copyrights and colonial notions of ownership are; they then put that on to our cultural belongings and our cultural entities.

They don't fully understand, and they want us to have a 'one person has copyright over that song,' but we don't understand in that way; the ownership isn't in the same way, and it's seen within the institution as being a 'lesser' understanding of 'ownership.' Where, in our worldviews, it's the most profound understanding of 'ownership.'

It's that colonial narrative—that we don't understand the full extent that they understand –but our understandings have so much more depth to them about why it's that way. There's extra barriers... we would want our ethics to be the standard for the way that our relationships are held, not sprinkled on...

The Indigenous library staff member highlights the common use of colonial standards as the norm for both dominant and minoritized groups. For song ownership, the colonial perspective associates ownership with one person, as opposed to the community, which runs counter to Indigenous ways of knowing and disregards the depth and nuance of Indigenous stewardship. Further, they point out the irony in this Indigenous view of ownership being considered 'lesser,' even though the Indigenous conception is multi-layered and based on generations of knowledge. The cultural barriers to securing policy that privileges Indigenous values of ownership are recognized in their observations. Rather than the community's ethical standards as guiding criteria, a superficial 'sprinkled-on' approach neglects community-based ethics and the primacy of the group.

Important aspects of the Authority to Control element also surfaced in relation to Case 2 in an exchange about assumptions and complexities of tribal control.

Regional Collections Librarian:

Is there an actual repository? A collaboration between [the tribe] and an institution that can handle archival stuff? Is there movement within the tribe to build one?

Native Scholar of American Indian Studies:

No, and that gets complicated because this is family knowledge, and we don't want it.

Regional Collections Librarian:

...subsumed by the [tribal] Nation?

Native Scholar of American Indian Studies

There's issues with that, you know, it's not what people think... cultural knowledge and governmental bodies are two different things.

Regional Collections Librarian:

Of course, so that's that a governance issue.

Native Scholar of American Indian Studies:

It's complicated because people think that the 'go-to' is always Tribal IRB, always check the boxes... In my community in the [tribe], it's really always been small towns and communities with their own distinct identities...

Regional Collections Librarian:

And then families within those...

Repository Expert:

And does that lead to tension? Those nation's leadership disagree with a lot of this being family knowledge?

Native Scholar of American Indian Studies:

Well, yeah, sure. There's this part of long-standing tribal politics. Who are the real [culture] bearers? Some people think the governance of the nation exists within our [ceremonial] grounds, that's where the true governance existed. Not with the elected

> body that cares more about building up the financial profile of the [tribal] nation in billions of dollars in revenue. The issues of culture and tradition play a part too. People who are very 'traditional' versus people who are perceived as outsiders. People who are about the finances. It goes back a long, long ways.

The differing perspectives and generalized assumptions underlying this exchange show the need for a nuanced and localized understanding of the Authority to Control element. This scholar's deep, long-standing collaboration within their own Native community is central to their Indigenous methods. They have conducted their research through a fully collaborative relationship with an elder and other family members who are the stewards of the intergenerational knowledge passed down through their family. The understanding underpinning the collaborative relationship recognizes that true governance may not lie with 'the elected body' but is tied to ceremonial grounds. In this case, cultural knowledge is distinct from governing bodies, with traditional ownership by a family superseding the formal governance model created after colonial contact and subjugation.

Data stewards will need to be sensitive to dynamics of family, as well as individuals, clans, and bands, and how they relate to oversight by tribal nations. The positionality of an Indigenous researcher and their application of Indigenous methods can introduce dimensions well beyond the Western model where research products fall under the ownership of an institution with an elected tribal council as the governing interface. As this case demonstrates, in addition to research institutions and tribal groups, family members can be the primary knowledge holders and, therefore, the authoritative owner.

As more and more Indigenous people become scholars and work with various members of their community, RDS professionals will encounter murky ownership situations and internal hierarchies. Even when an internal review board (Tribal IRB) process exists (Kuhn, Parker, & Lefthand-Begay 2020), dynamics of family politics, leadership, and authority within Native communities may not be addressed. Each information institution will need policies and processes that help determine a course of action that accounts for negotiations with all institutional and non-institutional interest groups, toward collective benefit and relational accountability for all.

Ownership: Key Considerations and CARE Sub-principles
• Community-based perspectives on ownership of recorded Indigenous culture were previously dismissed or minimized by institutions in favor of individual ownership, and now should be considered a critical aspect of responsible Indigenous data stewardship [R3]. • The common assumption that tribal governments or IRB processes are the authority for cultural knowledge does not account for primary authority held by culture bearers within families or the dynamics of longstanding intertribal politics [C3, A3]. **[C3] Collective Benefit** for equitable outcomes **[A3] Authority to control** governance of data **[R3] Responsibility** for Indigenous languages and worldviews

THEME 2: INSTITUTIONAL TRUST

The distrust of Western institutions emerged explicitly and implicitly in presentations, interactive sessions, and informal conversations throughout the workshop. The historical trauma, ethnocide, and genocide that must be confronted in conducting research with Indigenous communities is not just associated with governmental organizations and policies of colonizing foreign regimes (Pacheco et al. 2013; Patin et al. 2020). It extends to the history of unethical research methods and projects (Smith 2012; Harry & Kaneche 2006) and the real and perceived harms introduced by gatekeepers in universities and research institutions.

> Native Scholar of Culture and Communication:
>
> I know for [the elected tribal leader], he wants recordings returned to our family because they possess the [native language]. They [the holding university] have the [native language]. But the soul … that's what's in that original recording, and he just

feels that. He doesn't have an explanation beyond that, except that it belongs to us [the tribe].

It's not like a possession, because it still wants to be shared. But he wants to make sure that we're the ones who share. I tried to explain how he feels about it in terms of the community. It definitely belongs to the community, but it's like he wants, he doesn't want it. He wants everybody to be able to hear it, hear their songs, but he wants to make sure that they come from the [tribe].

Native Scholar of Language Revitalization:

So, would he want them taken out of the university all together?

Native Scholar of Culture and Communication:

I think he does, yeah. I think that he thinks the university has been bad stewards, is why. Because it has. He doesn't trust them, you know we've talked about it a lot, but I mean, there's many reasons not to trust institutions, right?

Native Scholar of Language Revitalization:

I think [the tribal council] felt the same way. They were like, 'We don't trust the [university]. They just want to take take take.' But that's the fear in everything that everybody experienced in the past; feel like everybody just took the knowledge and didn't provide back. And here we are trying to obtain things back, and sometimes we get those roadblocks, and so, it's really difficult. We can't remove that fear from them because it's always going to be there.

This conversation conveys both historical and cultural complications associated with institutional collections and management of tribal language resources within a university library. First, there is a strong sense of 'distrust' based on past relationships between the tribal nation and the university, resulting in a contentious 'bad steward' attitude towards the university, if not the library. Second, the scholar relates that the tribal group contends that they should have the authority to control access to the language resources, not the university.

The last sentence of this excerpt is of fundamental importance to our work in the DSISS project: 'We can't remove that fear from them [Native people] because it's always going to be there.' The speaker is relaying a generations' old sentiment of trepidation and anxiety on the part of Native peoples, researchers, and communities. Stewardship responsibility goes beyond avoiding future harms to providing benefits by recognizing fear of the Western 'take, take, take' institutional mindset. Implementation of the CARE Principles is a step toward allaying those justified fears if institutions proceed carefully and work directly with the Native communities for whom the data relate and have cultural value.

Institutional Trust: Key Considerations and CARE Sub-principles
• Relationships between institutions and Indigenous researchers, tribal leaders, and Native communities need repair due to pronounced intergenerational trauma and historical distrust of Western institutions [R1]. • Responsible data stewardship includes supporting originating tribal communities in regaining authority to control access to their materials [A3]. • Stewardship responsibility starts with addressing past harms and extends to actively providing benefits for the Native communities for whom the data relate and have cultural value [E3]. **[A3] Authority to control** governance of data **[R1] Responsibility** for positive relationships **[E3] Ethics** for future use

THEME 3: RELATIONAL ACCOUNTABILITY

The need for relational accountability was expressed as an essential aspect of all three of the cases, as summarized at the end of this section. Here we discuss the workshop engagement

around Case 3 that surfaced several important dimensions of relational accountability, stimulated by the scholar's presentation of a video recording of a Native ceremony.

Case 3 is underpinned by research conducted many years ago by a Native researcher from the community who is understood to have enacted relational accountability as they collaborated with a non-Native scholar to document ceremonial activities. Decades later, after the data, recordings, artifacts, and other research products were disseminated and the rich context was diluted, the non-Native Case 3 scholar was enlisted by the community to assist in reclaiming their physical and intellectual property. The case shows the consistent agency of this specific tribal community. Their use of archival materials asserts and reaffirms their rights to the data originating from their village, and they are reintroducing the data to the community via local projects. At the time of data collection in the late 19th century, the tribe negotiated the terms of their engagement with the non-Native researcher, and the tribe remains engaged with deliberate and forthright negotiations about their cultural knowledge to this day.

The excerpt below represents an exchange from the perspective of a Native librarian and a non-Native scholar on showing ceremonial content at the workshop without a 'content warning' or cultural acknowledgement of the type of ceremony.

> Indigenous Services Librarian:
>
> Okay, so I have a question as a [tribal member from a different tribe]. I'm speaking especially about stories or ceremonies that we share in our communities, and I know we have some colleagues that have kin ties to communities. I'm just thinking about how you work with open access folks that might have items that other [tribal] communities have control of and have protocols… even in my own community… stories that we may want to share and not share…
>
> Non-Native Scholar and Curator of Northwest Art
>
> So, in talking with those initiated [ceremonial group] who (…) People always say 'well, we're not going to tell everyone,' 'This is how it's done, right, this is how I do [tribal ceremony].'
>
> This is a narrow construct: they're not all the same, right? I, [as a non-Native researcher], don't come from the stance of 'this is how you [Native communities] deal with this.' Now, in the actual navigation [in writing my] book, things will all have titles and warnings of things that might be uncomfortable [for some]. So, I think that's maybe what you were asking, I can't speak for all the [Native] coauthors. We'll have to have some conversations about that.

Content warnings are not a common consideration in many scholarly settings, and they are not standard practice in RDS. For this case, it is important to note that the particular community represented in the video does not object to the viewing of their ceremonies, and they actively assert control of their own distribution of their ceremonial imagery. However, valid arguments have been made by Native communities for limiting viewership of their ceremonial images (Anderson 2005), since Indigenous viewers from different communities who hold similar ceremonial privileges may be uncomfortable with imagery deemed public by another tribal group.

The response to the video presentation of the historical ceremony demonstrates the complicated ethical considerations in handling historic materials collected using the standards of the time. More importantly, it shows the challenges associated with retaining relational accountability across a long period of time. While the historic recordings may be a point of sensitivity for individual tribal members, they were produced for the purpose of documenting dances, songs, and visual culture from their village for future use by their family, clan, and community members. It is noteworthy that while this community had direct control over which data were being collected about them, most communities have had very little if any control over data collected. It is far more typical for Native communities to have experienced extractive treatment by non-Native researchers and later be confronted with their materials being made widely available online and in print formats. The reluctance of Native communities to accept that their cultural intellectual property is up for grabs simply 'because it's already out there' incorrectly assumes a lack of agency by Indigenous communities (Belarde-Lewis 2011; Anderson 2009).

Case 3 sparked consideration of the need for extended accountability. A Native person in the workshop flagged how the images of ceremonial dances and songs may inadvertently harm the well-being of a viewer from the home community or from an adjacent community. The point was well taken by the scholar, who noted the need for further conversation with their community-based co-authors. The scholar was resolute in their responsibility to the community, confirming that it is not their intention or role to determine the best course of action for the community's cultural property, just as the community research partners decline to be prescriptive with others in their ceremonial community.

As intended by the CARE principles, collective benefit needs to be ensured in the use of the data, with the data contributing to the rights and well-being of Indigenous people, now and into the future. Those who work with Indigenous data have the responsibility to be accountable to the originating communities, but the concept of collective benefit may have variable parameters. Considerable effort and cultural competence are necessary for researchers and RDS professionals to work with culturally sensitive subject matter in ways that respect the existing cultural protocols within a specific originating community. It becomes much more complicated when, for example, previously unknown and divergent viewing expectations or protocols emerge. Determining when and how restrictions on viewership and access are enacted needs to be defined by the Indigenous peoples from whom the data originate, while also accounting for broader audience sensitivities.

Case 3 clearly demonstrated the need for a diversity of Native voices in consultation for decisions on data representation and management. Ethical processes must 'include representation from relevant Indigenous communities' (Research Data Alliance 2019), and RDS practice need to develop robust techniques for determining how far to reach out in identifying potentially relevant Indigenous communities.

Relational Accountability: Key Considerations and CARE Sub-principles
• Data with a long history of native and non-native associations will have complex and potentially divergent dimensions of relational accountability [C1, A1, R1]. • Documented tribal ceremonies and other expressions of cultural knowledge may be deemed highly sensitive by communities beyond the originating tribe [C1, A1, R1]. • Restoring and sustaining relational accountability is a critical first step in rebuilding institutional trust [C1, R1, E1]. • Ownership is only one of many potentially divergent relations and perspectives in the networks of relational accountability that need to be maintained through the lifecycle of data stewardship [C1, E1, E3]. **[C1] Collective benefit** for inclusive development and innovation **[A1] Authority to control** recognizing rights and interests **[R1] Responsibility** for positive relationships **[E1; E3] Ethics** for minimizing harm and maximizing benefit; for future use

DISCUSSION

The results above represent problems deeply embedded in our systems and institutions that now need to be addressed directly, as we develop CARE-based data systems and services. With our objectives tightly scoped to research *data* and Indigenous scholarly practices, we find it significant that our case studies and engagement activities continually raise issues of relationality and complexity in terms of traditional *knowledge*. To us, this indicates the need to recalibrate our lens to better relate Indigenous data to knowledge, as we work to extend accountability for relationships to RDS for Indigenous scholarship.

EXTENDING RELATIONAL ACCOUNTABILITY

Under the CARE Principles, those contributing to the data ecosystem are expected to minimize harm and maximize collective benefit and control for Indigenous people through responsible and ethical data management. Benefits range from improved governance and citizen engagement

to Indigenous community wellbeing and innovation. As suggested by our case studies, many benefits are dependent on continual attention to relationality. Exchanges from Theme 3 show how the wellbeing of one community may involve data sharing that can negatively impact another community. The management of Indigenous data cannot assume pan-Indigenous agreement across communities or even within communities. As seen in Theme 1, ownership of ecological knowledge has significant relational aspects, and the interests of tribal government may not outweigh the values of individual culture bearers or families.

Historically, the authority to control Indigenous data often sat with non-Indigenous researchers and institutions that lacked relationships with community members who were thus not able to provide free, prior, and informed consent in the collection and management of their knowledge. Creating trusted data governance policies that recognize the authority of Indigenous peoples, families, and governing bodies will at times require institutions to relinquish control of some data. If data are to remain in academic institutions or data repositories outside of Indigenous control, these institutions have the responsibility to work with Indigenous communities in an open and respectful manner. However, when collective institutional distrust has built up over many decades, rebuilding relationships will take time and require incremental steps to sincerely address and acknowledge past wrongs.

Relational accountability is a commitment central to Indigenous research methodologies. At its root, accountability not only applies to Native peoples, but also to the land, ceremonies, stories, ancestors, and future generations of any Native community. When relational accountability has been intentionally developed by researchers to ensure precision in the meaning of their data and its context, stewardship practices need to retain that relationality over time, through techniques such as contextual integrity profiling (Palmer et al. 2022). Additionally, the chain of responsibility for relational accountability needs to extend to the institutional curators, librarians, archivists, and repository experts caring for the data. At minimum, honest conversations about the complexity and time required to implement CARE will help RDS professionals remain 'people and purpose-oriented' in managing expectations of both users and institutions.

RELATIONAL POSITIONALITY OF SCHOLARS AND STEWARDS

The scholar cases above represent three multi-faceted relational accountability positions: a Native scholar navigating longstanding historical distrust of institutions by the tribal nations whose language resources they are helping to revitalize; a Native scholar collaborating with members of their own community as culture and knowledge bearers; and a non-Native scholar invited to conduct restorative research on behalf of a tribal nation. Each of the scholars is highly aware of their positionality, how it affords them a complex understanding of the data they are generating, and the heightening of responsibility when they are researchers within their home community.

Positionality does not sit only with the researcher in relation to their data, however. Like relational accountability, positionality also extends to RDS professionals and collecting institutions as caretakers of culture, knowledge, and relational accountability. Positioning is implicated in the development and maintenance of the relationships that build the trust essential in any genuine and successful implementation of the CARE principles. Neutrality, considered by many as a core value of library professional practice, is inappropriate, misleading, and stands in contrast to the deliberate and careful process of relationship building central to Indigenous research methodologies.

Our analysis clearly highlighted the need for collaborative positioning among scholars, Indigenous communities, and collecting institutions in the development of customized protocols for long-term care of qualitative cultural data. That base needs to be built in conjunction with the established protocols for Indigenous materials in archives, where the problems and efforts to decolonize stewardship practices are well understood. Translation into best practices for research data will have the challenge of representing the relationality inherent in Indigenous qualitative research methods and the sensitivities and distinctiveness of Indigenous experiences and ways of knowing.

In the next phase of DSISS, we are extending the range of case studies of both Native and non-Native scholars of Indigenous language and culture, whose data are currently held in a

research library as a condition of their funding. These cases will offer a better understanding of how implementing CARE can improve stewardship of the abundance of Indigenous data currently held in many archives and special collections. They will also provide further insight into the positionality of non-Native scholars who practice ethical Indigenous research. The larger set of cases will inform assessment and enhancement of metadata for the representation of extended relational accountability across scholars and stewards. Local Context notices offer an established starting point for visual descriptive indicators of significant Indigenous elements, but further work is needed on representing layers of relations and responsibility over time. Our contextual integrity profiling approach is a foothold that will be further aligned with emergent work on metadata standards to preserve the specificity, cultural context, protection, and ownership of Indigenous peoples' data (Taitingfong et al. 2023). Examining current stewardship conditions should also suggest paths forward in building or repairing community trust through Indigenous data literacy instruction that, for example, prioritizes trust building and reparation as a foundational area of expertise.

CONCLUSION

Our case studies demonstrate how the sub-principles of CARE function collectively to uphold relational accountability in the ethical and respectful stewardship of Indigenous data. The highly interdependent elements of CARE cannot be easily separated, indicating the holistic nature of caring for Indigenous data. Applying data stewardship practices in alignment with CARE will require a refined understanding of these interrelations and the potential tensions among the interests of scholars, Indigenous communities, and institutions. Repositories, libraries, and archives will need to confront the colonial legacy of extractive research practices that has caused the distrust of institutions by some Indigenous communities. We propose two calls to action: the first is for institutions providing research data services and the second is for Indigenous researchers.

For institutions providing RDS for Indigenous scholars and their data, we encourage honest and open dialog about the enduring legacy of colonialism, particularly as it relates to the work of information and RDS professionals. Librarians and archivists need to engage in candid assessments of the sources and reasons for the Indigenous information holdings in their care. They need to not only understand, but also acknowledge, the extractive research practices that have resulted in vast amounts of data now held in all manner of information institutions outside of Native control and authority. Identifying and naming mistrust, and the many causes for it, is a required step in building respectful relationships between tribal communities and information institutions and will contribute greatly toward implementing policy and practices with collective benefit. Transparency and acknowledgement are necessary in repairing mistrust. For example, the Society of American Archivists (2018) acknowledged that they missed the opportunity to correct past harms, publishing a formal apology for not endorsing the *Protocols for Native American Archival Materials* (First Archivists Circle 2007). Their acknowledgment may not be adequate amends, but it is an important step that shows a willingness to evolve as a field. Establishing a new bedrock of trust will need to start with recognition of past misconduct and harms while concurrently reinforcing the development of relationships with tribes and communities represented in an institution's collections.

The second call to action is for Indigenous researchers. We encourage their use of libraries, archives, and repositories for protecting and building awareness of their data and other research products. They will benefit from consulting with librarians, archivists, and data curators throughout the data lifecycle and by staying aware of efforts to support Indigenous scholarship currently underway. Several platforms are developing customized environments and tools to support the data needs of Indigenous researchers, including the Indigenous Data and Repositories Consortium, the Qualitative Data Repository (through their partnership with Dataverse and DSISS), and large-scale efforts such as the NIH supported RADx Tribal Data Repository. The Plateau Peoples' Web Portal, developed at Washington State University (WSU), is a longstanding example of collaborative curation with tribes to determine appropriate access to their cultural heritage and knowledge. WSU has also established a university policy on tribal engagement, consultation, and consent that guides joint research activities and specifies factors for mutual agreement related to data collection and stewardship. These and other

initiatives are evolving collaborative curation approaches that engage Indigenous scholars in meaningful dialog to help increase collective benefits for Indigenous communities.

At the same time, we compassionately and humbly remind Indigenous scholars that we have never relied on any Western mechanisms to be the 'keeper' of knowledge for Indigenous communities. While institutions can be another place to house our language and cultural data, our systems of knowledge live within Native peoples and our relationships to land, language, ceremonies, and kin. In recognizing this, another question emerges: Can our stewarding institutions be kin? Perhaps they can move closer to an esteemed status within Indigenous networks, if Indigenous scholars readily collaborate with institutions on the platforms and tools developed, and as those institutions also make significant investments in language and culture revitalization and reclamation efforts.

Relationships take work, and there will be mistakes. Learning about the context behind the relationships, collaborations, and bonds between scholars and Indigenous communities are crucial steps. Missteps will occur, but progress can be made with honest acknowledgement of past institutional misbehavior, particularly by large and influential institutions. Indigenous scholars and tribal partners will be watching. They will see how genuine apologies are enacted and determine how to make room for acceptance. Trust can be built when Indigenous researchers and community members observe and experience ethical stewardship. We are encouraged by sincere efforts by information and data scientists, librarians, archivists, and repository developers to carefully implement the CARE Principles and to center relationality.

Throughout our case studies and workshop engagement, we witnessed the complexity of putting the tenets of the CARE Principles into practice; the concerns central to CARE were present in every case of current research, as they will be in every legacy collection of Indigenous data. As more institutions work in collaboration with Indigenous scholars and communities to responsibly enact the CARE Principles, a feasible and realistic path for others to follow will become clearer, one that fully accounts for multiple ethical expectations and genuinely generates collective benefits.

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COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

This paper was collaboratively developed. Co-PIs Belarde-Lewis (Zuni/Tlingit), Palmer, and Littletree (Navajo/Eastern Shoshone) are the primary co-authors. The three student researchers made significant contributions. Belarde-Lewis led data analysis and writing of the results section with support from Iisaaksiichaa Ross Braine (Apsalooké), the PhD research assistant who was also responsible for the IRB process, data transcription, initial coding, and engagement with participating scholars on use and interpretation of excerpts. Palmer and Littletree had primary responsibility for analysis and writing of content related to their areas of expertise: Palmer on the project background and context, data practices research methods and analysis, and research library and repository service applications; Littletree on Indigenous

librarianship and systems of Indigenous knowledge. As graduate research assistants, Kaitlin Srader (Navajo) and Nestor Guerrero contributed to literature reviews, data management and coding, drafting content for selected sections, editing and revision, bibliographic verification, and quality control.

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