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“Credit where credit is due”: Authorship and Attribution in Algonquian Language Digital Resources

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> *La fonction auteur est donc caractéristique du mode d'existence, de circulation et de fonctionnement de certains discours à l'intérieur d'une société.* — Foucault, *Qu'est ce-qu'un auteur?*

1. Introduction

We begin by positioning ourselves and our work in the context of this paper. We are all non-Indigenous academics working at Canadian universities. Heather Bliss, Inge Genee, and Marie-Odile Junker are linguists who specialize in Canadian Indigenous languages of the Algonquian family. Our work attempts to combine conventional Western linguistic methods and theories of language description and analysis with feminist and Participatory Action Research methods (Chevalier and Buckles; Genee and Junker; Junker) to carry out community-based work (Czaykowska-Higgins; Rice). We employ collaborative applied and Indigenous methods and theories with the goal to support communities' efforts to document, stabilize, maintain, revitalize and reclaim their ancestral languages and transmit them to the next generations. Daniel Paul O'Donnell is a researcher within the Digital Humanities and Scholarly Communication. His work involves understanding and mobilizing new approaches to Scholarly Communication in the internet age, particularly as these involve cultural or disciplinary differences and the culture of research (e.g. Moore, Neylon, et al.; Tennant, Dugan, et al.; Bordalejo, O'Donnell, et al.; O'Donnell, Bordalejo, et al.).

In this paper we draw examples from our work in support of the Atikamekw, Blackfoot, East Cree, and Innu languages. The central problem we address is how to properly and appropriately credit the contributions of everyone involved in this work.

The aim of our projects is to build and maintain online "living" resources for Algonquian languages, using a common digital infrastructure, in ongoing partnership with speakers, learners, and communities. The resources we build and maintain include digital dictionaries (see Junker, MacKenzie, et al., "Algonquian Dictionaries Project"); terminology databases, online interactive grammars; lessons and spelling guides; verb conjugators; typing tools; text and oral stories databases that include a variety of genres and themes told by numerous different storytellers, and multimedia resources (sound files, photographs, videos). A spin-off project is the Linguistic Atlas (Junker, MacKenzie, et al., "Algonquian Linguistic Atlas"), whose goal is to promote mutual inspiration and sharing of resources across languages of the same family.

A large number of individuals have contributed to these projects over the last 20 years. Contributors include Indigenous and non-Indigenous individuals: Elders, academics, students, research assistants, staff, volunteers, teachers, school board administrators, community members. Some are involved for a very short time, as short even as just one recording session or consultation; others have been involved from the beginning and are still involved. Contributions vary from project development, web design,

and funding acquisition to audio and video recording, transcription, translation, analysis, media editing, archiving, and database management, and also include such harder-to-describe aspects as spiritual guidance, advice on cultural protocols, encouragement, and general feedback. As the projects grew and expanded, we needed better ways to properly attribute and acknowledge all these different roles. Film credits were an early informal model. What is clear is that the term "author" does not correctly capture anyone's involvement, no matter how big or small.

There is now a substantial literature that discusses Indigenous notions of intellectual property and ownership, particularly in relation to the often oral nature of Indigenous cultural practice (Bastien and Kremer 128; Battiste and Youngblood Henderson). There is also a large body of scholarship on the problems for conventional notions of authorship (including attribution, copyright and intellectual property rights) inherent in the digital age (e.g. August and Rodman; Velagic and Hasenay; O'Donnell) as well as a growing body of work that points to the potential benefits that come from undermining this notion(Fitzpatrick; Friedlander; Ng). There is much less work that explicitly addresses the effects of the digital age on (the treatment of) Indigenous cultural and linguistic heritage. Some exceptions include (Adelson and Olding; Brown; Moahi; Tuhiwai Smith).

Our goal in this paper is to bring digital and Indigenous approaches to attribution, copyright, and intellectual property rights to bear on each other as they both challenge conventional Western interpretations of authorship, and to show how we are attempting to navigate the issues from both perspectives in our web resources for Algonquian languages. By exploring some approaches to credit and attribution in the digital age proposed to address an in-some-ways similar authorship crisis in the natural sciences, we hope to show how we can move beyond colonial and print-based notions of authorship to a more appropriate model of attribution and acknowledgement in work with Indigenous communities that respects contributors, relationships among contributors, the materials they produce or transmit, and the environments and communities within which their knowledge is located and generated. We argue that this model is more responsive to Indigenous notions of authorship, as well as to the Indigenist research paradigm more broadly (Wilson, "Guest Editorial"; Wilson, *Research Is Ceremony*; Tuhiwai Smith). We also demonstrate some of the ways in which we implement this on our web sites and in our work in general.

2. Conventional Western Authorship and its Discontents

2.1 What is an Author?

Conventional Western conceptions of authorship revolve around three notions: attribution, intellectual property rights (IPR), and copyright. Discussions of these usually start with a reference to Foucault's 1969 lecture *Qu'est-ce qu'un auteur*, "What is an author?" (Foucault, "Qu'est ce-qu'un auteur?"; "What Is an Author?"), in which he offers an account of the history and nature of the idea of "an author" that,

despite subsequent modification and refinement by others, remains fundamental to our understanding of the post medieval, Western "author" (Chartier 28).

Core to Foucault's argument is the degree to which, he argues, modern understanding of literary or scholarly "works" is tied to the economic and technical processes by which such works are produced and consumed (Biagioli and Galison, "Introduction"). In particular, he argues, post-Enlightenment understanding of "books or texts with authors" can be characterised by four defining features, each of which belongs to one or more economic, intellectual, and psychological realms:

1. They are "objects of appropriation" (Foucault, "What Is an Author?" 8) by which he means subject to legal constraint both as property (i.e. via copyright or other forms of IP) and legal control (i.e. censorship and other forms of official disapprobation);
2. They are "totally dominated by the sovereignty of the author" (9) meaning that their definition requires an ability to be assigned to a specific creator (as opposed to traditionally anonymous works such as billboards or graffitti);
3. The "sovereign author" (9) is in turn a construct of audience projection — a principle of coherence and intention that audiences use to establish an understanding of the individual's purpose and method in composing both their individual works and oeuvre.
4. They are also understood as an idealised projection of the individual consciousness responsible for their composition: "it does not refer, purely and simply, to an actual individual insofar as it simultaneously gives rise to a variety of egos and to a series of subjective positions that individuals of any class may come to occupy" (11).

In addition to these, Foucault implies a fifth characteristic throughout his essay: that the actual act of "authorship"—that is to say the activity by which one becomes identified as an "author"—can be equated relatively simply with "composition": the application of creative energy by an individual or group to the organisation of actual words on the page or, in earlier periods, perhaps, the arrangement of words in lines of (oral) verse. The "author function" in Foucault's view is, in essence, a placeholder for the person or persons whom audiences know or assume were responsible for putting the words they are reading in the order in which they appear. But he appears to assume that the actual process by which these words are placed in order is itself relatively straightforward and theoretically uninteresting: authors, to Foucault, are canonised writers, and writers are the people who write texts. He does not appear to have countenanced any other relationship or ways of claiming authorial status.

The strength of Foucault's account is that it explains the economy of print authorship as it was practiced in twentieth-century Western Europe and North America. Although Foucault himself argued specifically that scientific authorship did not fit his model, his work has been used quite successfully by others to account for such practices in that domain as well (see especially the works collected in

Biagioli and Galison, *Scientific Authorship*). His "author function" provides an underlying theory to account for both capitalist intellectual property rules and statist attempts at censorship. It explains how (and which) individuals can be credited with or held accountable for the content of a given piece of writing and who should be censored or punished when it is judged to be offensive or plagiarised. It also identifies "owners" in the sense of "rights holders"—that is, the individuals who are allowed to determine what happens with a given "work," including who can copy or distribute it and under what circumstances, and who benefits from its transmission or sale.

As we shall see, however, Foucault's approach is much less useful when it comes to many post-print, Indigenous, and non-Western contexts. Its definition of "author" as, at least implicitly, "the person or persons who write the work" fails to account for the much broader patterns of participation and composition that have come to characterise writing in the digital age and have always characterised much Indigenous and other non-Western or non-conventional creativity. And its notion of "ownership" fails to reflect common Indigenous understanding of intellectual and textual ownership. If, as Foucault argues, "the function of an author is to characterize the existence, circulation, and operation of certain discourses within a society," then we need to recognise the degree to which this "function" is inadequate as a description of the way composition and discourse operates in a twenty-first century digital and modern Indigenous context. We need a different way to characterize its existence, circulation, and operation.

2.2 Challenges to Conventional Western Notions of Authorship from Science and the Digital Age

The need for a new model is clear even outside an Indigenous context. The rise of networked communication, near ubiquitous computation in the West, and, especially, the World Wide Web have changed many of the physical properties and economic and organisational models that govern the production of a "work." Mashup culture and the increasing use of technology in entertainment, research, advertising, and interpersonal communication are challenging Foucault's assumption of an unproblematic definition of "author" as "person who composes content" and "work" as "the result of that composition process."

This has been intensively studied with regard to the question of scientific authorship (Biagioli and Galison, *Scientific Authorship*) and, as we shall see, in ways that are useful for understanding authorship in an Indigenous context as well.

Scientific credit has been so well studied because it is such a crucial career good to most scientists: it is one of the main ways in which researchers distinguish themselves from others in their field, and what they use to claim promotion and financial rewards, honours, and social prestige.

But while scientists compete using "authorship" as an economic marker, the concept of scientific authorship itself has become, in the last fifty years or so, very unstable as the underlying work has evolved from a (largely) single investigator-author model to that of much larger and more specialised teams (for a summary see O'Donnell). While recent work has demonstrated the degree to which much early supposedly "single investigator" science nevertheless relied heavily on the contributions of non-credited others (Lee; Holmes; for an example from the Digital Humanities see Terras and Nyhan), it remains the case that authorship and scientific investigation were linked relatively closely in both theory and practice until the middle of the twentieth century: before World War II, most research was carried out by individuals or small teams, few if any of whom specialised in only one aspect of the project being described. Since the end of the Second World War, in contrast, this model has been largely replaced by an explicitly team-based model in which large groups of highly specialised investigators, occasionally numbering into the thousands (Castelvecchi), work together on projects of which only a few principal investigators may have a complete oversight (Wuchty, Jones, et al.). In such cases, an increasingly large and problematic gap has arisen between the traditional concept of the "investigator-author" and the fact that today's team-based science is rarely primarily produced by any single person—let alone the person responsible for writing the article reporting on the group's work.

A result of this is that definitions of scientific authorship have become increasingly legalistic and, in many cases, unwieldy (see, among many others, Biagioli; Bates, Anić, et al.; Matheson; Malički, Jerončić, et al.; Faggion; Macrina). In response to several scandals having to do with guest and ghost authorship in clinical research, for example, the International Council of Medical Journal Editors (ICMJE) developed a complex, multi-part definition of "author" that, amongst other things, excludes people who are *only* responsible for *writing* a scientific paper (i.e. technical writers on teams) and requires anybody who is credited with "authorship" to have had a say in both the design of the work being reported (a definition which often excludes crucial sub-specialisations, such as medical statisticians) and the drafting and approval of the final copy (something that can be impossible in massive teams such as are increasingly common in fields such as experimental physics):

> The ICMJE recommends that authorship be based on the following four criteria:
>
> • Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
>
> • Drafting the work or revising it critically for important intellectual content; AND
>
> • Final approval of the version to be published; AND
>
> • Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

> Contributors who meet fewer than all four of the above criteria for authorship should not be listed as authors, but they should be acknowledged. Examples of activities that alone (without other contributions) do not qualify a contributor for authorship are acquisition of funding; general supervision of a research group or general administrative support; and writing assistance, technical editing, language editing, and proofreading. Those whose contributions do not justify authorship may be acknowledged individually or together as a group under a single heading (e.g. "Clinical Investigators" or "Participating Investigators"), and their contributions should be specified (e.g., "served as scientific advisors," "critically reviewed the study proposal," "collected data," "provided and cared for study patients", "participated in writing or technical editing of the manuscript"). (International Committee of Medical Journal Editors)

Although often treated as a "gold standard" and adopted far outside of the particular circumstances in health research that led to its development, the ICMJE definition promotes a conception of scientific "authorship" that, while clearly indebted to Foucault's "author function," nevertheless fails to adequately recognise the essential contributions made by many participants in contemporary scientific and scholarly work. The idea of "acknowledgement" for such "less central" activities seems at first glance to represent a fair compromise; but this compromise fails to recognise both the essential economic and reputational difference inherent to the distinction between those appearing in the by-line (who receive career credit and value) and those appearing "under the fold" in the acknowledgements section (who receive little if any career value for their contribution), and the fact that many of these tasks are themselves essential to the science being reported. In many, perhaps most cases, the paper could not have been written without the intellectual contributions of people "acknowledged" rather than credited with authorship under this system (for discussion of how this affects one particular class of author, biostatisticians, see Wager; Parker and Berman). The problem with contemporary approaches to scientific authorship based on a historical understanding of "author" as "person who wrote the text," in other words, is that it privileges the thing we care least about in a scientific article—the name of the person who put the pen to paper or cursor to screen—and downplays the importance of the thing we care most about—the names of the people without whom the science reported on could not have been accomplished: who designed, carried out, and analysed the results of the work in question, whether or not they had a hand in determining the final words with which this work was reported. In literature, it is important who composed the words; in science, it is the people who did the work that these words describe who are the important participants. As team-based science has become the norm, our author-based mechanisms for assigning credit have failed to keep up.[1]

3. Indigenous Conceptions of Authorship

This gap between what is acknowledged and what is important in the authorship of "big science" has, despite important economic, political, institutional, and historical differences, strong practical parallels to the question of attribution in an Indigenous context as framed by traditional, settler-derived approaches to authorship. As Oguamanam argues, this is for three main reasons:

> First, the focus of traditional Western IPR system is far too narrow. As a market economic model of knowledge governance with an emphasis on the commercialization of creative endeavours, IPRs fail to accommodate the complex, holistic, cultural and spiritual essences of Indigenous creativity.
>
> Second, IPRs' bias toward the individual as "creator" does not reflect the communal nature of Indigenous creativity, where cultural knowledge and cultural expressions are produced and held collectively for the benefit of all.
>
> Third, the formal and prescriptive forms of IPRs common to Western systems, such as term limits on the length of copyright protection, and the protection of material or tangible expressions, are fundamentally incompatible with the intangible essence and spirituality that undergird Indigenous creativity.

Other authors likewise criticize conventional Western legal conceptions of authorship and copyright that are based on the notion that an author is an individual inventor who produces original creative works (Jaszi and Woodmansee; McCall; Thomas; Younging). Jaszi and Woodmansee argue that "this notion of authorship has functioned to marginalize or deny the work of many creative people: women, non-Europeans, artists working in traditional forms and genres, and individuals engaged in group or collaborative projects" (1), and they give several examples of the way in which it disposes of the cultural and scientific heritage of traditional and Indigenous communities. Appropriation of cultural, spiritual, and linguistic knowledge and products is seen in parallel with the appropriation of scientific and biological knowledge and products or the dispossession of land and land rights (Greaves; Paredes v; also in Battiste and Youngblood Henderson 11-12).

Battiste and Youngblood Henderson explain that "Indigenous peoples do not view their knowledge in terms of property at all—that is, something that has an owner and is used for the purpose of extracting economic benefits—but in terms of community and individual responsibilities. Their knowledge is incompatible with European property law [...]" (71). Term limits on copyright and IPR are likewise incompatible: "[i]n whatever way consent is given, it is always temporary and revocable; heritage can never be alienated, surrendered, or sold, except for conditional use. Sharing, therefore, creates a relationship between the givers and receivers of knowledge. The givers retain the authority

to ensure that knowledge is used properly, and the receivers continue to recognize and repay the gift" (71–72).

The disconnect between Western and Indigenous notions of "authorship" was nicely illustrated by a Blackfoot Elder, who, when asked if he wanted to be listed as a co-author on a joint presentation at an academic conference (Bliss, Breaker, et al.), reflected that he had never been an author before, in spite of being an accomplished and well-recognized storyteller in the community.

3.1 Indigenous IPR and the Ownership of Stories

The area of our language resources perhaps most sensitive to such "ownership" issues is the Oral Stories databases. The importance of sharing stories is often emphasized along with the need to respect proper protocol and transfer rights (Eli 92ff; see also Dabrusin and Standing Committee on Canadian Heritage 11-12).[2] Multiple renditions of the same story may have different permissions, suggesting that "ownership" of stories is dialogical and contextual. Once a version of a story is told, those who receive the story have permission to re-tell it. They then tend to credit their own sources ("this story was told to me by..."; for an example from the Blackfoot stories database, see Aahpiis (Hanks Eagle Head) and Red Old Man).

Sometimes collective ownership trumps individual rights. For example, the East Cree Oral Stories Database contains a lot of material recorded by anthropologists and linguists who had either left copies of their recordings with the Cree School Board (CSB) or with Cree individuals, or freely offered them from their own archives to the eastcree.org project in order to 'repay the gift' and make these accessible to the Cree people themselves. Everybody involved signed a "permission to use" their recordings for non-commercial, educational purposes. The sound files were edited and catalogued in the online database through a series of workshops with Cree educators who took part in designing these categories, including attribution ones, often based on Cree words and concepts (Junker and Luchian). The concern that arose from our CSB partner was that IP law would give individual Cree storytellers and their many descendants some individual rights over the collective rights of the Cree as people. The lawyers consulted by the CSB determined that collective ownership of the stories by Cree people and the CSB's mandate to support the transmission of the Cree language therefore overrode any individual rights over the stories presented in the database.

In Cree, the tagging of a recording of a story as belonging to a certain genre clarifies the cultural responsibilities attached to a piece. There is a major genre difference in most Algonquian languages between telling a story or news (*tipâchimû*) and telling a legend (*âtiyûhcheu*) (East Cree Southern words). The former requires clear attribution of the source. This is reflected throughout the narrative by the use of special verb forms (e.g. the Cree "relational form") or verbal markers indicating the source of the information relayed (called "evidentials"; see Drapeau; for Blackfoot see Bliss and Ritter;

Junker, Valentine, et al.). A Blackfoot Elder used the phrase "We didn't stand beside them" as a way to express that he was not an eyewitness to the story he was telling, and that therefore the story did not belong to him. It was this lack of "belonging" that made him reject all the English labels we suggested for his role, including not only "author," but also "translator," "interpreter," "orator," "speaker," "teller," "reteller," and "narrator."

The *âtiyûhkan* do not require such precautions, since they belong to common cultural knowledge, far away past, tradition. In such cases we would almost want to credit "tradition" or "shared cultural knowledge" as the "author," letting the words, grammar, discourse conventions. and categories of the languages themselves guide us in the attribution process.

Western publishing conventions sometimes force a specific individual to be named as "author" when this is clearly not appropriate. Publishers sometimes try to find ways around this. For instance, legends collected in Western Cree were published officially in 1995 by the University of Manitoba press with C. Douglas Ellis as "editor" and the first storyteller (Scott Simeon) in the book as "author" (see Ellis). However, he is not the only storyteller in this book, and the legends belong to an oral tradition (for some other examples of creative authorship attributions in story collections of the Algonquian Text Society, see University of Manitoba Press).

Another example of integrating "authorship" with the oral tradition can be seen in the Great Cree Storytellers CD series (e.g. Mark-Stewart). Junker developed a unique technique of involving the storyteller in the entire process of recording and editing, to ensure true oral authorship; she "produced and directed" eight CDs, featuring "storytellers" Job Kawapit and Florrie Mark-Stewart, who are the authors of their narration. Copyright rests with the Cree School Board.

Stories as language resources, and our oral story databases in particular, require us to resolve these issues around authorship and ownership of stories. But our web resources contain many other types of language content, including digital dictionaries; terminology databases; online interactive grammars and spelling guides; verb conjugators; typing tools; educational book catalogues, etc. Questions of attribution also extend to software and software development. There is sometimes reluctance towards "outsiders" for taking the language and transforming it into something that escapes its traditional local use and evolution. We examine questions around ownership of languages in the next section.

3.2 Indigenous IPR and Indigenous Languages

Because our web resources are concerned with Indigenous languages (including online dictionaries and language lessons) it is important to briefly discuss Indigenous thinking around ownership of ancestral languages. In Indigenous communities, language and other material and immaterial cultural and environmental knowledge (e.g. Soleri and Cleveland) are sometimes conceptualized as the jointly

held intellectual property of an entire community (Moahi). Language is generally seen as a strong identity marker (Chachai et al.). It embeds worldview and knowledge systems and cannot be seen as separate from it. This is also why the reclamation and stabilization of threatened Indigenous languages is seen as so important, because it implies the reclamation of the worldview embedded in them (Battiste and Youngblood Henderson, chap.4).

There is much variation amongst and within Indigenous communities in this regard. Examples of communities that regard their language as their communal IP include the Palawa Kani community in Tasmania (Robertson; Berk) and a Pueblo community in New Mexico (Debenport). In objecting to a Wikipedia page about their language, the Palawa Kani refer to the United Nations Declaration on the Rights of Indigenous People (UNDRIP; United Nations General Assembly) rather than national copyright laws, claiming that it supports Indigenous people having control over their own languages. The New Mexico Pueblo community is particularly concerned about the inappropriate spreading of ceremonial and religious language. Debenport attributes the tensions resulting from the introduction of print literacy to a local counter-rhetoric to the Western discourse of "universal property" (Hill), which holds that all languages are jointly owned by all humanity as sources of wisdom and knowledge that should benefit all human beings (for a glaring example of such thinking see van Driem).

On the other side of the language-as-IP spectrum is the case of the Dupaningan Agta in the Philippines, who appear to have no qualms at all in this respect and rebuffed all attempts to elicit opinions on which materials would or would not be appropriate to share or distribute (Robinson).

Our experiences with Algonquian communities fall somewhere in the middle of this continuum. Some anecdotes illustrate this. Junker remembers a young Cree student saying with some sadness in 2002 after making the Conversation CD later used as a basis for the Linguistic Atlas: "So does this mean that ANYONE could now learn East Cree even if they do not live with Cree people?" On the other hand, second-language speakers who gain excellent mastery of the language are often respected, admired and welcomed into the community.

Individual opinions within one community vary as well. For example, there are Blackfoot individuals who feel that the language should only be transmitted orally from person to person (and should not be written). On the other hand, there seems to be no special permission needed for outsiders to learn the language. Blackfoot language classes at the University of Lethbridge, University of Calgary, and local schools are accessible to students from any background. However, the same permissiveness does not apply to teaching. The idea of having non-Blackfoot instructors teach the Blackfoot language is generally frowned upon.

What does need to be protected from inappropriate harmful access by outsiders is mostly ceremonial and spiritual in nature. It is usually emphasized that this is not a rule against non-Indigenous or non-

Blackfoot people, but against anyone who does not have the right permissions and transfer rights.

4. Alternative Credit Systems

In searching for solutions, we explored two alternative approaches to attribution: the film credit system and the CASRAI Contributor Roles Taxonomy.

Most of our websites started with the film credit model, developed to acknowledge the very large number of different contributions that go into making a movie, as a way to credit many different contributor roles. However, a crucial difference between a film and our web resources is that a film, once released, is a finished product. Our web resources keep evolving; they are continuously built upon, modified, improved and updated, often by new contributors who build on each other's work over time (Kirschenbaum).

As described above, scientists have been dealing with attribution problems for a long time. Recently, an organization called the "Consortia Advancing Standards in Research Administration Information" (CASRAI) has proposed a Contributor Roles Taxonomy (CRediT) to account for the varying types of contributions that result in scientific publications (Consortia Advancing Standards in Research Administration Information; for a similar approach specifically to digital objects in Humanities research, see Borek, Dombrowski, et al.). This taxonomy explicitly does not deal with copyright, but only attribution, and is therefore particularly suitable for our purposes. The CASRAI website states that it sees itself as "[a] high-level classification of the diverse roles performed in the work leading to a published research output in the sciences. Its purpose [is] to provide transparency in contributions to scholarly published work, to enable improved systems of attribution, credit, and accountability"

This goes beyond the identification of traditional author roles:

> The classification includes, but is not limited to, traditional authorship roles. That is, these roles are not intended to define what constitutes authorship. Rather, the roles are intended to apply to all those who contribute to research that results in scholarly published works, and it is recommended that all tagged contributors be listed, whether they are formally listed as authors or named in acknowledgements.

As such, CRediT does not help us to decide whose name should appear in the list of authors or the byline, or whose name should appear in an acknowledgements section.

CRediT recognizes the following fourteen different contributor roles: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, software, supervision , validation, visualization, writing—original draft, and writing—review & editing (for a critique and suggestions for some refinements see Matarese and Shashok). It is possible

for one individual to function in multiple roles. The two roles involved with writing are probably closest to what humanists and social scientists who tend to work alone or in small groups would consider to constitute conventional authorship. Most of the specific roles described by CRediT are not applicable to our project, but the idea inspired us to think in a new way about the types of contributions represented in our project.

5. The Algonquian Language Digital Resources Credit System

The inherently unfinished nature of many digital projects (Kirschenbaum), including our own, allows us to be responsive to the changing needs and wishes of our contributors and changing conceptions around authorship, attribution, copyright, and intellectual property rights in communities. In this section, we give a few examples to show how we are currently handling attribution in our projects by using a continuously evolving set of contributor roles at the project and item level.[3] Because our work consists of a collection of related projects, each with their own history of collaborations, working relations, funding, and workflow, each project page has slightly different ways of handling attribution (and copyright). This may seem inconsistent at first glance, but it is the result of our prioritizing the wishes of the contributors of each project over perceived consistency. Wishes and preferences around attribution and acknowledgement vary between communities and individuals and continue to evolve. Nevertheless, we can make a broad distinction between macro-credits and micro-credits. This distinction requires us to rethink the nature and size of the "work" that needs attribution: rather than an entire website, an entire dictionary, or an entire story archive, the data point that needs attribution is often much smaller.[4] Macro-credits are usually given in a separate high level "Credit" tab or link and contain general contributor roles such as editor, director, web design, data processing, and funding. Micro-credits are usually attached to individual items (such as languages, stories, dictionary entries, audio files) and include more specific contributor roles such as speaker, storyteller, recording, sound editing, translation, transcription, and validation. Finally, some sites include "Contributor" pages in which contributors introduce themselves and their roles in their own words.

This fine-grained system is our attempt to work in the spirit of Tri-Council Policy Statement Chapter 9: Research Involving the First Nations, Inuit and Métis Peoples of Canada (TCPS2), which states that "[r]esearchers should seek advice from the community and the Elders regarding the appropriate recognition of the contribution of Elders and knowledge holders, which may include [...] acknowledging contributions by name or, as directed, withholding the Elder's identity in reports and publications" (Ells, Bartlett, et al. Section 9.15) and that

> [a]n Indigenous community, and those who participated in the research, should have the option to participate in deciding how collective or individual contributions to the research project will

> be acknowledged and credited in the dissemination of results (e.g., acknowledgement of co-authorship in research reports or at conferences and seminars). (Section 9.17)

In the next sections we describe how we handle attribution at multiple levels in the Algonquian Linguistic Atlas, the online dictionaries, and the oral stories databases.

5.1 Contributor Roles for the Algonquian Linguistic Atlas

The Algonquian Linguistic Atlas presents credit information at three levels:

1. A general credit page with macro-credit roles is accessed via a Credit tab at the bottom of the page in a scroll-down pop-up window. It lists all contributor roles followed by the names of individuals who fulfill(ed) those roles, with the relevant time period indicated in brackets (See Figure 1). The relevant roles are: project director; co-director; partner (institution); collaborator; technical director; assistant director; database entry, text and/or sound editing; programming; web and database design; interface design and programming; interface graphics; and funding (organization).

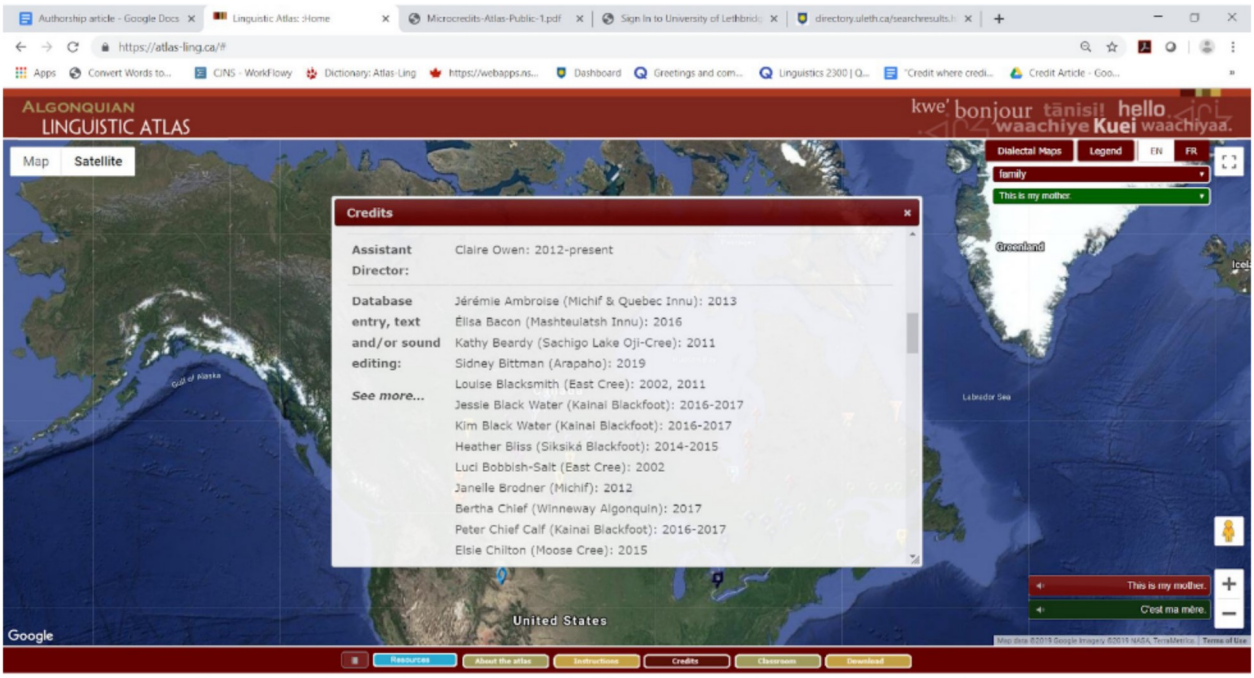

Figure 1: Linguistic Atlas Credit Window Excerpt (atlas-ling.ca)

2. Over time it became clear that we needed a more fine-grained record of all types of interventions to the data represented by the role called "Database Entry, Text and/or Sound Editing". We, therefore, now maintain a separate table of micro-credits organized by language/dialect, accessed by clicking on "See more..." in the "Credits" window shown in Figure 1 above. The credit roles are: speaker; recording; sound editing; provided text; database entry (See Figure 2).

Language/dialect	Speaker	Recording: who, when, where	Sound editing: who, when	Provided text: who, when	Database entry: who, when	Additional comments
Anishinaabemowin (Ojibwe) - Neyaashiinigmiing (aka Cape Croker)	Chastity Jenner-Keeshig	Rand Valentine, summer 2017, Thunder Bay	Claire Owen, June-Sept 2018	Chastity Jenner-Keeshig & Rand Valentine (2016-19?)	Claire Owen, Sept 2018 (waiting on text proofs to finalize)	*Needs to be verified before publication
(Anishinaabemowin) Nishnaabemwin (Ojibwe) - Walpole Island	Reta Sands	Rand Valentine, 22 July 2011, Thunder Bay	Claire Owen, summer 2013	Reta Sands, 2011	Claire Owen, summer 2013	Still missing some text
(Anishinaabemowin) Nishnaabemwin (Ojibwe) - Wikwemikong	Mary Ann Corbiere	Rand Valentine, spring 2013, Sudbury & 31 May 2015, Ottawa (re-recordings)	Claire Owen, summer 2013 & March 2016	Mary Ann Corbiere, 2013	Claire Owen, summer 2013 & March 2016	First recorded in 2013 but about half the audio later was missing/ corrupted. Re-recorded that half in 2015.

Figure 2: Linguistic Atlas Micro-credits Excerpt (June, 5 2019) (atlas-ling.ca)

3. For each individual sound file on the Atlas the name of the original speaker is given in a pop-up window that appears when clicking on the pin on the map representing the particular language or dialect (See Figure 3).

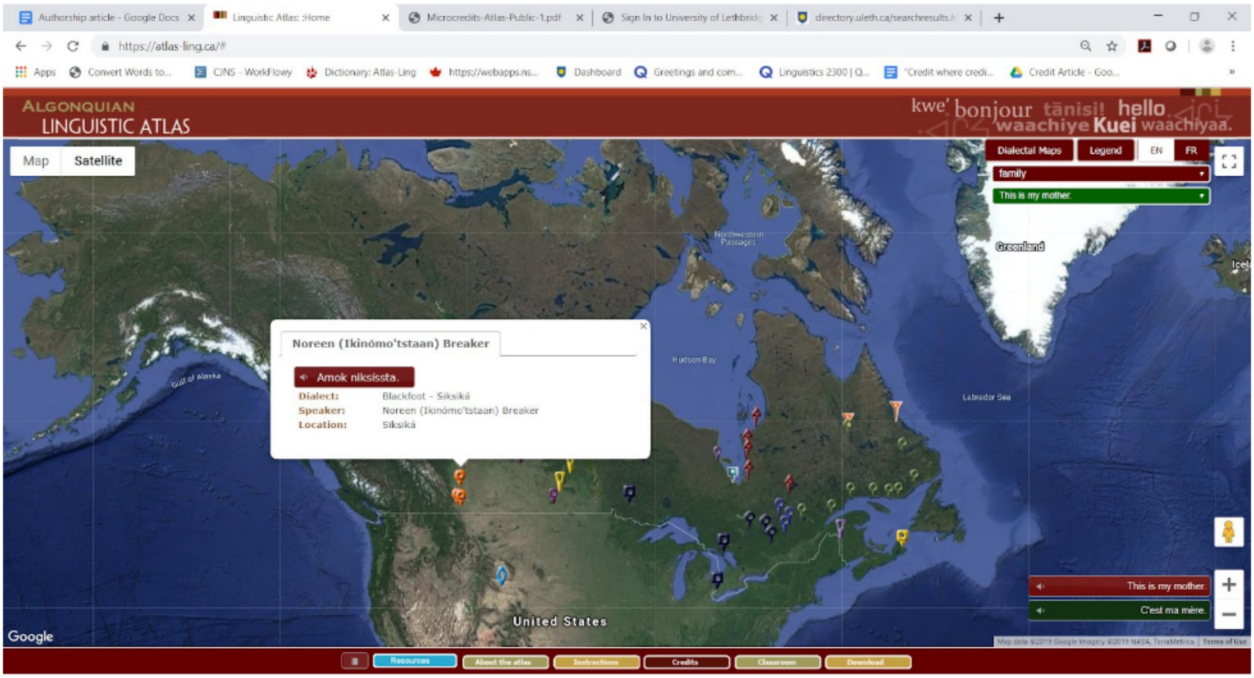

Figure 3: Individual Audio File with Speaker Micro-credit (atlas-ling.ca)

5.2 Contributor Roles for Online Dictionaries

The online dictionaries of the Algonquian dictionaries project (dictionaries.atlas-ling.ca) have individualized credit notices tailored to each specific project. For example, the East Cree online dictionary (dictionary.eastcree.org) features a "Credit" tab listing the following macro-roles with sub-roles (again with time periods indicated in brackets where relevant): editorial team (includes: editorial committee; English and French editors-in-chief; French translators); database (database and interface design; database programming; original shoebox/toolbox database set up); multimedia content (photography and illustrations; voices of; sound editing and database entry; sound recording); acknowledgements (Elders and resource people) (See Figure 4). Under "Multimedia Content" the user can access a separate page with multimedia credits which provides additional detailed credits for several sub-projects.

Editorial Team

Editorial Committee

Cree Northern	**Cree Southern**
Luci Bobbish-Salt (2004-2012)	Anna Blacksmith (2009-2012)
Alice Duff (2008-2012)	Patricia Diamond (2009-2012)
Elsie Duff (2004-2007)	Bill Jancewicz (2004)
Bill Jancewicz (2004)	Marie-Odile Junker (2004-present)
Marie-Odile Junker (2004-present)	Marguerite MacKenzie (2004-2012)
Marguerite MacKenzie (2004-2012)	Daisy Moar (2004-2007)
Linda Visitor (2012-present)	Ella Neeposh (2004)
	Ruth Salt (2004-2012)
	Pearl Weistche (2009-2012)

Figure 4: Excerpt of the Eastcree Online Dictionary Credits (dictionary.eastcree.org/words)

Several dictionaries include item-level micro-credits. In order not to overwhelm the page with metadata information we usually hide these credits behind a small clickable information button, as shown in Figures 5 and 6.

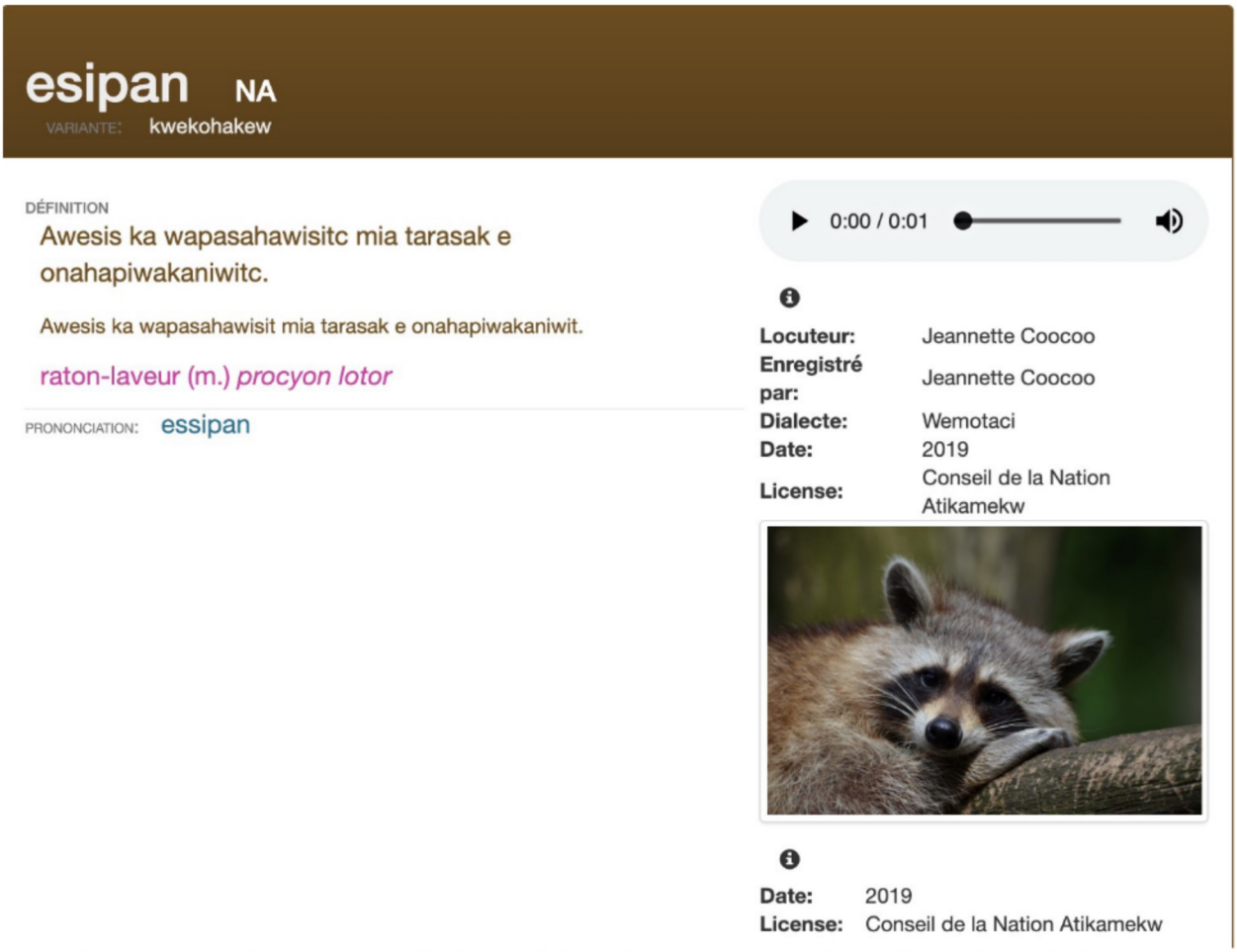

Figure 5: Attribution Details for Multimedia Content in the Atikamekw Dictionary (dictionary.atikamekw.atlas-ling.ca)

In the Blackfoot dictionary, clicking on an example reveals the linguistic analysis where available. Behind the clickable information button the following micro-credit metadata roles are given where relevant: source (=the speaker who provided the example); recording by; transcription by; translation by; morpheme glosses by; validation by; other processing by. If the example is accompanied by a multimedia file, the micro-credit metadata roles include: speaker; recorded by; photographer; submitted by; processed by; validated by; translation; transcription; language analysis. Fields left empty in any metadata form are not shown on the public interface.

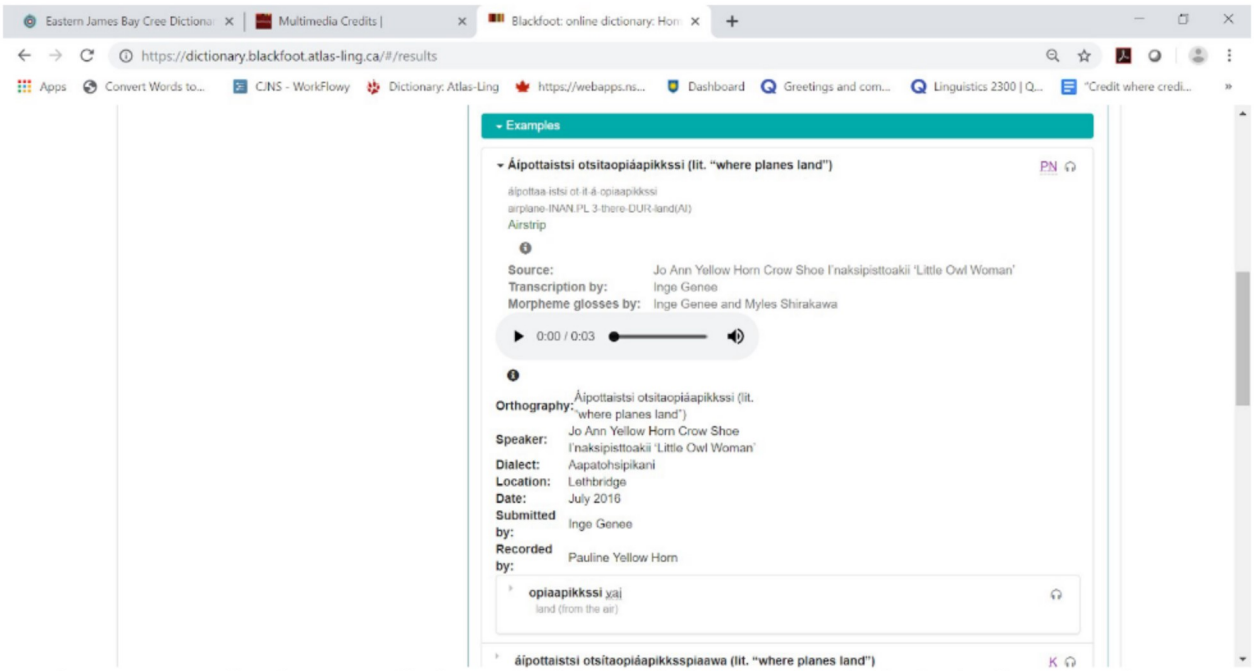

Figure 6: Attribution Details in a Blackfoot Dictionary Example including Morpheme Glossing and Audio File (dictionary.blackfoot.atlas-ling.ca)

5.3 Contributor Roles for Oral Stories Databases

Oral stories databases for Innu, East Cree, and Blackfoot contain individualized credits identifying the storyteller(s) or narrator(s), the collector, the sound editor, and the person who wrote a description of the story and tagged it into categories. Cree and Innu words and concepts were used in determining attribution categories when first designing these databases. The method was to start from Cree/Innu words and concepts describing what we were doing. These descriptions were then translated into English. Verb-based roles are preferred: for instance, narrated by (=the one who tells the story or the legend), collected by: (=the one who collects the story: i.e. records it or pays for it to be recorded),[5] written by: (=the one who writes a story or a legend), described by (= the person who creates the metadata and genre classification). Some examples are shown in Figures 7 and 8 below.

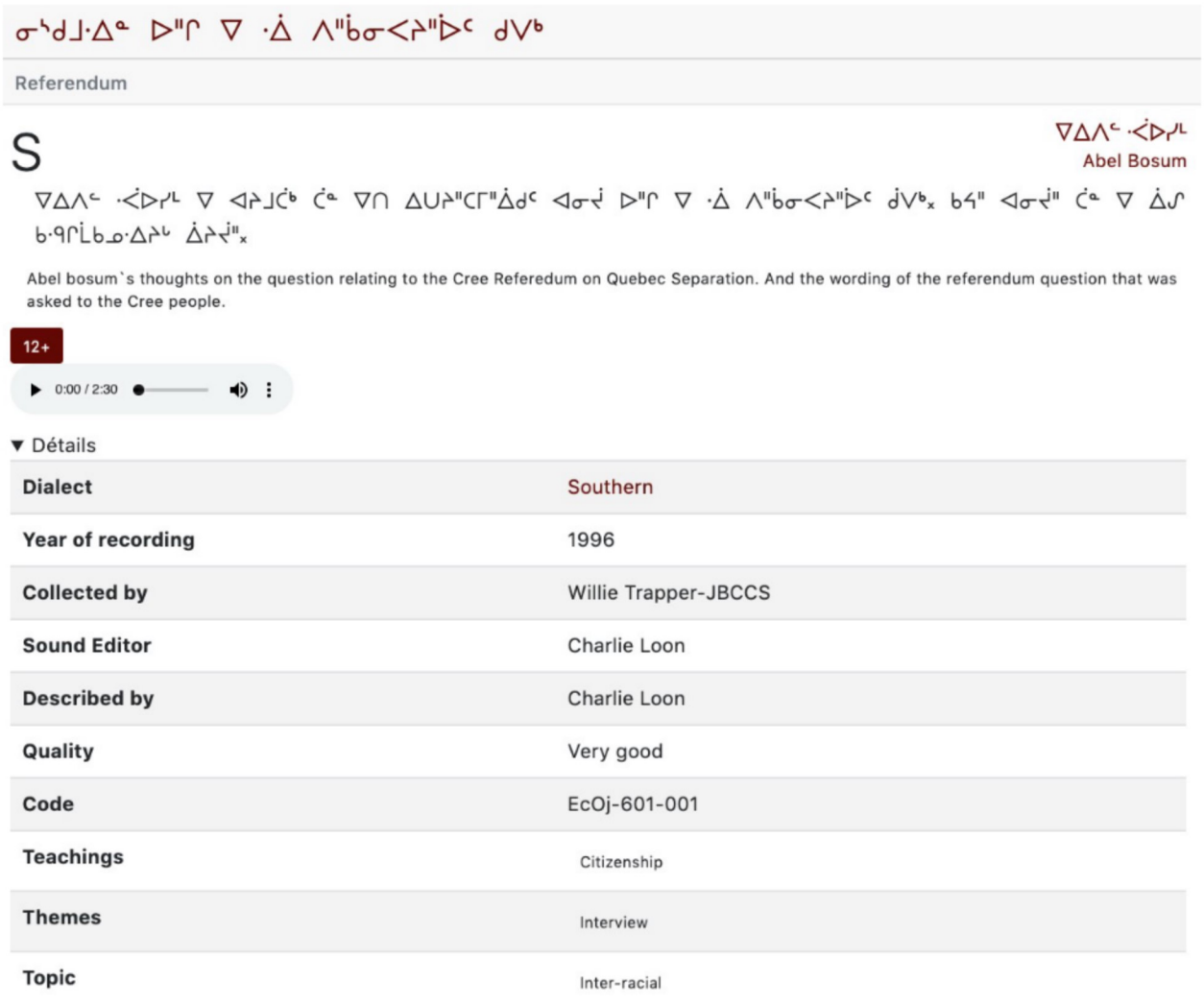

Figure 7: Attribution Details for an East Cree Story Told by Abel Bosum (stories.eastcree.org)

Figure 8: Attribution Details for an Innu Video Featuring Jérome Bellefleur (histoires.innu-aimun.ca)

5.4 Contributor Roles for Online Lessons: Updating Software, Overlapping Content Developments, and Funding Attribution Challenges

Sometimes the wishes of specific funders need to be observed in providing credits. Software obsolescence sometimes implies reprogramming and extensive testing, leading to improved functionalities and content. The East Cree and Innu online lessons platform is a good example of how we did attribution in this situation, both for software and content design, with multiple stakeholders (including funding sources). The original platform was started in 2005 for East Cree and expanded until 2010 with English interface and Cree syllabics, with different content providers. In 2009, we started adapting it to the Innu language with a French interface and Innu (roman) and kept expanding it until 2014 adding an English interface. Due to Heritage Canada funding requirements reports, Innu (French) new developments had to be organized in "levels" that reflected the year of the funding. In 2018, we obtained funding from NRC to reprogram the platform and reorganize it. We updated the

credit pages to reflect contributors, and especially funders, according to different time periods: three sections (2018-2019, 2008-2011, and 2006) for the Cree Lessons, and two for the Innu Lessons (2018-2019 and 2011-2014).[6]

6. Concluding Thoughts

As our projects continue to evolve, they will continue to attract new contributors and new (types of) contributions. This will require us to stay flexible with regard to new ways of attributing and acknowledging individuals, communities, and organisations involved in our work. The digital environment in which we work allows us to be nimble, and respond to evolving wishes and requirements in timely ways. We continue to look for appropriate models to build on, and especially for new thinking around these issues in the context of collaborations between Indigenous and non-Indigenous individuals, organisations, and communities.

In this paper we have limited ourselves to the attribution aspect of authorship, avoiding dealing in detail with matters of Intellectual Property Rights and Copyright. We hope to address these perhaps even more complex and thorny issues separately in future work. Especially the issue of Copyright is crucial, as it determines who will benefit economically. In this respect, we look forward to the revised Canadian Copyright Act ("Copyright Act"; CAUT; Oguamanam). During the current statutory review, which began in 2017 (see Ruimy and Standing Committee on Industry, Science and Technology), submissions were made regarding the protection of Indigenous ownership and copyright ("Indigenous Matters," 26-31) which include expressions of concern that closely mirror issues that continue to come up in our own work. Much important work in this area is already being done (see for instance Canadian Federation of Library Associations; "Intergovernmental Committee (IGC)"), but it will be important to have an updated Canadian legal framework within which to position ones practice. In the meantime, we suggest that in addition to a data management plan, funding agencies might encourage grant applicants to submit a copyright plan that details how funded projects will handle attribution, copyright, and intellectual property rights.

7. Contributor Roles and Acknowledgments

Inge Genee took the initiative for this paper, wrote the first draft, edited the other contributors' contributions, prepared the first submitted manuscript, and contributed to the final revision after peer review. She contributed content on Indigenous conceptions of authorship, the Blackfoot Language Resources website, the Blackfoot Digital Dictionary, and the Canadian ethics framework.

Heather Bliss contributed content on the Blackfoot Oral Stories Database, on Siksika Blackfoot collaborators' perspectives on ownership, authorship, and attribution, and on various other aspects of the paper and contributed to the final revision after peer review.

Marie-Odile Junker contributed content on the film credit model, on the Algonquian Linguistic Atlas, Algonquian Dictionaries, East Cree and Innu projects, and on her collaborators' perspective. She wrote the section and subsections on "The Algonquian Language Digital Resources Credit System", and contributed to the final revision after peer review.

Daniel Paul O'Donnell contributed content on Foucault's ideas around authorship, on the crisis in scientific authorship, on the CASRAI CRediT typology, prepared the bibliography, and contributed to the final revision after peer review.

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Works Cited

Aahpiis (Hanks Eagle Head), and Steve Red Old Man. "Kiaayo." *Blackfoot: Online Oral Stories*, 18 Sept. 2017, http://stories.blackfoot.atlas-ling.ca/#/story/The%20Bear/NTljNDI2MzktMTlkOC00YjM1LWE5YTItNGZkZTY4YzFhZDZh.

Abley, Mark. "Homage or Theft? How a Book Became a Hand Grenade in Haida Gwaii." *Review of A Story as Sharp as a Knife, by Robert Bringhurst. Times Literary Supplement*, vol. 5, 2000, pp. 4–5.

Adelson, Naomi, and Michelle Olding. "Narrating Aboriginality On-Line: Digital Storytelling, Identity and Healing." *The Journal of Community Informatics*, vol. 9, no. 2, Nov. 2012, http://ci-journal.net/index.php/ciej/article/view/740.

August, John, and Howard Rodman. "Authorship in the Digital Age." *Johnaugust.com*, 2007, https://johnaugust.com/2007/authorship-in-the-digital-age.

Bastien, Betty, and Jürgen W. Kremer. *Blackfoot Ways of Knowing: The Worldview of the Siksikaitsitapi*. University of Calgary Press, 2004, http://dspace.ucalgary.ca/bitstream/1880/49840/1/UofCPress_BlackfootWays_2004.pdf.

Bates, Tamara, Ante Anić, Matko Marusić, and Ana Marusić. "Authorship Criteria and Disclosure of Contributions: Comparison of 3 General Medical Journals with Different Author Contribution Forms." *JAMA: The Journal of the American Medical Association*, vol. 292, no. 1, July 2004, pp. 86–88, doi:10.1001/jama.292.1.86.

Battiste, Marie, and James Youngblood Henderson. *Protecting Indigenous Knowledge and Heritage: A Global Challenge*. University of British Columbia Press, 2000.

Bear Nicholas, Andrea. "Who Owns Indigenous Cultural and Intellectual Property?" *Policy Options*, 27 June 2017, http://policyoptions.irpp.org/magazines/june-2017/who-owns-indigenous-cultural-and-intellectual-property/.

Berk, Christopher D. "Palawa Kani and the Value of Language in Aboriginal Tasmania." *Oceania; a Journal Devoted to the Study of the Native Peoples of Australia, New Guinea, and the Islands of the Pacific*, vol. 87, no. 1, Mar. 2017, pp. 2–20, doi:10.1002/ocea.5148.

Biagioli, M. "The Instability of Authorship: Credit and Responsibility in Contemporary Biomedicine." *FASEB Journal: Official Publication of the Federation of American Societies for Experimental Biology*, vol. 12, no. 1, Jan. 1998, pp. 3-16, http://www.ncbi.nlm.nih.gov/pubmed/9438406.

Biagioli, Mario, and Peter Galison. "Introduction." *Scientific Authorship: Credit and Intellectual Property in Science*, edited by Mario Biagioli and Peter Galison, Routledge, 2002, pp. 1–9.

---. *Scientific Authorship: Credit and Intellectual Property in Science*. Routledge, 2002.

Bliss, Heather, Noreen Breaker, Fred Breaker, and Rachel Ermineskin. *Documenting Personal Stories in the Blackfoot Language: Perspectives from the Researcher and the Storyteller*. CUVIC 2016: Reconciliation, Innovation, and Transformation through Engagement, University of Victoria.

Bliss, Heather, and Elizabeth Ritter. "A Direct Evidential in Siksiká Blackfoot." *Proceedings of SULA 8*, edited by Jérémy C. Pasquereau, GSLA, 2015.

Bordalejo, Barbara, Daniel Paul O'Donnell, Elena Gonzalez, Roopika Risam, and Paul Spence. "Global Outlook: Digital Humanities: Promoting Digital Humanities Research Across Disciplines, Regions, and Cultures." *Digital Humanities 2014*, ADHO, 2014.

Borek, Luise, Quinn Dombrowski, Jody Perkins, Christof Schöch, and Others. *Methods-TaDiRAH-Taxonomy of Digital Research Activities in the Humanities*. DARIAH-DE and DiRTdirectory, 2014, http://tadirah.dariah.eu/vocab/index.php.

Bradley, Nicholas. "Remembering Offence: Robert Bringhurst and the Ethical Challenge of Cultural Appropriation." *University of Toronto Quarterly*, vol. 76, no. 3, University of Toronto Press, July 2007, pp. 890–912, doi:10.3138/utq.76.3.890.

---. "'We Who Have Traded Our Voices for Words': Performance, Poetry, and the Printed Word in Robert Bringhurst's Translations from Haida." *Essays on Canadian Writing*, no. 83, 2004, pp. 140–86.

Brown, Deidre. "Te Ahua Hiko: Digital Cultural Heritage and Indigenous Objects, People, and Environments." *Theorizing Digital Cultural Heritage: A Critical Discourse*, edited by Fiona Cameron and Sarah Kenderdine, MIT Press, 2007, pp. 77-92.

Canadian Federation of Library Associations. *Indigenous Knowledge in Canada's Copyright Act*. Position Statement, 2 May 2018.

Castelvecchi, Davide. "Physics Paper Sets Record with More than 5,000 Authors." *Nature News*, May 2015, doi:10.1038/nature.2015.17567.

CAUT. "Copyright Act Review an Opportunity to Press Feds on Aboriginal Issues." *CAUT*, Oct. 2016, https://www.caut.ca/bulletin/2016/10/copyright-act-review-opportunity-press-feds-aboriginal-issues.

Chachai, Véronique, Marie-Odile Junker, Katie Martinuzzi, Nicole Petiquay, and Cécile Planchon. "Anotc Nehirowimowin : La Langue Atikamekw Aujourd'hui: Attitudes et Identité." *Recherches Amerindiennes Au Quebec*, vol. 49, no. 1, 2019, pp. 3-13.

Chartier, Roger. "Foucault's Chiasmus." *Scientific Authorship: Credit and Intellectual Property in Science*, Psychology Press, 2003, pp. 13–31.

Chevalier, Jacques M., and Daniel J. Buckles. *Participatory Action Research : Theory and Methods for Engaged Inquiry*. Routledge, 2013, doi:10.4324/9780203107386.

Consortia Advancing Standards in Research Administration Information. "CRediT." *CASRAI*, 29 Jan. 2018, http://ref.casrai.org/CRediT.

"Copyright Act." *RSC*, C-42, 1985, https://laws-lois.justice.gc.ca/eng/acts/C-42/.

Crymble, Adam, Julia Flanders, Bethany Nowviskie, Ray Siemens, Stéfan Sinclair, and Melissa Terras. "Fair Cite: Towards a Fairer Culture of Citation in Academia." *Fair Cite*, 15 Feb. 2012, https://faircite.wordpress.com/.

Czaykowska-Higgins, Ewa. "Research Models, Community Engagement, and Linguistic Fieldwork: Reflections on Working within Canadian Indigenous Communities." *Language Documentation &*

Conservation, vol. 3, no. 1, University of Hawai'i Press, 2009, pp. 182–215, http://hdl.handle.net/10125/4423.

Dabrusin, Julie, and Standing Committee on Canadian Heritage. *Shifting Paradigms: Report of the Standing Committee on Canadian Heritage*. House of Commons of Canada, May 2019, https://www.ourcommons.ca/DocumentViewer/en/42-1/CHPC/report-19/.

Debenport, Erin. "The Potential Complexity of 'Universal Ownership': Cultural Property, Textual Circulation, and Linguistic Fieldwork." *Language & Communication*, vol. 30, no. 3, Elsevier, July 2010, pp. 204-10, doi:10.1016/j.langcom.2009.11.001.

Drapeau, Lynn. "Conjurors: The Use of Evidentials in Montagnais Secondhand Narratives." *Studies in Honour of H.C. Wolfart*, edited by J. D. Nicholas and A. C. Ogg, vol. 13, University of Manitoba Press, 1996, pp. 171–94.

Eli, Shelly Kay. *Piikanaikiiks : A Literary Analysis of Blackfoot Oral Stories and the Traditional Roles of Women in Leadership*. 2013. University of Lethbridge, M.A. Thesis. https://opus.uleth.ca/handle/10133/3572.

Ellis, C. Douglas, editor. *Âtalôhkâna Nêsta Tipâcimôwina: Cree Legends and Narratives from the West Coast of James Bay*. University of Manitoba Press, 1995.

Ells, Carolyn, Judith Bartlett, Michel Bergeron, Bill Bogart, Pierre Boulos, Marie-Pierre Bousquet, Peter Chow-White, Édith Deleury, Deborah Fels, Lawrence Felt, Conrad Fernandez, Joyce Helmer, Daphne Maurier, Gordon Robinson, Martin Schnechter, Veronica Stinson, Lehana Thabane, Brent Windwick, and Government of Canada, Interagency Advisory Panel on Research Ethics. *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. TCPS 2, Government of Canada, 2019, http://www.pre.ethics.gc.ca/eng/tcps2-eptc2_2018_chapter9-chapitre9.html.

Faggion, C. M. "Policies of Dental Journals for Reporting and Monitoring Authorship and Contributorship." *British Dental Journal*, vol. 211, no. 5, Sept. 2011, pp. 223–27, doi:10.1038/sj.bdj.2011.721.

Fish, Stanley. "No Bias, No Merit: The Case Against Blind Submission." *Peer-Review: A Critical Inquiry*, 2004, pp. 215–30.

Fitzpatrick, Kathleen. "The Digital Future of Authorship: Rethinking Originality." *Culture Machine*, vol. 12, 2011, https://www.culturemachine.net/index.php/cm/article/download/433/466.

Foucault, Michel. "Authorship: What Is an Author?" *Screening: Journal of the International Society of Neonatal Screening*, vol. 20, no. 1, Oxford University Press, Mar. 1979, pp. 13–34, doi:10.1093/screen/20.1.13.

---. "Qu'est-ce qu'un auteur ? Texte d'une conférence donnée en février 1969 à La Société Française de Philosophie." *Dits et écrits*, edited by Michel Foucault, Gallimard, 1994.

Friedlander, Larry. "Narrative Strategies in a Digital Age: Authorship and Authority." *Digital Storytelling, Mediatized Stories: Self-Representations in New Media*, Peter Lang Publishing, 2008, pp. 177–94.

Genee, Inge, and Marie-Odile Junker. *The Blackfoot Language Resources and Digital Dictionary Project: Creating Integrated Web Resources for Language Documentation and Revitalization*. University of Hawai'i Press, 2018, http://hdl.handle.net/10125/24770.

Greaves, Tom. *Intellectual Property Rights for Indigenous Peoples: A Sourcebook*. Society for Applied Anthropology Oklahoma City, 1994, http://www.es.ucsb.edu/faculty/cleveland/CV/94b.pdf.

Guiliano, Jennifer, and Carolyn Heitman. "Difficult Heritage and the Complexities of Indigenous Data." *Journal of Cultural Analytics*, Department of Languages, Literatures, and Cultures, 2019, p. 110-41, https://culturalanalytics.scholasticahq.com/article/11041.pdf.

Hill, Jane H. "'Expert Rhetorics' in Advocacy for Endangered Languages: Who Is Listening, and What Do They Hear?" *Journal of Linguistic Anthropology*, vol. 12, no. 2, Dec. 2002, pp. 119–33, doi:10.1525/jlin.2002.12.2.119.

Holmes, Richard. "The Royal Society's Lost Women Scientists." *The Guardian*, 21 Nov. 2010, http://www.theguardian.com/science/2010/nov/21/royal-society-lost-women-scientists.

"Intergovernmental Committee (IGC)." *WIPO: World Intellectual Property Organization*, https://www.wipo.int/tk/en/igc/, accessed 1 Aug. 2019.

International Committee of Medical Journal Editors. "Defining the Role of Authors and Contributors." *Recommendations*, 2013-2017, http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html.

Jaszi, Peter, and Martha Woodmansee. "Beyond 'Authorship': Refiguring Rights in Traditional Culture and Bioknowledge." *Scientific Authorship: Credit and Intellectual Property Rights in Science*, edited by Mario Biagioli and Peter Galison, Routledge, 2003, pp. 195-223. https://case.edu/affil/sce/authorship-spring2004/article.pdf.

Junker, Marie-Odile. "Participatory Action Research for Indigenous Linguistics in the Digital Age." *Insights from Practices in Community-Based Research: From Theory to Practice around the Globe*, vol. 319, Walter de Gruyter GmbH & Co KG, 2018, p. 164, http://www.marieodilejunker.ca/pdf/community-research-2017-JUNKER.pdf.

Junker, Marie-Odile, and Radu Luchian. "Developing Web Databases for Aboriginal Language Preservation." *Literary and Linguistic Computing*, vol. 22, no. 2, June 2007, pp. 187–206, doi:10.1093/llc/fql049.

Junker, Marie-Odile, Marguerite MacKenzie, Department of Cree Programs of the Cree School Board in Quebec, Gift of Language and Culture, Innu Education Authority, l'Institut Tshakapesh, Arok Wolvengrey, Rand Valentine, Nicole Rosen, Le Conseil de la Nation Atikamekw, Naskapi Development Corporation, Membertou First Nation (Mi'kmaw), John Nichols, Will Oxford, Inge Genee, Heather Bliss, Mushkegowuk Council, and Cree Health Board. "Algonquian Dictionaries Project." *Algonquian Linguistic Atlas*, 2005-2019, https://resources.atlas-ling.ca/.

---. "Algonquian Linguistic Atlas." *Algonquian Linguistic Atlas*, 2005-2019, https://www.atlas-ling.ca/.

Junker, Marie-Odile, Randolph Valentine, and Conor Quinn. "Evidentiality in Algonquian." *The Oxford Handbook of Evidentiality*, edited by Alexandra Y. Aikhenvald, Oxford University Press, 2018, doi:10.1093/oxfordhb/9780198759515.013.21.

Juola, Patrick. "Authorship Attribution and the Digital Humanities Curriculum." *Literary Education and Digital Learning: Methods and Technologies for Humanities Studies*, IGI Global, 2010, pp. 1-21, doi:10.4018/978-1-60566-932-8.ch001.

Kirschenbaum, Matthew G., editor. *Digital Humanities Quarterly*, vol. 3, no. 2, 2009, http://digitalhumanities.org/dhq/vol/3/2/index.html.

Lee, Jane J. "6 Women Scientists Who Were Snubbed Due to Sexism." *National Geographic*, May 2013, https://www.nationalgeographic.com/news/2013/5/130519-women-scientists-overlooked-dna-history-science/.

Leer, Jeff. "A Story as Sharp as a Knife: The Classic Haida Mythtellers and Their World. Robert Bringhurst." *International Journal of American Linguistics*, vol. 66, no. 4, The University of Chicago Press, Oct. 2000, pp. 565–78, doi:10.1086/466443.

Macrina, Francis L. "Teaching Authorship and Publication Practices in the Biomedical and Life Sciences." *Science and Engineering Ethics*, vol. 17, no. 2, June 2011, pp. 341–54, doi:10.1007/s11948-011-9275-1.

Malički, Mario, Ana Jerončić, Matko Marušić, and Ana Marušić. "Why Do You Think You Should Be the Author on This Manuscript? Analysis of Open-Ended Responses of Authors in a General Medical Journal." *BMC Medical Research Methodology*, vol. 12, Dec. 2012, p. 189, doi:10.1186/1471-2288-12-189.

Mark-Stewart, Florrie. *Great Cree Storytellers - Les Cris Racontent*. Eastcree.org, 2006, http://eastcree.org.

Matarese, Valerie, and Karen Shashok. "Transparent Attribution of Contributions to Research: Aligning Guidelines to Real-Life Practices." *Publications*, vol. 7, no. 2, Multidisciplinary Digital Publishing Institute, Apr. 2019, p. 24, doi:10.3390/publications7020024.

Matheson, Alastair. "How Industry Uses the ICMJE Guidelines to Manipulate Authorship--and How They Should Be Revised." *PLoS Medicine*, vol. 8, no. 8, Aug. 2011, doi:10.1371/journal.pmed.1001072.

McCall, Sophie. *First Person Plural: Aboriginal Storytelling and the Ethics of Collaborative Authorship*. University of British Columbia Press, 2011.

Moahi, Kgomotso H. "Copyright in the Digital Era and Some Implications for Indigenous Knowledge." *Indigenous Knowledge Systems and Intellectual Property in the Twenty-First Century*, edited by Isaac Mazonde and Thomas Pradip. African Books Collective, 2007, pp. 66–77.

Moore, S., C. Neylon, M. P. Eve, and D. P. O'Donnell. "'Excellence R Us': University Research and the Fetishisation of Excellence." *Palgrave*, nature.com, 2017, https://www.nature.com/articles/palcomms2016105.

Ng, Alina. "When Users Are Authors: Authorship in the Age of Digital Media." *Vanderbilt Journal of Entertainment and Technology Law*, vol. 12, HeinOnline, 2009, p. 853, http://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/vanep12&section=32.

Nyhan, Julianne, and Oliver Duke-Williams. "Joint and Multi-Authored Publication Patterns in the Digital Humanities." *Literary and Linguistic Computing*, vol. 29, no. 3, Sept. 2014, pp. 387–99, doi:10.1093/llc/fqu018.

O'Donnell, Daniel Paul. "First Thing We Do, Let's Kill All the Authors. On Subverting an Outmoded Tradition (Force2015 Talk)." *Daniel Paul O'Donnell*, 1 Mar. 2015, http://people.uleth.ca/~daniel.odonnell/Blog/first-thing-we-do-let-s-kill-all-the-authors-on-subverting-an-outmoded-tradition-force2015-talk.

O'Donnell, Daniel Paul, Barbara Bordalejo, Padmini Murray Ray, Rio Riande, and Elena González-Blanco. *Boundary Land: Diversity as a Defining Feature of the Digital Humanities*. Jagiellonian University & Pedagogical University (Cracovia), 2016, http://e-spacio.uned.es/fez/eserv/bibliuned:363-Egonzalez5/Gonzalez_Blanco_Elena_BoundaryDH.pdf.

Oguamanam, Chidi. "Rethinking Copyright for Indigenous Creative Works." *Policy Options*, 28 June 2017, http://policyoptions.irpp.org/magazines/june-2017/rethinking-copyright-indigenous-creative-

works/.

Paredes, J. Anthony. "Foreword." *Intellectual Property Rights for Indigenous Peoples: A Sourcebook*, edited by Tom Greaves, Society for Applied Anthropology, 1994, http://www.es.ucsb.edu/faculty/cleveland/CV/94b.pdf.

Parker, R. A., and N. G. Berman. "Criteria for Authorship for Statisticians in Medical Papers." *Statistics in Medicine*, vol. 17, no. 20, Oct. 1998, pp. 2289–99, https://www.ncbi.nlm.nih.gov/pubmed/9819828.

Rice, Keren. "The Linguist's Responsibilities to the Community of Speakers: Community-Based Research." *Language Documentation: Practice and Values*, 2010, pp. 25–36.

Robertson, Adi. "Can You Own a Language?" *The Verge*, 13 Aug. 2014, https://www.theverge.com/2014/8/13/5998273/who-owns-a-language-wikipedia-palawa-kani-raises-old-debate.

Robinson, Laura C. "Informed Consent Among Analog People in a Digital World." *Language & Communication*, vol. 30, no. 3, July 2010, pp. 186–91, doi:10.1016/j.langcom.2009.11.002.

Ruimy, Dan, and Standing Committee on Industry, Science and Technology. *Statutory Review of the Copyright Act*. House of Commons of Canada, June 2019, https://www.ourcommons.ca/DocumentViewer/en/42-1/INDU/report-16/page-5.

Soleri, Daniela, and David Cleveland. "Gifts from the Creator: Intellectual Property Rights and Folk Crop Varieties." *Intellectual Property Rights for Indigenous Peoples: A Sourcebook*, edited by Tom Greaves, Society of Applied Anthropology, 1994, pp. 21–40.

Tennant, Jonathan P., Jonathan M. Dugan, Daniel Graziotin, Damien C. Jacques, François Waldner, Daniel Mietchen, Yehia Elkhatib, Lauren B Collister, Christina K. Pikas, Tom Crick, Paola Masuzzo, Anthony Caravaggi, Devin R. Berg, Kyle E. Niemeyer, Tony Ross-Hellauer, Sara Mannheimer, Lillian Rigling, Daniel S. Katz, Bastian Greshake Tzovaras, Josmel Pacheco-Mendoza, Nazeefa Fatima, Marta Poblet, Marios Isaakidis, Dasapta Erwin Irawan, Sébastien Renaut, Christopher R. Madan, Lisa Matthias, Jesper Nørgaard Kjær, Daniel Paul O'Donnell, Cameron Neylon, Sarah Kearns, Manojkumar Selvaraju, and Julien Colomb. "A Multi-Disciplinary Perspective on Emergent and Future Innovations in Peer Review." *F1000Research*, vol. 6, July 2017, p. 1151, doi:10.12688/f1000research.12037.3.

Terras, Melissa, and Julianne Nyhan. "Father Busa's Female Punch Card Operatives." *Debates in the Digital Humanities 2016*, edited by Matthew K. Gold and Lauren F. Klein, University of Minnesota, 2016, https://dhdebates.gc.cuny.edu/read/untitled/section/1e57217b-f262-4f25-806b-4fcf1548beb5.

Thomas, Robina Anne. "Honouring the Oral Traditions of My Ancestors Through Storytelling." *Research as Resistance: Critical, Indigenous and Anti-Oppressive Approaches*, edited by Leslie Brown and Susan Strega, Canadian Scholars' Press, 2005, pp. 237–54.

Tuhiwai Smith, Linda. "Caminando Sobre Terreno Resbaladizo: La Investigación de Los Pueblos Nativos En La Era de La Incertidumbre." *Manual de Investigación Cualitativa*, Gedisa, 2012, pp. 190–230, https://dialnet.unirioja.es/servlet/articulo?codigo=3864825.

United Nations General Assembly. *United Nations Declaration on the Rights of Indigenous Peoples*. 13 Sept. 2007, https://undocs.org/A/RES/61/295.

University of Manitoba Press. "Publications of the Algonquian Text Society." *University of Manitoba Press*, 3 Jan. 2018, https://web.archive.org/web/20180103161800/https://uofmpress.ca/books/category/publications-of-the-algonquian-text-society.

van Driem, George. "Endangered Language Research and the Moral Depravity of Ethics Protocols." *Language Documentation and Conservation*, vol. 10, University of Hawai'i Press, 2016, pp. 243–52, http://hdl.handle.net/10125/24693.

Velagic, Zoran, and Damir Hasenay. "Understanding Textual Authorship in the Digital Environment: Lessons from Historical Perspectives." *Information Research: An International Electronic Journal*, vol. 18, no. 3, Sept. 2013, http://files.eric.ed.gov/fulltext/EJ1044679.pdf.

Wager, Elizabeth. "Authors, Ghosts, Damned Lies, and Statisticians." *PLoS Medicine*, vol. 4, no. 1, Jan. 2007, doi:10.1371/journal.pmed.0040034.

Wilson, Shawn. "Guest Editorial: What Is an Indigenist Research Paradigm?" *Canadian Journal of Native Education*, vol. 30, no. 2, University of Alberta, Faculty of Education, 2007, p. 193, http://search.proquest.com/openview/41af2d5a458dd2ed67ac950d8e1a3042/1?pq-origsite=gscholar&cbl=30037.

---. *Research Is Ceremony: Indigenous Research Methods*. Fernwood Publishing, 2008, https://epubs.scu.edu.au/gnibi_pubs/17/.

Wuchty, S., B. F. Jones, and B. Uzzi. "The Increasing Dominance of Teams in Production of Knowledge." *Science*, vol. 316, no. 5827, 2007, pp. 1036–39, doi:10.1126/science.1136099.

Younging, Gregory. *Elements of Indigenous Style: A Guide for Writing By and About Indigenous Peoples*. Brush Education, 2018.

Footnotes

1. Similar issues are beginning to arise in the Digital Humanities, with added complications arising from the often personal nature of analysis in Humanities disciplines. For discussions of multi authorship in the Digital Humanities, see Nyhan and Duke-Williams; Juola; and Crymble, Flanders, et al.; for a discussion of the importance of biography to some types of humanities research, see Fish. ↩

2. For some pertinent examples of clashes between Western and Indigenous interpretations of intellectual property regarding story collections see the discussions of the Bringhurst/Enrico appropriation controversy (Bradley, "We Who Have Traded"; Bradley, "Remembering Offence"; Abley; Leer) and the Maliseet/Szabo copyright conflict (Bear Nicholas). ↩

3. Space considerations prevent us from discussing ways in which we are attempting to include more consistent and complete attributions in our work published in print; see Genee and Junker; Chachai, Junker, et al. ↩

4. Guiliano and Heitman make a similar argument with regard to a buffalo hide with pictographs representing winter counts between 1800-1871, which they argue contains 71 data points with 71 "authors," rather than the single author suggested by the name "Lone Dog's Winter Count" (Guiliano and Heitman). ↩

5. During the editing workshop, a Cree interpreter assisting the anthropologist was often identified. His or her name was then added in the database as co-collector. ↩

6. See: https://lessons.eastcree.atlas-ling.ca/pages/credits and https://lessons.innu.atlas-ling.ca/pages/credits. ↩