**LIS 515: Organization of Information**
**School of Information, University of Arizona**
**Assignment 1 - Metadata Schema Assignment ("DigiTreaties")**
**Professor Sarah Bratt**
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## INTRODUCTION

Europeans who occupied and settled American lands negotiated treaties between their settler governments and the indigenous people from ~1600 to ~1871. Recently, the efforts of indigenous rights remembrance movements have joined the National Archives of the United States, the Museum of Indian Arts and Culture, the New Mexico State Library, and the Indian Pueblo Cultural Center in photographing, digitizing and transcribing these agreements between Great Britain, France, the United States, and Native nations to reclaim indigenous histories. This emerged the Indigenous Digital Archive (IDA) Treaties Explorer, or DigiTreaties (URI: https://digitreaties.org) that catalogs 374 ratified treaties and "prioritizes Native voices" while encouraging education around federal treaties that are '[l]egally binding...still in effect...[and] meaningful sources of rights for Native people" (National Archives, 2021).

A young project, DigiTreaties' metadata is sparse and unaligned with the search terms (National Council for the Social Studies, 2023) of its implied user group of middle school civics and social studies teachers (Thomas, 2020) who incorporate treaty instruction (Tupper & Cappello, 2008) towards inclusive curricular goals (Unal et. al. 2022). Digital humanities scholars note that while educators would benefit from this archive, it "is [currently] only useful for "researchers who already know what they are looking for" (Catalano, 2021).

Therefore, the purpose of this project is to support middle school social studies teachers and independent learners via a broader, more interoperable schema that facilitates locating and incorporating these treaties into classroom and personal instruction. Our hybrid approach draws from Dublin Core (DC), Schema.org (SO), and a unique treaty trading card element hopes to offer a robust response to Catalano (2021)'s critique that DigiTreaties is a rich resource with a "nebulous" audience due to drawbacks in "design and functionality."

**NAMESPACES USED**

DC: Dublin Core | URI: https://www.dublincore.org/specifications/dublin-core/dcmi-terms/
SO: Schema.org | URI: https://schema.org
Unique Schema | URI: https://lattice.org

**ELEMENT LIST**

Element Name: **title**
Label: Title
URI: (http://purl.org/dc/elements/1.1/title)
Definition: A name given to the resource.
Comment: Title corresponds to Title(s) given by Digitreaties metadata.
Required: Yes, all resources must have an identifying title.
Repeatable: Yes, it's possible for a resource to have more than one title.

Element Name: **URL**
Label: URL
URI: https://schema.org/url
Definition: URL or web link of the item.
Comment: All resources found in online database at Digitreaties.org
Required: Yes, all resources have a dedicated webpage.
Repeatable: No, resources are found on one webpage each, thus one URL.

Element Name: **legislationDate**
Label: Creation Date
URI: https://schema.org/Legislation
Definition: The date of adoption or signature of the legislation. This is the date at which the text is officially acknowledged to be a legislation, even though it might not even be published or in force.
Comment: Used to identify the date upon which treaties signed into effect. Not related to resources entering archival database. Some resources don't specify day or month.
Required: Yes, all treaties have an enacted date. If the date is not complete (day, month, year) simply put available information.
Repeatable: Yes, some treaties had negotiating amendments for periods of time, allowing for a time frame of creation.

Element Name: **contributors**
Label: Nation(s) involved
URI: https://www.dublincore.org/specifications/dublin-core/dcmi-terms/elements11/contributor/
Definition: An entity responsible for making contributions to the resource.
Comment: Includes historical nation(s) at time of ratification. For this schema they are considered contributors due to their signing of official government documents. Historical context needed to determine whether agreements were negotiated fairly and whether they are still honored today. Tribes/nations should be named, but some Digitreaties records are missing that piece of information.
Required: No, some resources do not explicitly name the nation(s) involved. If unstated, mark the field as "Unknown".

Repeatable: Yes, nations could be involved in multiple treaties, or multiple in one.
Element Name: **creators**
Label: Government entity involved
URI: https://www.dublincore.org/specifications/dublin-core/dcmi-terms/elements11/creator/
Definition: An entity primarily responsible for making the resource.
Comment: For this context, we are considering the British and/or US federal & state governments as creators because their ideas of land ownership were imposed onto native tribes through these treaties.
Required: Yes, resources require a creating entity.
Repeatable: Yes, resources can have more than one creator ex. Collaboration between states or state & federal governments.

Element Name: **accessibilityFeature**
Label: Document accessibility - contrast
URI: https://schema.org/accessibilityFeature
Definition: An entity that describes the contrast between the background and the text in a digital image rendering of the original document.
Comment: A recommended controlled vocabulary for this element could be inadequate contrast, passing contrast large text, passing contrast small text, passing contrast all text, image contrast fail, image contrast pass, image and text contrast pass, image and text contrast fail, and contrast undetermined, with contrast ratio needing to first be calculated by w3c guidelines to then assign a class.
Required: Yes, and all records can default to contrast undetermined until considered and described.
Repeatable: No, with the suggested controlled vocabulary, each resource should have one value.

Element Name: **accessibilityFeature**
Label: Document accessibility - text available
URI: https://schema.org/accessibilityFeature
Definition: An entity that describes if a text transcript is available for a scanned image in the repository.
Comment: The controlled vocabulary for this element could potentially extend to include translated text should the database expand to describe translations going forward.
Required: No
Repeatable: Yes, it could be possible for multiple text transcriptions or interpretations to be available, especially where scanned images are indeterminate and open to interpretation.
Controlled vocabulary: Yes, No, Partial Text

Element Name: **relevance**
Label: Modern nation(s) involved
URI: https://lattice.org
Definition: A statement of any changes in bound entities since its creation that are significant for its authenticity, integrity, and interpretation.
Comment: Necessary to distinguish and identify current nations and tribes today that have legal rights and claims based on the treaty.
Required: No, if no modern nation exists or is unidentified, the field can be left blank.

Repeatable: Yes, it's possible for multiple modern entities to be associated with one treaty.

Element Name: **identifier**
Label: National Archives identifier
URI: https://www.dublincore.org/specifications/dublin-core/dcmi-terms/terms/identifier/
Definition: An unambiguous reference to the resource within a given context.
Comment: DigiTreaties resources are linked to the National Archives Catalog through an identifying URI. Ratified and unratified (every resource) in the DigiTreaties Archive has an National Archives identifier
Required: No, leave field blank if no National archives identifier is present.
Repeatable: No, resources have a single National Archives identifier.

Element Name: **identifier**
Label: Ratified Indian Treaty number (RIT)
URI: http://purl.org/dc/elements/1.1/identifier
Definition: This element is a numerical identifier provided only for ratified treaties in the collection.
Comment: The RIT has been assigned chronologically to each of 374 ratified treaties but not to those that were ratified and then re-negotiated.
Required: No, some articles in the collection cannot have this value for they're not a ratified treaty. Example, a first draft of a treaty document where the later version was ratified.
Repeatable: No

Element Name: **instructionalMethod**
Label: NCSS themes
URI: http://purl.org/dc/terms/MethodOfInstruction
Definition: This element describes the resource's content as it would fit into the themes identified by the National Council of Social Studies Teachers.
Comment: The controlled vocabulary for this element would be the NCSS 10 Thematic Strands and Other to account for new thematic strands in future (NCSS, 2010).
Required: No, as not all resources will fit into these themes.
Repeatable: Yes, one resource can have multiple themes.

Element Name: **instructionalMethod**
Label: NGSS Crosscutting Concepts
URI: http://purl.org/dc/terms/MethodOfInstruction
Definition: This element describes the resource's content as it would fit into the 10 themes identified by the Next Generation Science Standards.
Comment: This element is important to (1) support social studies teachers in STEM-focused schools that may need to align curriculum with science and social studies standards. (2) it supports the extensibility of the user group to science teachers who seek to engage humanities in instruction.
Required: No, not all collection materials will be able to fit into a crosscutting concept.
Repeatable: Yes, more than one crosscutting concept can align with an artifact.
Controlled vocabulary: Each of the ten NGSS cross-cutting concepts (i.e. Patterns, Systems and System Models)

Element Name: **isPartOf**
Label: Number of articles
URI: https://schema.org/isPartOf
Definition: This element describes if the resources is a part of or a smaller component of a larger grouping
Comment:This description applies if a treaty is a portion or chapter within a larger series of agreements.
Required: No
Repeatable: Yes, a particular article or treaty can be part of multiple summaries of agreements, for example.

Element Name: **SizeOrDuration**
Label: Number of pages or minutes of tape
URI: http://purl.org/dc/terms/MediaTypeOrExtent
Definition: This element can indicate the number of pages for printed and digitized documents. Or, in a future-proofed extensible collection could indicate seconds of recording if recordings are provided of text as part of the collection.
Comment: To distinguish when this field is a page count and when it is recording time, the isPartOf element can be used in conjunction to distinguish pagination and audio recording.
Required: No
Repeatable: If used as per comment, yes as manuscript can have a page (size) and audio length (duration).

Element Name: **tradingCardAvailable**
Label: Trading Card
URI: https://lattice.org
Definition: The status of availability of a trading card related to the resource.
Comment: Trading cards have been created by Digitreaties database that provide QR code access to the resources archival page. It is an ongoing project, and a limited number of treaties have a trading card as of now.
Required: Yes, items without a card can be listed as "No".
Repeatable: No, only one treaty card associated per resource.

**SAMPLES:**

1. Title: Ratified Indian Treaty 1: Five Nations - Fort George, New York
   URL: https://digitreaties.org/treaties/treaty/81147473/
   Creation date: August 14, 1722
   Nation(s) involved: Five Nations
   Government entity involved: New York, Virginia, Pennsylvania
   Document accessibility - Contrast: Inadequate Contrast
   Document accessibility - Text Available: Partial
   Modern Nation(s) involved: Unknown
   National Archives Identifier: https://catalog.archives.gov/id/81147473
   Ratified Indian Treaty Number: 1

NCSS Themes: Power, Authority and Governance; People, Places and Environments; Time Continuity and Change
NGSS Themes: Patterns; Systems and System Models
Number of articles: 2
Number of pages: 61
Trading Card: Yes

2. Title: Ratified Indian Treaty 2: Five Nations [Deed in Trust From Three of the Five Nations, Amending the Treaty [Deed] of July 19, 1701 - Albany, New York
URL: https://digitreaties.org/treaties/treaty/77165396/
Creation date: July 19, 1701 - September 14, 1726
Nation(s) Involved: Five Nations
Government entity involved: Illinois, Indiana, Michigan, New York, Ohio, Pennsylvania, Great Britain, United States of America
Document accessibility - Contrast: Large Text Pass
Document accessibility - Text available: Yes
Modern Nation(s) Involved: Unknown
National Archive Identifier: https://catalog.archives.gov/id/77165396
Ratified Indian Treaty Number: 2
NCSS Themes: Time, Continuity, and Change; Individual Development and Identity; Power, Authority, and Governance; Production, Distribution, and Consumption; Civic Ideals and Practices
NGSS Themes: Patterns; Cause and Effect; Scale, Proportion, and Quantity; Systems and System Models; Stability and Change; Structure and Function
Number of articles: 2
Number of pages: 4
Trading Card: Yes

3. Title: Ratified Indian Treaty 3: Six Nations with Virginia and Maryland - Lancaster, PA
URL: https://digitreaties.org/treaties/treaty/77165997/
Creation date: June 1744
Nation(s) involved: Six Nations
Government entity involved: Maryland, Virginia, West Virginia, Great Britain, United States of America
Document accessibility - Contrast: Large Text Pass
Document accessibility - Text available: Yes
Modern Nation(s) involved: Cayuga Nation, Oneida Nation, Onondaga Nation, Saint Regis Mohawk Tribe, Seneca Nation, Seneca-Cayuga Nation, Tonawanda Band of Seneca Indians, Tuscarora Nation
National Archive Identifier: https://catalog.archives.gov/id/77165997

Ratified Indian Treaty Number: 3
NCSS Themes: Time, Continuity, and Change, Power, Authority, and Governance, Civic Ideals and Practices, Global Connections
NGSS Themes: Cause and Effect, Scale, Proportion, and Quantity, Systems and System Models, Stability and Change, Patterns
Number of articles: 2
Number of pages: 40
Trading Card: Yes

4. Title: Ratified Indian Treaty 4: Extracts from the Treaty with the Indians - Loggstown (Printed Copy)
   URL: https://digitreaties.org/treaties/treaty/81150171/
   Creation Date: June 1, 1752
   Nation(s) involved: Unknown
   Government entity involved: Maryland, Ohio, Pennsylvania, Virginia, West Virginia, Great Britain, United States of America
   Document accessibility - Contrast: Inadequate Contrast
   Document accessibility - Text available: Yes
   Modern Nation(s) involved: Unknown
   National Archive Identifier: https://catalog.archives.gov/id/81150171
   Ratified Indian Treaty number: 4
   NCSS Themes: Culture, Time, Continuity, and Change, People, Places, and Environments, Individual Development and Identity, Individuals, Groups, and Institutions, Power, Authority, and Governance
   NGSS Themes: Patterns, Cause and Effect, Scale, Proportion, and Quantity, Systems and System Models, Stability and Change, Influence of Engineering, Technology, and Science on Society and the Natural World
   Number of articles: 1
   Number of pages: 8
   Trading Card: Yes

5. Title: Ratified Indian Treaty 5: Extracts from the Treaty at Albany with the Six Nations (Manuscript Copy)
   URL: https://digitreaties.org/treaties/treaty/77166047/
   Creation date: 1754
   Nation(s) involved: Six Nations
   Government entity involved: Maryland, New Jersey, New York, Ohio, Pennsylvania, Virginia, West Virginia, Great Britain, United States of America
   Document accessibility - Contrast: Large Text Pass
   Document accessibility - Text available: Yes

Modern Nation(s) involved: Cayuga Nation, Oneida Nation, Onondaga Nation, Saint Regis Mohawk Tribe, Seneca Nation, Seneca-Cayuga Nation, Tonawanda Band, Tuscarora Nation
National Archive Identifier: https://catalog.archives.gov/id/77166047
Ratified Treaty number: 4
NCSS Themes: Power, Authority, and Governance, Individuals, Groups, and Institutions, Civic Ideals and Practices
NGSS Themes: Cause and Effect, Systems and System Models, Stability and Change, Influence of Engineering, Technology, and Science on Society and the Natural World
Number of articles: 2
Number of pages: 6
Trading Card: Yes

**DISCUSSION:**

Elements describing official government documents like ratified treaties are well-established and recognized by DC and SO. Our schema's continued inclusion of elements like title, creation date, National Archives identifier, and number of pages continues DigiTreaties' utility for researchers and *interoperability* with other archival databases; the IDA Explorer is also readily *extensible* to additional archival materials with elements that can account for new materials (i.e. text transcripts or tradingCards) and built-in *flexibility* in that most elements are non-required; new records can make a start in the archive with additional information added continuously.

However, we add that facilitating cross-disciplinary exchange through a controlled vocabulary recognizable to teachers within the SO instructionalMethod element (NCSS and NGSS concepts controlled vocabularies) would increase interoperability with curriculum planning and teacher-user search such that primary source materials cataloged in the IDA Treaties Explorer are findable to extend to classroom instruction. We also expanded the interoperability of DigiTreaties by using accessibility elements found in SO with controlled

vocabulary of W3C and WCAG 2.2 guidelines. This will support both website accessibility specialists who may work with the archive to maintain Section 508 compliance, and teachers searching for universally-designed primary source materials to use in their social studies classrooms.

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