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Pushing Back against the Frontier: Native American Writing on Western Expansion

*Raymond Isaac Orr, Raina Heaton, Kun Lu, Ryan Dubnicek, Isabella Magni,
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Authors' words are the center of literary expression and analysis. In addition to "close reading" and qualitative approaches to literature, there is a growing interest in using computer-assisted text-mining to understand patterns in written expression.¹ By counting the use of certain key terms and other terms in their proximity for context, text-mining finds potential patterns in literary texts on a large scale. Computer-assisted text analysis is an automated extension of coding interviews or other materials in the social sciences, but at a larger scale. Whereas an individual is unable to read and directly compare 10,000 works, computer-assisted programs may examine millions. Computer-assisted text-mining studies can offer greater confidence about the nature of language and its change across time, as well as differences between certain populations.² For instance, a recent study in the field of linguistics found that recent works published in English used more individualistic terms such as "I" or "me" compared to work published a century ago, with the possible implication that society grew more self-referential or self-focused over this period.³

We take a computer-assisted approach often used in the field of data and information science to understand how Native American authors use the term *frontier* and whether it differs from non-Native authors. Given the frontier's centrality in American historiography, and its different implication for Native peoples than settlers, we were interested in patterns of its use. Albeit a novel method for Native American and Indigenous studies, we selected this method as it is well established to investigate trends and patterns in word use over a larger corpus that would be impossible for human-driven analysis.⁴ Computer-driven text analysis has limitations and its share of skeptics, which is important to acknowledge.⁵ Computer-assisted analysis may not be as accurate as human-driven reading, for instance.⁶ Large-scale, computer-assisted

approaches are not entirely generative in the way a human might be, as they cannot provide the interpretation of their own findings with extant theory.⁷ Yet, this method can scan millions of texts for key terms and identify patterns. Given that, to our knowledge, computer-assisted text-mining is an approach not yet used by the field of Native American studies, we demonstrate its potential value for existing themes by looking at the term *frontier*.

As a term, frontier is used to describe the conflicting border of colonialism and Native lands. The concept of frontier is also perhaps unparalleled in its importance to American historiography associated with scholar Frederick Jackson Turner.⁸ Since the late nineteenth century, American historians have debated the role that the frontier has in shaping national character. Yet *frontier* has a different set of implications for Native Americans, as it was a location of loss, if not genocide.⁹ Vine Deloria Jr., in his *Metaphysics of Modern Existence*, identified the frontier as a conceptual exemplar of objectification in the form of land as an exploitable resource rather than an entity possessing its own spirit.¹⁰ Given such differences in what the frontier might mean to Native Americans and non-Natives, further analysis is valuable to better understand if the use of the term reflects this difference. Do authors who identify as Native American use the term differently than non-Native American authors writing on similar subjects? This question motivates our project.

We began this investigation by using the eighteen million-plus volume HathiTrust Digital Library first to assemble a machine-readable set of texts by Native American authors and then a comparative work set—a collection of analyzed texts—*about* Native Americans but written by *non-Native* American authors in HathiTrust Research Center analytics. The result was a set of 918 Native-authored works by 368 authors and 927 works by 727 non-Native authors with subject tags of “American Indian.” Then, text-mining methods (including term frequency, keyword-in-context, and sentiment analysis) were applied to both text collections—the Native work set and the comparative work set—to generate insights on how Native American authors and non-Native American authors use the term *frontier*. Our analysis shows that Native American authors indeed discuss the frontier differently than non-Natives. Native authors were less celebratory in their use of *frontier*, and more likely to use *frontier* at a distance by placing it within quotes, which suggests a subtle form of resistance to the settler-driven narrative of westward expansion.

THE FRONTIER AND NATIVE PEOPLES

Few concepts have been more central to American historiography than *frontier*. Frederick Jackson Turner popularized the term in an essay, “The Significance of the Frontier in American History,” initially an 1893 address to the American Historical Society and later a complete monograph in 1920. The idea of the frontier was well known before Turner. For instance, twenty years prior, John Gast’s 1872 painting *American Progress* captured the images of westward expansion. The concept has a long career, dating back to at least Thomas Jefferson’s writings, such as “Empire of Liberty” and “Manifest Destiny,” along with his letter to James Madison recommending the

United States pursue a continent-wide republic.¹¹ The frontier and whether it was “closed” was a part of the national discussion during this era. In 1890, the US Census Bureau declared the frontier “closed,” yet the following year witnessed the genocide of Native peoples at Wounded Knee.¹² The “Frontier Thesis” (or “Turner Thesis,” as it is commonly known) claimed westward expansion as central to American national character. The Frontier Thesis rejected the “Germ Theory” (associated with Herbert Baxter Adams, Turner’s mentor), which claimed American institutions were transplanted by European immigrants and were defined by these origins. David Weber wrote that many considered Turner’s theory as “the most useful [. . .] concept for understanding the distinctive features of American civilization.”¹³ At the time of Turner’s death in 1932, more than half of the history departments in the United States were teaching courses aligning with his theory.¹⁴

According to Turner, violence and opportunity constitute the frontier experience. In this perspective, a spirited individualism with a desire for limited government emerged to become what might be called *national culture*.¹⁵ The West functioned as a “safety valve” for class tensions in the East. Class and social divisions, prominent in Europe, were lessened by the availability of “open land.” From the perspective of the Frontier Thesis, American society moved forward as it did westward.¹⁶ As scholar Gilman Ostrander pointed out, the Frontier Thesis is an extension of Hubert Howe Bancroft’s 1890 argument that knowledge moves east to west. As objectionable as these arguments may now seem, each serves as the foundation of American historiography.¹⁷

Of course, the West was not “open land,” and few could now argue westward expansion benefited Native Americans. Though Native Americans were not a monolithic group with a single experience, westward expansion typically meant invasion. To Turner, the “meeting point between savagery and civilization” defined the frontier. To American Indians, the frontier spelled population decimation, land expropriation, and eventually sequestration and subjection on reservations.¹⁸ As Charles R. Hicks, vice chief of the Cherokee Nation at the time of removal, described how the frontier led to sorrow, “we are [. . .] leaving the country that gave us birth,” and “we bid farewell to it and all that we hold dear.”¹⁹ Lakota scholar David A. Nichols wrote of Turner’s view of Indians “as not very important” to the point of being “part of the landscape,” which resulted in the “unjustified neglect of the Indian in American history.”²⁰ Wilbur Jacobs also called for a revision to the Frontier Thesis to “focus more of our attention to what might be called the Indian point of view.”²¹ More recently is Donald Fixico, a member of the Sac and Fox Nation and historian, has equally called for a reworking of American History to better include the experiences of Native peoples.²² Scores of non-Native historians, as well, recognize the need to emphasize Native peoples’ perspectives and include those such as Richard White (in his *It’s Your Misfortune and None of My Own: A New History of the American West*²³) and Patricia Nelson Limerick (in *The Legacy of Conquest: The Unbroken Past of the American West*²⁴), to name a few of many.

American popular culture also found equally rich grounds in the West. Following a theme similar to the Frontier Thesis, settler cultural production romanticized violence and opportunity. American visual, literary, and oral culture invested heavily in narratives of pioneer struggle.²⁵ For instance, James Bryce claimed the West as “the most

distinctively American part of America,” therefore making the West an ideal setting for cultural production.²⁶ Individual struggle is novelized and valorized in the West.²⁷ This included emphasizing themes like perseverance. Works such as Owen Wister’s *The Virginian* added to a collective theme established by Daniel Defoe’s *Robinson Crusoe* of civilizational progression over wilderness by Europeans.²⁸ In the visual medium of cinema and television, depictions of settlers on the frontier cultivating self-reliance are often tied or contrasted with Native peoples as “vanishing.”²⁹

When present, Native peoples fulfilled the role of antagonists in Western-focused cinema (Westerns). Settler-Native strife constituted a central theme in notions of progress, violence, and honor. Though present, the depiction of Natives in Western cultural production, as scholar Martin Berny argues, shows an “Indian looking glass [that] magnifies America’s lack of self-knowledge.”³⁰ By orienting historiographies from one process such as Turner³¹ or geographic movement such as Bancroft, much was missed, and the Frontier Thesis is important in its rejection as much as acceptance.³² A particularly salient criticism, and one gaining favor in recent years, is that the role and presence of Native American peoples was ignored in earlier historical accounts. More recent revisions to American historiography built upon Jacobs and Nichols’s criticism of Turner’s conclusion.³³ For instance, Richard White forwarded the concept of the “middle ground” that offered greater nuance and inclusion of Native peoples in early settlement.³⁴ Yet, as Yankton Dakota scholar Philip Deloria argues, concepts such as the “middle ground” still might lack the full inclusion of Native peoples or sufficient clarity as to their role in American historiography.³⁵ Historian Colin Calloway describes the notion of progress westward as a “master narrative” that excludes Native American experiences and perspectives, which, if included, would generate a richer account of the country’s origin.³⁶ A central theme in Native American studies is that Native peoples should be understood as equal constituents in the creation of our current political, legal, social, and cultural landscape. This commitment requires formally recognized Native-centered scholarship (often residing within or near the field of Native American studies) that has grown in the last fifty years.³⁷ We look to Native American authorship and how the term *frontier* is used to draw on how Natives Americans construct an interpretation of American history that is different from non-Natives.

NATIVE AMERICAN WRITING AND RESISTANCE

Resistance need not be brazened. This is particularly applicable in the case of marginalized peoples who might risk their survival through overt contestation. Research in the social sciences has shown, therefore, an increase in attention to more subtle forms of resistance. Unlike revolution, protest, or direct actions, “[e]veryday forms of resistance make no headlines,” argues James Scott in *Weapons of the Weak*.³⁸ Given the intensity of colonization and the common—yet inaccurate—depiction of Native Americans as acquiescing to settler power, Native-focused research has sought to highlight many forms of subtle resistance by Indigenous peoples. Put differently, if Native Americans’ agency were limited to overt physical resistance, there would be

only a handful of instances after the nineteenth century. Such an assertion is false, as research from Indigenous studies³⁹ and allied fields has drawn out the myriad of avenues Indigenous peoples followed and created in resisting colonization and pushing against dominant settler narratives.⁴⁰

One form of resistance is writing. Instead of the “duplicious interrelationships between writing, violence, and colonization” that “set into motion a persistent distrust of the written word” by Native peoples, Native-generated authorship, according to scholar Gary Lyons, has the potential to forward Indigenous interests.⁴¹ In fact, Native peoples’ ability to express their views without the filter of settler society motivated the development of Native American and Indigenous studies.⁴² Native-authored work argues against the erasure of Native peoples in scholarship and history or the desire to overlook Indigenous ways of being from accounts of contemporary society.⁴³

Native authorship in response to colonization is strident. Native authors’ response includes remonstrating works against genocide, settler attempts at an apology, or rebuking caricatures of Native peoples.⁴⁴ Native American authors can also advocate for Native contributions to larger notions of governance.⁴⁵ Writing might utilize subtlety, e.g. allegory and metaphor, to expand upon the contributions of Native peoples.⁴⁶ Native peoples’ use of English-written texts as resistance to colonization reaches back at least two hundred years. *Sketches of Ancient History of the Six Nations* by Tuscarora author David Cusick, published in 1825, describing Iroquois origin stories is perhaps the first Native-authored and Native-printed book in English.⁴⁷ Later in the nineteenth century, and more explicitly adversarial to settlers, was William Appess’ *Experiences of Five Christian Indians of the Pequot Tribe*.⁴⁸ A Pequot and minister, Appess blended autobiography with a call to condemn abuses of Native peoples. Much nineteenth-century Native authorship was aided (or altered) by non-Native transcribers. Such complications aside, Native-authored or co-authored works increased toward the end of the nineteenth century. Falsifying written records might also be considered resistance. As anthropologist Thomas Biolsi describes record-keeping on the Rosebud Indian Reservation, Native peoples deceived the federal officials with pseudonyms such as “Dirty Prick” and “Shit-Head” in order to increase their population and therefore procure greater resources in the nineteenth century.⁴⁹ In part, this type of subversive writing was a response to settler duplicity in treaties, which dispossessed Native peoples more than treaties protected their lands. Such writing could be a type of deception, in which the truth about a covert process is exposed.⁵⁰ Falsification was small consolation to what would come to be seen by many Native peoples as the “witchcraft” involved in written treaties signing away real property.⁵¹

By the early twentieth century, Native Americans developed a literary class that was recognized by settlers. Some works were settler-transcribed, such as *Black Elk Speaks* in 1932, with ethnographer John Neihardt recording and editing the well-known book on the views of Oglala Sioux leader Black Elk.⁵² Another example of transcribed work is that of Crow leader Plenty-coups in *Plenty-coups: Chief of the Crow* in 1930, an autobiographical account told to writer Frank Linderman.⁵³ Transcribed accounts, as Raymond DeMallie pointed out from an analysis of Neihardt’s original and unedited transcriptions of his interview with Black Elk, were subject to romanticization and

should be viewed with some skepticism regarding accuracy.⁵⁴ Yet by the mid-twentieth century, a growing cadre of Native authors also emerged who did not rely upon transcription in publishing their experiences or views.

Boarding schools contributed a growth in Native authorship. In the nineteenth and twentieth centuries, Native American boarding schools caused widespread cultural erasure and genocide. Using letters between boarding school students and their parents, Ojibwe scholar Brinda Child details the painful rupture this policy had for Native peoples.⁵⁵ Yet these schools produced complex results. As Chickasaw scholar Amanda Cobb illustrates, boarding schools generated complex experiences and could be periods and locations of positive meaning.⁵⁶ One such side effect was the emerging professional and literary class in the early-to-mid-twentieth century. Many Native authors in this period attended college and were not reliant upon non-Native transcription. Particularly prolific from this period was Lakota Charles Eastman (Dartmouth College) who published thirteen books, two coauthored with his wife, Elaine Goodale Eastman. He wrote two autobiographies—*Indian Boyhood* in 1902 and *From the Deep Woods to Civilization: Chapters in the Autobiography of an Indian* in 1916—which documented the massacre at Wounded Knee in 1890.⁵⁷ Yankton Sioux author and opera composer Zitkala-Ša attended Earlham College; her 1913 stage work *The Sun Dance Opera* is considered the first Native-composed and authored opera.⁵⁸

By the 1960s, explicit calls for recognizing Native sovereignty constituted a core theme in writing. Most notable was Yankton Dakota Vine Deloria's *Custer Died for Your Sins: An Indian Manifesto*.⁵⁹ A confluence of intellectual and political actions brought the field of Native American studies into being. Concurrent to the tribal political renaissance that grew in visibility in the 1960s and '70s was an increase in Native authorship. Ojibwe and Sioux scholar Richard Scott Lyons describes the use of what he terms "rhetorical sovereignty" as "the inherent right and ability of people to determine their own communicative needs and desires."⁶⁰ As much as Native authorship involves political and intellectual autonomy, this writing recognizes challenges to fulfilling greater self-determination. For instance, scholars John Sanchez and Mary Stuckey identify the Broken Treaties movement in the 1970s as a form of Native political expression, one designed to educate both Natives and non-Natives who had not fully grasped how Native peoples, rather than being a "racial minority," were partnered in a political relationship with the federal government.⁶¹

Resistance and sovereignty may manifest as a refusal. Using *ethnographic refusal*, a term coined by Sherry Ortner in *Resistance and the Problem of Ethnographic Refusal*, Mohawk scholar Audra Simpson argues Indigenous peoples resist through omission.⁶² Refusal means Indigenous peoples do not validate non-Indigenous knowledge systems by engaging in these systems. Given Indigenous participation, we need to consider that Indigenous peoples ignore these systems and that scholars should be open to examining the absence of information. Admittedly, this is not entirely straightforward as a concept, so let us provide an example: Potawatomi scholar Raymond Orr charted how often the term *nostalgia* is used in Native American studies journals and found that it rarely appears compared to similar journals in other fields. This can be understood as an omission or refusal by Native-focused authors to engage *nostalgia's* superficial

connection in comparison to the term *tradition*, which was used more often in Native American Studies journals.⁶³ Within this context of omission, we are interested in how Native authors may differ in their language use as an act of resistance to the concept of *frontier*, potentially showing refusal through comparative analysis.

METHODS: NATIVE AND COMPARATIVE (NON-NATIVE) WORK SETS

Text-mining harnesses computational power, including recent advances in artificial intelligence, to extract insights from vast repositories of textual data. This method has found interesting applications across a broad spectrum of academic disciplines, encompassing humanities, social sciences, natural sciences and engineering, and biomedicine.⁶⁴ How can text-mining make claims about literary works by counting the number of words? This method relies upon identifying patterns, associations, and trends over a large number of texts rather than what we might think of as reading for content. This method is an extension of what social scientists might call “coding” textual data, which is a method with origins in Barney Glaser and Anselm Strauss’s 1967 work *The Discovery of Grounded Theory*.⁶⁵ Using this method, a researcher will begin by creating categories that words or sentences might fit into, for instance *positive* or *negative*. The researcher will then determine which sentences might be placed into a positive or negative category. Those categories are added together in a way to make mathematical comparisons about the nature of a work. In the same way social scientists might conduct an interview, transcribe it, and then code its words and sentences for intent, computer-driven text-mining attempts to do the same over a larger data set. Computers break down sets of information, in this case words, and place (or code) them into categories. A common example is on the positive, negative, or neutrality of surrounding text,⁶⁶ which is used to supplement or even replace political polling.⁶⁷

Though text-mining approaches have been used to understand features of authorship among other racial and ethnic groups, such as Black Americans, such analyses have not been used to understand Native authorship.⁶⁸ This is one of the cohort projects funded by the Mellon Foundation’s Scholar-Curated Work Sets for Analysis, Reuse, and Dissemination initiative to create and analyze work sets for historically underresourced and marginalized textual communities. Other projects in the cohort analyzed African American texts.⁶⁹ There is no mechanism in the metadata from the HathiTrust Digital Library (HTDL) for identifying if an author is Native or non-Native; we therefore compiled lists of Native authors and their works from publicly available datasets, locally accessible resources, and our field knowledge. Two primary sources used for building the Native authors and works lists included the Native American authors collection at Internet Public Library (<https://www.ipl.org/div/natam/>) and the Native American languages collection at the Sam Noble Museum at the University of Oklahoma. All authors included in the corpus data set were manually checked from the compiled lists. We compiled a corpus from the HTDL made up of 1,083 texts by 369 Native American authors. These texts spanned the years 1826 to 2009.

Native *status* and *identity* are complex concepts that are difficult to adequately operationalize. Our project uses membership in a federally recognized tribe in the United States or First Nation in Canada as the criterion for inclusion in our Native author work set. Our intent is not to dismiss a sense of belonging in a Native community for authors that fit outside of this membership. A longstanding research interest in Native American and Indigenous studies is to expose how settler states narrowly draw the boundaries of Indigenous peoples and polities.⁷⁰ Given these considerations, membership in a federally recognized tribe or First Nation is a common standard for ascribing Native status.⁷¹

To understand how the writings of Native authors compare with those of non-Native authors on similar subjects during similar time periods, we worked with members of the HathiTrust Research Center staff to create a comparative work set of non-Native authors. This involved searching the HTDL for similar subjects (i.e. “Indians of North America,” “Indians,” “Indian,” “Indiens,” “Indiens d’Amérique”) over similar time periods (date range, 1826 to 2009). The search resulted in 43,921 matches. These matches were filtered by limiting the publication place to North America. Then, a random sample of 1,000 works was selected to proportionally sample comparative works based on the proportion of records in decades in the Native work set. This ensures the distribution of works by decade are similar in both work sets. After that, we adjusted the sample to ensure the language representation is comparable. We also manually screened the remaining works in the comparative work set to ensure no Native authors were represented in the comparative work set (e.g., in a compilation edited by a non-Native author). The process resulted in a comparative work set with 927 volumes.

ANALYSIS

In order to identify instances of *frontier* in context across our textual corpora, we generated a Python script to search the occurrences of the terms in the volumes of the Native work set and comparative work set. The information we collected includes volume ID, title, publication year, page number (to identify which page in the volume), sentence number (to identify which sentence on the page), keyword, the sentence where the keyword occurs, five sentences before this sentence, and five sentences after this sentence. Both compilations of instances of *frontier* from the Native and the comparative work sets were then manually screened to remove any spurious or nontopical instances (e.g., index references) as well as to tag examples for recurring thematic relevance (e.g., “frontier thesis,” “last frontier,” “white frontier,” etc.—see table 1).

To compare the frequency of the use of *frontier* by Native and non-Native authors, we calculated the percentage of works using these keywords in each work set over different decades. This measure normalizes the raw term frequency counts given different numbers of volumes in each set. The term *frontier* appeared somewhat more frequently in non-Native works than Native works in our set. Native authors used the term *frontier* in 901 instances and non-Natives used the term in 3,846 instances. While there could be many reasons for this, one possible reason is the type of “resistance as

refusal” explored in the discussion section, in which Native authors are more likely to reject the term altogether. This difference in usage and/or appearance is statistically significant ($p<0.05$).

Sentiment analysis is another well-established natural language-processing modeling tool to evaluate an author’s stance, rating textual occurrences of a word or phrase as *positive*, *negative*, or *neutral*. We used OpenAI GPT-3.5 turbo model for the sentiment analysis, as the model has shown good performance on this task.⁷² The prompt provided to the GPT model is as follows: “You will be provided with a sentence, and your task is to classify its sentiment on a scale of -1 (very negative) to 1 (very positive) and return only a numerical score equal to or between -1 and 1 . In the very rare instance where you can’t give a score, return 0 as the score.” The values returned from the GPT model were used as sentiment scores. The model temperature was set to 0.7 and top_p to 1. The results of this analysis show that, when used by Native authors, *frontier* is more likely to be used in a negative context (15.87 percent versus 9.81 percent). Figure 1 shows the distribution of sentiment scores for both data sets. The non-Native corpus has more neutral and positive instances of *frontier* use in context, visualized here by the wider top (positive) portions of the right-hand violin, whereas the Native data set violin on the left has a wider representation at the bottom (negative portion). This difference is statistically significant ($p<0.001$).

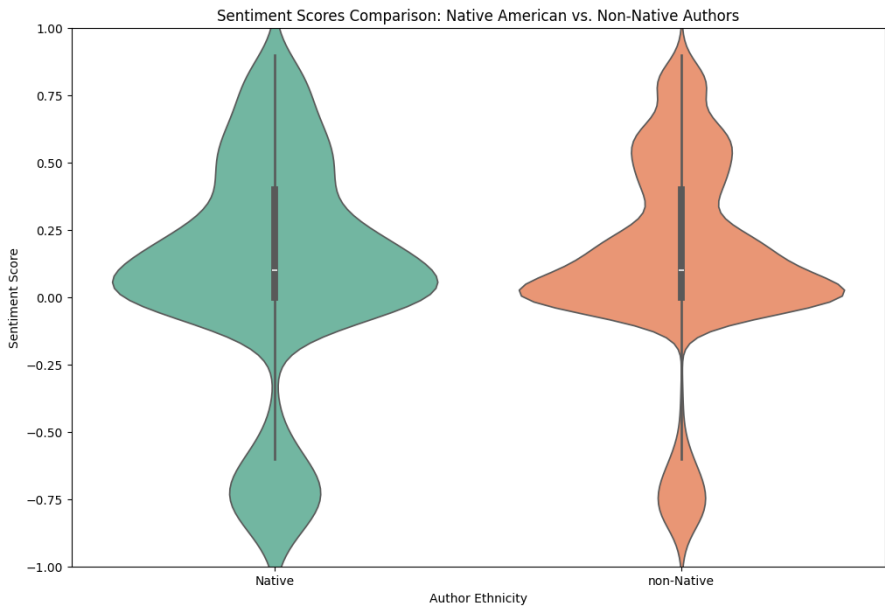


FIGURE 1. Sentiment scores for Native vs. Comparative worksets using OpenAI GPT 3.5 turbo model for the sentiment analysis

The automated sentiment analysis results are additionally supported by traditional text methods, observable individually and in aggregate in our corpora. One of the classic typographic indicators of an author's use of a particular term in a noncanonical way is to place it in scare quotes (" "). This is often done to indicate irony, dubiousness, inappropriateness, or to generally distance the author from the meaning of the quoted term. "Frontier" occurs in scare quotes in both Native and non-Native works with precisely this intention. By tracking the instances of "frontier" in quotes in each corpus we can observe a specific type of negative sentiment, where the author not only views the term negatively but also rejects the premise of the referent.

Qualitative analysis also shows that Indigenous peoples are moving away from traditional ideas of the frontier. As Western Shoshone historian Ned Blackhawk asserts, "Few have claimed the effects of 'frontier' expansion" as equally "foundational" to Native peoples in the American experience.⁷³ Oglala Sioux journalist and writer Tim Giago also uses quotes from another author, which indicates distance as "Meierhenry's 'frontier mentality' becomes obvious when he talks about law and order from his lofty position as the state's number-one law enforcement officer."⁷⁴ In these cases, we see that *frontier* is not taken as a concept in earnest. Non-Native authors are often less critical. To Meierhenry, the non-Native author Giago references, *frontier* was a generative geographic space that Frederick Jackson Turner theorized. Non-Native authors were aware of the different treatments given to the frontier experience. As Wilbur Jacobs writes, "Reflecting the frontiersman's viewpoint, white historians have generally equated frontier progress with fur trade business because progress meant frontier expansion"—however, this "implied elimination of the Indian frontier, a barrier to peaceful white occupation of the continent."⁷⁵ These examples demonstrate the types of differences observable throughout the two corpora. Of the 901 instances of *frontier* in the Native corpus, thirty-four appear in scare quotes (3.8 percent). This contrasts with the comparative data set, where non-Native authors used *frontier* in scare quotes forty-two times, 1.1 percent of the corpus. This difference is likewise statistically significant ($p < 0.05$).

In addition to the global frequency and sentiment metrics, we can glean more about how Native versus non-Native authors view the frontier and characterize it in their writing through further investigating the contexts in which the term appears. To do this, we looked at both collocations and thematic content. With respect to collocations, we noticed in compiling the data that certain modifiers regularly appear with *frontier* in the writing of Native and non-Native authors, which speak to the topics they choose to address and how they portray history. These were not predetermined: the modified pairs in table 1 arose organically from the data; we simply report their frequency here as support for the broader trend of Native authors' expressions of resistance in their use of *frontier*.

Table 1 provides counts of the instances of the recurring modifiers of *frontier* in both work sets, along with the percentage that represents the total mentions of *frontier* in each work set. Looking at the figures, we should remember that there are fewer overall mentions of *frontier* in the Native work set versus the comparative work set by a factor of four. In addition, while some of the numbers are small, they can

be revealing. Western historiography often involves reference to Frederick Jackson Turner’s *Frontier Thesis*. It exists in both work sets, which is unsurprising, although for Native authors the presentation is negative or at least distanced, with half the instances presented in scare quotes. D. L. Birchfield sums up the sentiment well in *Lonesome Duck: The Blueing of a Texas-American Myth*: “Webb [a historian on the West] was an uncritical disciple of Frederick Jackson Turner’s ‘Frontier Hypothesis,’ in which the westward movement [. . .] [and settlers’] complete inability to be restrained and their disregard for the rights of indigenous peoples, somehow becomes a thing filled with great promise.”⁷⁶

TABLE 1: MODIFIERS OF FRONTIER IN THE NATIVE AND COMPARATIVE WORKSETS

1830-2009		
	Native	Comparative
Phrase % (N)	% (N)	% (N)
American/US frontier	4.6 (91)	2.7 (103)
White frontier	0.8 (7)	0.4 (14)
Indian/Native frontier	1.0 (9)	1.0 (38)
[Tribe/Tribal] frontier	0.2 (2)	(5) 0.1
[State] frontier	6.3 (56)	10.4 (401)
Frontier thesis	0.7 (6)	0.8 (30)
Last frontier	0.4 (4)	1.1 (42)

The clearest difference in the two work sets between the collocations in table 1 is in the nearly nonexistent use of the phrase *last frontier* by Native authors. The phrase *last frontier* invokes a romanticization of the West, or any type of frontier (cf. Gene Roddenberry’s famous proclamation of space as the “final frontier” in the *Star Trek* series). This perspective also inherently presupposes some version of manifest destiny, in which everywhere except outer space has been occupied, and expansion for anything new is a disappearing part of a previous reality. The few instances of Native authors using this phrase are, therefore, almost entirely ironic or otherwise marked. For example, in discussing the history of Big Bend National Park in Texas, Silvester Brito, a poet and scholar of Comanche descent, writes, “The story involves international intrigue and border incidents, conflicts over predators, and visitor and employee experiences in the Lone Star State’s ‘last frontier.’”⁷⁷ Non-Native authors were more likely to use “last frontier,” and to use the phrase uncritically.

We see two opposing uses of the term *frontier*. Whereas Native American authors may employ the concept of *frontier*, it is often done at a distance. Native American authors do not use the term *frontier* in earnest as compared non-Native authors. This difference also extends to how non-Native authors select the material to be quoted for their own writing. A non-Native author Robert Berkhofer uses the term *frontier* in this

context: "At their best, [James Fenimore] Cooper's good frontiersman represented the ideal blend of the two cultures in a somewhat primitivistic version." and "[d]emocracy, liberalism, and individualism possessed important implications for understanding frontiersmen and Indians" or that "[t]his area is, to a great extent, a promising and unexplored frontier."⁷⁸ Here Berkhofer draws on a noncritical source in the form of Cooper for his conclusion.

Finally, while the percentages of use of terms like *white frontier*, *Indian frontier*, and *American frontier* are similar, this obscures the fact that their usages are generally quite different between Native and non-Native authors. That these modifiers appear regularly with *frontier* is itself noteworthy. Perhaps specifically labeling the frontier a *white frontier*, *American frontier*, or *Indian frontier* is purposefully "other"-ing. For example, Silvester Brito, in his poem *Looking through a Squared-Off Circle*, very clearly provides an alternative frontier narrative:

They have seen the brave blood beat of an ancient people
in a petrified forest with radiant colors
that speak of an age-old tribal war
between Mountain Apache and my old ones,

Proud Comanche warriors with long black braids
adorned with glass beads bright as the brilliant horsemen
who once commanded sun baked, grass plains,
Native barriers to an expanding white frontier

Which has come of age in cattle ranches turned to missile ranges
with frail technical workers who only ride cars
in a short awaited time for a nuclear war,
a crack-brained barrier to life.⁷⁹

This sort of negative use of *white frontier* is characteristic of the Native corpus. This stands in contrast to its use in the comparative corpus, where fewer than half the uses are negative. For example, historian Michael Malone equates the white frontier with the frontier, dropping the modifier in the second mention: "Careful examination of the text reveals that early settlers involved in barter, rural small business, and limited agriculture (Montana's first white frontier), and township entrepreneurs, speculators, and farmers (Montana's second frontier), simply broke trail for the truly successful frontier, nonresident capitalists."⁸⁰

Beyond these specific collocations (a predictable combination of words), it became clear when examining our two work sets side-by-side that the works by Native authors in the HathiTrust Digital Library (HTDL) exhibit some recurring themes with respect to the frontier. Specifically, authors embed notions of control or exclusion within *frontier*. For instance, Métis author Beatrice Mosionier, in her novel *In the Shadow of Evil*, writes, "In the old frontier settlements in Indian country, white people controlled all the amenities of the town."⁸¹ Violence without benefit was another feature of Native authors writing about the *frontier*. Deloria Jr. describes the space

between settlers and Native peoples in terms of “the flaming frontier” that included “war bonnets [and] slashing cavalry swords.” He describes the frontier as an experience that overwhelms Native peoples, as “Shawnee tribesmen in Ohio and Indiana watched in dismay as the advancing white frontier poured around them.”⁸²

In contrast, non-Native writers in the work set have described violence on the frontier as necessary. In the journal of Alonzo Davis, an Arizona settler in the 1860s, he argues frontier violence “may seem harsh to the people who know nothing of the conditions on the old frontier, but it was the only way we could get hold of those natives who would never stand and fight. . . .”⁸³ Difference senses of what might be “necessary” is explored by Ari Kelman in *A Misplaced Massacre: Struggling over the Memory of Sand Creek*.⁸⁴ A 1979 monograph titled *North Dakota History* suggests that “all the indomitable will to overcome obstacles, all the love of freedom and of democratic process, and all the determination to make things better for the future, which the old frontier nourished and symbolized, will remain part of American thought and aspirations.”⁸⁵ Indeed, in this positive perspective of the frontier, “the old frontier was the scene of so many Indian adventures.”⁸⁶

DISCUSSION AND CONCLUSION

Our study utilizes a novel approach to Native American writing and resistance. Text-mining offers a way to make comparisons across a broad corpus. To our knowledge, this study’s analysis is based on the largest digitized and machine-readable database of Native American authors ever compiled. Findings show Native authors differ from non-Native authors in how they discuss the concept of *frontier*, an idea central to American historiography and the lexicon of national progress, which invites reflection on the nature of nuanced resistance to settler states.

Based on various quantitative and qualitative metrics, we have demonstrated that when Native authors have used the term *frontier* it is incorporated differently into their work. Native authors use *frontier* less frequently and less positively than non-Native authors writing on similar subjects in the same period. In addition, when Native authors *do* use the term, it is more likely to appear in quotes—the “frontier”—than when used by non-Native authors, indicating that *frontier* in its canonical use is problematic. Our analysis also found the themes that appear around the use of *frontier* by Native and non-Native authors differ, even when they are related. We provided examples in which perspectives on violence on the frontier were different, discussed on the one hand as necessary, on the other as futile. Finally, while many of the same modifier phrases (*white frontier*, for instance) appear in both work sets, their use is quite different, often with Native authors using them in negative or ironic ways to either subtly or overtly subvert the dominant narrative about the American West. Each of these metrics speak to a measurably different Native discourse around the term *frontier*.

These results display a subtle resistance, most clearly discernible when using a different point of entry than traditional methods such as individual textual analysis or examining political events. As Cornell, among others, has identified, Native resistance

takes multiple forms, including social and military resistance that change according to context and time.⁸⁷ Resistance is articulated in Native manifestos, for instance in the American Indian Movement's *Trail of Broken Treaties: A Twenty-Point Position Paper* in 1972.⁸⁸ By refusing to discuss *frontier*, we see in the Native work set a type of resistance that follows Justin Richland's identification of forms of resistance that might bear a family resemblance to consent, such as working within the parameter of tribal authority within federal Indian law.⁸⁹ Richland identifies these as a merger of strategy, nuance, and competence, which Natives understand as resistance.⁹⁰ This extends from work by Evans on how tribes utilize niches and expertise in the federal systems in building tribal power and negotiating with local governments.⁹¹ Resistance might also be in the form of ambivalence, as scholar Kevin Bruyneel identified in discussions around citizenship in the 1920s. We see a similar resistance in the case of Native authors who appear to avoid replicating the ways that settler-focused historiographies refer to western expansion and the frontier.

It seems Native Americans have reciprocated Turner's omission in kind. Nichols identifies Turner's work as having been "significantly responsible for the unjustified neglect of the Indian in American history," and here Native authors have repaid Turner in kind, so to speak.⁹² This omission is congruent with perspectives from Native American studies, in which Native-focused historiographies themselves call for a need to avoid replicating theories, ontologies, and epistemologies of the settler state. In Native American studies, warnings on use of the term *frontier* as an epistemological framework for discovery is ongoing, with David Shorter and Sisseton Wahpeton Oyate scholar Kim Tallbear's examination of language surrounding space exploration.⁹³ For instance, scholars Paul Berne Burow et al. describe the project of Indigenous studies as a series of "efforts to contest and unsettle modes of" conceptualizing reality.⁹⁴ By omitting *frontier* from their work, and discussing it negatively when it does appear, Native American authors are participating in a tradition that seeks to reframe American history.

In relation to this, our study also suggests Native authors practice a form of refusal. Extending on seminal work by author Sherry Ortner on ethnographic refusal, Mohawk scholar Audra Simpson identifies the lack of Indigenous need to recognize settler state demands.⁹⁵ This may take place as requests for political or intellectual contributions in which Indigenous peoples may not benefit. We see this refusal to participate as discernable acts, such as an overt remonstrance, but also as an absence of material. By refusing to participate in the non-Native discourse around the frontier, we see Native authors reject the dynamics around settler colonization and the rhetoric that enables it.

Finally, our work sets have limitations and therefore so will our findings. Most notable is that we relied on HTDL to access the full texts of the Native-authored work we identified. While extensive, HTDL is not a comprehensive database of all works written or published; it is also biased toward certain types of publications (works found in university libraries). As such, Native-authored works not present or not identified in HTDL were not available for inclusion in this analysis. We cannot guess the degree to which the works available in HTDL are representative of Native-authored

writing in general, and therefore our conclusions with respect to *frontier* may be similarly unrepresentative of a larger set. We also cannot account for the ways in which publisher style guides affected the use of quotations and “scare quotes,” and whether authors could be more or less liberal with how they confront and shape text. However, this is a necessary shortcoming given the lack of any other existing full-text corpus of Native-authored works.

This paper is a first step in bringing aspects of digital humanities and data science into the critical analyses of Native literatures and histories. We used standard quantitative methods on a novel textual corpus to add evidence to an existing body of work claiming that Native authors resist standard accounts of national progress in American history. We hope that this strengthens characterizations of Native authors as having distinct voices and perspectives that are identifiable from their work. In addition, we hope our paper validates the types of quantitative methods we use here as applicable to Indigenous studies, history, literature, and related disciplines. There are many possibilities for further interdisciplinary research, research where questions of concern in Native American and Indigenous studies may be investigated in new ways using techniques from the growing and evolving field of data science. Our work here on uses of the term *frontier* exemplifies one small way these methods can be applied, with benefits from simply compiling the necessary textual databases for qualitative investigation to testing complex large language models.

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