Ideology in Government: Evidence from the Office of Indian Affairs and the Assimilation Era*

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Abstract

This paper studies the ideology of government officials and coercive policymaking by examining the Office of Indian Affairs, an institution that held broad authority over the land, education, and legal governance of Indigenous populations in the United States. We digitize the detailed reports of the agency's bureaucrats and use computational tools to measure the strength of their support for assimilationist policies during the 19th and early 20th centuries. We document major shifts in ideological commitments that coincide with the entry—and eventual exit—of social reformers nominated for high-level agency positions by religious organizations. We find that ideology within the bureaucracy appears to moderate around the turn of the century despite the organization's overall continued pursuit of major assimilation policies, such as the promotion of farming and enrollment in off-reservation Indian boarding schools. To examine performance implications of ideology within the bureaucracy, we conclude with an analysis of policy implementation after the passage of the Dawes Act, a landmark law that aimed to dismantle collective land holdings. We provide evidence showing that the agencies with local staff who express greater past commitment to assimilationist goals carried out more land redistribution immediately after Dawes became law.

JEL Codes: D73, M5, J15, N41.

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1 Introduction

Governments throughout history have implemented coercive policies targeting racial or ethnic groups within their jurisdictions. In the United States, Jim Crow laws enforced racial segregation and disenfranchisement for decades (Woodward, 1955). Nazi Germany, where racial ideology organized law and administration—through the Nuremberg statutes, registries, and confiscations—well before mass violence escalated, offers a particularly stark case (Koonz, 2003). In South Africa, apartheid-era pass laws constrained Black people's movement and residency (Posel, 1991). Colonial administrations similarly institutionalized group subjugation: in the French empire, the Code de l'Indigenat established an inferior legal status with summary punishments; and colonial schooling in North Africa and Indochina privileged French while marginalizing Indigenous languages (Julien, 1950). These cases, just a small set of many such examples, illustrate a common repertoire of policy instruments—detention, segregation, language suppression, and surveillance—through which states pursue repressive projects of social engineering.

A state's capacity to implement coercive directives rests on ideology—shared beliefs about appropriate ends and means—and on the extent to which bureaucrats embrace that ideology. Policymakers can articulate policy objectives under the banner of an official ideology, but their realization depends on the bureaucrats who carry them out. Bureaucrats, however, may not be neutral functionaries: they can enter their roles with beliefs and ideological commitments that shape how they choose to implement policy. A large qualitative literature on everyday bureaucracy shows that officials frequently bring distinct beliefs, values, and attitudes, which shape how they approach their positions (e.g., Brehm and Gates, 1997; Maynard-Moody and Musheno, 2003).

The diversity of bureaucratic beliefs raises fundamental questions about how governments operate through individuals, particularly in contexts with high-stakes decisions concerning rights and punishments. What factors shape the strength of support for rights-abridging policies within government bureaucracies? And, to what extent do individual differences across personnel alter the intensity, targeting, and timing of such measures? These questions are particularly salient when implementation turns on meaningful discretion and in contexts where bureaucrats face resistance from local community members. Yet, empirical evidence on this topic remains limited, particularly at large scale, due to the twin challenges of measuring the beliefs and ideology of bureaucrats along with relevant data on individual-level performance.

This paper provides a novel study of the importance of ideology in government by

examining a formative institution in U.S. history: the Office of Indian Affairs. As one of the most enduring and wide-ranging social interventions in American history, it exercised extensive control over land, education, and legal governance of Native populations for over a century. We focus on the dominant ideology that emerged and structured the agency's work in the late 19th and 20th centuries: assimilation and the goal of encouraging Native Americans to abandon tribal cultural practices in favor of Western norms. This setting offers a rare opportunity to observe how bureaucratic ideology evolved and shaped implementation of coercive policies during a critical period of major federal reform. Over these decades, policy toward Native Americans shifted dramatically, including the dismantling of collective landholding by tribes and the promotion of off-reservation schools that sought to "civilize" Native children.

The foundation of our analysis is the large-scale digitization of decades of archival records from the Indian Affairs office that have not been used previously for comprehensive quantitative analysis. Key to our analysis is that Indian agents—the bureaucrats tasked with enforcing federal policy on reservations—were required to submit annual assessments describing their operations and activities. In addition, school leaders, physicians, missionaries and other personnel involved with local Indian Affairs operations also submitted reports. To measure ideology across the bureaucracy, we process these annual reports and use them as a rich source to infer the beliefs of Indian Affairs personnel based on both the tone and framing used to describe their official interactions with Native communities and efforts to implement government policy. To connect these beliefs to downstream patterns of bureaucratic behavior, we digitize additional archival materials to examine how variation in ideological commitments across local agencies shaped the early implementation of land allotment following the Dawes Act—a defining policy of the assimilation era that required sustained effort amid tribal resistance and ultimately led to large-scale dispossession.

Methodologically, we extract systematic information on the intensity of each bureaucrat's support for assimilation goals and policies using large language models (LLMs). Using a GPT-4o classification prompt, calibrated on a small-scale benchmark sample of manually evaluated reports, we code annual reports for the author's stance on assimilation policy, distinguishing strong support from neutrality or opposition. This approach is similar to other recent efforts to use LLM-based classification methods to extract attitudes and sentiment from narrative documents (Lagakos, Michalopoulos and Voth, 2025) and builds on the emerging body of work in economics that uses text to infer ideology

(Gentzkow, Kelly and Taddy, 2019; Jelveh, Kogut and Naidu, 2024). More broadly, our work contributes to a growing literature that uses scalable computational methods to study representation and ideology in historical and educational content, including work that draws on visual materials (Adukia et al., 2023). To validate our classifier, we compare output from repeat model runs, develop a novel external benchmark that relies on blinded human audits with history educators, and test predictive validity by examining whether assimilation support scores from our annual reports predict policy advocacy—specifically, whether reservation agents wrote letters to federal officials to endorse early proposals for the creation of an Indian police force, a policy designed to accelerate assimilation.

To understand our approach, consider the following summaries of annual reports from two reservation agents. In 1878, William Daugherty's report from the Crow Creek Agency includes standard administrative updates—recounting the number of acres planted, the quantity of hay stored, and the condition of agency buildings. But, Daugherty also frames Native culture as an obstacle. He describes traditional beliefs, such as "sun-worship" as deeply entrenched "native vices," and laments that the "great majority of the tribe are obdurate savages." He praises missionary efforts and celebrates the families who have "abandoned tribal usages and superstition," while warning that unless agents are willing to "invoke the power of military force," the influence of resistant leaders will undo these fragile gains. This report is categorized as providing clear assimilationist support due to its explicit ideological stance: it treats Native culture as something to be dismantled. In contrast, James Roberts's 1873 report from Camp Apache reflects a more neutral attitude toward assimilation. His account focuses on logistical challenges such as insufficient supplies, funding delays, and the need for farming equipment, buildings, and medical aid. Although Roberts notes that some Apache leaders wear Western clothing and that the community has embraced agriculture, he does not celebrate these changes as signs of moral or other advancement. His tone is pragmatic, and there is no argument for replacing Indigenous institutions or culture. Despite covering similar topics, the difference lies in tone—whether the author expresses normative support for assimilation—which our LLM-based approach is designed to detect.

Processing the full sample of over three thousand reports written between 1868 and 1906, our LLM approach identifies just more than 70 percent of reports as expressing strong support for assimilationist policies or goals. Nearly all reports discuss topics broadly related to assimilation, with 94 percent covering land or allotment policy and 38 percent addressing boarding schools. As previewed, topical content is not the main driver of scor-

ing, as there are no significant differences in the frequency of major topics between reports coded as strongly assimilationist and those coded as neutral or non-supporting. Instead, our analysis of the LLM's justification statements and a parallel textual analysis of the underlying reports provide evidence that the authors' tone—whether they express normative support for assimilation or argue for its perceived benefits—is the key component of our ideology measure.

Our analysis proceeds in two main parts, where we begin with a descriptive exploration of the evolution of assimilation support over the nearly four-decade period that we study the Indian Affairs office. We find that there is a large rise in assimilation support during the 1870s that only begins to moderate significantly in the 1890s, even as measured support levels remain high. This pattern appears in our full sample of agency personnel and, importantly, is clear among Indian Affairs agents, the local enforcers of federal policy who consistently wrote annual reports during our sample period. Shifts in federal policymaking do not clearly explain the moderation, as major assimilation policies—such as efforts to break up tribal land and Indian boarding schools—continued or even intensified into the early 20th century. Nor can the moderation be explained by directives from higher-level leadership: after digitizing and analyzing Commissioner reports from this period, we find that they consistently expressed strong support for assimilation. In addition, while historical records highlight substantial violence during the 1870s and 1880s, we find no evidence that the attitudes of Indian Affairs bureaucrats were strongly influenced by violence.

Instead, our evidence indicates that personnel appointment and promotion policies played an important role in driving the change in ideological commitments that we detect. The marked rise in assimilation support aligns closely with the federal government's adoption of a policy that delegated authority to nominate Indian Affairs officials to major religious denominations—a unique instance of direct church involvement in federal appointments that began under President Grant's Peace Policy and formed part of the broader assimilationist reform movement of the 1870s. The decline in assimilation support occurs around 1890, after the end of church-nominated appointments and the passage of several appointment reforms. Importantly, military officers—a key group present throughout our sample years and consistently less supportive of assimilation—increased notably in the agency workforce during the 1890s due to shifts in Congressional policy after the Wounded Knee Massacre. At the same time, civil service appointees, who were also less committed assimilationists than their church-nominated predecessors, grew in number

toward the end of our study period. These shifts in personnel composition were themselves shaped by broader political currents of the late nineteenth century, most notably the debates over civil service reform. Thus, the evolving composition of Indian Affairs personnel, rather than broader federal policies or external events alone, most apparently explains the patterns we observe.

The second main part of our analysis turns to consider the consequences of these ideological commitments on bureaucratic performance. To shed light on this question, we focus on the early implementation of the Dawes Act of 1887—a landmark federal assimilation policy that aimed to break up tribal lands by assigning individual tracts of land (allotments) to Native Americans. Although the law was formally authorized at the federal level, its rollout depended on local actors. In practice, the early implementation of land allotment through the Dawes Act unfolded gradually, with many reservations remaining unallotted for years after the law's passage. This slow rollout raises the question of what factors could have enabled some agencies to act sooner. We examine whether variation in our measure of Indian agents' assimilation commitment—a measure of policy conviction that could translate into greater on-the-ground effort in the face of tribal opposition—helps explain early differences in implementation. To conduct our analysis, we digitize allotment records from 1888, providing a measure of agency performance during the first year of Dawes Act implementation.

Our results provide evidence that local agencies led by personnel with stronger past expressed commitments to assimilation allotted more land immediately following the Act's enactment. Specifically, a one standard deviation increase in assimilation support corresponds to a 9.5 percentage point increase in the likelihood of having any allotment ($p < 0.01$) and an increase of about 4,000 acres in the total land allotted ($p < 0.05$). To assess whether this relationship reflects ideology itself—as opposed to other performance-relevant attributes—we augment the analysis with three additional measures of agent characteristics: administrative capacity (capturing explicit evidence of concrete, procedural office practices in agents' reports), annual salary as reflected in the Official Federal Registers of the U.S., and total prior experience in the Indian Service. Across specifications that incorporate these measures alongside baseline agency covariates, the estimated relationship between assimilation support and early allotment activity remains similar, indicating that ideology predicts implementation differences even after accounting for these other dimensions of bureaucratic performance.

A central concern in interpreting these results is that the ideological orientation of

Indian agents may have been correlated with the characteristics of the agencies to which they were assigned. For instance, more assimilationist agents might have been placed in areas already viewed as more favorable to allotment. We address this selection concern using two complementary approaches. First, we present an analysis of balance which shows no meaningful associations between pre-Dawes assimilation views and proxies for the local reservation demographics, culture, or economic conditions. This lack of correlation is consistent with institutional features of the Indian Service that may have generated variation in personnel assignments plausibly exogenous to local conditions—such as frequent vacancies, interim military appointments, and limited information about agents' ideological leanings prior to their appointment. Second, we implement a placebo test: if unobserved local conditions were driving both the type of agent assigned and subsequent allotment activity, then the ideology of each agency's immediately preceding agent should also predict later allotment outcomes. Instead, we find no detectable relationship. Separately, we confirm the robustness of our main results by extending the analysis to later years of Dawes implementation and find similar results.

This paper primarily contributes to work in economic history studying major government campaigns that systematically repressed and coerced marginalized communities in the United States. This research has focused on the consequences of policies ranging from Jim Crow laws (Naidu, 2010, 2012; Althoff and Reichardt, 2024), to immigrant language bans (Fouka, 2020), and coercive medical practices (Alsan and Wanamaker, 2018).[1] Our work directly relates to studies of federal initiatives that disrupted Native populations. For example, Feir, Gillezeau and Jones (2024) show that the near-extinction of the bison—a state-enabled ecological shock—had lasting effects on Indigenous development and political organization. Dippel (2014) demonstrates how the forced consolidation of autonomous Native bands into single reservations undermined local governance and lowered long-run incomes. A distinct strand of this research studies the project of cultural assimilation, showing that off-reservation boarding schools and land allotment programs had important impacts on the social and economic outcomes of Native communities (Gregg, 2018;

[1] In Europe, studies have examined state-sanctioned repression in varied contexts such as religious persecution carried out by the Spanish Inquisition (Drelichman, Vidal-Robert and Voth, 2021), Nazi "Aryanizations" in Germany (Huber, Lindenthal and Waldinger, 2021), and Soviet repression during the Holodomor famine (Markevich, Naumenko and Qian, 2025). Economists have likewise shown that coercive colonial institutions such as the Peruvian mita (Dell, 2010) and the Dutch Cultivation System in Java (De Zwart, Gallardo-Albarrán and Rijpma, 2022; Dell and Olken, 2020) were designed for extraction yet intertwined economic exploitation with political control by constraining autonomy, mobility, and social organization (Acemoglu, Johnson and Robinson, 2001).

Akee, 2020; Dippel, Frye and Leonard, 2020, 2024; Leonard, Parker and Anderson, 2020; Maruthiah, 2024). While prior literature on Native populations or other targeted groups typically estimates the effects of policy exposure, we shift the focus to those administering the policy—federal Indian agents—and introduce new data to recover direct measures of their ideology and trace its impacts on bureaucratic performance. In this way, our study complements foundational qualitative work by historians such as Priest (1942), Hoxie (1984), and Prucha (1984), who richly documented the goals and ideological underpinnings of the Office of Indian Affairs during the assimilation era. While this work draws on primary sources to characterize national policy and official discourse, it has necessarily relied on readings of a limited set of archival material, an inherent feature of approaches grounded in detailed textual interpretation. Our approach builds on this tradition by applying scalable and systematic methods to a large corpus of bureaucratic reports, allowing us to characterize the ideological commitments of all officials implementing assimilation policy.

This paper also contributes to a growing literature in political economy on state institutions and bureaucrats. Prior work has long recognized that bureaucrats bring personal beliefs and motivations that could shape state capacity and service delivery (e.g., Prendergast, 2007; Besley and Ghatak, 2005; Finan, Olken and Pande, 2017). A central focus has been on how these beliefs interact with organizational missions and incentives. Khan (2025) experimentally shows that public workers in Pakistan increase effort when organizational missions are made salient, strengthening mission motivation and improving service delivery. Other studies explore related themes in performance, selection, and incentive design across a range of contexts (e.g., Bertrand et al., 2020; Colonnelli, Prem and Teso, 2020; Dal Bó, Finan and Rossi, 2013; Iyer and Mani, 2012). While this research has made significant progress on measuring bureaucrat incentives and selection, directly measuring bureaucrats' substantive beliefs about the policies they implement—and linking those beliefs to implementation—has remained difficult. We most directly complement Spenkuch, Teso and Xu (2023) who show that partisan misalignment between federal procurement officers and the President reduces bureaucratic performance, consistent with lower worker morale.[2] Distinct from their work, we examine a uniquely consequential policy domain—

[2]Other work similarly examines the political alignment of bureaucrats with high-level politicians such as the President (Bednar and Lewis, 2024) and governors (Geys et al., 2025). Also relevant is recent research that focuses on the political party affiliations of street-level bureaucrats, namely, police officers in the contemporary period (Ba et al., 2025; Goncalves and Tuttle, 2025). Some of this work builds on a classic literature in political science on representative bureaucracy, which posits that, under certain conditions, service quality improves with the degree to which civilians and bureaucrats share salient social identities

Native assimilation—where implementation frequently required persuasion to advance coercive policies in the face of local community resistance, making ideological commitment an operative margin of state capacity. In addition, we distinguish our measure of ideology from other bureaucrat attributes that may independently raise performance—most directly, administrative capacity, annual salary, and accumulated experience—allowing us to assess whether ideology predicts implementation beyond these alternative channels. Moreover, through our focus on a policy-specific measure of ideology rooted in culture and norms, we introduce a novel method that leverages modern language models to extract beliefs from narrative texts, enabling new insights into how we understand the ideological foundations of bureaucratic behavior and its role in shaping policy.

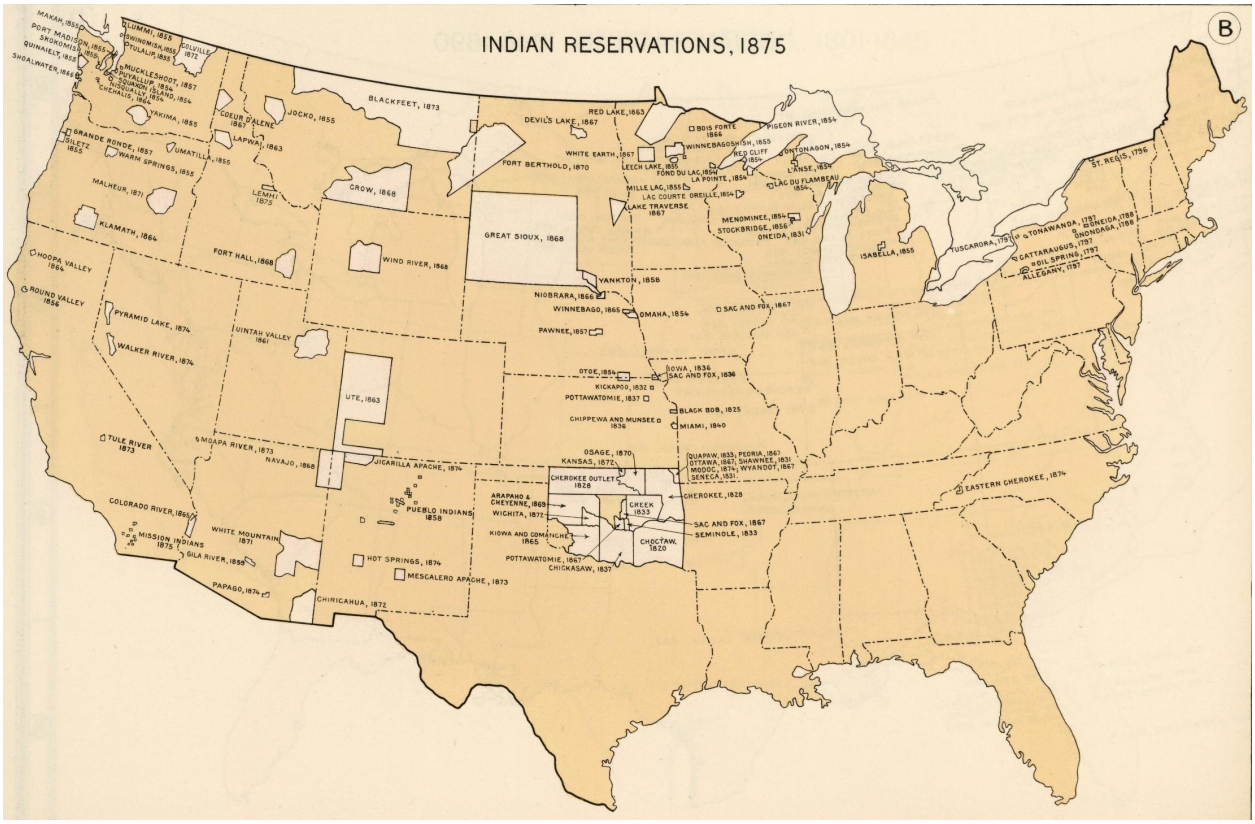
2 A History of Native American Reservations and the Office of Indian Affairs

The 19th century saw an irrevocable transformation of Native American life as the United States displaced tribal nations through war, treaty-making, and forced removal to facilitate continental expansion. The Indian Removal Act of 1830 formalized a strategy of east-to-west relocation, leading to the forced migration of tens of thousands of Native people from the southeastern United States to Indian Territory. In the decades that followed, U.S. expansion continued into the Great Plains and the Southwest, where many Indigenous communities were confined to reservations. Figure 1 provides a map of reservations in 1875 and highlights the system's wide territorial spread across much of the continental U.S. As settlement pushed westward after the Civil War, new territories were incorporated into the Union—often on lands previously designated as Indian Country. Colorado achieved statehood in 1876, followed by the Dakotas, Montana, and Washington in 1889, and other western territories shortly thereafter. By the end of the century, tribal sovereignty had been systematically undermined, and more than 200,000 Native people were living under federal oversight on reservations across the United States.

The Office of Indian Affairs (OIA) was the central federal authority over reservation life as the system expanded and was formalized during the continental expansion of the U.S. Established in 1824 within the War Department, the agency initially managed relations between the federal government and tribal nations in the context of removal and treaty enforcement. In 1849, it was transferred to the newly created Department of the Interior, marking a shift from military control to civilian administration. Over the second half of the 19th century, as the number of reservations grew, the OIA expanded rapidly in both

(Kingsley, 1944; Dolan and Rosenbloom, 2003; Ba et al., 2021).

Figure 1: Map of U.S. Indian Reservations, 1875



Notes: Map shows Indian reservations as of 1875 (shaded light tan). Adapted from Plate B, "*Indian Reservations, 1875*," from Charles O. Paullin and John K. Wright, *Atlas of the Historical Geography of the United States* (Carnegie Institution of Washington, 1932). Digital scan courtesy of the Digital Scholarship Lab, University of Richmond. In the public domain.

scale and scope. As shown in Appendix Figure A1, the Indian Office began the 1870s managing annual budgets of around $5 million (in 1873 dollars) and fewer than 1,000 employees; by the 1890s, these numbers had more than doubled to just over $10 million in expenditures and 4,000 employees. Its responsibilities ranged from distributing rations and managing land to running schools with teachers, courts with judges, and reservation police forces with their own officers and doctors. This unusually broad scope and level of complexity—even when compared to the Post Office, the government's largest civilian agency—meant that the Indian Office often functioned as a de facto local government on many reservations.

The dramatic expansion of the Office of Indian Affairs in the late 19th century was driven by major changes in U.S. Indian policy after the conclusion of the Civil War. Politi-

cal leaders and a coalition of religious organizations, social reformers and political elites advanced the view that Indigenous cultures should be dismantled and replaced with Western norms (Priest, 1942).[3] In this framework, Native people were to become private landowners engaged in traditional Western farming and adopt Euro-American cultural practices (including converting to Christianity)—a vision that required deep intervention into family life, governance, and spiritual practice. This push gave rise to a suite of coercive assimilationist reforms. Off-reservation boarding schools separated children from their families in order to suppress Native languages, religion, and identity (Adams, 1995; Lomawaima, 1995; Trennert, 1988; Vuckovic, 2024). The Dawes Act of 1887 authorized the division of tribal lands into individual allotments to erode collective land ownership and promote market agriculture (McDonnell, 1991). Allotments under Dawes also set in motion the reduction of Native landholdings by defining "surplus" acreage—land beyond what was needed for individual allotments—that would be opened for sale to non-Native settlers (Otis, 1973).[4] Additional policies banned ceremonial practices and imposed Anglo-American legal and religious systems. These sweeping efforts dramatically expanded the administrative responsibilities of the Indian Affairs bureaucracy, which now became the operational core of a nationwide campaign to transform Native life.

2.1 The Indian Affairs Bureaucracy, Personnel Selection, and Diversity of Ideology

To implement the federal government's wide-ranging assimilation policies, the Office of Indian Affairs relied on a growing and diverse workforce stationed across the reservation system. At the center of this bureaucracy were Indian agents, the federal government's principal representatives on reservations who were appointed directly by the President, typically with Senate confirmation (Stuart, 1979). These agents exercised sweeping administrative, fiscal, and quasi-judicial authority and were supported by a broad array of personnel to implement day-to-day operations. Until the expansion of civil service reg-

[3] In the aftermath of the Civil War, a range of political and advocacy organizations promoted assimilationist reforms through lobbying, public campaigns, and missionary activity. These efforts included the creation of the Board of Indian Commissioners in 1869, which institutionalized Protestant and philanthropic oversight of Indian policy, and culminated in the annual Lake Mohonk Conferences, where federal officials, reformers, and religious leaders coordinated support for policies such as land allotment, off-reservation boarding schools, and the suppression of tribal governance and religious practices (Prucha, 1984).

[4] Contemporary officials frequently framed land allotment as an instrument of assimilation. Soon after the Act, Superintendent of Indian Schools Daniel Dorchester wrote in his annual report: "The breaking up of the more offensive features of the tribal relation is destined to follow the severalty allotments, and with that also must come, in time, habits of industry, individuality, and self-reliance, all of which will be conserving forces to strengthen the Indian youth upon whom the Government confers culture" (p. 335, U.S. Department of the Interior, 1889).

ulations in the late 19th century, Indian agents generally had the authority to appoint these subordinate employees, allowing them to shape the local administrative apparatus according to their own priorities and beliefs.[5] Staff included physicians, teachers, farmers, and clerks—many of whom were based on or near the reservations they served. Together, this distributed workforce managed both routine administrative duties and the execution of federal policies. The latter effort often encountered resistance from tribal leaders and members who opposed the major assimilation era policies such as boarding schools and land allotment (Adams, 1995; Otis, 1973).

Due to their broad authority and close control over reservation life, Indian agents became some of the most powerful and controversial bureaucrats in the federal government. Within the Office of Indian Affairs itself, their influence was widely acknowledged. As Commissioner Hiram Price observed in 1883, "The civilization and elevation of the Indian depends more upon the agents who have their immediate care and management than upon any and all other instrumentalities combined" (p. VIII, U.S. Department of the Interior, 1883). Yet, this same discretionary power raised deep concerns among reformers and Native advocates. Testifying to this, Native rights activist Thomas Tibbles wrote: "An Indian agent under our system is an absolute monarch. He can practice any cruelty and there is no appeal so long as he is in favor" (Unrau, 1972). These fears were not unfounded. Throughout the 1870s and 1880s, corruption scandals plagued the agency, with agents accused of embezzling annuity funds, inflating census rolls, and selling government rations on the black market (Prucha, 1984).[6] Mounting concerns over such abuses ultimately led to the establishment of a formal corps of Indian inspectors—federal officials tasked with monitoring agency conduct and reporting directly to Washington.

In response to persistent concerns about fraud and mismanagement, the process for selecting Indian agents became the subject of sustained debate and reform throughout the late 19th century. Scrutiny of appointments was further amplified by the instability of the position, as poor living conditions, illness, and threats to safety often led to resignations

[5]While some subordinate agency employees were appointed directly through the Indian Office in Washington in response to concerns about corruption, Indian agents still shaped their staffs by recommending candidates and, at times, petitioning for the removal of unwanted appointees (Stuart, 1979).

[6]For example, a particularly notable case occurred in South Dakota when Chief Red Cloud of the Oglala Lakota accused agent J. J. Saville of furnishing poor supplies in insufficient quantities (Phillips, 1972). After the case was publicized, an official investigative committee found that inferior supplies had been provided and tribal members at the Red Cloud agency had been defrauded. Another example was found at Tulalip, where the agent had used government funds to hire loggers to cut Indian timber for his own profit (Keller, 1983).

and frequent vacancies.[7] Prior to the election of President Ulysses S. Grant, Indian agents had primarily been appointed through a system of political patronage and selected based on partisan loyalties rather than competence or the ability to promote moral reform. In 1869, Grant implemented the so-called "Peace Policy," which initially attempted to promote non-political appointments by selecting army officers as agents. Under pressure from Congress, this approach was soon replaced by a system that delegated the power to nominate Indian agents to Protestant religious denominations.[8] However, the system again reverted to political control by the 1880s as members of Congress criticized the policy of religious favoritism, while others resented the loss of political patronage. Several additional key reforms occurred following the Wounded Knee Massacre in 1890. Notably, Congress passed legislation allowing military officers to be detailed as Indian agents to fill vacancies, and a subsequent act enabled the Commissioner of Indian Affairs to abolish agent positions and elevate the superintendents of local reservation schools to oversee agencies (United States, 1893). These superintendent positions fell under the classified Civil Service system, established earlier by the Pendleton Act, and therefore required candidates to pass competitive examinations. Many superintendents had risen through the ranks of Indian Affairs, bringing prior experience, shared norms, and a working knowledge of the tribes they served—an understanding of local circumstances and attitudes that incoming political appointees often lacked. The shift produced a more professionalized administrative corps—selected for merit and relevant experience (Stuart, 1979).

These shifting appointment policies, along with broader social and political changes, resulted in a highly heterogeneous Indian Affairs bureaucracy that potentially held distinct ideologies. Personnel arrived at their positions with different training and life experiences. Civilian appointees often had little or no prior experience working with Native populations (Stuart, 1979; Keller, 1983).[9] Military officers brought a background in discipline and

[7] Living and working conditions for agents were often harsh and unpredictable. John Critchlow, appointed to the Uintah Agency in Utah, wrote that he had been "deluded by eastern novelists" and confessed that he would never have accepted the post had he known how miserable conditions were (p. 109, Keller, 1983). The risks could also be severe: in 1879, Indian Agent Nathan Meeker and other personnel at the White River Agency were killed after Meeker attempted to force the Ute to abandon their traditional hunting grounds and adopt settled farming, sparking an armed uprising later known as the Meeker Massacre (Hoxie, 1984).

[8] According to the account by Indian Agent Lawrie Tatum, the policy of delegating Indian agent appointments was initially promoted by the Society of Friends. Tatum wrote that Grant responded to the proposal by saying: "Gentlemen, your advice is good. I accept it. Now give me the names of some Friends for Indian agents and I will appoint them. If you can make Quakers out of the Indians, it will take the fight out of them." (p. 246, Sim, 2008).

[9] For example, James M. Haworth was appointed as the agent to the Kiowa and Comanche despite

command, viewing Native populations through the lens of control and containment.[10] Religious appointees may have been committed to the goal of moral reform and cultural transformation, while political appointees and those connected to networks that benefited from fraudulent contracts and black market sales were motivated by personal enrichment or advancement through illicit means. Even among those appointed by reform-minded religious groups, motivations and levels of commitment were far from uniform. For instance, John Armstrong was nominated for an agency position by his friends and initially declined his appointment to serve as an agent in New Mexico. After changing his mind and accepting the job, he ultimately resigned after sustained accusations of misconduct and drunkenness (Bender, 1988). In contrast, Lawrie Tatum was given an unsolicited appointment but embraced the role as a moral calling and worked diligently to promote assimilationist goals such as agricultural reform (Cutler, 1971). These cases reflect the range of individuals that ultimately comprised the OIA workforce. In sum, the personnel tasked with carrying out federal policy brought a wide range of assumptions, goals, and beliefs to their work—differences that could potentially shape how assimilationist policy was interpreted and implemented on the ground.

3 Data

Our analysis draws on a large corpus of annual reports authored by personnel of the Office of Indian Affairs (OIA), which we link to an original collection of data on the background characteristics of the OIA workforce, agency characteristics, and local outcomes. Using the combined data, we construct two main samples. The first is a report-level sample that treats each annual report produced by the Office workforce as the unit of analysis. The second is an agency-level sample, where we aggregate across reports to construct measures of the average ideological orientation of the personnel leading a given agency. This section describes the primary data sources and provides an overview of the construction of these two samples. Further details on the data and our measures are provided in Appendix B.

lacking experience with Native populations and having no background in agency affairs (Hiatt, 1958).

[10]Military leaders themselves often cast their view of policies toward Native populations in terms of control and containment. In their testimonies to Congress advocating for military oversight of the Indian Affairs office, General William T. Sherman argued that Army management of supplies and force would prevent conflict, while General Philip Sheridan testified that the Army could more effectively promote assimilation, particularly the promotion of agriculture, since, in his words, the military "could, to some extent, compel the Indians to labor on individual tracts of land." (U.S. House of Representatives, 1876).

Annual Reports: Our core data source consists of the annual reports filed each year by high-ranking personnel assigned to the Indian Affairs agencies responsible for managing relations with tribal nations and administering reservations across the United States. OIA regulations required that Indian agents submit a written report every year to the Commissioner of Indian Affairs, summarizing activities, progress, and notable developments during the previous year.[11,12] In addition to agents, annual or periodic reports were also filed by other local officials such as reservation school teachers, physicians, and farmers, often for inclusion in the agent's own annual report. We use the annual reports produced from 1868 to 1906, a period when the Annual Report of the Commissioner of Indian Affairs (ARCIA) systematically published full agency-level reports authored by OIA personnel alongside the Commissioner's own report. We begin in 1868, just before President Ulysses Grant's administration launched a series of reforms that fundamentally reshaped the Indian Affairs bureaucracy.[13] We extracted these reports from each volume of the ARCIA and recorded metadata on the reporting agency, the agency's state location, the name based on the signature of the author, and the author's title (e.g., Indian Agent or Physician in Charge).

Characteristics of Personnel: We rely on a range of sources to obtain information on key characteristics of the individuals who authored the annual reports in our corpus. A major limitation of the reports themselves is that they contain no biographical details: in a large share of records (41 percent), the signature line includes only an initial for the first name alongside a full last name. To recover basic demographic characteristics—specifically, year of birth, place of birth, and full first names—we employ a multi-step approach that draws from two primary sources. The first source is the federal biennial register, a personnel directory that lists every federal employee and importantly includes information on place of birth and, in some cases, a complete first name. We extract all entries associated with the OIA from these registers and link them to report authors based on the available

[11] Appendix Figure A2 reproduces the official annual reporting directions from the 1884 Regulations of the Indian Department.

[12] Before institutional reforms in the 1870s, many Indian agents reported to superintendents of Indian Affairs who oversaw multiple agencies and relayed information, including annual reports, to the Commissioner. These superintendent positions were gradually eliminated by congressional acts, with the last one abolished in 1878 (Prucha, 1984). We stress that the superintendents of Indian Affairs in this earlier system served as an intermediate administrative authority and should not be confused with the homonymous but distinct position of "superintendent" at local reservation schools.

[13] After 1906, the format of the ARCIA changed and agency reports written by local personnel were not included in the published materials.

name information and agency location. The second approach involves a combination of automated and manual searches of state historical archives and genealogical websites to identify the full first name, year of birth, and place of birth for the authors in our corpus. Our approach only uses the information from sources that directly reference the individual's employment or close involvement with the Office of Indian Affairs, ensuring that all biographical matches are grounded in direct evidence of their service.[14]

For authors that we identify as leading a local agency within the Office of Indian Affairs, there are formally two types of positions: Indian Agents and reservation school superintendents (i.e., career civil servants) promoted to oversee an agency. As noted above, the promotion of superintendents to a broader leadership role became possible after Congressional reforms in 1893 (United States, 1893). Much of our analysis focuses on authors holding agency head positions, which we group in a binary indicator that codes both Indian Agents and promoted superintendents as a single category. Consistent with this coding, we refer to all agency heads as "agents" throughout the paper. We measure appointment types and identify promoted superintendents using schedules in the ARCIA, which listed each agency and the personnel in charge during a given year. Among Indian Agents, a key distinction is whether their appointment was through a military detail or a nomination by a religious denomination. Military appointments are identified in the schedule by the inclusion of a formal military rank (e.g., "Captain, U.S.A.") next to the agent's name, while promotions of school superintendents are indicated by the title "school superintendent" appearing alongside the individual's name. Religious appointments are inferred by matching a non-military agent's first year of service with the period during which their agency was officially assigned to a religious denomination, based on a separate ARCIA table that reported these assignments. Such religious appointees are temporally clustered in the 1870s and 1880s, reflecting the fact that the denomination-based appointment system was discontinued after 1881.

Dawes Allotment Records: As a key measure for our analysis of the performance implications of bureaucratic ideology, we use land allotment statistics reported in the ARCIA.

[14]Our approach generates a list of potential sources that contain genealogical information on the authors included in our corpus. We manually review each potential source and confirm that it explicitly links the individual to the OIA. For instance, our search for Francis Heyer Weaver recovered an entry on Find a Grave, the world's largest gravesite collection with over 250 million entries. On the page for Francis Heyer Weaver, the biography reproduced on the page provides a direct description of the individual's OIA service: "On April 10, 1877, he accepted an appointment as the Indian Agent for the Southern Ute Indians in southwestern Colorado." Appendix B provides further details on our approach.

The Dawes Act passed in 1887, and we focus on performance during the first year of the policy using statistics on the number of allotments and total acres allotted from the 1888 ARCIA. The original records are presented for individual tribes. Since agents were assigned to agencies that often encompassed multiple tribes, we aggregate the underlying records to the agency level to align with our ideology measures. As robustness checks, we also use comparable allotment statistics from the 1889 and 1890 ARCIA.

Characteristics of Agencies: We digitize measures of agency-level characteristics from several benchmark years to include as controls in our empirical exercises. For our descriptive analysis of the factors driving attitudes, we digitize information on total acres under an agency's jurisdiction, total Native population, the fraction of the Native population reported wearing Western dress (as a proxy for cultural change), and livestock holdings (as a measure of economic conditions). We draw these measures from three benchmark "anchor" years (1875, 1885, and 1895), selected to provide broad coverage and comparability across the study period. To align the annual reports with these benchmarks, we assign each report to the closest anchor year within its decade (e.g., reports from 1868–1879 are linked to 1875; 1880–1889 to 1885; and 1890–1906 to 1895), with the goal of assigning each report a corresponding set of agency controls and avoiding missing observations. As detailed in Appendix B, we construct harmonized crosswalks for each decade to link the agency listed in an annual report to its counterpart in the relevant benchmark year. This procedure accounts for the fact that agencies frequently opened, closed, merged, or were renamed during the period, meaning that report-year agency titles do not always map cleanly onto a single benchmark-year agency.[15] In addition, for our analysis of the relationship between personnel ideology and the implementation of the Dawes Act, we digitize the same four agency-level characteristics from the 1887 ARCIA.

3.1 Samples for Main Analysis

Our main analysis is based on two main samples. First, we use a report-level sample to study both the ideology of the OIA bureaucracy as a whole and its evolution over our nearly four-decade study period. The full corpus from 1868 to 1906 contains 4,114 annual reports. We exclude reports with fewer than 500 words, as these contain limited

[15]For example, the Mescalero and Jicarilla agencies operated separately in 1881 but were merged in 1882 into a single agency (U.S. House of Representatives, 1882). Accordingly, all reports from the separate Mescalero and Jicarilla agencies in 1881 are mapped to the combined agency's statistics reported in the 1885 ARCIA.

information for inferring author ideology and beliefs. The resulting sample includes 3,554 reports written by 1,301 distinct authors. For these authors, demographic characteristics are available for a subset who can be linked to the supplemental sources. We use first names to infer gender. A challenge for this approach is that a large share of the annual reports contain only the author's first initial in their signature. To improve coverage, we link authors with only a first initial to external records as described above. Combined with cases where the first name was already available, this yields a sample with full first names for 81 percent of authors. Place of birth is available for 87 percent of authors, primarily from the biennial federal registers. Information on year of birth is more limited: we obtain this information for 36 percent of authors, relying exclusively on online genealogical sources (e.g., state archives and obituary databases). In the following subsection, we summarize the characteristics of this sample. The final data is augmented by including agency-level characteristics from several benchmark years as discussed above.[16]

The second sample is defined at the agency level and is used to examine how the ideological commitments of Indian Affairs personnel shaped concrete policy outcomes for Native populations under their jurisdiction. As detailed in Section 5, our analysis exploits a major institutional shift midway through our observation period: the Dawes Act of 1887. The Act created a natural test of whether personnel with stronger assimilationist commitments acted more aggressively when tasked with implementing a high-stakes, assimilation-oriented policy. Because we observe agents' expressed views on assimilation in reports written before 1887, we can treat these ideological positions as predetermined with respect to subsequent allotment activity.

The agency-level sample includes 55 agencies that were in operation in 1887 and whose leadership at the passage of the Dawes Act had sufficient reporting history to measure the strength of their prior commitment to assimilation.[17] For all agencies in our sample, we construct pre-1887 measures of ideology using all available annual reports written by the agent in charge. We augment these data with digitized records describing each agency's social and economic context in 1887, including the total acres under supervision, the total

[16] A small number of non-agent reports were written from non-reservation institutions such as military outposts (e.g., Fort Apache). As such, there are no agency-level measures such as the number of acres overseen or other characteristics to link to these reports. We retain such reports in relevant analyses, setting missing values to zero and including indicators for missing data.

[17] We exclude four agencies that experienced leadership changes in the year immediately preceding the Dawes Act. In addition, we exclude the Union Agency, which had responsibility for the "Five Civilized Tribes"—the Cherokee, Chickasaw, Choctaw, Creek, and Seminole in what is now eastern Oklahoma—who were exempted from the Dawes Act of 1887.

Native population, the fraction of the Native population reported wearing Western dress, and the size of livestock holdings.

Basic Summary Statistics: Table 1 provides basic summary statistics for our sample of reports and their authors. The average word count is 1,917, which is moderately lower than the 2,804 words in the American Life Histories narratives studied in Lagakos, Michalopoulos and Voth (2025). Reports are disproportionately from the Midwest (33 percent) and the West (51 percent), with smaller shares from the South (14 percent) and Northeast (1 percent, which comes from the New York Agency). This distribution reflects the geographic concentration of major agencies in the Dakotas (e.g., Standing Rock, Pine Ridge, and Rosebud), in Montana (e.g., Crow Agency), and in the far West (e.g., Navajo and Colorado River Agencies).

As noted above, the sample has 1,301 unique authors, who on average contribute just under three reports each (Table 1, Panel B). Because some individuals moved into and out of agent positions over their careers, we classify authors at the author level as either "ever an agent" or "only non-agent" for the current discussion of summary statistics. The majority of reports (72 percent) were written by those who held Indian agent positions with the remainder (28 percent) submitted by non-agents. Non-agents held a variety of posts in the OIA, most commonly as teachers (56 percent) with smaller shares for farmers (5 percent) and missionaries (6 percent). This occupational mix reflects the OIA's emphasis on promoting education and training.[18] Consistent with their broader range of responsibilities, agents tended to write substantially longer reports (2,127 words on average) compared to non-agents (1,367 words on average). Agents also typically wrote more reports than non-agents; however, the fact that the average agent authored only about three reports underscores the relatively short tenure of OIA local leadership, rather than long-standing service.

Among the demographic patterns, the place of birth statistics stand out for their notable contrast with the geographic distribution of agencies. While most reports originate from the West, relatively few of the authors themselves were born there. Instead, the majority were born in the Northeast (32 percent) and Midwest (39 percent), with only 6 percent from the West.[19] There is also a substantial immigrant presence as 9 percent of personnel were foreign born. This reflects a workforce largely recruited from outside the frontier

[18] Appendix Figure A3 provides the full breakdown on non-agent positions within our sample.

[19] Appendix Figure A4 is a map that provides a detailed report on the total number of authors born in each U.S. state or territory (based on the 1870 boundaries).

Table 1: Annual Report Sample and Author Characteristics

	(1) All	(2) Ever an Agent	(3) Only Non-agent
A. Report Characteristics			
Number of reports	3,554	2,573	981
Word count (avg.)	1,917	2,127	1,367
Agency Region: Northeast	0.012	0.015	0.006
Agency Region: Midwest	0.331	0.315	0.374
Agency Region: South	0.142	0.133	0.167
Agency Region: West	0.514	0.538	0.453
B. Author Characteristics			
Number of authors	1,301	823	478
Reports by each author (avg.)	2.732	3.126	2.052
Linked Authors			
Female (share)	0.047	0.001	0.126
Birth Region: Northeast	0.315	0.337	0.273
Birth Region: Midwest	0.394	0.369	0.439
Birth Region: South	0.135	0.133	0.138
Birth Region: West	0.063	0.072	0.048
Birth Region: International	0.094	0.090	0.101
Age (avg.)	44.732	46.019	41.800

Notes: This table shows descriptive statistics for annual reports and author characteristics. The sample is restricted to reports with at least 500 words. Authors are categorized as "Ever an Agent" if they ever served as Indian agents or, after 1893, as reservation school superintendents promoted to oversee an agency. The remaining authors in our corpus are "Non-agents" who worked at the OIA only in other positions such as teachers, physicians, or farmers. Among individuals who ever held agent positions, only 8 percent of their reports in the corpus were written during periods when they were not serving in agent leadership positions, primarily in the latter part of the sample period. Agency regions represent the geographic location where reports were submitted. Author demographic characteristics are available only for the subset of individuals linked to supplemental records, including biennial federal registers and original genealogical sources.

regions where reservations were located—resulting in personnel who often had limited exposure to Native populations prior to their OIA employment. The average author age is 45 years, consistent with mid-career government service.

For Indian agents in our sample, we also classify appointment type—whether on detail from the army, religious denomination, civil service promotion, or political/patronage nomination. Appendix Table A1 shows that political/patronage appointments were the most common (45 percent), followed by religious nominations (29 percent). Army offi-

cers accounted for about 10 percent of agents and were present throughout our sample period, whereas civil service appointments (i.e., the reservation school superintendents promoted to oversee an agency, whom we include in our definition of agents) emerged only after reforms in the 1890s and make up about 9 percent of the sample. These patterns align with the historical shift away from denominational and military control toward professionalized and bureaucratic appointments.

4 Methodology for Identifying Assimilation Ideology

This section describes our main methodology for identifying ideological commitment to assimilation policies within the Indian Affairs bureaucracy. We begin with an overview of our LLM classification prompt that describes the development process and criteria for selecting our final prompt. To better understand the approach, this section then provides an illustrative example based on one annual report and the resulting LLM-generated assimilation support score and justification. Next, we offer further insight into our LLM model's behavior by examining high-level patterns from applying the model to the full corpus of reports, along with diagnostic analyses that examine topic frequency and the LLM's justification output. To complement these diagnostic exercises and aid interpretation, the next part of this section applies standard textual analysis techniques to the underlying reports. The section concludes with a series of sensitivity checks, human audit analysis, and predictive tests, to evaluate the reliability of our approach.

4.1 Overview of LLM Classification Approach

To measure the ideological commitments of bureaucrats, we developed a classification task using a large language model to assess the tone and framing of thousands of annual reports from the Office of Indian Affairs. Our structured prompt was developed using GPT-4o and instructed the model to rate each report's attitude toward assimilation policies such as boarding schools and land allotment. This focus is natural given that our sample period coincides with the enactment and expansion of large-scale assimilation policies and because the annual reports systematically tracked their implementation and evaluated progress. We use a binary classification in which "1" indicates support and "0" indicates neutrality or opposition. The prompt emphasized that "0" should be the default unless the text expressed clear ideological or judgmental support.[20] In addition to the score,

[20]Note that we do not separate paternalist expressions from those that express the view that Native culture should be eliminated on moral grounds. This is because both lead to support for the OIA's assimilation policies.

the model returned a detailed justification and three separate pieces of evidence, each tied to a quote from the report. This approach broadly follows the LLM approaches in Lagakos, Michalopoulos and Voth (2025) and Fang, Li and Lu (2025). The inclusion of direct quotations as evidence is a key feature of this approach, serving to ground the model's output in the source text and mitigate the risk of hallucination.[21] The prompt also included detailed decision rules and concrete examples that clarify the distinction between mere compliance and ideological support. For instance, an agent might accurately describe implementing a federal boarding school program without endorsing it; our approach codes only explicit normative approval or evaluative language as ideological support, not neutral accounts of compliance.[22]

The following is a brief summary of the development process, while Appendix C provides further details and reproduces the final prompt in full. Beginning with a set of 30 randomly selected annual reports, we manually scored each based on whether the author's text clearly indicated personal commitment and support for assimilation policies. This small sample served as a benchmark that we used subsequently to conduct calibration exercises that evaluated the performance of candidate prompts by comparing each of their output to the manual classifications. Across iterations, we refined the prompt by clarifying decision rules, discussing edge cases, and adding examples. This round-by-round process helped us converge on a prompt with improved accuracy and aligns with recommendations from the computer science literature to structure prompts with supplementary instructions and decision boundaries (Chen et al., 2025).[23] Moreover, our use of explicit instructions and examples follows recommended best practices from the OpenAI (2024) Cookbook.

[21] We audit the data and verify that quotes provided in the LLM output are included in the original source document.

[22] This approach contrasts with studies that infer ideology from compliance or revealed decisions, such as judicial votes (e.g., Clark, Montagnes and Spenkuch, 2022) or legislative roll calls (e.g., Poole and Rosenthal, 1997). In our setting, bureaucrats could faithfully execute assimilationist policies while remaining neutral or skeptical. Our measure instead recovers their evaluative stance. Section 5 tests whether our stance-based measure of policy support predicts concrete bureaucratic action—specifically, the early implementation of land redistribution through the Dawes Act.

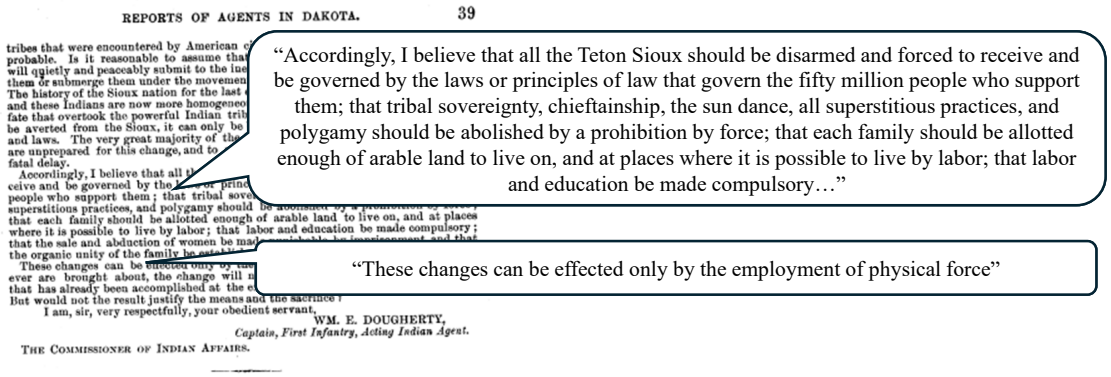
[23] In the benchmark sample of 30 randomly selected reports, our final prompt aligns with our manual classification in 28 of 30 (93 percent of cases), with the two deviations being in either direction. Appendix Table A2 presents a subset of illustrative examples, showing the manual and GPT-4o scores together with our justification statements and representative quotes.

4.2 Illustrative Example

To demonstrate how our classification approach operates in practice, Figure 2 presents selected excerpts from one annual report alongside the corresponding output from our LLM prompt. The selected report returns to the case of William E. Daugherty, the Indian agent we briefly described in Section 1. We now focus on his report from 1880 from the Lower Brule Agency in South Dakota. As shown in Panel (a), the report includes a direct endorsement of federal efforts to restructure Native life through disarmament, compulsory education, and the abolition of tribal practices. Daugherty describes tribal sovereignty and customs as "superstitious practices" and calls for their elimination and later emphasizes that these changes can only be achieved through the use of physical force.

Figure 2: Annual Reports and Assimilation Score Examples

(a) 1880 Lower Brule, Wm. E. Daugherty, Excerpts


REPORTS OF AGENTS IN DAKOTA. 39

"Accordingly, I believe that all the Teton Sioux should be disarmed and forced to receive and be governed by the laws or principles of law that govern the fifty million people who support them; that tribal sovereignty, chieftainship, the sun dance, all superstitious practices, and polygamy should be abolished by a prohibition by force; that each family should be allotted enough of arable land to live on, and at places where it is possible to live by labor; that labor and education be made compulsory…"

"These changes can be effected only by the employment of physical force"

WM. E. DOUGHERTY,
Captain, First Infantry, Acting Indian Agent.

THE COMMISSIONER OF INDIAN AFFAIRS.

(b) Score and Rationale for 1880 Lower Brule, Wm. E. Daugherty

Assimilation score	**Assimilation score justification**
1	The text expresses a clear endorsement of assimilation policies, advocating for the disarmament of the Sioux and the imposition of laws and principles of the dominant society. The writer supports the abolition of tribal sovereignty and cultural practices, viewing them as obstacles to progress. The language used indicates a belief that assimilation is necessary and morally justified.

Notes: Panel (a) is a selected excerpt of William Daugherty's 1880 Annual Report from the Lower Brule Agency. The bold text highlights a key portion of text that informs our large-language model (LLM) assimilation support scoring model. Panel (b) shows the resulting LLM output which includes the binary score along with the LLM's overall scoring justification. In addition to the overall justification, the full output from our scoring model includes three quotes from the original text which includes the highlighted portion.

Panel (b) displays the model's structured output, including the support score (i.e., a value of "1" for strong assimilationist support) and the LLM-generated justification. As expected given our prompt and its guidelines, the justification output identifies the features of the original record highlighted above: that the writer personally endorses specific federal assimilation efforts, including the disarmament of the Sioux and the imposition of external cultural norms. The model's reasoning clearly picks up the author's ideological framing of Native traditions as obstacles to be overcome based on the normative language.

4.3 Interpreting LLM Classifications at Scale: Aggregate Results, Topics, and Justification Analysis

We applied our main prompt to our main sample of 3,554 annual reports produced by Indian Affairs personnel between 1868 and 1906. As shown in Panel A of Table 2, the model identifies 70 percent of reports as expressing strong assimilationist attitudes—defined by normative or ideological endorsement of assimilation-related policies such as boarding schools, allotment, and the dismantling of tribal institutions. This rate of ideological support provides early evidence that assimilationist beliefs were widespread in the Indian Affairs workforce. Panel A also reports average report length and shows that assimilation-supporting reports tended to be somewhat longer on average than neutral reports.[24]

A natural question is how the assimilation scores are related to the underlying topics discussed in each report. We use a simple keyword-based classification approach to identify whether a report discusses (i) boarding schools, (ii) land or allotment policy, (iii) either of these two types of policies, or (iv) both. Boarding schools and land allotment are among the most prominent and contested components of federal assimilation policy during our sample period, and thus provide a reasonable test of how topics are associated with the model's ideological classifications. Using the flags for assimilation policy, we compare topic prevalence across assimilation-supporting and neutral/non-supporting reports. In Panel B of Table 2, Columns 2 and 3 provide summary statistics for the frequency of discussing major topics separately for reports that are classified as assimilation supporting or neutral/opposed, respectively. We further break down various statistics by agent and non-agent authorship in Columns 4-7.

Overall, this analysis reveals no systematic differences in the frequency of discussing

[24] In subsequent empirical exercises, we control for word count, recognizing that longer text may reveal more information from the authors in our corpus. Controlling for word count leaves our results virtually identical in magnitude and significance.

major topics. For instance, there is no substantive difference in the fraction of reports discussing boarding schools between supporting and neutral/non-supporting reports (39 vs. 36 percent), nor is there a large gap in the likelihood of discussing land or allotment policy (94 vs. 93 percent). We also see similarly high and nearly identical coverage of either policy (97 vs. 96 percent) and both policies (36 vs. 33 percent) across support and neutral reports. Notably, these patterns are in almost all cases consistent across both agent and non-agent authored reports.[25] The general conclusion from these results is that major assimilation topic content alone does not account for the model's scoring decisions.

To further understand the basis for these classifications, we examine the justification statements returned by the model for each report. These detailed explanations offer insight into the model's internal reasoning and help us assess whether it is detecting meaningful tonal or ideological differences. We conduct a simple textual analysis of the model's justifications, comparing common words across assimilation-supporting and neutral/non-supporting cases. In Table 2, Panel C reports the share of reports in each category that contain a given justification word. For example, 25 percent of assimilation-supporting reports use the word "superiority," compared to just 0.1 percent of neutral reports. Similarly, words like "beneficial," "civilizing," and "promotion" appear far more frequently in the justifications of assimilation-supporting reports. In contrast, justifications for neutral reports are more likely to include language such as "factual," "administrative," or "neutral." Importantly, these patterns are consistent across both agent and non-agent authors. The evidence as a whole aligns with our prompt's design, which emphasizes that tone and ideological perspective should drive classification.

4.4 Assimilation Scores and Textual Analysis of Annual Reports

While our analysis of the LLM's justification statements implies a logical assimilation supporting and neutral/non-supporting divide, the precise process by which the model determines these classifications is opaque. We therefore use natural language processing methods to provide a complementary analysis of the differences between assimilation supporting and neutral/non-supporting reports.

Sentiment and emotion: We first use the NRC Word-Emotion Association Lexicon (NRC EmoLex) (Mohammad and Turney, 2013) to explore sentiment and emotive language. This

[25] For the topics listed in Table 2, differences across assimilation-supporting and neutral/non-supporting reports are generally small and not statistically significant. The only exception is among non-agents, where we observe a statistically significant difference in the fraction of reports discussing boarding schools.

Table 2: Topics and Justification Words by Assimilation Score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		All Reports		Agents		Non-Agents	
	All	Support	Neutral	Support	Neutral	Support	Neutral
A. Reports							
Assimilation score	0.70	1.00	0.00	1.00	0.00	1.00	0.00
Word count (avg.)	1,917	1,993	1,740	2,226	2,040	1,464	1,260
N (reports)	3,554	2,495	1,059	1,733	651	762	408
B. Major Topics in Reports							
Topic: Boarding schools	0.386	0.395	0.366	0.355	0.326	0.486	0.431
Topic: Land/allotment	0.937	0.939	0.931	0.992	0.994	0.819	0.831
Topic: Either policy	0.968	0.971	0.961	0.994	0.995	0.920	0.907
Topic: Both policies	0.355	0.363	0.336	0.354	0.324	0.385	0.355
C. Word Statistics from LLM-Justification Statements							
superiority	–	0.251	0.001	0.259	0.000	0.234	0.002
beneficial	–	0.195	0.005	0.193	0.005	0.199	0.005
adopt	–	0.125	0.006	0.150	0.009	0.067	0.000
praises	–	0.071	0.000	0.079	0.000	0.054	0.000
civilizing	–	0.070	0.001	0.068	0.002	0.075	0.000
promotion	–	0.042	0.000	0.048	0.000	0.030	0.000
advancement	–	0.065	0.001	0.080	0.002	0.031	0.000
factual	–	0.000	0.740	0.000	0.708	0.000	0.792
descriptive	–	0.000	0.566	0.000	0.559	0.000	0.576
administrative	–	0.000	0.493	0.000	0.498	0.000	0.485
neutral	–	0.000	0.158	0.000	0.184	0.000	0.115

Notes: This table summarizes assimilation scores, frequency of major assimilation topic discussion, and word usage patterns by whether a letter is assimilation supporting or neutral/non-supporting. Columns 1–3 report results for all reports, and Columns 4–7 separate results by whether the author wrote the report while holding an agent (including, after 1893, reservation school superintendents promoted to agency leadership) or non-agent position. Panel A provides information on assimilation support scores, word counts of the annual reports, while Panel B reports the fraction of reports discussing major assimilation policy topics: boarding schools, land or allotment policy, either policy, and both policies. Panel C shows the frequency of selected words used in the LLM's justification statements as a test of the differences in rhetorical style. The list of words in Panel C was identified by comparing word frequencies across assimilation-supportive and neutral reports. Words that appeared disproportionately in supportive or neutral reports were then used to construct the set of keywords we focus on.

lexicon contains around 14,000 associations between English words, sentiment (positive and negative), and eight emotions (anger, fear, anticipation, trust, surprise, sadness, joy,

and disgust).[26]

In line with best practices when using emotion lexicons (e.g., Mohammad, 2023), we first develop a domain-specific "stoplist" (i.e., terms that we exclude when conducting sentiment analysis) to account for words that are assigned a positive/negative sentiment or emotion in NRC EmoLex, but are used in an administrative or neutral fashion in our corpus. For example, our stoplist includes the word "teacher", which is associated with "trust" and "positive" sentiment in the lexicon, but arguably does not carry these connotations in 19th-century reports by Indian Office agents. Our final stoplist contains around 160 words, covering themes such as education and school (e.g., "pupil", "teacher"), agriculture and work (e.g., "hog", "labor"), and physical infrastructure, objects, and materials (e.g., "building", "iron").[27] We then preprocess reports in our main sample, removing generic terms (e.g., the names of tribes, standard stop words) and terms on our domain-specific stoplist, and lemmatize (normalize) remaining words.[28] Finally, we require that lemmas appear at least 10 times in the corpus, ensuring robustness against idiosyncratic terms and OCR noise.

We then examine differences in the share of lemmas associated with each NRC EmoLex sentiment or emotion in assimilation supporting and neutral/non-supporting reports. Appendix Table A4 shows the results of this exercise. Differences are small in magnitude, but assimilation supporting reports do appear to have a slight "positive" slant, with roughly 9 more positive-sentiment terms per 1,000 words (after removing standard and domain-specific stop words). Consistent with this, assimilation supporting reports are more likely to use terms associated with the emotions of "joy", "trust", and "anticipation" (e.g., "civilize", "encourage", and "hope"), and are less likely to use terms associated with the emotions of "fear", "disgust", and "sadness" (e.g., "evil", "offense", and "punish"). For robustness, we repeat this exercise excluding plausibly ideological or value-laden terms that are associated with positive sentiment or emotions in NRC EmoLex (e.g., "civilize", "influence", and "progress").[29] Appendix Table A5 presents these supplemental results. While class-level differences with respect to "trust" and "anticipation" disappear

[26] The terms in EmoLex contain English nouns, verbs, adjectives, and adverbs. Term-emotion associations were identified using manual annotations obtained through Amazon MTurk. A term may be associated with multiple emotions.

[27] Appendix Table A3 contains the full list of themes and terms.

[28] We use the *stop_words* function from the R package *tidytext* to generate our list of standard stop words (Silge and Robinson, 2016). Lemmatization converts variations of a word into their dictionary form (e.g., the words "civilizes," "civilized," and "civilizing" all become "civilize"), allowing us to treat them as the same word. This reduces sparsity and noise in the text.

[29] These terms are grouped under "Doctrine and Ideology" in Table A3.

after applying these exclusions, there is still a detectable positive slant in assimilation supporting reports. Taken together, these patterns—especially after excluding ideology-laden terms—are consistent with our LLM-assigned scores capturing evaluative tone and a more favorable stance toward (invariably assimilationist) policy at the time.

Characteristic words: While count-based methods are straightforward and transparent, the lexicons that underlie them involve a degree of subjective judgment in their construction, and require researcher discretion in their application (e.g., the stoplist described above). Therefore, we complement our analysis of sentiment and emotion with a data-driven investigation of differences in vocabulary. Here, we apply the log-odds method from Monroe, Colaresi and Quinn (2008), which identifies words that are statistically overrepresented in one category of texts versus another—in our setting, the categories being the LLM-labeled assimilation supporting reports versus neutral/non-supporting ones. This method—which uses the overall corpus to form a Dirichlet prior—addresses the tendency of the standard log-odds ratio to overemphasize differences in very rare words (Jurafsky and Martin, 2025).[30] We calculate log-odds scores (equivalent to z-scores) using a version of our main sample of annual reports filtered using the same preprocessing procedure as in our sentiment analysis, except that here we retain words from the domain-specific stoplist.

Appendix Figure A5 shows the 20 lemmas with the largest absolute log-odds scores; positive values indicate that the lemma is characteristic of assimilation supporting reports, whereas negative values indicate that the lemma is characteristic of neutral/non-supporting reports. There are marked differences across classes. The lemmas most strongly associated with assimilation supporting reports—such as "civilize", "dance", and "progress"—reflect clear concerns with assimilation and cultural practices. In contrast, the terms most characteristic of neutral/non-supporting reports (e.g., "guardian", "council", and "lease") are largely administrative in nature.

Semantic validation with sentence embeddings: To assess whether LLM-assigned labels reflect differences beyond count-based features, we examine semantic differences between assimilation supporting and neutral/non-supporting reports using sentence embeddings. Sentence embeddings are vector representations of sentences (or passages) of text; if two passages have similar meanings (e.g., promoting the adoption of Christianity),

[30]The Dirichlet prior (i.e., parameters based on a word's frequency in the entire corpus) shrinks the influence of very infrequent words when conducting comparisons between categories.

their corresponding embeddings will be more similar to each other than to the embedding of an unrelated passage (e.g., describing financial statements).

We use embeddings from the Sentence-BERT family of models (Reimers and Gurevych, 2019). Broadly, these embeddings are generated by fine-tuning transformer-based models (i.e., based on a neural network architecture that captures dependencies between distant words or phrases) on combinations of sentences (e.g., pairs and triplets) such that sentences with similar meanings have similar numerical representations. In our application, each report is divided into smaller textual passages of roughly 256 words, which are encoded into vector representations using one of three pre-trained models: *all-MiniLM-L6-v2*, *all-mpnet-base-v2*, and *instructor-large*.[31] We then average passage-level embeddings to obtain a single embedding per report, and train a logistic regression classifier on these document-level embeddings.

Appendix Table A6 presents illustrative output from the classification procedure. Each row displays: (i) a passage of text, (ii) an indicator for whether the passage is classified as assimilation supporting by the logistic classifier (with predicted probability in parentheses), (iii) an indicator for whether the document from which the passage is drawn is classified as assimilation supporting by the logistic classifier (with predicted probability in parentheses), and (iv) the label assigned by GPT-4o. The first two passages express approval of cultural assimilation (e.g., "the whole internal man must be made over and reorganized... when an [I]ndian can take his team and go to the woods to chop a load of firewood... he has taken a long step upward"), whereas the latter two are purely administrative. A logistic regression classifier trained on passage-level embeddings assigns the first two passages to the assimilation supporting class and the latter two to the neutral/non-supporting class.[32] Aggregating passage-level embeddings and training the classifier on document-level embeddings yields consistent classifications, which align with the (document-level) LLM-assigned labels.

To evaluate and interpret our classification exercise more generally, we report standard performance metrics (e.g., Hausladen, Fochmann and Mohr, 2024). These are: balanced accuracy (the average of the correct prediction rate for each class, giving equal weight

[31]The *all-mpnet-base-v2* model produces higher-dimensional embeddings that capture more fine-grained nuance than *all-MiniLM-L6-v2*, at the cost of speed. Neither model is fine-tuned for the analysis of historical documents. The *instructor-large* model generates task-specific embeddings using natural language instructions (e.g., "represent the passage to capture stances and attitudes in historical reports by United States government officials"), which allows for domain adaptation without additional fine-tuning.

[32]Note that, since we do not have LLM-assigned labels at the passage level, we assign document-level labels to all passages within the report for the purposes of this illustrative exercise.

to both classes), AUC (area under the receiver-operating characteristic curve, which is the probability that the model ranks a randomly chosen positive example higher than a randomly chosen negative one), and AP (average precision, which is a summary of the precision–recall trade-off).[33] We compare these with two relevant benchmarks. The first is a majority-class classifier that always predicts the assimilation supporting label, and the second is random guessing in proportion to class prevalence. Both benchmarks would achieve balanced accuracy of 0.50, AUC of 0.50, and AP of 0.70.

Appendix Table A7 reports the performance of a logistic regression classifier trained to distinguish between assimilation supporting and neutral/non-supporting reports with document-level embeddings. When using embeddings generated by the "baseline" *all-MiniLM-L6-v2* model, the classifier achieves balanced accuracy of 0.691, AUC of 0.756, and AP of 0.870. These results exceed both benchmarks across all metrics, and performance improves when using embeddings from the higher-dimensional *all-mpnet-base-v2* and *instructor-large* models. Taken together, these results support the view that there are meaningful semantic differences between assimilation supporting and neutral/non-supporting reports, as classified by the LLM.

4.5 Predictive Validity, Human Audit, Stability, and Robustness

Predictive Validity: To assess the predictive validity of our ideology measure, we test whether it is correlated with support for a consequential reform closely tied to the federal assimilation agenda. In 1875, the Board of Indian Commissioners (BIC)—a quasi-official advisory body created by Congress——sent letters to every Indian agency, asking whether the agent would endorse the formation of a federally funded Indian police force. The development of a local police force was in part designed to weaken traditional tribal authority by establishing a state-controlled institution of law enforcement on reservations. As Commissioner of Indian Affairs Hiram Price later described, "[t]he police force is a perpetual educator. It is a power entirely independent of the chiefs. It weakens, and will finally destroy, the power of tribes and bands..." (p. XVII-XVIII, U.S. Department of the Interior, 1881). Because the responses to the BIC were written prior to the widespread adoption of police forces and come from separate archival correspondence, they offer a unique opportunity to assess how agent beliefs—captured in annual reports—translated into real-time policy preferences.

We manually coded the full set of 1875 BIC responses from responding local agents,

[33] In our setting, "positive" refers to the assimilation supporting label, and a "true positive" is a report classified as assimilation supporting by GPT-4o.

classifying each letter as either supportive or non-supportive of creation of a police force at their agency. We then linked these letters to the same set of agents for whom we had assimilation policy support scores based on their 1875 annual report. In total, the resulting matched sample is a set of 55 agents who submitted both an annual report and a BIC response in that year.[34] Figure 3 shows the share of agents who do not and do support the creation of a police force broken out by the 1875 assimilation scores assigned by our LLM approach.

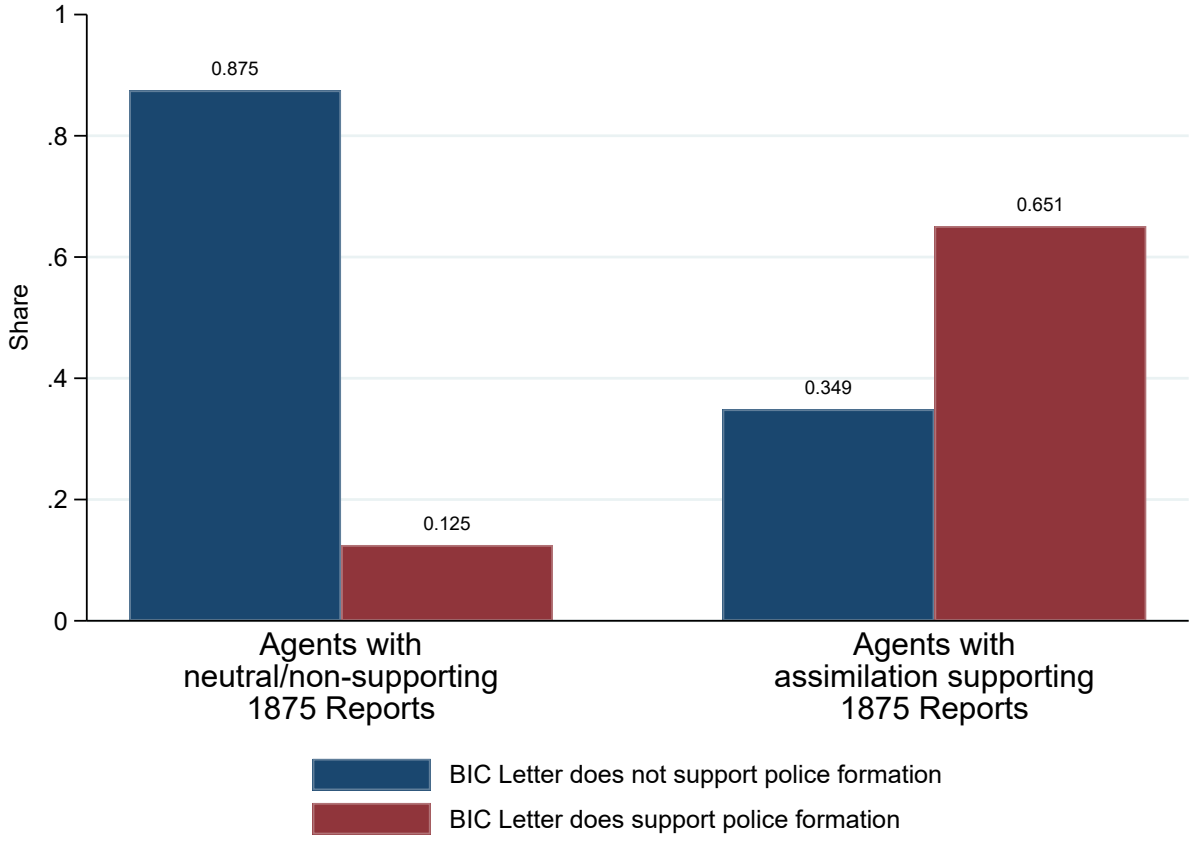
In sum, the results show a strong association between model-classified ideology and policy support. Among the agents classified as strong assimilationist in 1875, 66 percent supported the police reform. In contrast, only 13 percent of agents classified as neutral or non-supporting did so. This 53-percentage-point difference is statistically significant at the one percent level. The magnitude of the association suggests that our classifier captures more than linguistic framing: it recovers meaningful variation in bureaucratic beliefs that shaped real policy positions at the time.

Human Audit Comparisons: Next, we further assess the validity and performance of our LLM classification approach using a blinded audit with five US-born high school teachers who each hold undergraduate degrees in History. We recruited these auditors online via CloudResearch Connect's existing participant-targeting questions. Our audit sample characteristics were chosen to ensure that respondents possessed relevant contextual knowledge of U.S. history needed to accurately read the annual reports. Each respondent received our final prompt (excluding the instructions to record the JSON output) and a set of the same 10 annual reports, which were selected at random from our full sample. The respondents were paid $15 each for the task that we estimated would take 90 minutes. Subjects were informed that compensation would only be paid after we verified that they completed all scores and provided justifications.

While the literature on LLM performance is evolving (Gilardi, Alizadeh and Kubli, 2023; Bojić et al., 2025; Törnberg, 2023), we make progress on establishing useful practices for testing the performance of LLM classification using two exercises. First, we rely on a novel and intuitive hold-out exercise to assess the performance of the LLM against human evaluators. Our test proceeds as follows. For each respondent, we consider whether the

[34]Responses to the BIC letters were published in the 1875 Annual Report of the Board of Indian Commissioners to the Secretary of the Interior (Board of Indian Commissioners, 1875). There are a total of 63 responses to the BIC inquiry regarding police forces, implying that we have a match rate of 87 percent (= 55/63).

Figure 3: Predictive Validity of Assimilation Scores: Evidence from BIC Letters



Notes: This figure shows the share of Indian agents supporting or opposing a policy proposal to create a federally funded Indian police force at their local agency, broken out by their assimilation support scores. The sample is based on 55 agents who submitted both an annual report and a BIC response in 1875. Assimilation scores are based on each agent's 1875 annual reports using our LLM-based classification, while police support is a binary measure manually coded from responses to Board of Indian Commissioners letters sent that year.

LLM achieves a higher or equal agreement rate with the remaining evaluators. In each of these comparisons, this test assesses whether a given human evaluator would outperform the LLM as an evaluator. Table 3 reports the agreement rates associated with the five hold-out exercises that we can construct. Across all of the hold-out cases, we find that the LLM matches or exceeds of human raters in either 9 or all 10 of the scored reports. Using a one-sided comparison test for matched pairs, we reject the null hypothesis that the LLM performs worse than the human rater at the 5 percent or lower level in all cases. This test demonstrates that LLM performance can be meaningfully validated even when using a

limited sample of human evaluators and a small set of reports.

Table 3: Pairwise Comparison of LLM versus Human Raters for 10 Reports

	A. Hold out R1			**B. Hold out R2**			**C. Hold out R3**			**D. Hold out R4**			**E. Hold out R5**		
	Agree %			Agree %			Agree %			Agree %			Agree %		
Report	LLM	R1	≥	LLM	R2	≥	LLM	R3	≥	LLM	R4	≥	LLM	R5	≥
1	.75	.75	1	.75	.75	1	.75	.75	1	.75	.75	1	1	0	1
2	.75	.25	1	.5	.5	1	.5	.5	1	.75	.25	1	.5	.5	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	.75	.75	1	1	0	1	.75	.75	1	.75	.75	1	.75	.75	1
5	.5	.5	1	.5	.5	1	.75	.25	1	.75	.25	1	.5	.5	1
6	.75	.25	1	.5	.5	1	.5	.5	1	.5	.5	1	.75	.25	1
7	.5	.5	1	.75	.25	1	.5	.5	1	.5	.5	1	.75	.25	1
8	.25	.75	0	.25	.75	0	0	0	1	.25	.75	0	.25	.75	0
9	.5	.5	1	.25	.25	1	.5	.5	1	.5	.5	1	.25	.25	1
10	.75	.75	1	.75	.75	1	1	0	1	.75	.75	1	.75	.75	1
Test	$p < .05$			$p < .05$			$p < .01$			$p < .05$			$p < .05$		

Notes: This table compares LLM performance versus each of five human evaluators in a series of hold-out comparisons. Each row in the table is a report in our audit study. For each report, we compute the agreement rate of the LLM and a held-out human (indicated in a given panel) with the remaining four human evaluators. For instance, the first row and second column shows the LLM agrees with respondents 2,3, 4, and 5 on report "1" in 75% of cases. The final column in each panel (indicated with ≥) indicates whether the LLM's agreement rate is greater than or equal to the held out human rater. Across all five hold out exercises, the LLM matches or outperforms the human in either 9 or 10 of the 10 reports. We use a one-sided test to assess whether the LLM's performance is higher or greater than a given human rater across all 10 documents. For all the 5 respondents, we reject the hypothesis that the LLM performance is worse than a given human evaluator.

Our second validation exercise compares the performance of the LLM to human respondents using a standard measure of inter-rater reliability. We focus on Fleiss' κ, a statistic that captures the extent to which multiple raters agree in their evaluations beyond what would be expected by chance.[35] We begin by computing κ using only the evaluations from the five history educators. We then recompute the same statistic after including the GPT-4o model as a sixth "rater."

[35]Fleiss' κ is calculated as $\kappa = (\bar{P} - \bar{P}_e)/(1 - \bar{P}_e)$, where $\bar{P}$ is the observed agreement among raters and $\bar{P}_e$ is the expected agreement by chance, given the marginal distributions of responses. A value of 1 indicates perfect agreement, while a value of 0 reflects agreement no better than random guessing.

If the LLM's judgments were misaligned with the human raters, we would expect its inclusion to lower or leave unchanged the overall level of agreement. Instead, we find that κ increases by approximately 20 percent when the LLM is added to the panel. In line with our hold-out sample testing, the improvement in κ indicates that the LLM scores are more in line with the human raters, and, as a result, its inclusion brings the overall set of evaluations into closer consensus. To test whether this improvement could occur by chance, we perform a permutation test that reshuffles the LLM scoring at random, confirming that the improvement is unlikely to be driven by chance ($p < 0.05$).

Stability/Consistency: Large language models are not fully deterministic: even when provided with identical inputs, they can return slightly different outputs due to their probabilistic architecture and internal sampling behavior (Zhao et al., 2023; Atil et al., 2025). To reduce randomness and prioritize stability, we set the model temperature to 0 in all API calls. This setting minimizes variation in the model and increases the likelihood of consistent output across runs. To assess the practical importance of the random variation inherent in LLM models such as ChatGPT 4o (even with temperature set to 0), we randomly sample 200 reports and evaluate each five times using our finalized prompt and all settings fixed. We find that 93.5 percent of letters received the same score in all five iterations, and 98 percent received the same score in at least four out of five iterations (Appendix Table A8). Overall, we interpret this evidence as suggesting that our prompt generates highly consistent scores.

Robustness: The computer science literature has observed that both substantive and more subtle changes to the text of a given LLM task can lead to important changes in the resulting output, an issue well illustrated by prompt-engineering techniques such as chain-of-thought reasoning, personas, and few-shot prompting (Lu et al., 2022; Liu et al., 2023; Sahoo et al., 2024; White et al., 2023). We examine the sensitivity of our results to altering key features of our prompt for a randomly selected sample of 100 reports. To assess consistency, we again use agreement rates between the output in our main sample and in the modified prompt for this 100 report subset. As a benchmark, recall that re-running the unmodified prompt on a sample of 200 randomly selected reports produced 93 percent agreement across all five runs.

In Panel A of Appendix Table A9, we begin with the comparison between our main prompt and variants that append adjustments to the very beginning of the prompt, as shown in Appendix Figure A6. The first set of modifications request the LLM to adopt

one of four possible personas: "historian with expertise in 19th and early 20th century Native American policy," "political scientist with expertise in federal Indian policy and assimilation programs," "cultural anthropologist with expertise and deep understanding of Native American societies and the impacts of assimilation policies," or a "helpful research assistant for a political scientist." We varied not only the role ("political scientist"), but also the description of their expertise, as the goal is to see how much variation we can produce with these adjustments. This type of prompt augmentation has been shown in other domains to affect performance by anchoring the model's perspective or tone, with some finding significant performance improvements (Salewski et al., 2023; Hu and Collier, 2024), though others have found modest and unpredictable improvements (Zheng et al., 2024). Reassuringly, the impact is relatively minimal as the associated agreement rates of 92, 90, 97, and 88 percent are all very close to the sampling variation benchmark of 93 percent. Finally, motivated by Li et al. (2023), we use an "emotion prompt" that starts the prompt with "This task is very important to my career," a technique that produced large improvements in their context. This adjustment also performed quite similarly to the original prompt, with 95 percent agreement.

In Panel B of Appendix Table A9, we turn to the prompt modifications added to the middle or end of the original prompt (but before the text of the letter being evaluated), as written out completely in Appendix Figure A7. The first four cases prompt "chain-of-thought" reasoning via simple (zero-shot) modifications shown to affect performance in previous research (e.g., Kojima et al., 2022). These simply ask the LLM to "Think carefully," to "Think step by step. Lay out each step," or to "Please provide an explanation for your answer." The most extensive of these (the structured chain-of-thought prompt) writes out a set of steps, though one could argue this is somewhat redundant with the text earlier in the original prompt. We find that these prompts induce even less variation from our original prompt than the persona modifications (with agreement rates ranging from 92 to 96 percent). The next two prompt modifications are not discussed in the literature but aimed at reminding the LLM of the historical context of the text and to avoid modern moral judgments. One achieved 91 percent agreement while the other achieved 92 percent agreement, but in the latter case all deviations were in the direction of assigning more cases to neutral rather than strong support, whereas the other warning led to roughly an equal number of deviations in either direction. Finally, we attempt a version of few-shot prompting, a technique that can improve performance significantly by providing labeled examples, though prior research has shown this class of prompting can be quite sensitive

to the ordering (Lu et al., 2022). To avoid pushing the limits of the LLM context window, we provide condensed hypothetical sentences that are then scored and justified. We find that this modified prompt agrees with the original prompt in 90 percent of cases, with all deviations being in the direction of assigning what would be neutral/non-supporting letters to instead be supportive. Overall, these results suggest that prompt modifications have relatively small effect on performance above and beyond what would be expected by sampling variability of the exact same prompt run multiple times.

5 Main Results

5.1 The Evolution of Assimilation Support Over Time

We begin our main analysis by tracing how support for assimilation evolved over the nearly four decades covered by our corpus. This was a period of significant transformation in federal Indian policy, the composition of the Indian Affairs workforce, and the social conditions on reservations. Against this backdrop, we use our collection of annual reports to document how the bureaucracy's commitment to assimilation changed over time—and to consider whether these broader institutional and contextual shifts may have contributed to the evolution of ideology within the agency.

Table 4 reports summary statistics on assimilation by decade and across types of personnel. As previewed above, the top row in Column 1 shows that 70 percent of all reports express positions supportive of assimilationist goals. Next, Columns 2 and 3 examine how views differ by broad author type, comparing Indian agents—the central administrative figures in the reservation system—to non-agents, which include teachers, physicians, farmers and other supporting staff who also submitted annual reports. Agents are more assimilation-supporting than non-agents, with mean attitude scores of 73 and 65 percent, respectively. The six percentage point gap in support is statistically significant at the one percent level. This difference is potentially consistent with the role of agents, who were charged with carrying out federal policy at the agency level and may have been often selected on the basis of having stronger alignment with assimilationist objectives.

In terms of patterns over time, we observe a substantial moderation of commitment to assimilationist ideology over time. The decade level rows of Table 4 show that overall support peaks in the 1880s at 82 percent and falls to 61 percent in the 1900s. While part of this decline reflects compositional changes in authorship in the corpus—namely, a reduction in the share of reports authored by agents, from 87 to 55 percent—the downward trend is also visible within author types. Assimilation support among agents falls from 81

Table 4: Assimilation Support by Decade and Agent Status

	(1)	(2)	(3)	(4)	(5)
	Mean Assimilation Support			**Fraction of Reports**	
	All	Agents	Non-agents	Agents	Non-agents
All Years	0.70	0.73	0.65	0.67	0.33
1870s	0.69	0.72	0.57	0.78	0.22
1880s	0.82	0.81	0.85	0.87	0.13
1890s	0.72	0.71	0.72	0.53	0.47
1900s	0.61	0.65	0.57	0.55	0.45

Notes: This table reports mean assimilation support scores (Columns 1–3) and the share of total reports (Columns 4–5) by decade and the type of position the author held when submitting their report. The full sample spans the years 1868-1906 where 1868 and 1869 are included in the 1870s statistics. "Agents" refers to personnel heading an agency such as Indian agents or, after 1893, a reservation school superintendent promoted to leadership; "non-agents" includes teachers, physicians, and other supporting personnel, as detailed in Section 3.

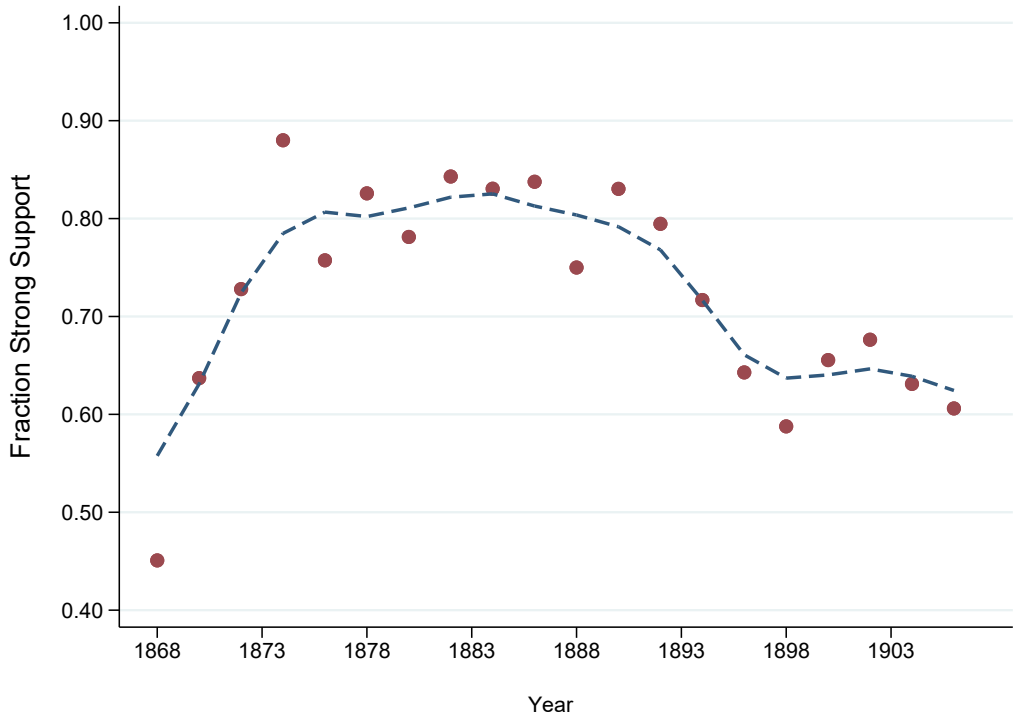
percent in the 1880s to 65 percent by the 1900s, while support among non-agents follows a similar trajectory. The close parallel in the evolution between agent and non-agent attitudes may reflect the fact that agents had significant discretion over the hiring of the non-agents, and thus may have selected physicians, teachers, and other supporting personnel who shared their ideological commitments.

Figure 4 examines this pattern more closely by plotting biennial averages of assimilation support for agents, the majority author in our corpus.[36,37] Two features are worth noting. First, we see a steady rise in support through the 1870s, a period that coincides with the institutional consolidation of assimilationist reform. Second, the decline in support begins around 1890 and persists through the turn of the century, with no clear reversal in the final years of the sample. This shift marks a notable change in the ideological tone of the Indian Affairs bureaucracy, and motivates our closer investigation later in this section into the potential drivers of this evolution.

[36] Appendix Figure A9 plots the biennial average for the pooled sample of all reports and non-agents alongside the agent averages. These series move closely in parallel.

[37] Table 2 shows that assimilation supporting reports are longer than neutral/non-supporting reports. Appendix Figure A10 shows that the evolution of assimilation support is substantively unchanged when we adjust for word count.

Figure 4: Agent Assimilation Scores Biennially, 1868-1906



Notes: This figure displays averages of a binary indicator for assimilation support, based on annual reports authored by Indian Affairs agents between 1868 and 1906. Each point represents the fraction of reports in a given two-year period that express strong support for assimilationist policies. The dashed line plots smoothed values from a locally weighted polynomial regression of the biennial series to visualize the trend.

5.2 Discussion: Institutional and Contextual Drivers of Ideological Change

What factors potentially explain the rise and subsequent moderation in assimilation support within the bureaucracy of the Office of Indian Affairs? This subsection considers several possible reasons for why views appeared to shift within the bureaucracy, particularly among those holding Indian agent positions. A general explanation for ideological patterns within bureaucracies is that their internal character tends to track the dominant political or policy currents of the time. However, the timing of key federal initiatives does not align with the patterns we observe. The sharp rise in assimilation support among OIA personnel occurred during the 1870s, before the expansion of the off-reservation boarding school system in the 1880s and well in advance of the Dawes Act of 1887. Conversely, the moderation in support that begins around 1890 does not coincide with a retreat from these initiatives: both off-reservation boarding schooling and land allotment policies intensified

into the early 20th century. In addition, federal spending on the Indian Affairs bureaucracy rose steadily from the 1870s through the 1890s, and the number of staff on reservations grew in tandem (see Appendix Figure A1), reflecting the continued effort to support the federal government's broad assimilation agenda.

A related concern is that the trends, particularly the moderation after 1890, could simply reflect bureaucrats shifting their views or language in response to directives from higher-level leadership (i.e., Commissioners) or a general change in how ideology was expressed. To assess this, we apply our classification prompt to the 39 Commissioner reports in our sample and find that all are scored as assimilation-supporting except for 1868 which is coded as non-supporting in this first run.[38] Notably, these findings are consistent with the historical literature, which emphasizes the unwavering assimilationist commitments of Commissioners. Writing about Commissioner Thomas Jefferson Morgan (1889–1893), Prucha described him as having an "absolute and unwavering conviction that the Indians must all be completely Americanized" (1984, p. 723).

An analysis of reports from the Carlisle Indian Industrial School, covering 1880–1900, provides an additional comparison. Richard H. Pratt, the school's founder and longtime superintendent, consistently expressed strong support for assimilation throughout this period. Using the digitized annual reports from Carlisle and applying our classification prompt, we likewise find unbroken support for assimilationist ideology across the two decades. This contrasts with the moderation observed in the agent-level reports, underscoring that the shift among agents reflected a particular evolution within the OIA bureaucracy rather than a broader weakening of federal assimilation policy. Pratt's role as superintendent of Carlisle is also distinct from the reservation school superintendents in our sample, who appear more moderate in tone. In line with this, historical accounts emphasize that off-reservation schools such as Carlisle were intended as uncompromising instruments of assimilation, whereas reservation schools were often perceived as being less forceful and effective in "civilizing" Indian children (Adams, 1995).[39]

[38] As with the agent reports, we repeated the GPT-4o classification script five times as a consistency check (here for the full Commissioners sample rather than a subset). We find complete stability across 1869-1904 (and 1906); however 1868 and 1905 were borderline cases, as 1868 was coded as supporting in four out of five of the re-runs, while 1905 was coded as non-supporting in all five of the re-runs. One caveat for this analysis is that the Commissioner's reports are much longer and more wide-ranging than the agent letters. A concern is that such length might approach the limits at which GPT-4o's performance deteriorates, although Appendix Table A14 shows no clear evidence of this: the LLM's justifications for the Commissioner reports are consistent with our analysis of the annual reports, and manual inspection of the support quotes confirms their accuracy.

[39] This view was shared within the OIA. In 1890, for example, Commissioner Thomas Jefferson Morgan

Another possible driving factor relevant for the moderation we observe is that support for assimilation may have waned in the aftermath of the marked social tension and violence that characterized the 1870s and 1880s. The early years in the sample of annual records covered a period of conflict between the federal government and tribal communities. For instance, in 1879, Nathan Meeker, the Indian Agent leading the White River Indian Agency, and several members of his staff were killed by Ute tribal members following escalating disputes over land use and cultural practices. More broadly, historians emphasize the frequency of local confrontations where land encroachment by white settlers set the stage for broader conflict, including high-profile conflicts such as the Nez Perce War in 1877 and the Apache Wars that culminated in Geronimo's 1886 surrender (Brown, 1970).

To examine whether violence might be linked to bureaucratic attitudes, we leverage a second large language model (LLM) approach to create an original collection of reports of violent incidents mentioned in the annual reports. Discussions of violence are often indirect or embedded in narrative detail, making keyword searches potentially less reliable. Our LLM-based classification provides a more systematic measure of whether a given report references local violence, regardless of how it is framed. Figure 5 shows the fraction of agent-authored reports that mention violence in each year. Consistent with the broader historical context, references to violence are most common in the 1870s and 1880s and decline after 1890.

Despite the similar timing of a moderation in ideology and violence, we find no evidence that exposure to violence directly shaped assimilation attitudes. Reports that mention violence do not exhibit meaningfully different assimilation attitudes compared to those that do not mention violence. Summary statistics reported in Appendix Figure A11 show that the average assimilation support score is very similar across reports with and without violence mentions.[40] This pattern suggests that while violence was an important contextual feature of the assimilation era, it is unlikely to be a primary driver of the ideological shifts we observe in the Indian Affairs bureaucracy.

A final explanation for the decline in assimilation support focuses on changes in the composition of the Indian Affairs workforce, driven by reforms to personnel appointment practices. At face value, key features of the institutional shifts reviewed in Section 2 align

opined that reservation schools faced "influences which necessarily hamper them very seriously in their work." Among these were the fact that these schools were "far removed from civilization," and Indian parents had "ready access" (U.S. Department of the Interior, 1890, pp. XII–XIII).

[40]The figure also demonstrates that there is a similar pattern in assimilation support scores between reports with and without violence after residualizing out the influence of a large set of observables.

Figure 5: Agency Violence Reporting Biennially, 1868-1906

Notes: This figure displays averages of a binary indicator for reports discussing violence, based on annual reports authored by Indian Affairs agents between 1868 and 1906. Each point represents the fraction of agent annual reports in a given two-year period that our LLM-based approach identifies as discussing local violence at their agency. Full details on the prompt are provided in Appendix C.

closely with the evolution of assimilation support. The rise in pro-assimilation attitudes during the 1870s coincides with the influx of agents nominated by religious denominations who replaced the military officers that President Grant had initially appointed at the start of his administration. The subsequent moderation in ideological commitment emerges only after major changes to the appointment system took hold: the phasing out of religious nominations, the large-scale reappointment of military officers to agency roles following the Wounded Knee Massacre, and the eventual replacement of Indian agents with reservation school superintendents. The sharp timing of these shifts is particularly informative, as many alternative explanations—such as gradual cultural change within the bureaucracy or slow-moving regional economic trends—would be unlikely to generate such abrupt reversals in attitudes.

To complement our qualitative assessment based on the time series, we formally test whether assimilation support is correlated with the appointment characteristics of the authors in our sample. Specifically, we estimate whether reports authored by agency

heads—whom we refer to throughout as agents, including promoted school superintendents after 1893—with different appointment types, i.e., military officers, religious nominees, or career civil servants, were systematically more or less assimilationist. This descriptive approach inevitably captures some of the same temporal patterns visible in the time series because appointment types are not evenly distributed across years. For example, religious nominees were exclusively appointed in the 1870s and early 1880s, and the typical agent served only about three years. As a result, their observed attitudes may reflect both the appointment process and the broader ideological climate of that era. By contrast, army and political appointees appear throughout the sample period, allowing for comparisons that are less confounded by historical clustering.

We estimate the following specification:

$$A_{ir} = \pi + \gamma\, Army_i + \delta\, ReligiousNominee_i + \theta\, CivilServant_i + X'_{a(i)}\lambda + \varepsilon_{ir}, \tag{1}$$

where the dependent variable of interest is assimilation support A_i for individual i in report r, and the independent variables include indicators for whether i was a military appointment ($Army_i$), a religious nomination ($ReligiousNominee_i$), or a career civil servant (i.e., a reservation school superintendent elevated to the position of being in charge of an agency). The omitted group in the specification is the set of reports by authors who were political appointees. A natural concern is that agents with different backgrounds may have been systematically assigned to reservations that had systematically different characteristics. With this in mind, the vector $X'_{a(i)}$ includes a set of controls for key characteristics of the agency a that individual i is assigned to lead. We digitized measures of the total acres under an agency's jurisdiction, total Native population, the fraction of the Native population reported as wearing Western dress, and a measure of total livestock. As previewed in Section 3, we assign each report the characteristics from the nearest benchmark year (1875, 1885, 1895). This anchor-year matching introduces some approximation but provides broad coverage and avoids missing controls.[41] We further augment the vector $X'_{a(i)}$ to include controls for word count (given that assimilation supporting letters are slightly longer) and fixed effects for the state in which the agency is located.

Table 5 reports the descriptive results from equation 1. The results confirm more systematically that the types of appointees have importantly distinct ideological commitments. In Column 1, without any controls, the differences across appointment types are

[41]The agency characteristics vary temporally across reports because each is assigned values from the nearest benchmark year (1875, 1885, 1895), but we omit an explicit time index to simplify notation.

clear: reports by army officers or career civil servants are about 15 and 9 percentage points less likely to express strong assimilation support than those by political appointees, while religious nominees are roughly 5 percentage points more likely to do so. In Columns 2–4, we successively add word count, agency characteristics, and regional fixed effects controls. Notably, the estimated effects of appointment type change very little as these controls are added.[42] Taken together, these patterns reinforce the view that appointment policies shaped the ideological composition of the Indian Affairs bureaucracy, although we stress that the sharp breaks in the time series remain the clearest signal—changes in nomination rules produce abrupt shifts in attitudes that slower-moving alternative explanations would struggle to match.

5.3 Assimilation Support and Bureaucrat Performance: Evidence from the Dawes Act

Do the ideological commitments of Indian Affairs personnel shape concrete policy outcomes? Linking support for assimilationist policy to the performance of bureaucrats faces several empirical challenges. Many key assimilation-related outcomes such as the adoption of agriculture and farming practices tend to evolve slowly over time. Testing for impacts on these forms of long-run social changes is difficult particularly when many agents and personnel served for limited tenures, often only a few years. In addition, a natural concern is that the beliefs and attitudes of bureaucrats may be shaped by ongoing developments at the agencies where they serve. For example, higher Native schooling attendance in a given year might encourage more confident or optimistic views of assimilation expressed in an agent's annual report written that same year. In this way, it becomes difficult to rule out the possibility that policy outcomes are shaping beliefs—a concern over simultaneity that complicates interpretation of ideology as an independent variable.

To empirically make progress on understanding the performance implications of bureaucratic ideology, we focus on initial land allotments under the Dawes Act of 1887. Critically, we use the fact that we can measure assimilation support using the annual reports authored by agents before the law's passage. Moreover, allotment under Dawes proceeded gradually with substantial variation across agencies in the timing and scale of initial land allocation.[43] The staggered implementation of land allotment provides us with meaningful variation, allowing us to treat land allotment as a downstream outcome

[42] In the next section, we provide evidence that agent assimilation ideology is not systematically related to local reservation characteristics—consistent with minimal sorting of more assimilation-supporting agents into observably different posts.

[43] As Carlson (1981) notes, the pace of allotment was drawn out, and the number of acres allotted increased significantly after 1900.

Table 5: Descriptive Analysis of Attitudes and Agent Nomination Type

	(1)	(2)	(3)	(4)
	Dep. Variable: Assimilation Support			
Army	-0.148***	-0.147***	-0.134***	-0.138***
	(0.034)	(0.034)	(0.034)	(0.034)
Religious	0.061***	0.066***	0.044**	0.035*
	(0.020)	(0.020)	(0.020)	(0.020)
Civil Servant	-0.088***	-0.063*	-0.047	-0.070**
	(0.033)	(0.033)	(0.033)	(0.034)
Dep. Var Mean	0.702	0.702	0.702	0.702
Observations	2,384	2,384	2,384	2,384
Word Count Controls	No	Yes	Yes	Yes
Agency Controls	No	No	Yes	Yes
Region FE Controls	No	No	Yes	Yes

Notes: This table reports OLS estimates from equation (1) using the sample of annual reports written by authors holding an agent position (including, after 1893, reservation school superintendents promoted to agency leadership). The dependent variable is assimilation support in report r authored by agent i. The omitted category is political/patronage appointees. Columns 1–4 present results from models that vary the definition of the control variables, as indicated in the rows near the bottom of the table. The agency level controls include total acres, total Native population, the share of the Native population wearing Western dress, and total livestock holdings. Missing values for all variables are set to 0, and a full vector of indicators for missingness is included in the respective models. Region fixed effects are indicators for the four regions where agencies are located. Robust standard errors are reported in parentheses. Statistical significance is indicated by: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

and test whether agencies led by bureaucrats who were stronger proponents of assimilation moved more aggressively to implement the federal government's landmark policy to break up tribal lands.

We focus on Indian agents and their beliefs due to their substantial autonomy and influence over reservation affairs. Although the allotment process under Dawes was formally authorized by the President and often overseen by special agents, the historical record emphasizes that local agents played a critical role in implementation. Agents often pressured the tribes under their authority to agree to allotment and coordinated necessary logistics to support the surveying work needed to divide tribal lands (Carlson, 1981). In annual reports, agents referenced their involvement in these activities—indicating that even

without being formally designated as special allotting agents, they exercised meaningful influence over the speed and shape of allotment at the local level.[44,45]

As described in Section 3, our main analysis relies on allotment measures that we digitized for the initial year under Dawes from the Annual Report of the Commissioner of Indian Affairs. We estimate the following specification:

$$y_a^{87-88} = \alpha + \beta \bar{A}_a^{pre} + X_a' \gamma + \epsilon_a, \tag{2}$$

where y_a^{87-88} is either an indicator for having any allotment, the number of allotments, or the total acres allotted at agency a during the period 1887-1888. The key independent variable is a measure of the strength of assimilation support by the Indian agent assigned at agency a in the baseline year before the passage of the Dawes Act, denoted by $\bar{A}_a^{pre}$. The measure is defined as the average of past assimilation support scores across the available annual reports authored by the given agent in all years before Dawes, regardless of where they were stationed at baseline.[46] To improve precision in our estimates and address interpretative concerns that we discuss further below, the term X_a' is a set of controls for baseline (1887) agency characteristics (the total number of acres, total Native population, the share of the Native population reported to be wearing Western dress, and total livestock) as well as additional characteristics for the baseline year agent at the agency (their total years of prior experience as an Indian agent, annual salary, and a measure of administrative capacity constructed from pre-Dawes reports).

Our main interest is the estimate of the coefficient β, which captures the degree to which allotment activity is associated with our measure of bureaucratic ideological support for assimilation. There are two distinct concerns in interpreting this estimate. First, a natural

[44]The process of allotment at the Devil's Lake agency demonstrates the close collaboration between Indian agents and special allotting agents. As recounted in the 1889 ARCIA, after Special Agent Malachi Krebs arrived to begin allotments, the Devils Lake Sioux "most unexpectedly refused to make their selections." In response, the regular Indian agent, John Cramsie, collaborated with Krebs to convene two tribal councils aimed at diffusing opposition and encouraging families to accept and select land. Cramsie's role was central to facilitating the allotment process.

[45]Dippel, Frye and Leonard (2024) also study a context in which Indian Agent discretion mattered. Specifically, they focus on the period after the completion of allotment and show that agent fixed effects—i.e., which agent was stationed at a given location—mattered for whether Native families were given full property rights over their land allotment. Distinct from their analysis, we use new data and develop a methodology to measure assimilation policy support directly from agents' written reports, and test whether this ideology predicts allotment activity.

[46]In practice, only 1 of the 55 agents in this sample authored any reports at a different agency than the one they were stationed at the baseline year. On average, these agents wrote nearly 4 reports that contribute to our measure of assimilation support before Dawes.

threat to the interpretation of this estimate is the potential for selective assignment of personnel to systematically different posts. For example, more pro-assimilation agents could have been posted to agencies inherently more favorable to allotment. To shed light on this issue, Appendix Table A10 reports a balance analysis that examines the relationship between our set of baseline agency characteristics and our measure of ideology. We find no systematic relationships, suggesting that more (or less) assimilationist leadership was not simply concentrated in agencies with advantageous demographic, cultural, or economic characteristics.[47] This pattern reduces concerns about endogenous assignment and is consistent with institutional and contextual dynamics that generate plausibly exogenous variation in personnel. Abrupt resignations due to scandal or illness frequently resulted in temporary military appointments—introducing less assimilation-oriented officers into posts vacated by civilian agents—while the final cohort of denominational appointees, among the most assimilation-oriented, gradually left the service in the years leading up to Dawes.[48,49] Finally, we also note that ideology was likely imperfectly observed by those making appointments: Congress members may have had limited knowledge about agents' assimilation views or prioritized other considerations such as political ties or availability.

Second, even absent selective assignment of agents to reservations, our estimates of β could also reflect correlations between our measure of assimilation support and other agent attributes that independently affect implementation performance—such as greater experience in the Indian Service, financial incentives, or stronger administrative capacity. To address this concern, we construct measures of agents' total prior experience, annual salary, and administrative capacity from their pre-Dawes reports and include these characteristics directly in our allotment specifications, allowing us to assess whether the association between ideology and implementation persists when we hold these alternative channels constant. We measure administrative capacity using another LLM classification approach with a prompt that instructs the model to look for explicit evidence of concrete, procedural, and repeatable practices that demonstrate administrative capacity. Specifically, the prompt scores evidence across five administrative categories (planning/procedures; record-keeping; resource management; coordination/compliance; and problem-solving

[47] We also find no detectable association between the agency characteristics and an agent's total years of experience or administrative capacity.

[48] As highlighted in Section 2, fraud and mismanagement were prevalent among Indian agents, and in some cases, scandals led to their dismissal or resignation. For instance, allegations concerning agent Galen Eastmen at the Navajo Agency included the creation of a nominal boarding school that existed only on paper; these accusations ultimately resulted in his resignation (McCluskey, 1980).

[49] In the sample for our Dawes analysis, 14 percent of agents are military or religious appointees.

with follow-through) and assigns a binary indicator equal to one only when a report contains concrete evidence from at least one category. We then aggregate this pre-Dawes measure to the agent level (denoted $\bar{C}_a^{pre}$).[50] In our preferred specifications, we include both experience, administrative capacity, and annual salary as controls in the vector X_a' to isolate the role of ideology, and report these estimated coefficients separately to assess whether these agent characteristics predict allotment activity in their own right.

Table 6: Analysis of Ideology and Land Allotment After Dawes (1887-1888)

	(1)	(2)	(3)	(4)	(5)	(6)
	Allotted		# of Allotments		Acres Allotted	
$\bar{A}_a^{pre}$	0.114***	0.134***	48.620**	66.582**	5,074.746**	6,758**
	(0.035)	(0.039)	(21.853)	(29.643)	(2,302.388)	(3,007.841)
Exp_a		-0.014**		-6.124		-654
		(0.006)		(3.944)		(397.915)
$\bar{C}_a^{pre}$		-0.117		-208		-21,018
		(0.160)		(167.120)		(16,144.780)
$Salary_a$		-0.000		0.008		1.047
		(0.000)		(0.014)		(1.369)
Dep. Var. Mean	0.145	0.145	60.891	60.891	6,348	6,348
Observations	55	55	55	55	55	55
Agency Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports OLS estimates from equation 2. The dependent variables are an indicator for having any allotment (columns 1-2); the number of allotments (columns 3-4); and total number of acres allotted (columns 5-6). All measures are based on the allotment activity during the first year after the passage of the Dawes Act reported in the 1888 ARCIA. All specifications include controls for word count and agency-level demographic, social and economic characteristics in the baseline (1887) year (i.e., total acres under the agency jurisdiction, total Native population, the fraction of the Native population that wears Western dress, and total livestock). Robust standard errors are reported in parentheses. Columns (2), (4), and (6) additionally control for the agency's baseline year agent's total prior experience (Exp_a), pre-Dawes measured administrative capacity ($\bar{C}_a^{pre}$), and the agent's annual salary recorded in the Federal Register. Note that the sample includes 55 agencies in operation in 1887 and whose leadership had sufficient reporting history (the Union Agency is excluded because it was exempt from the Dawes Act of 1887). Statistical significance is indicated by: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Our analysis shows that agencies led by Indian agents whose past reports revealed stronger support for assimilation policy engaged in more allotment activity in the first

[50] Appendix C reproduces the prompt we use to measure administrative capacity. In our sample for Dawes analysis, the mean of our capacity measure is 0.68.

year of the Dawes Act. Table 6 reports estimates from equation 2 while varying whether the agent-specific controls for experience, salary, and administrative capacity are included. Column 1 shows that a one-standard deviation increase in average assimilation support is associated with an 11.4 percentage point increase in the likelihood that a given reservation was allotted—a 79 percent effect size relative to the mean allotment rate of 14.5 percent. We similarly find large magnitude impacts on the number of allotments (Column 3) and number of acres allotted (Columns 5). Consistent with the balance analysis, Appendix Table A11 shows these estimates are very similar to those from specifications that do not include the 1887 agency characteristics, suggesting that the estimated link between agent ideology and allotment activity is unlikely to reflect systematic differences across agencies.

Table 6 also reports coefficients on the additional agent-specific characteristics. Reassuringly, the estimated relationship between assimilation support and allotment activity is essentially unchanged when we add controls for agent experience, annual salary, and administrative capacity (columns 2, 4, and 6), suggesting that the main ideology estimate is unlikely to be driven by these other important agent attributes. At the same time, we find some evidence that more experienced agents were less likely to initiate allotment activity: in column (2), experience is negatively associated with the probability of any allotment. While we interpret this pattern cautiously, one possibility is that longer-serving agents—having greater exposure to local conditions and Native communities—may have been more reluctant to advance allotment early on, even holding constant their expressed assimilation views. By contrast, we do not find clear statistical evidence that administrative capacity nor annual salary independently predict allotment outcomes.[51,52]

To further address concerns about a potential correlation between agent ideology and selective assignment, we conduct a placebo analysis using the average ideology of the earlier Indian agents who served at a given agency *prior* to the leadership in place at the time of the Dawes Act's passage. Intuitively, these preceding agents could not have directly influenced allotment outcomes because they left their posts before Dawes was enacted.

[51]While measuring bureaucratic skill and linking it to performance has proven difficult in the literature, our null on administrative capacity is consistent with other findings from this period. For example, Moreira and Pérez (2024) show that Pendleton Act exams improved customs employees' professional backgrounds but not revenue collection performance.

[52]Salary levels can shape bureaucrat quality through both selection and effort. Higher base pay can attract higher-ability applicants (Dal Bó, Finan and Rossi, 2013), although lucrative financial incentives may also crowd out intrinsically motivated ones by signaling a less pro-social mission (Deserranno, 2019). For incumbents, however, large-scale experimental evidence has found limited effects of unconditional base-salary raises on performance (de Ree et al., 2018). We ultimately find that adding salary as a control has little effect on our estimates of ideology, and salary itself does not predict allotment outcomes.

Appendix Table A12 reports the results for our early allotment outcomes, showing no detectable effect of prior leadership ideology. For instance, a one–standard–deviation increase in the average assimilation support of the preceding agent is associated with a small and statistically insignificant 0.9 percentage-point *decrease* in the likelihood that an agency had any allotment ($p = 0.851$). The absence of any relationship is consistent with both our balance evidence and the institutional realities of the Indian Service, where high turnover, short tenures, and interim appointments often generated leadership changes that were not systematically related to ideology.

Finally, as a test of robustness, we turn to a natural extension that uses additional allotment records from the early years of the Dawes Act and continue to find that greater past ideological commitment predicts increased land allocation. Specifically, we use ARCIA records to measure allotment activity through 1889 and 1890, respectively. A limitation is that these data do not include information on the total acres allotted, so we restrict our attention to having any allotment and number of allotments.[53] Appendix Table A13 reports results using these additional allotment measures.

6 Conclusion

This paper examines the evolution of bureaucratic ideology and how it mattered for one of the most consequential policy campaigns in U.S. history: the federal government's effort to assimilate and socially transform Native populations. We study the Office of Indian Affairs (OIA), the federal agency that exercised sweeping authority over reservation life, effectively acting as a local government. Its personnel wielded extensive power over core aspects of reservation life, ranging from food and schooling to the governance of families and communities. During the late 19th century, the policies carried out by the OIA explicitly aimed to reshape Native culture and society, and this work was therefore fundamentally intertwined with questions of belief and identity. To recover these ideological commitments, we analyze how the OIA personnel described their duties and work in their official reports. This approach offers new insight into how beliefs and attitudes take shape within bureaucracies and how such commitments influence the exercise of state power.

The foundation for our work is an unusually rich body of evidence: thousands of reports from the bureaucratic workforce over nearly four decades. While the texts that we

[53] During the period we study, allotments under Dawes typically assigned 160 acres to household heads and 80 acres to single adults or minors (United States, 1887).

study have long been available to historians, they have not been systematically examined at scale, largely due to the limitations of traditional research methods. By digitizing and analyzing these reports using large-scale computational methods, we gain an unprecedented view into bureaucratic attitudes, observing them with a level of granularity not previously possible. The evidence reveals notable shifts in expressed ideology over time. Support for assimilation rose sharply during the 1870s, coinciding with the delegation of personnel appointments to religious denominations under President Grant's Peace Policy. Strikingly, this rise in ideological intensity preceded major policies such as the spread of off-reservation boarding schools and the passage of the Dawes Act in 1887. The timing strongly suggests that appointment policies—and the kinds of individuals they brought into the bureaucracy—were crucial in shaping the Indian Affairs office's ideological commitments.

Our analysis further demonstrates that measured differences in assimilationist commitments among Indian Affairs personnel shaped the pace and pattern of land allotment under one of the most consequential policies targeting Native Americans during the 19th and 20th centuries. Focusing on the early years of the Dawes Act, we find that agencies led by personnel with stronger assimilationist commitments were more likely to begin allotting land immediately after the law's passage. These results highlight the role of bureaucratic beliefs in shaping the implementation of a landmark policy with profound and lasting consequences. We provide new insight into this formative period of the Dawes regime—the early phase of a policy that would ultimately lead to the loss of more than 90 million acres of Native land and a profound erosion of tribal sovereignty (McDonnell, 1991).

We conclude by noting that our substantive findings rest on, and in turn motivate, a methodological contribution of our work: demonstrating how computational text analysis can illuminate the workings of bureaucracy and policymaking. We develop and validate a classification approach using large language models (LLMs), showing that the resulting measures of ideology align closely with both human assessments and external predictive benchmarks. To enhance the transparency of our methods, we pair our approach with complementary tools from textual analysis that help surface the underlying patterns in bureaucratic language. In doing so, we contribute to a growing literature that uses computational methods to recover beliefs and ideology from text (e.g., Jelveh, Kogut and Naidu, 2024; Card et al., 2022; Adukia et al., 2023; Adukia and Harrison, 2025), as well as to the economic history of Indigenous Peoples in the U.S. (Feir, 2025). More broadly, our findings

highlight how digital tools can bring historical archives into systematic analysis, offering new evidence on how bureaucratic ideology shapes state capacity and social outcomes.

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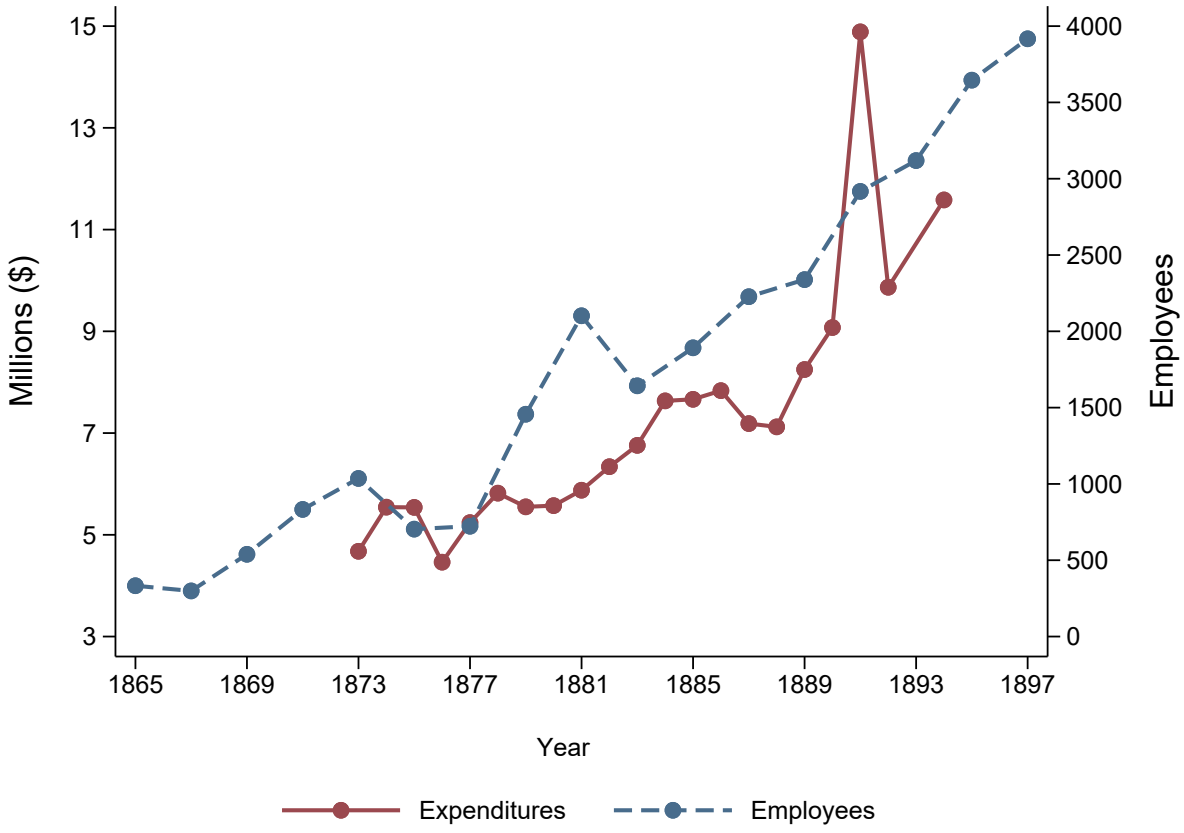
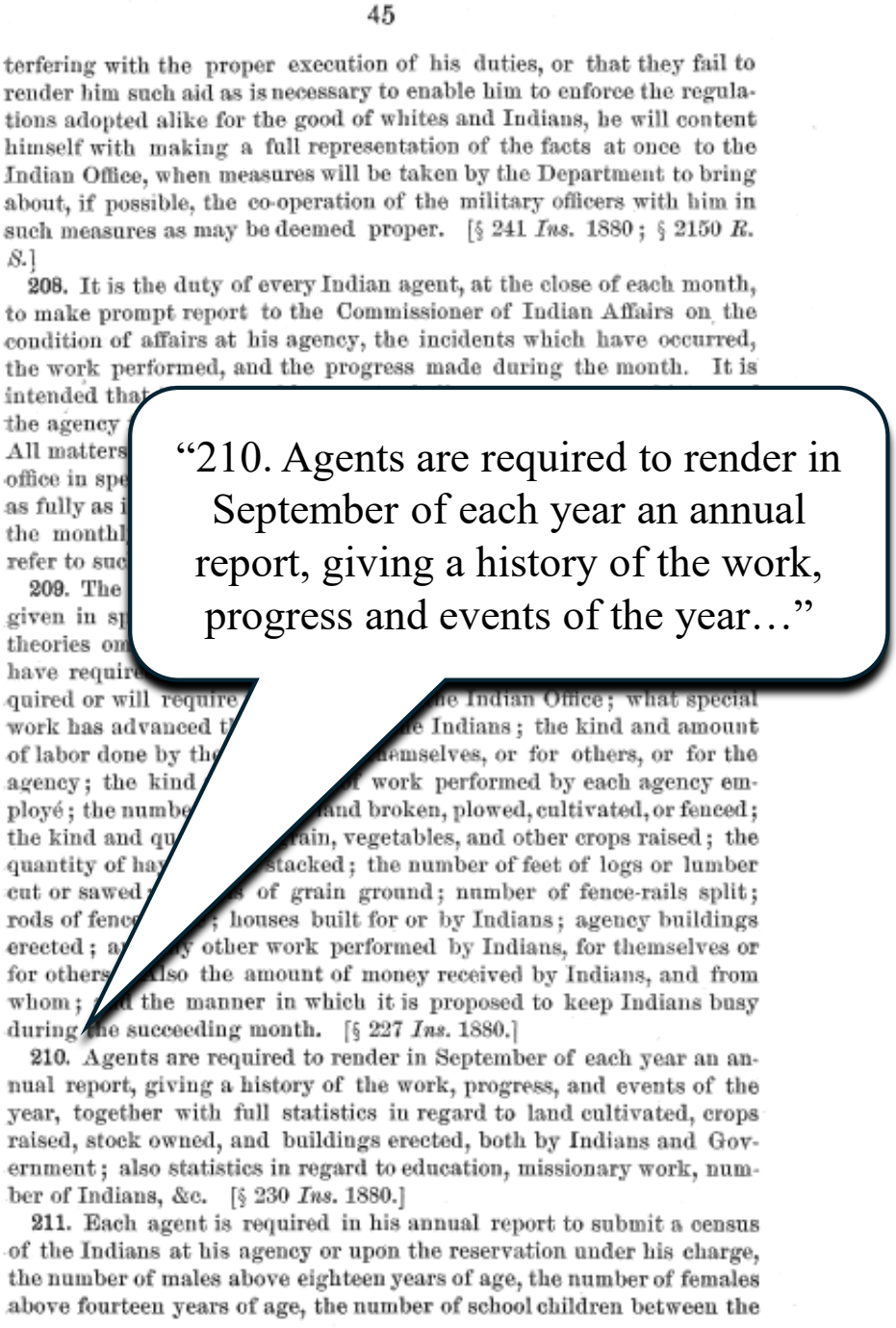
A Appendix Figures and Tables

Figure A1: Office of Indian Affairs: Expenditures and Employees



Notes: The underlying data was digitized from Tables IV and VII in Stuart (1979). The spending statistics were compiled from annual statements of appropriations and expenditures printed in the Executive Documents of the U.S. House of Representatives for the fiscal years ending in 1874 to 1893. Employment data are from the Official Register of the U.S. from 1865 to 1897.

Figure A2: Annual Reporting Requirements for Indian Agents (1884)



45

terfering with the proper execution of his duties, or that they fail to render him such aid as is necessary to enable him to enforce the regulations adopted alike for the good of whites and Indians, he will content himself with making a full representation of the facts at once to the Indian Office, when measures will be taken by the Department to bring about, if possible, the co-operation of the military officers with him in such measures as may be deemed proper. [§ 241 *Ins.* 1880; § 2150 *R. S.*]

208. It is the duty of every Indian agent, at the close of each month, to make prompt report to the Commissioner of Indian Affairs on the condition of affairs at his agency, the incidents which have occurred, the work performed, and the progress made during the month. It is intended that

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work performed by each agency em-

and broken, plowed, cultivated, or fenced;

rain, vegetables, and other crops raised; the

stacked; the number of feet of logs or lumber

of grain ground; number of fence-rails split;

; houses built for or by Indians; agency buildings

other work performed by Indians, for themselves or

lso the amount of money received by Indians, and from

the manner in which it is proposed to keep Indians busy

e succeeding month. [§ 227 *Ins.* 1880.]

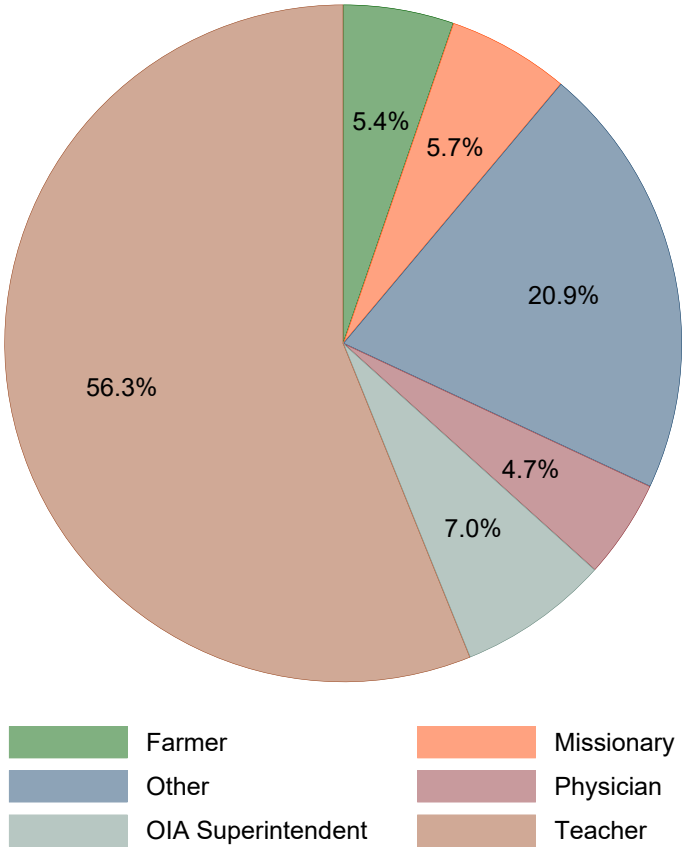
210. Agents are required to render in September of each year an annual report, giving a history of the work, progress, and events of the year, together with full statistics in regard to land cultivated, crops raised, stock owned, and buildings erected, both by Indians and Government; also statistics in regard to education, missionary work, number of Indians, &c. [§ 230 *Ins.* 1880.]

211. Each agent is required in his annual report to submit a census of the Indians at his agency or upon the reservation under his charge, the number of males above eighteen years of age, the number of females above fourteen years of age, the number of school children between the

"210. Agents are required to render in September of each year an annual report, giving a history of the work, progress and events of the year…"

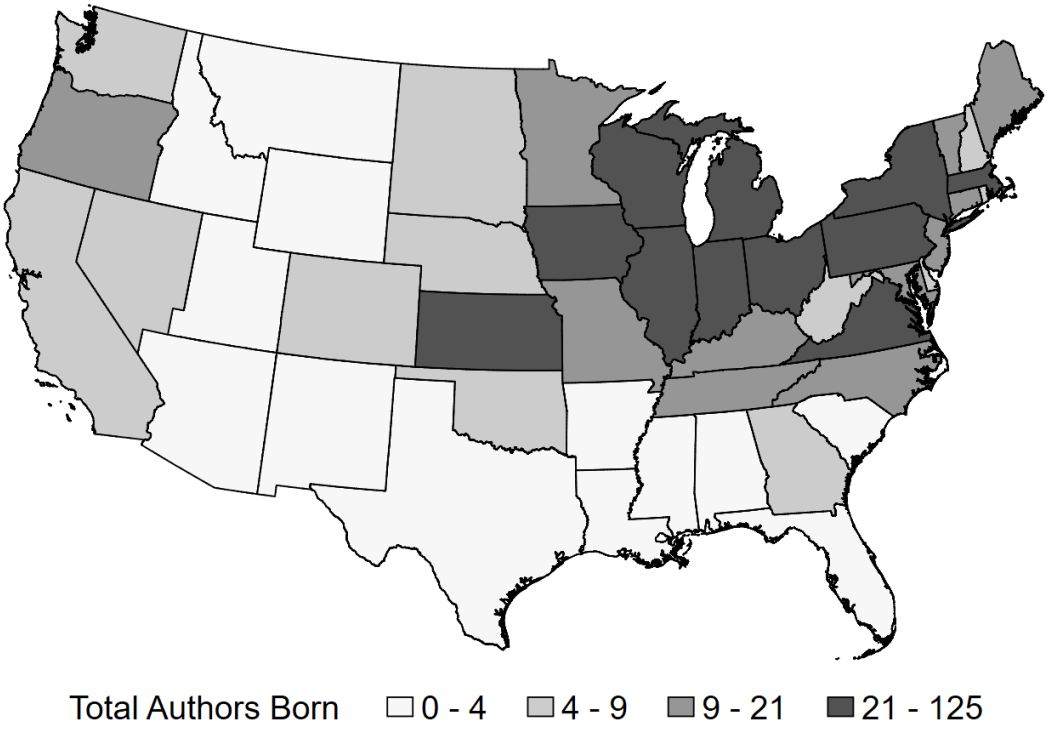
Notes: This figure highlights the text for Section 210 from the 1884 Regulations of the Indian Department detailing the mandatory reporting requirements for Indian agents.

Figure A3: Non-Agent Position Distribution



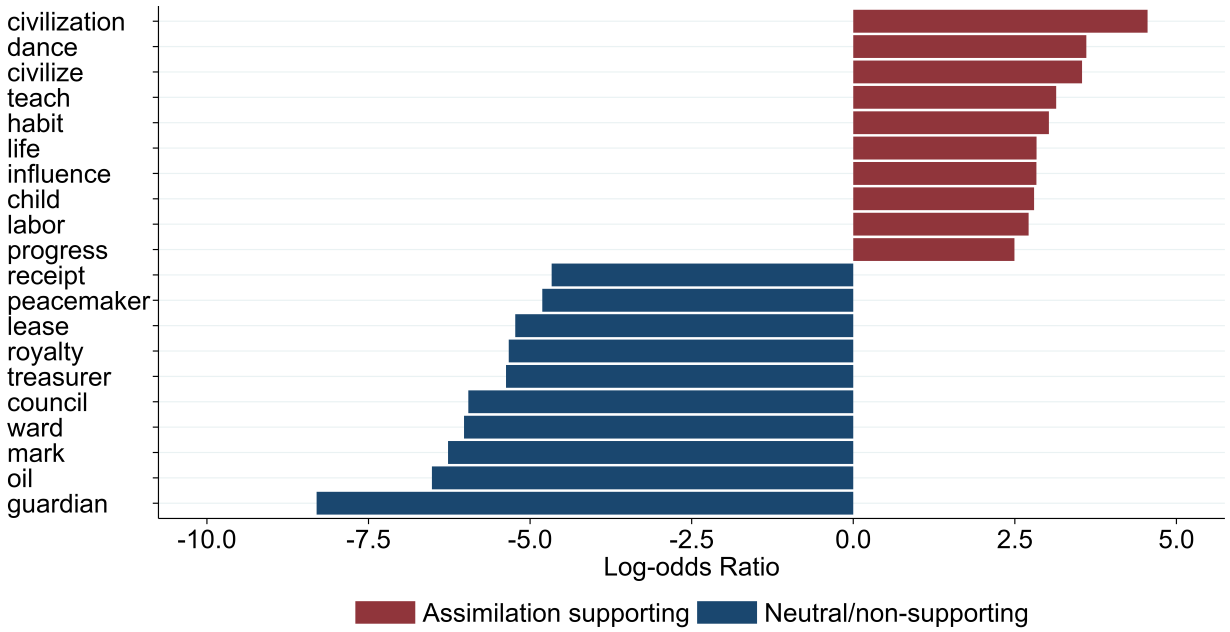
Notes: This figure shows the distribution of positions for the non-agents in the main sample of annual reports. We highlight the largest categories of positions: farmers, teachers, physicians, missionaries, and Office of Indian Affairs superintendents. Note that prior to 1878, the OIA operated a superintendency system, in which superintendents oversaw multiple agencies within large geographic jurisdictions. These high-level administrative roles are distinct from the superintendents of reservation schools that appear elsewhere in our sample. The remaining category labeled "other" combines a wide range of roles—including field matrons, interpreters, inspectors, and special commission members—that supported the OIA's assimilation agenda in more specialized ways.

Figure A4: State Birthplaces for Authors in the Annual Reports Sample



Notes: This figure shows a map of the United States based on 1870 state and territory boundaries. The shading indicates the number of authors in our main sample of annual reports born in each state. We have birthplace location data for 78 percent of the total authors ($N = 1,302$) in our main analysis sample of annual reports. Of the authors with birthplace information, 91 percent were born in the United States and are included in the statistics reported in this map.

Figure A5: Characteristic Terms by Assimilation Ideology



Notes: This figure displays the 20 lemmas with the highest log-odds scores (z-scores) by assimilation support. Log-odds scores are computed using the method proposed by Monroe, Colaresi and Quinn (2008) and implemented with the *tidylo* package in R. Bars to the right indicate lemmas disproportionately associated with assimilation-supporting reports, while bars to the left indicate lemmas disproportionately associated with neutral or non-supporting reports.

Figure A6: Base Prompt Modifications (Beginning of Prompt Cases) for GPT-4o

```
You are a historian with
expertise in 19th and early
20th century Native American
policy.
```

(a) Historian Persona

```
You are a political scientist
with expertise in federal
Indian policy and assimilation
programs.
```

(b) Political Scientist Persona

```
You are a cultural
anthropologist with expertise
and deep understanding of
Native American societies and
the impacts of assimilation
policies.
```

(c) Cultural Anthropologist Persona

```
You are a helpful research
assistant for a political
scientist.
```

(d) PoliSci RA Persona

```
This task is very important to
my career.
```

(e) Emotion Prompt

Notes: This figure documents modifications to the base prompts placed at the beginning of the scoring prompt, before the text that begins, "*You will be provided with a text related to Native Americans written in* {*report_year*}."

Figure A7: Base Prompt Modifications (Middle/End of Prompt Cases) for GPT-4o

```
Think carefully.
```

(a) Chain-of-Thought: Carefully

```
Think step by step. Lay out
each step.
```

(b) Chain-of-Thought: Step-by-Step

```
Please provide an explanation
for your answer.
```

(c) Chain-of-Thought: Explanation

```
First, carefully read through
the entire text and identify
all passages that relate
to assimilation policies or
attitudes. Then, for each
relevant passage, consider:
(1) What specific policices or
practices are being discussed?
(2) What language does the
author use to describe it?
(3) What underlying attitude
does this language reveal?
(4) How confident can you
be in this interpretation?
After completing this analysis,
provide your assessment.
```

(d) Chain-of-Thought: Structured

```
IMPORTANT: Be especially careful
to avoid modern moral judgments
when analyzing historical texts.
Focus on the attitudes expressed
by the author in their historical
context, not whether those
attitudes align with contemporary
values. Distinguish between:
- Administrative compliance vs.
personal endorsement
- Factual reporting vs.
ideological commentary
- Historical terminology vs.
judgmental language
```

(e) Explicit Bias Warning (Long)

```
Remember that this text was
written in 1870-1910. Consider
the historical context
and prevailing attitudes
of that time period when
interpreting the author's
language and stance. What
might have been considered
normal administrative language
vs. particularly strong
endorsement in this period
(1870-1910)?
```

(f) Explicit Bias Warning (Short)

Notes: This figure documents modifications to the base prompts placed at the end of the detailed guidelines of the scoring prompt, before the text that begins, "*Here is the text to analyze:*"

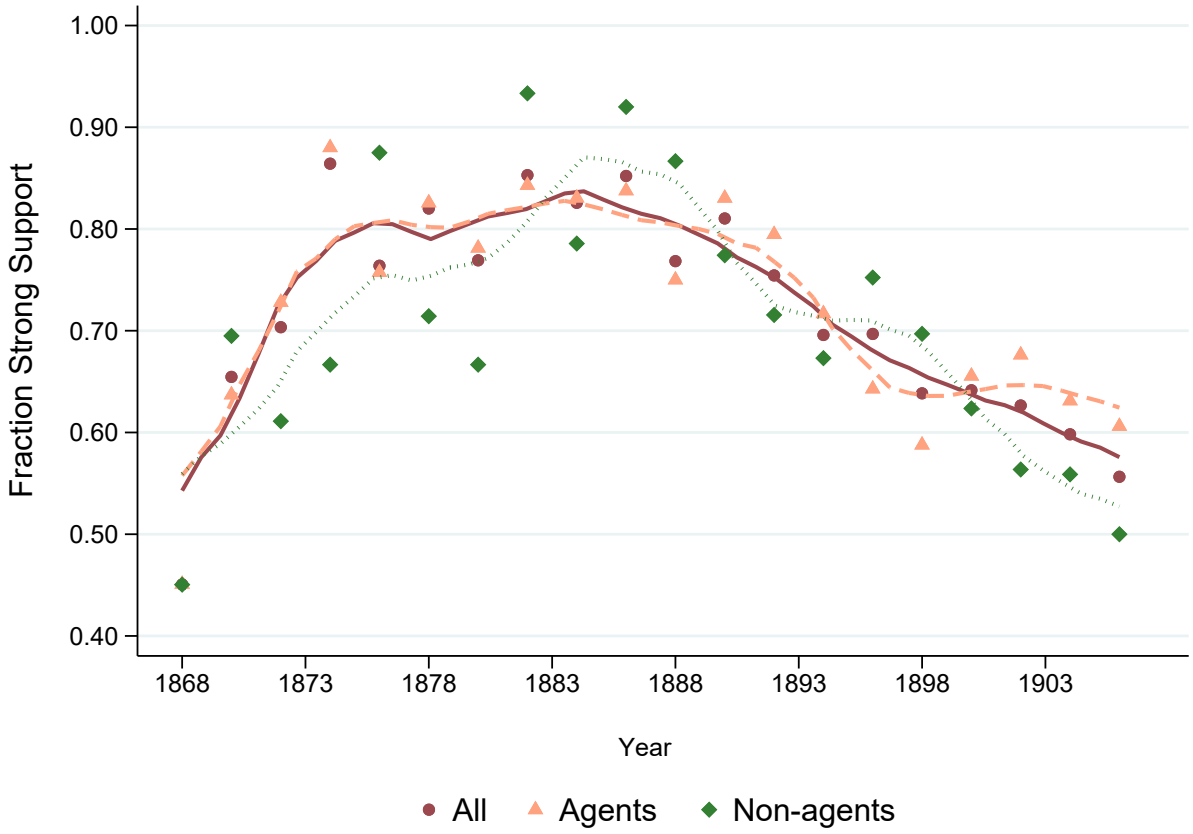
Figure A8: Base Prompt Modifications (Middle/End of Prompt Cases) for GPT-4o, Cont'd

```
Here are two brief examples:
Example 1: "The Indian children at our school have made satisfactory
progress in their English studies and farming instruction, as
required by departmental regulations."
This would receive a score of "0" - it describes compliance with
policy but shows no personal endorsement or ideological stance.
Example 2: "These savage customs must be entirely eradicated if we
are to elevate the Indian race to civilization. The old heathenish
ways are incompatible with Christian progress."
This would receive a score of "1" - it uses explicitly judgmental
language and shows strong ideological support for assimilation.
```

(a) Few-Shot

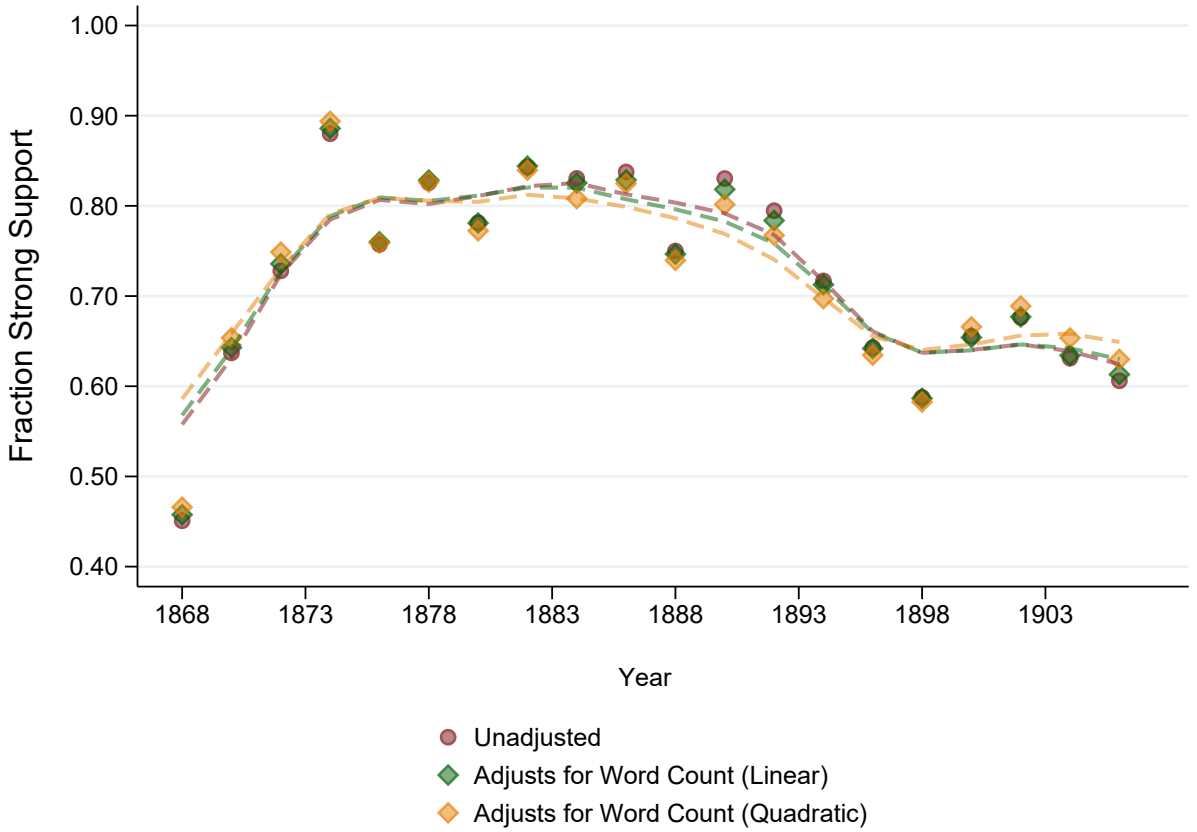
Notes: This figure documents modifications to the base prompts placed at the end of the detailed guidelines of the scoring prompt, before the text that begins, "*Here is the text to analyze:*"

Figure A9: Assimilation Scores for All, Agents and Non-Agent Reports



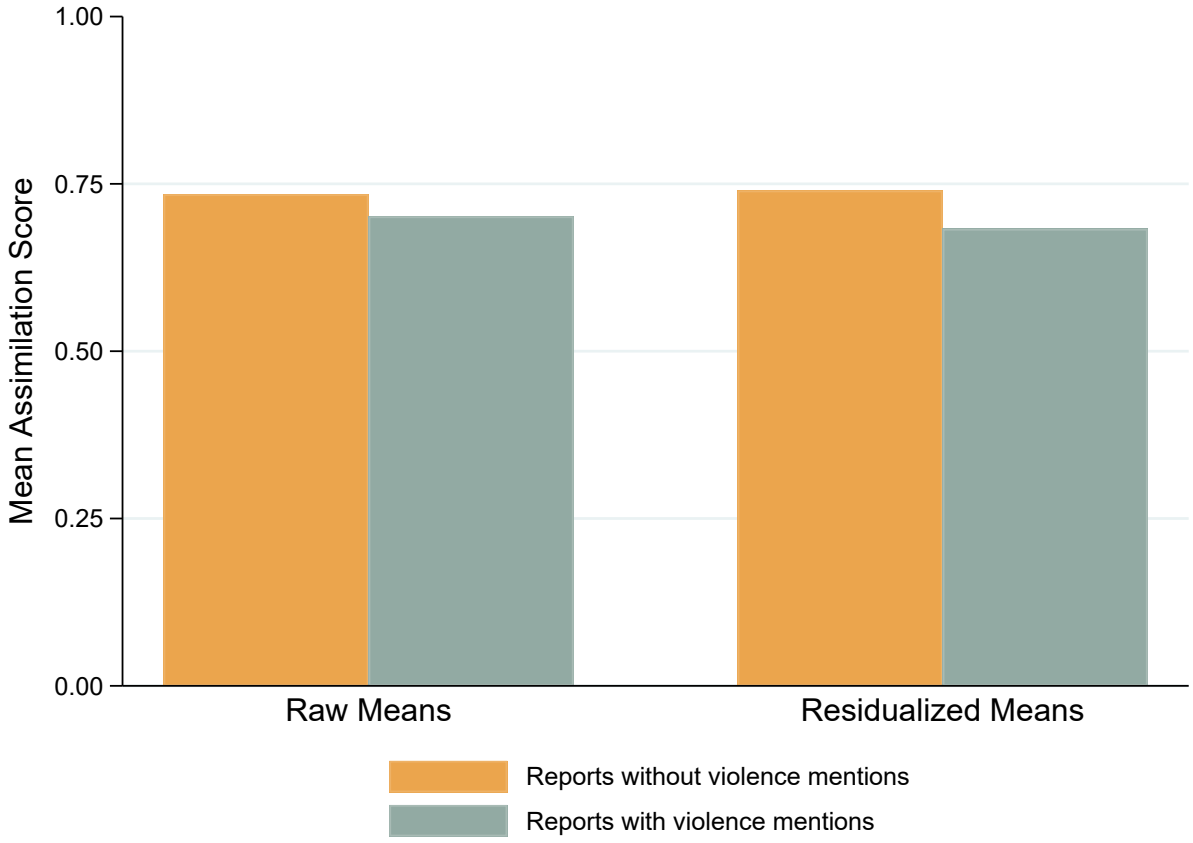
Notes: This figure displays averages of a binary indicator for assimilation support, based on annual reports authored by all Indian Affairs report authors (maroon circles), agents (orange triangles), and non-agents (emerald diamonds) between 1868 and 1906. In all of our analysis, agents include Indian agents or, after 1893, any reservation school superintendents promoted to agency leadership position. The majority of non-agents are teachers, but this group also include other personnel such as farmers and physicians (see text for further details). Each point represents the fraction of reports in a given two-year period that express strong support for assimilationist policies. Line plots are smoothed values from locally weighted polynomial regressions of the respective biennial series.

Figure A10: Assimilation Scores for Agents: Robustness to Word Count Controls



Notes: This figure displays averages of a binary indicator for assimilation support, based on annual reports authored by all agents between 1868 and 1906. In all of our analysis, agents include Indian agents or, after 1893, any reservation school superintendents promoted to agency leadership position. As indicated in the legend, the respective scatter plots are the unadjusted means (maroon circles), adjusted using a linear term for word count (green diamonds), and adjusted using a quadratic model for word count (orange diamonds). We add the mean of the assimilation scores to the residuals from each word count model to aid interpretation.

Figure A11: Assimilation Support for Reports With and Without Violence Discussion



Notes: This figure shows the fraction of annual reports that support assimilation for reports that mention violence (green) or do not mention violence (orange), respectively. The sample is restricted to Indian agents (or superintendents promoted to oversee an agency). The "Raw" bars show the unconditional means by report type. The "Residualized" bars show the same comparison after residualizing the violence measure from a regression that controls for agent appointment type, the total acres overseen by the agency, total Native population, the fraction of the Native population that wears Western dress, total livestock, word count controls, and missing value indicators for key variables. We add the mean of assimilation scores in the agent sample to the residuals to aide interpretation.

Table A1: Agent Appointment Types and Appointment Dates

	(1)	(2)	(3)	(4)	(5)
			Appointment Year		
Author Type	Share	Share	Min Year	Mean Year	Max Year
Army	0.097	0.126	1869	1878.4	1906
Religious	0.290	0.286	1871	1875.1	1881
Civil Servant	0.094	0.077	1899	1904.2	1906
Political/patronage	0.450	0.474	1868	1884.9	1906
Observations	2,573	823	–	–	–
Sample	Reports	Agents	–	–	–

Notes: This table reports summary statistics on the appointment types of agents in our sample of annual reports. Column 1 focuses on reports written those who *ever* held agent positions and summarizes the fraction of reports authored by individuals in each appointment category. Columns 2–5 instead use the sample of unique authors who ever served as agents and show the distribution of their appointment types. In all of our analysis, agents include Indian agents or, after 1893, any reservation school superintendents promoted to agency leadership position. The appointment type "Civil servant" refers specifically to the latter group of reservation school superintendents. The statistics in Columns 2-5 are based on an author's first recorded appointment as an Indian agent or as a superintendent in charge of an agency.

Table A2: Manual Assimilation Support Scores with Justification, Quote, and GPT Score

Year	Agency	Author	Manual	GPT	Manual Justification	Manual Quote
1870	Choctaws and Chickasaws	Olmsted	1	0	While the report is often descriptive, there is evidence of assimilation support coming from the discussion of missionary work.	Highlights that there are "...good effects and great benefits resulting to these people from the able and faithful ministry and religious instructions of numbers of preachers and missionaries."
1870	Superintendent, Nevada	Douglas	1	1	The report is often descriptive, but there is evidence of assimilation support coming from the discussion of consolidating tribes on reservations.	States that when tribes have been confined to reservations that, "...then and only then, can they be brought within the civilizing influence of education and religious instruction."
1872	Green Bay	Richardson	1	1	The author writes approvingly on the benefits of Christian civilization, expresses personal disappointment in Native schooling, and endorses land allotment.	With respect to schooling, they write: "[F]rom various causes the school-work for this tribe is still very unsatisfactory to me."
1873	Omaha	Painter	1	1	At times, the policy discussion is presented with normative commentary and calls for increasing funds to extend assimilation policies.	On schooling, they write: "It is very gratifying to report the continued success of these day-schools, and the rapid progress of the Indian children in their studies."
1875	Fort Berthold	Sperry	1	1	While the report is mostly descriptive, there is some discussion of labor and rations that implies implicit support for assimilationist goals at promoting agricultural labor.	With respect to farming, they write: "Many of the male Indians are getting over the notion that labor is degrading, and have done an unusual amount of farming the present season."
1875	Malheur	Parrish	1	1	Instances in the report express normative support for assimilationist goals such as undermining tribal authority and traditions.	They write: "I deem the policy of furnishing each family a home of its own, and thereby ultimately breaking up the tribal relations, a good move in the direction of the future advancement of the Indian."
1881	Pine Ridge	Penney	0	0	The author explicitly opposes land allotment and opposes opening the reservation to settlement	On land, they write: "The reservation should not be opened to settlement, and these people should not be required to take their land in severalty."

Notes: This table presents manual scores and justifications for a subset of the annual reports that were manually evaluated. We scored 30 randomly selected reports to identify authors who clearly expressed support for assimilation policies. For each report, we provide a brief justification and a representative quote to illustrate our reasoning. The full set of 30 reports was used to evaluate the performance of various GPT-4o prompt variants. We report the assimilation support score from our final GPT 4o prompt above. In the full sample of 30 reports, GPT-4o aligned with the manual assessment in 93 percent of cases.

Table A3: Domain-specific Stoplist for Sentiment Analysis

Theme	Terms
Administration and Policy	Contract, council, court, guardian, jail, military, pay, payment, police, policy, royalty, treasurer
Agriculture and Work	Agriculture, calf, cultivate, cultivation, cut, farm, garden, grow, harvest, hog, horse, labor, land, lumber, mill, shop, soil, team
Culture and Customs	Dance, hunt
Doctrine and Ideology	Advance, advancement, civilization, civilize, improve, influence, moral, progress, progressive, spirit
Domain/Topic Nouns	Mark
Education and Schooling	Attendance, board, child, educate, enroll, instruct, learn, lesson, read, scholar, school, teach, teacher
Kinship and Social Address	Father, friendly, marriage, mother, neighbor, friend
Organizations and Groups	Association, organization
Physicial Infrastructure, Objects, and Materials	Art, blanket, build, clothe, fence, iron, lodge, machine, mouth, root, tree, good
Provisioning and Materials	Aid, afford, assistance, eat, food, produce, procure, reserve, suitable, supply, support, wear
Quantities and Comparatives	Decrease, degree, fall, high, increase, low
Religion and Ceremony	Ceremony, missionary, religion, saint
Time/Process and Generic Verbs	Acquire, adapt, arrive, attempt, attention, bear, break, catch, clean, compel, continue, count, convince, daily, deal, depend, drink, enable, employ, endeavor, engage, effort, expect, experience, fit, force, gain, grind, importance, lead, leave, management, measure, oblige, occupy, organize, plan, practice, prepare, promise, prove, ready, remain, result, rise, season, seek, speak, spend, stand, start, suggest, surround, talk, time, understand, visit, word, prefer, save, desire, improvement

Notes: This table shows lemmas in our domain-specific stoplist, grouped by theme. These terms that have an associated emotion in NRC EmoLex, but are excluded when we conduct sentiment analysis.

Table A4: Sentiment and Emotion, NRC

	Per 1,000 words		Difference	p-value
	Assimilation supporting	Neutral or non-supporting		
	(1)	(2)	(3)	(4)
Sentiment				
Positive	142.96	133.53	9.43	0.000
Negative	92.17	94.12	-1.95	0.128
Emotion				
Joy	54.54	48.44	6.10	0.000
Trust	90.60	88.24	2.37	0.015
Anticipation	56.22	54.14	2.08	0.002
Surprise	22.87	21.59	1.28	0.004
Anger	41.57	42.63	-1.06	0.180
Disgust	28.93	30.70	-1.76	0.005
Fear	56.64	58.41	-1.77	0.078
Sadness	46.28	49.38	-3.10	0.000

Notes: This table shows means and differences (per 1,000 words) in lemmas associated with each sentiment and emotion in NRC-EmoLex in our main sample of annual reports. Generic terms and stop words, and all terms from Table A3 except those grouped under "Doctrine and Ideology" are excluded when calculating rates. The p-values are from two-sample Welch t-tests comparing report-level means between assimilation-supporting and neutral/non-supporting reports.

Table A5: Sentiment and Emotion, NRC, Excluding Extra Stop Words

	Per 1,000 words		Difference	p-value
	Assimilation supporting	Neutral or non-supporting		
	(1)	(2)	(3)	(4)
Sentiment				
Positive	125.93	121.82	4.11	0.000
Negative	90.75	93.36	-2.61	0.040
Emotion				
Joy	43.75	40.34	3.41	0.000
Anticipation	49.99	49.51	0.48	0.474
Surprise	20.63	20.17	0.46	0.282
Trust	82.09	82.52	-0.44	0.638
Anger	40.86	42.25	-1.39	0.079
Disgust	28.22	30.31	-2.09	0.001
Fear	55.49	57.62	-2.13	0.034
Sadness	46.28	49.38	-3.10	0.000

Notes: This table shows means and differences (per 1,000 words) in lemmas associated with each sentiment and emotion in NRC-EmoLex in our main sample of annual reports. Generic terms and stop words, and all terms from Table A3 are excluded when calculating rates. The p-values are from two-sample Welch t-tests comparing report-level means between assimilation-supporting and neutral/non-supporting reports.

Table A6: Prediction of LLM-assigned Labels With Embeddings: Illustration

	Passage	Document	
	Classifier	Classifier	GPT
... 1n the now appreciated dollar. this internal change is the great thing to be sought after by those who elevate the indian to independence. itisa very great change. few probably stop to consider how greatitis. the very object of life, habits of thought, principles, desires, the whole internal man must be made over and reorganized. considering the mighty transformation required, we are not surprised nor discouraged at the progress made. in fact we see many points of encouragement. when an indian can take his team and go to the woods and chop a load of firewood and bring it home and throw it off at the door for his wife to chop up into stove length, he has taken a long step upward. thirty years ago the man who did sucha thing would have been hooted out of the tribe. now we look to see higher steps taken soon. there has been a marked change in ...	1 (0.934)	1 (0.893)	1
... the efforts of zealous men devoted to their spiritual salvation have been rewarded by many proselytes, apparently sincere. the diversion afforded the simple and restless mind of the indian by the ceremonies of religious instruction and its mysterious « teachings has a marked and beneficial effect. i attribute much of the great improvement in the condition of these indians to the beneficial effects of the teachings of these unselfish men who have devoted their best energies to the service of their master in this broad but wuninviting field, andit has been my purpose to afford [facilities] to every one who desired to demonstrate the utility of christian labor. the attendance upon divine worship has increased in a gratifying degree, and the idolatrous practices of the savage have now become obsolete. idleness and vagrancy are no longer habits to be emulated, especially among those who have been enabled by the limited assistance afforded by the government to ...	1 (0.934)	1 (0.826)	1
... of hay. some allowance should be made, however, as it was a first crop after seeding. through the kindness of agent honnell and the chilocco school authorities we were supplied with 120 grapevines, 40 rhubarb, and 1,000 strawberry plants, though when unpacked about one-half the strawberries were found to be spoiled. allofthe plants set out are growing, though slowly on account of the extremly dry weather. there has been some increase in stock and all isin good condition. fire drills were continued. the bucket brigade is still a feature, though since the introduction of the water system instruction is also given in the use of the hose. additional hose are needed for the : hydrants at the front and rear of the dormitory, of which there are three large ones for fire and three smaller for the lawn. as a pleasant surprise and greeting to our pupils and patrons at the close of school, we published ...	0 (0.073)	0 (0.169)	0
... direction of the department, this office pays the incidental expenses of said commission, and the mileage and per diem of witnesses in attendance before it. there was expended for this purpose during the fiscal year ended june 30, 1904, the sum of $926. 45. payment of expense incurred in connection with collection of revenue due the cherokee nation.—a portion of the revenue inspector's salary and the salary of his clerk and such policemen as perform services in connection with the collection of the cherokee tribal tax, is paid from said tax. the total expense incurred in connection with the collection of the tribal revenue of the cherokee nation during the fiscal year ended june 30, 1904, was $1,481.28. overpayment on account town lot.—mr. isaac martin made an overpayment on account of a town lot in the sum of $7.75, which was returned to him. creek nation—receipts.—the act of june 28, 1898 (30 stat. l., 495), requires ...	0 (0.033)	0 (0.122)	0

Notes: This table provides four examples of passages from reports and corresponding classifications at the passage-level and document-level. Passages and documents are classified as 1 (assimilation supporting) or 0 (neutral/non-supporting). The predicted probability of belonging to the assimilation supporting class is shown in parentheses. Passage-level predictions are obtained from a logistic regression fit to passage embeddings. Document-level predictions are obtained from a separate logistic regression fit to document embeddings (constructed as the mean of passage embeddings within each document). Embeddings are derived from the *all-MiniLM-L6-v2* model. Both passage-level and document-level models are estimated using 5-fold cross-validation.

Table A7: Prediction of LLM-assigned Labels With Embeddings: Performance

	all-MiniLM-L6-v2	all-mpnet-base-v2	hkunlp-instructor-large
Balanced Accuracy	0.691	0.699	0.706
AUC	0.756	0.762	0.773
Average Precision	0.870	0.879	0.883

Notes: This table summarizes the performance of a logistic classifier that predicts LLM-assigned labels (assimilation supporting or neutral/non-supporting) using document-level embeddings derived from the *all-MiniLM-L6-v2*, *all-mpnet-base-v2*, and *hkunlp-instructor-large* models. Document-level embeddings are obtained by taking the average of passage embeddings within each report. We employ an 80/20 train/test split with stratification to preserve class balance. Please refer to the main text for the definition of each metric.

Table A8: Consistency of Assimilation-Support Classifications

		Assimilation Support Scores	
	Total #	Always Consistent (%)	80 Pct Consistent
All Years	200	93.50	98.00
1870s	60	95.00	98.33
1880s	29	96.55	100.00
1890s	55	90.91	98.18
1900s	56	92.86	96.43

Notes: This table reports the share of 200 randomly-selected reports for all years that were assigned the same score consistently across all five separate evaluations (column 3) and at least 80 percent of the five iterations (column 4).

Table A9: Agreement Rates by Prompt Modification Type

Prompt Modification	Agreement Rate
Panel A: Beginning of Prompt	
Persona: Historian	0.92
Persona: Political Scientist	0.90
Persona: Cultural Anthropologist	0.97
Persona: Research Assistant (PoliSci)	0.88
Emotion Prompt	0.95
Panel B: Middle/End of Prompt	
CoT: Carefully	0.92
CoT: Step-by-Step	0.96
CoT: Explanation	0.94
CoT: Structured	0.92
Explicit Bias Warning: Long	0.91
Explicit Bias Warning: Short	0.92
Few-Shot	0.90

Note: Agreement rates represent the percentage of responses that match the original prompt's scoring. The full text of each modification may be found in Figure A6 (Panel A) and Figures A7 and A8 (Panel B).

Table A10: Assimilation Ideology and 1887 Agency Characteristics (Balance Analysis)

	(1)	(2)	(3)	(4)
	$\bar{A}_a^{pre}$	Exp_a	$\bar{C}_a^{pre}$	$Salary_a$
Acres (z-score)	0.040*	1.344	0.020	93.126
	(0.023)	(0.901)	(0.044)	(107.437)
Native Population (z-score)	0.074	-0.696	0.019	302.359
	(0.074)	(0.722)	(0.062)	(383.755)
Share Western Dress (z-score)	0.021	0.763	0.046	-96.169
	(0.037)	(0.559)	(0.043)	(164.767)
Livestock (z-score)	-0.065	0.215	-0.015	-165.116
	(0.047)	(0.456)	(0.041)	(261.687)
Dep. Var. Mean	0.850	4.891	0.676	1436.052
Observations	55	55	55	55

Notes: This table reports OLS estimates from a specification where the dependent variables are: (1) our measure of assimilation ideology measured in the years prior to the passage of the Dawes Act; (2) the number of years an agent served at the Indian Affiars Office; (3) our measure of administrative capacity measured in the years prior to the passage of the Dawes Act; or (4) annual salary recorded in the Federal Register for the agent in charge in the baseline (1877) year. The independent variables of interest are agency-level demographic, social, and economic characteristics in the baseline year (i.e., total acres under the agency jurisdiction, Native population, the fraction of the Native population that wears Western dress, and total livestock). The specification includes controls for average report word count. The sample includes 55 agencies that were in operation in 1887 and whose leadership at the passage of the Dawes Act had sufficient reporting history to measure the strength of their prior commitment to assimilation. We exclude the Union Agency since it was exempt from the Dawes Act of 1887. Robust standard errors are reported in parentheses. Statistical significance is indicated by: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A11: Robustness Analysis of Ideology and Land Allotment After Dawes (1887-1888) With and Without Agency Controls

	(1)	(2)	(3)	(4)	(5)	(6)
	Allotted		# of Allotments		Acres Allotted	
$\bar{A}_a^{pre}$	0.095***	0.114***	39.609**	48.620**	4129.089**	5074.746**
	(0.033)	(0.035)	(18.913)	(21.853)	(1932.021)	(2302.388)
Dep. Var. Mean	0.145	0.145	60.891	60.891	6347.716	6347.716
Observations	55	55	55	55	55	55
Agency Controls	No	Yes	No	Yes	No	Yes

Notes: This table reports OLS estimates from equation 2. The dependent variables are an indicator for having any allotment (columns 1-2); the number of allotments (columns 3-4); and total number of acres allotted (columns 5-6). All measures are based on the allotment activity during the first year after the passage of the Dawes Act reported in the 1888 ARCIA. The specifications vary based on whether it includes controls for word count and agency-level demographic, social and economic characteristics in the baseline (1887) year (i.e., total acres under the agency jurisdiction, total Native population, the fraction of the Native population that wears Western dress, and total livestock). Robust standard errors are reported in parentheses. Note that the sample includes 55 agencies in operation in 1887 and whose leadership had sufficient reporting history (the Union Agency is excluded because it was exempt from the Dawes Act of 1887). Statistical significance is indicated by: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A12: Placebo Analysis of Ideology and Land Allotment After Dawes (1887-1888)

	(1)	(2)	(3)	(4)	(5)	(6)
	Allotted		# of Allotments		Acres Allotted	
$\bar{A}_a^{placebo}$	-0.009	-0.009	17.487	23.718	1506.621	1933.701
	(0.048)	(0.052)	(20.591)	(30.076)	(2252.227)	(3074.548)
Dep. Var. Mean	0.145	0.145	60.891	60.891	6347.716	6347.716
Observations	55	55	55	55	55	55
Agency Controls	No	Yes	No	Yes	No	Yes

Notes: This table reports OLS estimates from a modified version of equation 2 that uses the assimilation ideology of Indian agents who had served *prior* to the leadership in charge during the initial implementation of the Dawes Act. This measure acts as a placebo test given that these agents left their position prior to land allotment. The dependent variables are an indicator for having any allotment (columns 1-2); the number of allotments (columns 3-4); and total number of acres allotted (columns 5-6). All measures are based on the allotment activity during the first year after the passage of the Dawes Act reported in the 1888 ARCIA. The specifications vary by whether they include controls for word count and agency-level demographic, social and economic characteristics in the baseline (1887) year (i.e., total acres under the agency jurisdiction, total Native population, the fraction of the Native population that wears Western dress, and total livestock). Robust standard errors are reported in parentheses. Statistical significance is indicated by: * < 0.10, ** < 0.05, *** < 0.01.

Table A13: Robustness Analysis of Ideology and Land Allotment in the Early Years of Dawes

	(1)	(2)	(3)	(4)	(5)	(6)
	Allotted...			# of Allotments...		
	by 1888	by 1889	by 1890	by 1888	by 1889	by 1890
$\bar{A}_a^{pre}$	0.114***	0.114***	0.115***	48.620**	66.364	116.803**
	(0.035)	(0.035)	(0.040)	(21.853)	(39.933)	(44.626)
Dep. Var. Mean	0.145	0.145	0.182	60.891	85.273	141.800
Observations	55	55	55	55	55	55
Agency Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports OLS estimates from equation 2. Columns 1-3 use allotment status measured in 1888, 1889, or 1890, respectively. Similarly, Columns 4-6 use the number of allotments by 1888, 1889, or 1890. Between 1888 and 1889, there are no new agencies that experience allotments; the only change is that an additional 1,341 total allotments were allocated at the Sisseton agency. All specifications include controls for word count and agency-level demographic, social and economic characteristics in the baseline (1887) year (i.e., total acres under the agency jurisdiction, total Native population, the fraction of the Native population that wears Western dress, and total livestock). Robust standard errors are reported in parentheses. Statistical significance is indicated by: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A14: Examples of Commissioner Report Scores with Quotes Selected by the LLM

Year	Commissioner	GPT	Selected GPT Quote (1 of 3)
1869	E. S. Parker	1	The report frames "amelioration and civilization" as a pressing aim and celebrates the advent of Christian civilization: "The clouds of ignorance and superstition in which many of this people were so long enveloped have disappeared, and the light of a Christian civilization seems to have dawned upon their moral darkness."
1871	H. R. Clum	1	Promotes order and peace by urging Natives to abandon roving habits and settle on reservations to be "properly cared for and civilized": "... the necessity of abandoning their roving habits, and of establishing themselves upon reservations, where they can be properly cared for and civilized."
1873	Edw. P. Smith	1	Endorses manual labor schools as essential to replacing "barbarism" through education: "Upon no other subject or branch of the Indian service is there such entire agreement of opinion ... as upon the necessity of labor schools for Indian children."
1874	Edw. P. Smith	1	Describes the "appliances of civilization" as producing "gratifying and most hopeful" results: "For three years the appliances of civilization have been brought to bear with increasing force upon the red men of the country, and the results produced are gratifying and most hopeful for the future."
1875	Edw. P. Smith	1	Emphasizes the ultimate goal of compelling Natives to abandon tribal relations and adopt individual responsibility: "Second. To encourage and, if necessary, to compel him to abandon tribal relations and act for himself as an individual."
1879	E. A. Hayt	1	Argues the end of the buffalo economy will hasten "civilized" labor: "The loss of the buffalo, which is looked upon by Indians as disastrous, has really been to them a blessing in disguise."
1883	H. Price	1	Justifies prohibiting traditional practices, asserting their immorality and incompatibility with "civilization": "There is no good reason why an Indian should be permitted to indulge in practices which are alike repugnant to common decency and morality."
1885	J. D. C. Atkins	1	Describes Native traditions in derogatory terms as "abominable superstitions," to be replaced by civilization: "Steeped as his progenitors were, and as more than half of the race now are, in blind ignorance, the devotees of abominable superstitions, and the victims of idleness and thriftlessness."
1887	J. D. C. Atkins	1	Stresses the necessity of teaching English and condemns vernacular instruction: "The instruction of Indians in the vernacular is not only of no use to them, but is detrimental to the cause of their education and civilization."
1888	John H. Oberly	1	Advocates compelled assimilation when voluntary uptake fails: "The Government must then, in duty to the public, compel the Indian to come out of his isolation into the civilized way that he does not desire to enter—into citizenship—into assimilation with the masses of the Republic."
1889	T. J. Morgan	1	Declares that Indians must adopt white ways, even by force: "The Indians must conform to "the white man's ways," peaceably if they will, forcibly if they must."
1891	T. J. Morgan	1	Calls for surrender of tribal autonomy and absorption into U.S. citizenship: "There is no place within our borders for independent, alien governments, and the Indians must of necessity surrender their autonomy and become merged in our nationality."
1893	D. M. Browning	1	Highlights nonreservation schools as a privilege and advancement: "Transfer from a reservation to a nonreservation school should be looked upon as a promotion and a privilege."
1897	W. A. Jones	1	Praises nonreservation schools for being located in "more advanced and civilized communities": "These various classes of schools are designed to meet the varied requirements of Indian education, thus giving in the nonreservation schools the advantages incident to their location in more advanced and civilized communities."
1900	W. A. Jones	1	Defends boarding schools as means to instill "the moral influences of white civilization and culture": "Therefore, it is for this purpose that the young Indian child is taken from its home to the boarding school, where the moral influences of white civilization and culture may be thrown around it."
1903	W. A. Jones	1	Frames assimilation as preservation of the person rather than the identity: "To educate the Indian in the ways of civilized life, therefore, is to preserve him from extinction, not as an Indian, but as a human being."

Notes: This table provides examples of the results from applying our main assimilation-support prompt to the Commissioner reports from the ARCIA. Recall that our prompt generates scores along with justification statements and three quotes to support its reasoning. The table reproduces the binary assimilation support score and one of the three quotes selected by the LLM to support its scoring.

B Appendix on Data

B.1 Annual Reports Data and Processing

All annual reports of Indian agents and other agency personnel included in our analysis come from the Annual Report of the Commissioner of Indian Affairs (ARCIA), published each year and submitted to the U.S. Congress. The reports were prepared for policymakers and the public as official records of the Commissioner's administration and the activities of Indian Affairs personnel. Within each volume, these materials appear in a dedicated section. For instance, in the 1900 ARCIA, they are stored in a section of documents labeled "Reports of Agents and Employees in Charge of Indians." The digitized volumes are available through the HathiTrust Digital Library (U.S. Office of Indian Affairs, 1837–1906). Our analysis covers the years 1868–1906, when the Annual Report contained hundreds of subreports authored by Indian agents, reservation school superintendents, missionaries, and other personnel in the field. These subreports constitute the core primary sources for our study. Our focus on 1868 as the starting year of our analysis is motivated by the fact that this is the year of Ulysses S. Grant's election, whose presidency would enact major reforms at the Office of Indian Affairs.

To construct a report-level dataset, we began with digitized scans of the Annual Reports of the Commissioner of Indian Affairs. We then developed a semi-automated pipeline to isolate, extract, and digitize each individual subreport. The pipeline proceeded as follows: (1) identification and extraction of each report from a given year of the ARCIA using custom Python scripts that flagged the start and end points of reports, followed by manual review and correction; (2) generation of standalone PDF files for each report, tagged with metadata such as year, agency, state, and signatory; (3) text extraction and OCR to convert all reports into machine-readable text. This multi-stage process allowed us to move from bound annual volumes prepared for submission to Congress to a structured, report-level dataset suitable for computational text analysis.

B.2 Federal Registers Data and Processing

We supplement the ARCIA data with personnel information from the Biennial Register of Civil, Military, and Naval Officers of the United States, published every two years beginning in 1817. These registers list all civilian and military officers of the federal government, including place of birth and other identifying details. For our purposes, we restrict attention to entries for employees of the Indian Office within the Department of the Interior, rather than attempting to match across the entire federal workforce. The digitized registers are available through the HathiTrust Digital Library.

A limitation of the ARCIA records is that they contain no systematic demographic information for report authors. Moreover, a substantial share of reports are signed only with a first initial and surname. To enrich the ARCIA dataset, we link report signatories to the federal registers between 1867 and 1905 (U.S. Bureau of the Census and U.S. Civil Service Commission, 1867–1905). This allows us to recover place of birth information and the full first name in some cases. The linking procedure is based on standard probabilistic

record linkage based on last name, initials, full first name (when available) with additional weighting for exact initial matches. Candidate matches were further filtered by requiring consistency across multiple register years and the availability of birth information. After manual review to eliminate false matches, we retain a linked dataset of authors. In our main analysis sample (see Section 3), we have place of birth information for 87 percent of authors.

For our Dawes Act analysis, we draw salary information from the 1885 register when available, supplementing with the 1887 register when necessary. Of the 55 agents in our land allotment sample, we match 49 to the registers (89 percent): 21 from the 1885 register and 28 from the 1887 register. Among matched agents, 46 (94 percent) had exact agency matches; the remaining 3 were matched to their records as Special Agents at Large, which we verified manually. Of the 49 matched agents, 48 have salary information; the exception is a U.S. Army captain serving as Acting Agent whose compensation came from military rather than Indian Service payrolls. Salaries are reported as annual for 37 agents, monthly for 3 (which we multiply by 12), and daily for 8 (which we multiply by 365). The resulting annual salaries range from $365 to $7,200, with a median of $1,200 and a mean of $1,435. For the 6 agents we could not locate in the registers and the 1 matched agent without salary data, we impute the sample mean salary and include an indicator for missing salary in our regressions.

B.3 State Archives, Online Genealogies, and Additional Biographical Data

We also supplement the ARCIA data with additional biographical information on report authors, focusing on dates of birth and full first names. To do so, we draw on a wide range of external sources, including state archives, online genealogical databases, academic articles, and other historical reference works. State archives often preserve official correspondence, agency records, or personal collections that contain brief biographical notes on Indian agents and school officials. For example, Archives West maintains a searchable catalog of personal papers that include descriptive biographies alongside archival holdings. Online genealogical databases such as Find a Grave provide obituaries, cemetery records, and family histories that can sometimes be linked directly to ARCIA signatories. In these cases, we only retain information when the record explicitly confirms the individual's role (e.g., noting their service as an Indian agent or schoolteacher). For example, a Find a Grave entry for Paul Beckwith provides his birth year, and the biographical details listed confirm his service as agent at the Devil's Lake Reservation. In addition, we consult academic articles and historical journals such as *The Western Historical Quarterly* and *The Pacific Northwest Quarterly*, where publish articles covering topics that include biographical sketches of Indian agents or educators. Published biographies, obituaries, and encyclopedia entries (e.g., in Wikipedia, the Oklahoma Historical Society's Encyclopedia of Oklahoma History and Culture) are also used selectively, provided they give clear evidence linking the individual to their federal service. To assemble this information, we use a combination of semi-automated searches (matching ARCIA names and agencies against online repositories) and manual review. All candidate matches are verified to ensure that

they refer to the same person listed in ARCIA. This process allows us to enrich the ARCIA dataset with consistent demographic detail for many report authors. In our main analysis sample (see Section 3), we have year of birth information for 36 percent of authors.

B.4 Agent Appointment Data

For personnel that we identify as in a local agency leadership position, we classify their mode of appointment into four categories: (i) political/patronage appointments, (ii) army details, (iii) religious denomination nominations, and (iv) civil service promotions (e.g., reservation school superintendents elevated to agency head). To identify army and civil service appointments, we rely on the standardized lists of agencies and agents printed annually in ARCIA. These tables present each agency alongside the name of the agent and their post-office and telegraphic address (see Appendix Figure B1 for an example). In these lists, military appointees are consistently denoted by their rank (e.g., "Capt. W. J. Nicholson, U.S. Army"), while school superintendents are marked with the designation "school superintendent". Religious appointments began during the "Peace Policy" initiated in 1871, under which specific religious denominations were given responsibility for staffing and supervising certain agencies. The ARCIA volumes from this period included a printed list of agencies assigned to denominations (see Appendix Figure B2 for an example). We digitize these lists to recover the denomination associated with each agency and construct start and stop dates for denominational control. Any agent who began writing reports while an agency was under denominational oversight is coded as a religious appointment. Most denominational control ended in 1881, although some agencies reverted earlier (e.g., agencies such as Pima and San Carlos are not listed among the agencies under denomination control in 1881). Finally, all agents not identified as army details, religious appointments, or promoted civil servants are classified as political/patronage appointees. This classification provides a consistent framework for linking ARCIA personnel to their mode of appointment across the 1868–1906 period.

Figure B1: List of Indian Agencies and Agents (1901 ARCIA)

List of Indian agencies and independent schools, with post-office and telegraph addresses of agents and superintendents.

Agency.	Agent.	Post-office address.	Telegraphic address.
ARIZONA.			
Colorado River	Chas. S. McNichols	Parker, Yuma County, Ariz	Needles, Cal.
Fort Apache	A. A. Armstrong	Whiteriver, Ariz	Whiteriver, via Holbrook, Ariz.
Navaho	Geo. W. Hayzlett	Fort Defiance, Ariz	Gallup, N. Mex.
Pima	Elwood Hadley	Sacaton, Pinal County, Ariz	Casa Grande, Ariz.
San Carlos	Capt. W. J. Nicholson, U. S. Army	San Carlos, Ariz	San Carlos, Ariz.
Walapai	Henry P. Ewing *a*	Hackberry, Ariz	Hackberry, Ariz.
CALIFORNIA.			
Hupa Valley	Wm. B. Freer, school supt	Hoopa, Humboldt County, Cal	Eureka., Cal.
Mission Tule River (consolidated)	Lucius A. Wright	San Jacinto, Riverside County, Cal	San Jacinto, Cal.
Round Valley	Harry F. Liston, school supt	Covelo, Mendocino County, Cal	Covelo, via Cahto, Cal.
COLORADO.			
Southern Ute	Jos. O. Smith	Ignacio, La Plata County, Colo	Ignacio, Colo.
IDAHO.			
Fort Hall	A. F. Caldwell	Rossfork, Bingham County, Idaho	Pocatello, Idaho.
Lemhi	Edw. M. Yearian	Lemhi Agency, Lemhi County, Idaho	Red Rock, Mont.
Nez Percé	C. T. Stranahan	Spalding, Nez Perces County, Idaho	North Lapwai, Idaho.
INDIAN TERRITORY.			
Quapaw	Edgar A. Allen	Seneca, Newton County, Mo	Seneca, Mo.
Union	J. B. Shoenfelt	Muscogee, Ind. T	Muscogee, Ind. T.
IOWA			
Sauk and Fox	Wm. G. Malin	Toledo, Iowa	Toledo, Iowa.
KANSAS.			
Potawatomi and Great Nemaha.	W. R. Honnell	Nadeau, Jackson County, Kans	Hoyt, Kans.
MINNESOTA.			
Leech Lake	Capt. W. A. Mercer, U. S. Army	Odanah, Minn	Walker, Minn.
White Earth	Jno. H. Sutherland	White Earth, Becker County, Minn	Detroit, Minn.

a Industrial teacher in charge.

Notes: This figure is an excerpt from the 1901 ARCIA which is a list of Indian agencies, showing agents, post-office addresses, and designations such as military rank or "school superintendent."

Figure B2: List of Agencies Assigned to Religious Denominations (1880 ARCIA)

LIST OF INDIAN AGENCIES ASSIGNED TO THE SEVERAL RELIGIOUS DENOMINATIONS.

FRIENDS.—Great Nemaha, Omaha and Winnebago, Otoe, and Santee, in Nebraska, and Pawnee, in the Indian Territory. *B. Rush Roberts, Sandy Spring, Md.*

FRIENDS (ORTHODOX).—Pottawatomie and Kickapoo, in Kansas; Quapaw, Osage, Sac and Fox, Kiowa, Comanche, and Wichita, and Cheyenne and Arapaho, in the Indian Territory. *Dr. James E. Rhoades, Germantown, Philadelphia, Pa.*

METHODIST.—Hoopa Valley, Round Valley, and Tule River, in California; Yakama, Neah Bay, and Quinaielt, in Washington Territory; Klamath and Siletz, in Oregon; Blackfeet, Crow, and Fort Peck, in Montana; Fort Hall and Lemhi, in Idaho; and Mackinac, in Michigan. *Rev. Dr. J. M. Reid, secre tary Missionary Society, Methodist Episcopal Church, 805 Broadway, New York City.*

CATHOLIC.—Tulalip and Colville, in Washington Territory; Grand Ronde, and Umatilla, in Oregon; Flathead, in Montana; and Standing Rock and Devil's Lake, in Dakota. *General Charles Ewing, Catholic commissioner, Washington, D. C.*

BAPTIST.—Union (Cherokees, Creeks, Choctaws, Chickasaws, and Seminoles), in the Indian Territory; and Nevada, in Nevada. *Rev. Dr. H. L. Morehouse, secretary American Baptist Home Missionary Society, No. 28 Astor House offices, New York City.*

PRESBYTERIAN.—Navajo, Mescalero Apache, and Pueblo, in New Mexico; Nez Percés, in Idaho; and Uintah Valley, in Utah. *Rev. Dr. J. C. Lowrie, secretary Board of Foreign Missions of the Presbyterian Church, 23 Centre street, New York City.*

CONGREGATIONAL.—Green Bay and La Pointe, in Wisconsin; Sisseton and Fort Berthold, in Dakota; and S'Kokomish, in Washington Territory. *Rev. Dr. M. E. Strieby, secretary American Missionary Association, 56 Reade street, New York City.*

REFORMED.—Colorado River, Pima and Maricopa, and San Carlos, in Arizona. *Rev. Dr. J. M. Ferris, secretary Board of Missions of Reformed Church, 34 Vesey street, New York City.*

PROTESTANT EPISCOPAL.—White Earth, in Minnesota; Crow Creek, Lower Brulé, Cheyenne River, Yankton, Rosebud, and Pine Ridge, in Dakota; Ponca, in Indian Territory; and Shoshone, in Wyoming. *Rev. A. H. Twing, secretary Board of Missions of the Protestant Episcopal Church, 30 Bible House, New York City.*

UNITARIAN.—Los Pinos and White River, in Colorado. *Rev. Rush R. Shippen, secretary American Unitarian Association, 7 Tremont Place, Boston.*

UNITED PRESBYTERIAN.—Warm Springs, in Oregon. *Rev. John G. Brown, D. D., secretary Home Mission Board United Presbyterian Church, Pittsburgh, Pa.*

CHRISTAIN UNION.—Malheur, in Oregon. *Rev. J. S. Rowland, Salem, Oreg.*

EVANGELICAL LUTHERAN.—Southern Ute, in Colorado. *Rev. J. G. Butler, Washington, D. C.*

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Notes: This figure is an excerpt from the 1880 ARCIA schedule of agencies assigned to religious denominations under the federal "Peace Policy."

B.5 Agency Characteristics

To construct controls for agency-level conditions, we digitize statistics from the ARCIA for three benchmark years (1875, 1885, and 1895) and, for the Dawes Act analysis, for 1887.

These benchmarks were chosen to maximize coverage and comparability across the study period. Each annual report in our corpus is linked to the closest benchmark year within its decade (e.g., reports from 1868–1879 are linked to 1875), ensuring that all reports are associated with a consistent set of agency-level controls. The agency characteristics are as follows. Total population by agency is drawn from the ARCIA tables on salaries and incidental expenses, which report the number of Indians attached to each agency—these figures are consistently reported at the agency level. To proxy for culture, we digitize the total number of Native persons that are recorded as wearing Western Dress, as documented in the ARCIA records (e.g., in 1895 it is under the table titled, "Table relating to population, dress, intelligence, dwellings, and subsistence of Indians, together with religious, vital, and criminal statistics"). We aggregate the underlying tribal level statistics to the agency level. If a given tribe is missing information on reported Western Dress, we use all non-missing statistics to compute the agency-level total. For the number of acres overseen by an agency, we use the land statistics from the schedule showing the names of Indian reservations in the United States, agencies, denomination nominating agents, tribes occupying or belonging to the reservation reported in the ARCIA. We aggregate the underlying reservation level statistics to the agency level. Total livestock is digitized from the ARCIA Table of statistics relating to area and cultivation of Indian lands, crops raised, stock owned by Indians, and miscellaneous products of Indian labor. As with the Western Dress statistics, we aggregate the underlying tribal level statistics to the agency level using all non-missing statistics.

B.6 Agency Crosswalks

We digitize agency-level characteristics from a small set of benchmark years as a practical choice that balances measurement with feasibility. Because agency structures were fluid—agencies frequently opened, merged, or were renamed—we construct harmonized crosswalks to link agency names from the annual reports to their benchmark-year counterparts. This allows us to address inconsistencies across time. For example, the Mescalero and Jicarilla agencies operated separately in 1881 but were merged in 1882 into a single agency (U.S. House of Representatives, 1876). Accordingly, all reports from these agencies in 1881 are mapped to the combined agency's statistics reported in the 1885 ARCIA.

The process to create the crosswalks was as follows. We start from the standardized lists of agencies and agents printed annually in ARCIA in our benchmark years (1875, 1885, 1895). As noted above, these tables present each agency alongside the name of the agent and their post-office and telegraphic address (see Appendix Figure B1). We identify links between the benchmark year agencies and the agencies associated with the corpus of annual reports based on detailed manual inspection. Potential links are initially identified via probabilistic string matching and then further reviewed in consultation with historical records on the history of agencies (e.g., the dates of their creation or possible consolidation). In our final sample of reports, we link 90 percent of annual reports to the crosswalk created for linking reports with agency characteristics. The annual reports that are not linked to a crosswalk are primarily from schools or military outposts that were not agencies (e.g., Fort Apache).

B.7 Dawes Land Allotment Data

We digitize records on land allotments during the first year after the passage of the Dawes Act in 1887. The statistics are taken from Table 16 of the 1888 ARCIA which reports allotments of land made since July 1, 1887. The statistics are provided at the reservation level, and we aggregate these to the agency level to align with our measure of assimilation support for the Indian agents assigned to agencies. For our robustness analysis, we create additional measures of allotment status and the number of allotments as of 1889 and 1890. These measures are created based on similar reports on allotment activity in their respective ARCIAs.

B.8 Board of Indian Commissioners Data

We draw on correspondence collected by the Board of Indian Commissioners (BIC) to validate our main measure of assimilation ideology. Established by Congress in 1869, the BIC served as a quasi-official advisory body tasked with overseeing federal Indian policy and recommending reforms (Prucha, 1984). In 1875, the BIC circulated letters to Indian agents across the reservation system, asking whether they would support the creation of federally funded Indian police forces—a reform explicitly intended to undermine tribal authority and advance assimilation. We digitized these responses, published in the Board's Seventh Annual Report (Board of Indian Commissioners, 1875), and matched them to the same set of agents for whom we observe assimilation scores from their annual reports in that year. Because the letters were produced outside of the standard reporting process and before the widespread establishment of police forces, they provide an external benchmark to test whether assimilation support expressed in annual reports predicted contemporaneous policy preferences.

B.9 Annual Reports of Commissioners and the Carlisle Off-Reservation Boarding School

In addition to the agency and personnel reports described above, we rely on data from two other types of documents included in the ARCIA. First, we use the annual reports written by the Commissioner of Indian Affairs. These documents are printed as the first document in each volume of the ARCIA and provide a comprehensive account of federal policy, administrative actions, and conditions related to Indian Affairs policies. Second, for the years 1880 to 1900, we use the annual reports of the Carlisle Indian Industrial School, founded in 1879 in Carlisle, Pennsylvania. These reports first appear in the 1880 ARCIA and were authored by the school's founder and longtime superintendent, Richard Henry Pratt. Unlike the agency-level reports, the Carlisle reports are stored in a separate section of the ARCIA (e.g., in 1900, they were printed in the section "Reports of Superintendents of Bonded Schools"). To prepare these reports for analysis, we followed the same digitization and processing steps described above: isolating the relevant sections of the ARCIA, generating standalone PDF files tagged with metadata such as year and author, and applying OCR to render the text machine-readable. This procedure ensured that the Commissioner's reports and the Carlisle reports were integrated into the same

structured, report-level dataset as the agency and personnel reports, allowing us to analyze them using parallel computational methods.

C Appendix on LLM Prompts

C.1 Assimilation Prompt Details

Our development of a classification prompt using ChatGPT-4o began with background reading of foundational historical works on the assimilation era (e.g., Prucha, 1984; Stuart, 1979) along with close readings of individual annual reports. This exercise highlighted variation in report length, topical scope, and author voice. Most importantly, this review confirmed that normative commentary on assimilation policy was prevalent enough to make text-based inference of beliefs and ideology plausible.

To calibrate our prompt quantitatively, we drew a random sample of 30 reports from the full corpus and manually scored each one. We jointly read and discussed each report, assigning a binary score of "1" if the text contained sufficient evidence that the author personally supported assimilation policies or implicitly supported them through criticism of Native cultural or social practices. Reports that lacked such evidence or expressed opposition to assimilation policies were coded as "0". Our focus on binary classification follows the approach in Lagakos, Michalopoulos and Voth (2025). In addition to the binary scores, we provided a brief justification statement and identified a representative quote from each report to justify our decision. In this calibration sample, 22 reports (73 percent) were scored as supportive of assimilation.

Prompt development proceeded in multiple rounds. Our initial attempts used short prompts instructing the model to classify reports on the binary scale and to provide both a short justification and three direct quotes from the report as supporting evidence. In these first iterations, we observed that the model tended to assign relatively more assimilation supportive classifications compared to our manual benchmark. To address the high Type I error (false positives) rate, we refined the prompt by incorporating a detailed set of decision rules, including explicit examples of what did and did not constitute normative endorsement of assimilation. This additional structure provided clearer guidance and reduced ambiguity in borderline cases.

The final version of our prompt achieved a 93 percent match rate, correctly classifying 28 of the 30 benchmark reports. The two disagreements were evenly split where the model identified assimilationist support in a report we judged neutral/opposed, and one where the model failed to detect assimilationist support that we judged present. The full text of our final prompt is provided in Appendix Figure C1. As representative illustrations, Appendix Table A2 presents the benchmark reports alongside our manual scores, GPT scores, as well as the manual justifications and quotes that we wrote and identified.

Figure C1: GPT-4o Instructions: Assessing Support for Assimilation

Your task is to read through the text and assess the writer's attitudes toward the social, cultural, religious, linguistic, or economic assimilation of Native Americans, or toward assimilation policies targeting Native Americans at the time (e.g., boarding schools, land allotment).

Return only a valid JSON object containing the following fields:

- "support_score": a score of "1" (support for assimilation or related policies) or "0" (a neutral stance, or opposition to assimilation or related policies).

- "support_score_justification": a brief justification (2 to 4 sentences) explaining your answer to "support_score".

- "support_score_reasoning_1": reasoning supported by a direct quote from the text.

- "support_score_reasoning_2": additional reasoning supported by a direct quote from the text.

- "support_score_reasoning_3": further reasoning supported by a direct quote from the text.

Use the scale and decision rules below to determine your answer to "attitude_score":

0: Opposition, or a neutral, descriptive, or ambiguous stance, toward assimilation or related policies. Assign a score of "0" if:

- The text discusses assimilation or related policies in a factual, descriptive, or administrative tone, without any clear positive or negative judgment, personal endorsement, or ideological stance.

- The text expresses moderate or qualified opposition to assimilation or related policies, using language that conveys skepticism or concern, or expresses respect for Native American culture.

- The text includes strong or ideological criticism of assimilation or related policies, using language that portrays assimilation as harmful, coercive, or unjust, and affirms the value, rights, or sovereignty of Native American culture and traditions.

1: Support for assimilation or related policies. Assign a score of "1" if:

- The text includes a clear, positive assessment of assimilation or related policies, using language that expresses personal approval or endorsement.

- The text includes a strong or ideological endorsement of assimilation or related policies, using language that frames assimilation as morally right and necessary for civilization, or strongly criticizes or denigrates Native American culture and traditions.

Please adhere to the following general guidelines:

- Treat "0" as the default score. Do not assign a score of "1" unless the text includes either personal endorsement or ideological or judgmental language in support of assimilation or related policies.

- Do not assign a score of "1" if the writer merely speaks approvingly of schooling or farming, or indicates compliance with government policy or instructions, but does not express a personal endorsement of or ideological commentary on assimilation or related policies.

- When reading the text, always assume that the word "Indian", tribal names (e.g., "Crow", "Apache"), and outdated or offensive terms (e.g., "squaw") refer to Native Americans. Do not assign a score of "1" merely because the text uses historical or outdated referential terms for Native Americans. However, do assign a score of "1" if the text uses explicitly judgmental or derogatory language (e.g., "savage", "heathenish", or "uncivilized") to describe Native Americans, their culture, or their traditions.

- Each reasoning field should include a short explanation (2 to 4 sentences) interpreting a direct quote from the text that supports the assigned score. Include the quote after the explanation. Do not include formulaic or procedural phrases (e.g., report openings like "in compliance with the regulations...") as evidence.

- The "attitude_score" and "attitude_score_confidence" fields must be returned as strings (e.g., "attitude_score": "1", not "attitude_score": 1).

C.2 Violence Prompt Details

To examine whether violence might be linked to bureaucratic attitudes, we developed a second classification prompt aimed at detecting local reports of violent incidents in the annual reports. As described in the main text, discussions of violence in these records were often indirect or embedded in narrative detail, making keyword-based searches less reliable. Our LLM-based classification therefore provides a more systematic measure of whether a given report references local violence, regardless of the author's framing. Figure 5 shows that such references are most common in the 1870s and 1880s and decline after 1890, consistent with the broader historical context of conflict in the assimilation era.

The design of this violence prompt differs from the assimilation prompt in two ways. First, it uses a simpler binary classification task, returning "yes" if a report clearly describes a specific, recent, and local episode of violence involving Native Americans, and "no" otherwise. Second, the prompt includes explicit temporal and geographic restrictions to ensure that only contemporaneous, site-specific incidents were captured, excluding generic commentary on violence or accounts of distant historical events. The full text of the violence prompt is provided in Appendix Figure C2.

Figure C2: GPT-4o Instructions: Violence Mentions Classification

```
You will be provided with a text related to Native Americans written in
{report_year}.

Your task is to determine whether the text describes one or more specific,
recent, and local episodes of violence committed by or against Native
Americans.


Return only a valid JSON object containing the following fields:

- "mentions_violence": "yes" or "no".

- "mentions_violence_reasoning": provide reasoning for your answer in no more
than two sentences.


Please adhere to the following general guidelines:

- Answer only "yes" or "no" in the field "mentions_violence".

- For an answer of "yes", the text must refer to a specific violent event. Do
not answer "yes" if the text only contains a general description of violence
committed by or against Native Americans.

- For an answer of "yes", the text must refer to a local violent event (i.e.,
an event that occurred at or near the location of the writer). If the location
of the event is unclear, but plausibly near the location of the writer, you may
still answer "yes".

- Only answer "yes" if the text refers to a violent event that occurred within
3 years of the year the text was written. Do not answer "yes" if the text
describes historical violence or conflict.

- When reading the text, always assume that the word "Indian", tribal names
(e.g., "Crow", "Apache"), and outdated or offensive terms (e.g., "squaw") refer
to Native Americans.
```

C.3 Administrative Capacity Prompt Details

A potential concern in interpreting the relationship between agents' assimilation attitudes and early allotment activity is that the same agents who expressed stronger pro-assimilation views may also have had greater bureaucratic skill or administrative effectiveness. In that case, higher allotment rates could reflect differential capacity to implement new federal directives, rather than ideology per se. To address this possibility, we developed a separate LLM-based classification prompt to measure agents' administrative capacity using the text of their pre-Dawes annual reports. As with the assimilation and violence measures, references to administrative competence in these reports are often qualitative and embedded in narrative detail (e.g., discussions of recordkeeping, staffing,

enforcement, procurement, and the organization of agency operations), making simple keyword-based approaches unreliable.

The administrative capacity prompt is designed as a conservative binary classification task. It returns "1" only when the text contains clear evidence that the author demonstrates strong administrative performance—for example, careful recordkeeping and accounting, systematic supervision of subordinates, timely execution of directives, organized management of agency resources, or the production of detailed operational statistics. In the absence of such evidence, the prompt defaults to a score of "0." Importantly, the instructions explicitly direct the model to ignore the author's policy views (including assimilationist rhetoric) and to focus solely on signals of administrative competence. The full text of the administrative capacity prompt is provided in Appendix Figure C3.

Figure C3: GPT-4o Instructions: Administrative Capacity Classification

```
You are scoring **administrative capacity** in historical Indian Affairs
reports. Administrative capacity means the presence of concrete,
procedural, and repeatable office practices for running an agency (e.g.,
planning/scheduling, record-keeping with metrics, resource/logistics
management, coordination/compliance with orders, problem diagnosis followed
by remedial action and verification).

Your task is **not** to evaluate ideology, moral judgments, or writing quality.
Ignore policy preferences (e.g., for or against assimilation) except when
they explicitly describe administrative actions or procedures. Reward only
**explicit evidence** of administration.

Define five evidence buckets:
1) planning_procedures - plans, schedules, protocols, targets, standard forms,
written rules;
2) recordkeeping_measurement - ledgers/rolls/inventories, attendance/production
figures, budget tallies, internal checks;
3) resource_management - procurement, ration issuance workflow, stock control,
maintenance, staffing rosters;
4) coordination_compliance - references to Commissioner circulars,
inspections/audits, inter-office coordination, following instructions;
5) problem_solving_followthrough - identifies bottlenecks, takes a remedy, then
verifies results.


**Binary rule:** Assign capacity_binary = 1 **only if** the report contains
concrete evidence from **at least one distinct bucket** above. Otherwise assign
capacity_binary = 0. Do not infer beyond the text. Do not reward eloquence or
normative claims.
```