ABSTRACT

The American Indian Wars provide unusual insight into debates about group structure and military behavior. These conflicts present a cross-section of experience with a relatively high degree of unit homogeneity; it is possible to gather information on tribes that fought as well as those that did not; scholars have recorded information about the tribes’ political and economic structures in detailed and consistent ways; and because these institutions took shape prior to military contact with U.S. and British forces, they are plausibly exogenous to the wars the tribes fought. This paper examines 167 tribes, showing how groups with more centralized political institutions were more likely to engage in political violence, to wage large-scale “wars,” to fight conflicts that were more destructive, to fight for more protracted periods, and to achieve more favorable battlefield outcomes. The results shed light on open historical debates about the American Indian Wars while speaking to broader theoretical questions about how intragroup politics affect intergroup conflict.

Jeffrey A. Friedman (jeffrey_friedman@hksphd.harvard.edu) is a predoctoral research fellow at the Belfer Center for Science and International Affairs, a graduate student associate at the Weatherhead Center for International Affairs, and a Ph.D. Candidate in Public Policy at Harvard University.
POLITICAL STRUCTURE AND MILITARY BEHAVIOR
IN THE AMERICAN INDIAN WARS

Scholars have devoted substantial attention to the ways in which group political structures affect the dynamics of armed conflict, yet several fundamental questions about this subject remain open. For instance, it is often argued that cohesive groups can restrain radical factions that promote violence. At the same time, cohesion may help solve collective action problems that inhibit organizing military resistance, and so it is unclear, on balance, whether more centralized political structures should correlate with a higher or lower incidence of armed conflict.1

It is similarly ambiguous how political structure influences conflicts once underway. Cohesive groups may be in a better position to fight protracted wars because they can muster more military capabilities and resist “divide-and-rule” manipulation. Yet cohesive groups may also hold institutional advantages for negotiating and enforcing peaceful settlements, or for restraining actors prone to excessive force. Once again, theory suggests countervailing mechanisms for predicting whether political structures should correlate with more or less violence on the whole.2

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1 For literature arguing that group fragmentation raises the incidence of conflict, see Lawrence 2010, K. Cunningham, Bakke, and Seymour 2012. On more cohesive groups solving collective action problems for initiating conflict, see Petersen 2001 and Wood 2003. On open questions in this literature more generally, see Pearlman and K. Cunningham 2012.

2 For literature arguing that fragmented groups are more susceptible to “spoilers” who impede negotiations, see Stedman 1997, Kydd and Walter 2002, D. Cunningham 2006, Pearlman 2009, and K. Cunningham, Bakke and Seymour 2012. Johnston 2008, Staniland 2012a, and Jha and Wilkinson 2012 argue that more cohesive groups are in a better position to coordinate military politics. Humphreys and Weinstein 2006, Weinstein 2007, and Pearlman 2011 argue that more cohesive groups can restrain unnecessary violence. For literature arguing that fragmented groups are easier for rivals to coopt, see Asal, Brown and Dalton 2012, Staniland 2012b, and Driscoll 2012. K. Cunningham 2011 argues, however, that concessions made to cohesive rivals are more effective, while Findley and Rudloff 2012 provide a theoretical critique of the argument that factionalized groups should fight longer wars. Bueno de Mesquita 2008 and Krause 2013 discuss how political structure may create offsetting mechanisms regarding the incidence and intensity of non-state violence.
It is difficult to gain empirical traction on these debates. Conflicts and combatants vary on so many dimensions that it can be hard to identify cross-sections of experience that are large enough and comparable enough to identify meaningful patterns. Especially when it comes to studying the incidence of armed conflict, it is generally challenging to gather comprehensive information on groups who did not resort to violence as well as those that did. Even once a sample of groups has been identified, it can be difficult to operationalize political structure in a manner that is conceptually valid across cases. Many political groups (especially rebels or insurgents) are formed to serve specific military purposes, and so political structure may often be a product as well as a determinant of conflict processes.3

This paper examines the relationship between political structure and military behavior in the American Indian Wars, an experience that provides an unusual opportunity to mitigate these analytic challenges. The American Indian Wars span a relatively large cross-section of cases with a relatively high degree of unit homogeneity; it is possible to gather relatively comprehensive information not only on the tribes that fought but also those that did not; anthropologists have collected extensive data on the political structures of these tribes which they have recorded systematically using common constructs; and American Indian tribes generally formed their political structures long before military contact with U.S. and British forces.

Sections 1 and 2 flesh out the methodological and historical grounds for studying the relationship between political structure and military behavior in the context of the American

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3 For studies of why some groups are more prone to fragmentation than others (including the idea that military outcomes and strategic bargaining are themselves an important determinant of this process) see Stein 1976, Greenhill and Major 2006/07, Bueno de Mesquita 2008, Johnston 2008, Kalyvas 2008, Bakke, K. Cunningham, and Seymour 2012, Christia 2012, Fjelde and Nilsson 2012, McLaughlin and Pearlman 2012, and Staniland 2012b.
Indian Wars. Section 3 provides theoretical foundations for empirical analysis. Section 4 explains the collection and coding of original data. Section 5 presents empirical results, describing how Native American tribes’ political structures correlated with the incidence and conduct of political violence. Section 6 re-examines these results using agricultural subsistence patterns as an instrument for political institutions. Section 7 discusses how the study informs scholars’ historical understanding of the American Indian Wars while speaking to broader questions about how intragroup politics affect intergroup conflict.

Section 1. Methodological reasons to study the American Indian Wars

This section describes analytic advantages of examining the relationship between political structure and military behavior in the context of the American Indian Wars, taken here to mean armed conflict between Native Americans and either British or U.S. forces between the founding of Jamestown in 1607 and the Battle of Wounded Knee in 1890.

First, the American Indian Wars offer a relatively large cross-section of experience with a relatively high degree of unit homogeneity. In total, there are 167 tribes who resided in the continental United States and for whom anthropologists have recorded systematic data. Roughly two-thirds of these tribes posed military resistance to U.S. and British forces. These tribes fought in relatively similar ways and for relatively similar stakes, which generally revolved around disputed territory. The tribes fought against the same opponents and their wars ultimately ended in similar ways, with almost every tribe in this analysis eventually coerced into reservation life.⁴

⁴ This lack of variation in strategic outcomes is extremely important for facilitating analysis of the data. If the U.S. Army had won some conflicts and lost others, for instance, then we would need to stratify the sample in order to interpret variables like the campaign’s duration or loss
Of course, this is not to imply that all of the tribes and all of the conflicts in this sample were literally identical. The point is that, relatively speaking, these units of analysis are more comparable than those in most existing data sets on interstate wars, civil wars, insurgencies, or other kinds of political violence. The most widely-used data set on interstate conflicts (Sarkees and Wayman 2012) involves multi-party wars of the most destructive magnitude (e.g., World War II) along with much more limited conflicts in vastly different contexts (e.g., the Ecuadorian-Colombian War of 1863). The most widely-used data set on insurgencies (Lyall and Wilson 2009) involves one case (the Chinese Civil War) in which million-man armies employed advanced weaponry throughout a huge East Asian country, along with another case (the Costa Rican Revolution of 1948) in which a few thousand rebels toppled a Latin American regime in less than two months. In relation to these bodies of evidence, the American Indian Wars offer a much more comparable cross-section of cases, which facilitates identifying meaningful empirical patterns.

A second methodological advantage to studying the American Indian Wars is that it is possible to gather systematic information on groups that did not fight along with those that did. Including “dogs that did not bark” is generally challenging in conflict studies, which often impedes drawing inferences about military behavior without relying on untested assumptions about how groups select into conflict.\(^5\) In addition, most data sets that deal with violent conflict are “left-censored,” systematically excluding groups that do fight, but not extensively enough to warrant enumeration. (In many data sets, an armed conflict does not qualify for inclusion until it has passed a threshold of one thousand battle deaths.) This creates a well-known potential for

\(^5\) See Lewis 2012 for a broader discussion of the point.
bias, but collecting uncensored data is generally so infeasible that scholars accept the problem out of necessity.

In studying the American Indian Wars, by contrast, there is no need to select on military behavior or impose thresholds for inclusion. Anthropologists and historians have devoted more than a century of effort to enumerating Native American tribes as comprehensively as possible, and there is no reason to filter this sample based on the incidence or intensity of conflict. To put matters in perspective, Lyall and Wilson’s data set of insurgencies contains observations of eight Native American tribes, and the Correlates of War project’s data sets observe just one tribe. While the present sample of 167 tribes still surely excludes many groups, the problem of biased sampling is another confound that is substantially mitigated here.

A third methodological reason to examine the American Indian Wars is that scholars have recorded information about the tribes’ political and economic structures in detailed and consistent ways. In particular, this study draws on the Smithsonian Institution’s 20-volume *Handbook of North American Indians*. Much of the *Handbook* consists of articles devoted to individual tribes which revolve around a standard template: there are generally separate sections describing demographics, political organization, social organization, subsistence, and so on. By presenting similar data using similar formats – and by drawing on common conceptual constructs – these articles provide unusually well-structured information for coding data.

A well-structured evidence base is an important advantage, because any time that scholars gather new data, there is a risk that variations across sources will influence empirical results in

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6 Lyall and Wilson’s data include observations for the Apaches, Foxes, Navajos, Red River Indians, Sauks, Seminoles, Sioux, and Yakimas. The Correlates of War data (Sarkees and Wayman 2012) include the Sioux.
problematic (and potentially unexpected) ways. In order to code data on group structures across a standard cross-section of civil war participants, for example, scholars would need to rely on secondary sources. Some of those sources may indeed be devoted to detailing group structures per se, but in many cases, scholars would presumably need to draw this information from sources that are primarily geared towards other purposes, and that discuss political institutions with different concepts and varying attention to detail. Again, the evidence base used for this project offers a rare opportunity to mitigate a common methodological problem.

A fourth advantage of examining the American Indian Wars for the present study is that most tribes formed their political structures prior to conflict with U.S. or British forces. It is always difficult to infer causal relationships from observational data, but this is especially problematic for political scientists studying the relationship between group structure and the dynamics of armed conflict, because group politics are often clearly a function of conflict processes. Rebels, insurgents, and other opposition groups organize for the express purpose of achieving political and military objectives. Thus if more cohesive groups tend to be more militarily successful, this could be because groups with higher probabilities of success engender bandwagoning that facilitates constructing cohesive organizations.\(^7\) If a group has low political cohesion, this may simply reflect that its political goals do not map onto social cleavages that motivate strong support.\(^8\)

Native American tribes, by contrast, were not founded simply (or even mainly) for military purposes, and they took shape long before armed conflict (or in some cases even political contact) with colonial powers. When these tribes were threatened, they generally worked through

\(^7\) See Kalyvas 2008 and Christia 2012 on how group cohesion is often a function of military capabilities and battlefield outcomes.

\(^8\) See Weinstein 2007 on this point.
pre-existing institutions to conduct diplomacy and military politics. This is yet another way in which choosing to focus on the American Indian Wars helps to mitigate common problems in the empirical study of conflict.

Section 2. History and historiography

There are also historiographical reasons to study the relationship between political structure and military behavior in the American Indian Wars. In some respects, the existing literature on this period mirrors the ambivalence of broader theoretical debates. For example, it is often thought that more factionalized tribes were more prone to conflict, and historians have identified many cases where violence between tribes and settlers originated partly because neither could restrain radical factions. By the same token, it is often argued that more cohesive tribes were better able to negotiate without the use of force. U.S. and colonial diplomats found that tribes were easier to treat with when their political structures were more centralized. In cases where central political institutions did not exist, diplomats often attempted to create them by naming “head chiefs” or simply by pretending that certain factions spoke for broader constituencies.

At the same time, historians emphasize that factionalized tribes were more susceptible to divide-and-rule politics. Individuals often had incentives to sell land even when that was not in

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9 E.g., Leach 1988.
10 This is a central theme in Blackhawk’s (2006) discussion of how the Utes’ “raiding economy” helped to provide conflict in the Great Basin, for instance.
11 The Iroquois are often seen as the archetypal example: see Richter 1992 and Shannon 2008.
12 See Prucha 1994, 2000 on this argument. Lewis and Clark were especially known for “making chiefs” but they were following long-standing practice. See Weber 2005: 5 on similar Spanish policies and White 2011 on the British and French.
the tribe’s interest – a fact that settlers knew and exploited. U.S. and colonial officials used similar strategies to buy off tribal factions piecemeal. In this respect, structural cohesion is often thought to have been positively correlated with a tribe’s ability to stave off encroachment and coordinate effective military action. Thus, as with the broader theoretical literature on group politics and warfare, within the specific context of the American Indian Wars there remains substantial ambiguity about how political structure related to the incidence of armed conflict.

Similar ambiguity surrounds perceived patterns of how tribal structure influenced cases where violence broke out. Many scholars argue that the tribes were disadvantaged relative to U.S. and British forces because they generally lacked political cohesion. By contrast, tribes such as the Osages, the Cherokees, or the Comanches are thought to have exerted commanding military presences in large part because of their durable political structures. Then again, some of the most protracted American Indian Wars involved tribes like the Seminoles or the Apaches who are said to have comprised so many different factions that it was impossible to end armed conflicts through decisive battles or negotiations. It is again difficult to know which of these countervailing effects might have dominated on balance, if any. Making these kinds of assumptions explicit and subjecting them to empirical analysis is thus important for advancing historical knowledge.

13 See Banner 2005: ch. 2.
14 For instance, the United States effected Potawatomi removal by conducting nineteen different treaties with different factions of the tribes. Prucha 1994: ch. 8 describes this and other examples.
15 This is a central theme in Gallay’s 2002 history of the Southeast and White’s 2011 history of the Great Lakes region, among others.
16 E.g., Mahon 1988.
18 See Mahon 1961 and Thrapp 1967, respectively.
In doing so, this study ties into two broader historiographical trends. The first of these is to make the tribes the focus of analysis. Deloria (1970), for instance, sought to dispel the “cameo theory of history” in which the American west is the stage for the inexorable rise of U.S. hegemony; Native American tribes and leaders appear as they relate to this narrative, but they are rarely the protagonists. Richter (2001), Calloway (2003), and others have taken up this challenge in writing broad histories from the tribes’ perspectives. This study does not attempt to reinterpret history in such a fundamental way, but it explicitly takes tribes to be the units of observation.

Secondly, even scholars who push against the “cameo theory” still cannot avoid placing some tribes at the center of attention while giving others short shrift. Blackhawk (2006: 4) laments that for this reason, too many tribes “remain nonparticipants in the epic of America.” Large-n social science cannot provide context-driven analysis necessary for understanding how individual tribes managed their political affairs. What this methodology can do is ensure that each tribe constitutes an independent observation assessed with equal weight. This approach avoids treating some tribes as being more salient or important than others, and it is critical to evaluating broad claims about how political structure related to military behavior during the American Indian Wars. The next section describes theoretical foundations for this analysis.

19 See also Jennings 1975 on how histories of this subject have been shaped by ethnocentric narratives.
20 See also Richter 1992, Rollings 1992, Saunt 1999, Blackhawk 2006, and Hämäläinen 2008 for work that reinterprets the histories of particular tribes or regions by taking Native Americans to be the central unit of analysis.
Section 3. Theoretical foundations

Anthropologists often describe tribal politics as revolving around “segmentary” demographic structures. These segments can constitute family groups or larger “tribelets” of collocated families. Generally speaking, these groupings constituted the building blocks of Native American politics prior to reservation life.

Segments held varying political preferences. Some segments were relatively accommodating to the United States and the British, while others were more hostile. These preferences were shaped by material exchange, which ranged from mutually lucrative trading networks to exploitative, zero-sum economies. Segments also varied in noneconomic views of external groups. Christian missionaries established religious bonds with some Native Americans and not others, for instance, and during the removal and reservation periods, segments varied widely in how they viewed the “civilized” life that the U.S. government purported to offer them. To the extent that tribal segments had varying preferences regarding the United States, the British colonies, and their policies, this also means they would have varied in how they perceived the prospective costs and benefits of engaging in armed conflict.

Tribal segments did not operate in a political vacuum, however, and scholars have identified three principal mechanisms by which tribal structure influenced political action. The first and probably most important of these functions was to facilitate consensus building. Native

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21 The classic work on segmentary politics is Sahlins 1968.
22 Kroeber 1925 is the foundational work on tribelets.
24 See Richter 1992 and White 2011 on how Christianity spread more extensively among some tribal factions relative to others.
American tribes did not have hierarchical political institutions like European states. Even when tribes appointed chiefs or central councils, these institutions had relatively little coercive authority. What tribal structures did generally provide, however, was an institutionalized forum for exchanging views, often alongside strong norms favoring consensus. Thus even if tribes could not compel compliance with group decisions, their political structures could pressure segments to harmonize preferences.

A second important function that tribal structures often provided was self-policing. If a tribe favored accommodation, it may not have literally been able to prevent militant segments from fighting with settlers or expropriating their assets, but tribes could often identify the perpetrators and arrange restitution, thus mitigating interethnic fallout while providing an intragroup deterrent to predation. By contrast, if a tribe favored taking a more confrontational stance, then political institutions could provide a mechanism for sanctioning segments who undermined group interests through freeriding or defection.

A third important function of tribal politics was coordinating military action. Several tribes, for instance, designated individuals in peacetime who assumed leadership when armed conflicts arose. Tribal councils served to coordinate military politics in much the same way that they facilitated intragroup agreement more generally. By helping to coordinate war, these institutions may have enhanced military effectiveness and thus lowered the perceived costs of fighting, all else being equal.

It is possible to capture these historical and anthropological foundations with the following theoretical framework. Consider a tribe to consist of $N$ segments. Segments have varying

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25 See Fearon and Laitin 1996 for a more extended discussion of intragroup self-policing.
political preferences regarding other groups. Consistent with the contemporary literature on bargaining and armed conflict, we can represent those preferences in terms of demanding a fraction $x$ of some disputed stake, ranging from 0 (where a segment demands nothing) to 1 (where the demand is total). It is perhaps easiest to conceptualize this bargaining as taking place over the distribution of territorial ownership, but any stock or flow of resources could be modeled within this framework.\textsuperscript{26} These preferences, which incorporate prior beliefs about external groups’ capabilities and resolve, are distributed according to a random variable $\theta$ with density $\theta$, mean $\mu$, and variance $\nu$. If a demand lies above some threshold, $\alpha \in [0,1]$, then it is far enough outside the range of mutually acceptable deals that the segment would be willing to accept the costs of political violence in order to pursue its preferred outcome. The number of segments favoring the use of political violence, in expectation, will thus be given by $N \cdot \theta(x > \alpha)$. Consensus-building and self-policing influence a group of segments by compressing their distribution of preferences around the sample median.\textsuperscript{27} Military coordination lowers the costs of political violence, and thus raises mean political demands.

This framework motivates the paper’s subsequent empirical analysis in terms of identifying variables to examine, predicting their relationships, and interpreting potential results. First, the relevant political institutions for this analysis are those that provide structured forums for exchanging information. This contrasts with the way political structure is measured in some other contexts. The most commonly-used index of state-level political structures,\textsuperscript{28} for instance, focuses on the extent to which democracy is institutionalized through formal procedures such as intragovernmental checks and balances and constitutional limits to executive authority. Scholars

\textsuperscript{27} This follows from the median voter theorem, but using the sample mean as the focal point for consensus could also be defensible.
\textsuperscript{28} The Polity project: Marshall, Jaggers, and Gurr 2010.
have explained how non-state militaries also often possess organizational hierarchies designed to maximize the group’s political, economic, and military potential. These characteristics, however, are not especially relevant in the context of Native American tribes which generally did not have the kinds of formal institutions on which political scientists often focus. As described above, the most relevant aspects of political structure for the purposes of this study are regular forums that facilitated consensus-building, self-policing, and coordinating military action. This premise guides the gathering and coding of appropriate evidence as described in the following section.

Second, it is ambiguous whether political structure should make tribes more or less likely to favor the use of political violence. In cases where the great majority of segments favored accommodation and only a few favored conflict, consensus-building and self-policing should restrain “spoilers” at the margin. But these mechanisms would increase the number of segments favoring conflict when the bulk of a tribe believed that to be in their interest. This kind of theoretical ambiguity leaves it unsurprising that historians have found it so difficult to agree on common assumptions about the general influence tribal structures had on military behavior in the American Indian Wars, just as political scientists have been ambivalent about this kind of relationship more broadly.

Third, in the absence of political organization, larger tribes should be more likely to conduct political violence. If the expected number of tribal segments favoring the use of force is given by \( N \cdot \theta(x > \alpha) \), then increasing the population term \( N \) should lead to more segments being willing

\[ \text{\textsuperscript{29}} \text{See, for example, Weinstein 2007, Shapiro 2007, and the sources cited in this paper’s introduction.} \]

\[ \text{\textsuperscript{30}} \text{This logic is expressed by the notion that when } \alpha > \mu, \text{ compressing the variance of political preferences should make segments less likely to favor the use of violence, but the opposite would be true when } \alpha \leq \mu. \]
to wage armed conflict. However, when tribes possessed central political organization, the impact of increased population size is theoretically ambiguous. Larger samples are more likely to reflect the distributions that create them. Thus when $\mu \leq \alpha$ and $N$ is large, it is relatively unlikely that the median segment will prefer to engage in political violence, and political structure will reinforce this tendency. In this case it will be predominantly in smaller groups where sample medians will favor the use of violence. If $\mu > \alpha$, however, then the reverse is true: political organization is more likely to promote the use of force in large samples and restraint in small samples.

Fourth, and despite this ambiguity, this discussion suggests that it is important to study the relationship between political structure and military behavior while controlling for population size. Though this may sound truistic, most existing empirical studies of political structure in conflict do not account for the size of the groups they study, perhaps because it is often difficult to gather data on the composition of rebel groups, insurgencies, and other armed movements. In the context of the American Indian Wars, however, it is possible to gather systematic estimates of population size and it is important to control for this variable given its theoretical salience.

Fifth, conditional on conducting political violence, tribes with higher degrees of political organization should be more militarily effective, given their capacity for coordinating military politics. However, it is not possible to infer that more militarily effective tribes should also be more likely to initiate armed conflict. Following a bargaining approach to war initiation, if outside groups know they are dealing with a tribe whose costs of fighting are relatively low, then they should be willing to grant that tribe more concessions, all else being equal. In the above theoretical framework, this would raise the threshold $\alpha$ above which segments would not be able
to obtain their political demands peacefully, thus lowering the proportion of segments, $\theta(x < \alpha)$, who favor the use of force in expectation.

Finally, it is worth closing this theoretical discussion by emphasizing that political structure provides just one set of mechanisms facilitating cohesive action in armed conflict. For example, Tecumseh and the Shawnee prophet Tenskwatawa mobilized an unusually large pan-tribal force to oppose the United States in 1811. Historians generally emphasize that what held this alliance together was not any political institution, but rather Tecumseh’s charismatic leadership, Tenskwatawa’s message of religious revival, and bonds created by shared grievances.\textsuperscript{31} Pontiac’s ability to organize widespread resistance in 1763 and Sitting Bull’s role in the Great Sioux War of 1876 are often similarly described. Political structure is neither necessary nor sufficient to explain most kinds of military behavior, and this is very much part of the reason why this relationship is often subject to dispute and in need of further analysis, both in the specific context of the American Indian Wars and in the study of armed conflict more broadly. The next section explains the evidence used here to examine the subject.

### Section 4. Data and descriptive statistics

The Smithsonian’s 20-volume *Handbook of North American Indians* (HNAI) contains articles describing more than 200 tribes, and it is generally regarded as being the authoritative source of its kind. Some of these tribes did not principally live within the continental United States, and others ceased to exist as independent political entities under French or Spanish colonialism. One hundred sixty-seven tribes remain as the sample for the present study.

\textsuperscript{31} See Calloway 2007.
HNAI articles have a standardized format. Most begin with a section on demographics, which usually provides an overview of population estimates for the tribe in question, along with a discussion of estimates’ reliability. This information was used to code a *Tribe Population* variable. Since tribal populations varied over time, especially during periodic waves of smallpox and other diseases, this variable represents HNAI’s best estimate given as close as possible to the initiation of political contact with either the British or the United States, as this is when the tribe would enter the sample of groups with potential to wage an “American Indian War.”

After presenting demographic information, HNAI articles generally proceed in sections covering “Subsistence,” “Social Organization,” and “Political Organization.” The first of these categories will play a role in the analysis presented in Section 6, and the other two categories provide the evidence for defining tribes’ political structures. These sections generally describe a common set of characteristics that would facilitate the kinds of information sharing that the previous section identified as being salient to this study: for instance, whether members of the tribe lived together or in separate units; whether those units possessed a common sense of group identity; whether the tribe delegated political authority to any level higher than the segment; whether the tribe possessed central political or military leaders or established central councils; how regularly these councils convened; and whether the group possessed similar attributes at subtribal, “band” levels. The fact that this information is presented in such a systematic manner across HNAI’s articles facilitates coding and conceptual validity.

Figure 1 describes how each tribe in this analysis was assigned for the purposes of this study to one of three categories. At one end of the spectrum are *segmentary polities* that essentially had no institutionalized political structure (though this is not to say that these groups lacked complex systems of social relations). In some cases, it can be disputed that these groups represented
Figure 1. Data on Tribes’ Political Structure

**Tribe-level polities** (N=55, 33%)
Arikara, Catawba, Cayuga, Cherokee, Chickasaw, Choctaw, Creek, Fox, Gros Ventre, Guale, Havasupai, Hidatsa, Huron, Kansa, Kiowa, Kitsai, Mascouten, Menominee, Miami, Mingo, Modoc, Mohave, Mohawk, Nanticoke, Narragansett, Natchez, Nez Perce, Niantic, Omaha, Oneida, Onondaga, Osage, Otoe, Papago, Pawnee, Pequot, Pima, Ponca, Powhatan, Quapaw, Quechan, Sauk, Seneca, Shawnee, Susquehannock, Teton Sioux, Tonkawa, Tuscarora, Tutelo, Walapai, Wampanoag, Winnebago, Yakima, Yavapai.

**Band-level polities** (N=39, 23%)
Apache, Arapaho, Bannock, Caddo, Cahuilla, Cayuse, Cheyenne, Chinook, Chippewa, Comanche, Couer d’Alene, Crow, Cupeno, Flathead, Gabrieleno, Huchnom, Illinoi, Iowa, Kalapuyan, Kalispel, Karankawa, Kickapoo, Klamath, Maidu, Monache, Nisenan, Pueblo, Quileute, Santee Sioux, Shasta, Siuwalwan, Spokane, Tubatulabal, Umatilla, Ute, Wichita, Yankton Sioux, Yuki, Yurok.

**Segmentary polities** (N=73, 44%)
Alabama, Alsean, Apalachee, Atsugewi, Blackfeet, Cahto, Central Salish, Chemakum, Chetco, Chilula, Chimariko, Chiricahua, Chumash, Coahuiltecan, Costanoan, Cusabo, Delware, Galice, Gosiute, Hupa, Jicarilla, Karok, Kawaiisu, Kitanemuk, Kwalhioqua, Lake Miwok, Lipan, Luiseno, Mahican, Makah, Mandan, Maricopa, Mescalero, Miwok, Molala,Navajo, Nipmuc, Nomlaki, Ottawa, Paiute, Palouse, Patwin, Pomo, Potawatomi, Salinan, Salish, Seminole, Serrano, Southern Athapaskan, Southern Salish, Tahltan, Takelma, Tätaviam, Tenino, Tillamook, Tolowa, Tututni, Umpqua, Wallawalla, Wappo, Wasco, Washoe, Western Apache, Whilut, Wintu, Wiyot, Yamasee, Yana, Yokut, Yuchi.

“tribes” in any meaningful sense. Yet U.S. and British forces generally lacked fine-grained understanding of segmentary variations, and generally found it convenient to deal with groups they defined broadly.32 We can effectively conceive of these segmentary polities as constituting a set of tribelets brought together by common language and circumstance but lacking the kinds of

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32 Kroeber 1955 describes how U.S. forces “again and again rolled a number of related obscure bands or minute villages into the larger package of a ‘tribe,’ which we then putatively endowed with sovereign power and territorial ownership which the native nationality had mostly never claimed. It was infinitely more convenient and practicable for us to deal with representatives of one large group than with those of ten, twenty, or thirty tiny and shifting ones whose very names and precise habitat often were not known…. Generally we treated the nationality-‘tribes’ as if they were sovereign state-tribes, and by sheer pressure of greater strength forced the Indians to submit to our classification of them.” Prucha 1994: ch. 10 shows this in the context of treaty negotiations specifically, how the U.S. typically dealt with “more or less arbitrary groupings for convenience” in California and the Northwest. Also see Calloway 1997: ch. 7.
political institutions discussed in Section 3. Seventy-three observations fall into this category, comprising 44 percent of tribes in the sample.

At the other end of the spectrum, tribal polities possessed central political structures. As mentioned previously, this does not mean these groups had powerful chiefs that spoke for the whole tribe, though there were instances of this. There are 55 tribes (one-third of the total) who possessed tribe-level political institutions which operated regularly and exerted authority over political or military affairs. These groups should have been in the best position to build consensus, self-policing, and coordinate political violence.

Between segmentary and tribe-level polities were groups with political institutions that spanned multiple segments, but did not consistently extend across the tribe as a whole. In particular, some tribes were organized into relatively cohesive and essentially autonomous “bands.” In general, we would expect these political structures to have some impact on military behavior by promoting consensus, self-policing, and military coordination at band levels. We might also expect that band-level polities would be in a better position to provide these functions across the tribe on an ad hoc basis when necessary (as it would be easier to establish cooperation among groups of segments with pre-delegated political authorities). On the whole, however, we should expect that since these institutions had relatively limited scope, they should be less correlated with military behavior than their tribe-level counterparts. There are 39 cases (about 30 percent of the total) which fall into this category. When there was ambiguity about whether to code a tribe as having band- or tribe-level institutions, the decision rule was to err on the side of the latter, as this should attenuate observed relationships between political structure and military behavior, adding robustness to any consistent results. After coding each tribe into one of three political structures based on HNAI, these choices were cross-checked against Murdock’s
Ethnographic Atlas (1961), Waldman’s Encyclopedia of Native American Tribes (2009), and Yale University’s Human Relations Area Files. There were no direct conflicts across sources, but in places where HNAI information was ambiguous, these alternative sources helped to determine appropriate coding.

Data on military behavior

There is no single, optimal way to measure “military behavior,” and several different conflict-related outcomes could correlate with political structure. The empirical analyses below therefore include five dependent variables measuring the incidence and conduct of political violence. In addition to capturing several different kinds of military behavior, a multiple outcomes approach helps to validate potential findings.

The principal source of information on tribes’ military behavior is Friedman’s (2013a) event level data on military engagements between Native American tribes and either British forces (prior to 1776) or U.S. forces (after 1775). These data were gathered from eight well-known anthologies on the American Indian Wars, spanning roughly five thousand event reports that cover roughly three thousand independent military engagements. For each engagement, the data record date and location along with which tribe(s) were involved in the fighting and the estimated casualties inflicted on each side.33

Based on these data, the dummy variable Political Violence is coded with a value of 1 if a given tribe participated in at least one recorded engagement with U.S./British forces, capturing whether tribes engaged in political violence. As Table 1 shows, roughly two-thirds of the tribes

---

33 Friedman (2013b) provides an article-length assessment of these data’s comprehensiveness, estimating that they contain roughly half of total engagements during the American Indian Wars.
appear in the event-level data, and are thus coded as participating in political violence to some degree.

The obvious shortcoming of this variable is that it cannot distinguish a tribe that fought a few scattered engagements from those that fought more protracted conflicts. A second dependent variable, *War Incidence*, partially addresses this issue. This variable is coded based on Axelrod’s *Chronicle of the Indian Wars* (1993), which surveys major armed conflicts between the Native American tribes and U.S./British forces.

Axelrod discusses 55 “Indian Wars” in total. (On average, each war involved just over three tribes.) It is not clear that there are any specific criteria for distinguishing an “Indian War” from political violence falling short of that. But to the extent that Axelrod’s volume identifies conflicts that possess enough historical salience to be thus enumerated (and which would have involved relatively large-scale mobilization on both sides), this should map onto the conceptual distinction

<table>
<thead>
<tr>
<th>Variable</th>
<th>MIN</th>
<th>MAX</th>
<th>MEAN</th>
<th>MEDIAN</th>
<th>STD. DEV.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Violence</td>
<td>0</td>
<td>1</td>
<td>0.65</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>War Incidence</td>
<td>0</td>
<td>5</td>
<td>0.63</td>
<td>0</td>
<td>1.09</td>
</tr>
<tr>
<td>Conflict Size*</td>
<td>1</td>
<td>3,644</td>
<td>430</td>
<td>114</td>
<td>686</td>
</tr>
<tr>
<td>Loss Exchange*</td>
<td>0</td>
<td>105</td>
<td>3.4</td>
<td>0.25</td>
<td>12.2</td>
</tr>
<tr>
<td>Conflict Duration*</td>
<td>1</td>
<td>203</td>
<td>35</td>
<td>20</td>
<td>41</td>
</tr>
<tr>
<td>Population</td>
<td>100</td>
<td>20,000</td>
<td>3,175</td>
<td>2,000</td>
<td>3,390</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0</td>
<td>1</td>
<td>0.45</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* Statistics given are conditional on observing conflict
between “wars” and lower-level armed conflicts.\textsuperscript{34} The variable *War Incidence* counts the number of wars that each tribe fought according to Axelrod. Of the 167 tribes in the data set, 110 do not appear in Axelrod’s volume, and thus are assigned a value of zero. The highest value on this variable is for the Abenakis and Shawnees, who each fought five separate “Indian Wars” against the United States or the British. Figure 2 provides the full distribution for this and other dependent variables.

\textsuperscript{34} Axelrod’s work is generally well-regarded, and it was recently used by Spirling (2011) to code the case universe of “American Indian Wars” for an empirical analysis of treaty-making published in the *American Journal of Political Science*. 
Conflict size is a different measure of how extensively tribes fought against U.S. and British forces. This variable represents the sum of casualties – soldiers and civilians killed, captured, or mortally wounded in battle – that were either sustained or inflicted by Native American forces according to the data set. Conflict Size provides at least a relative sense of which groups fought deadlier conflicts than others, and Figure 2 again demonstrates that there is substantial variation here.

One of the main drawbacks of the Conflict Size variable is that it aggregates casualties sustained and inflicted by Native American forces, whereas any assessment of “military effectiveness” would presumably distinguish these. To address this issue, a fourth dependent variable captures Loss Exchange, which is the ratio of recorded casualties inflicted by each tribe to those inflicted on each tribe. Higher values thus indicate a tribe’s ability to achieve more favorable battlefield outcomes. This variable is highly dispersed, and so it is presented in Figure 2 on a logarithmic scale, where there is again substantial variation.

The final dependent variable used in this study is Conflict Duration, which is the number of years between the first and last recorded engagement in the data set. This variable is useful because there are some tribes (such as the Pequots or the Wampanoags) who fought wars that were very costly but also relatively short. By contrast, other tribes (such as the Seminoles and

35 As expected, these variables are correlated, though far from perfectly – the correlation coefficient is 0.32.
36 This ratio cannot be calculated for tribes who did not sustain any recorded casualties, as the ratio would be undefined. For balance, the data here also drop observations of tribes who did not inflict any recorded casualties.
37 While Native American forces sustained the large majority of casualties across the American Indian Wars overall (31,579 to 14,955 according to the data used here), the average tribe actually had a favorable loss exchange rate (about 3.4:1). This is due to some tribes (such as the Potawatomis, Miamis, and Mohawks) who have extremely high loss exchange ratios of 10:1 or more. The median value for this variable is roughly 1:4.
Cheyennes) forcibly resisted the United States and the British over the course of more than a century. As with most temporal measures of armed conflict, the main weakness of this variable is that it does not account for inevitable variations in military intensity, as most wars contain protracted periods of relative nonviolence.

Overall, the five dependent variables presented here capture several different aspects of armed conflict that are relevant to examining the relationship between political structure and military behavior in the American Indian Wars: whether tribes engaged in political violence, whether they fought relatively large-scale “wars,” how destructive the fighting was, how long it took, and the extent to which tribes were able to achieve favorable battlefield outcomes. These variables are related to one another, but Table 2 demonstrates that they nevertheless contain a fair amount of independent variation.

<table>
<thead>
<tr>
<th></th>
<th>Political Violence</th>
<th>War Incidence</th>
<th>Conflict Size</th>
<th>log Loss Exchange</th>
<th>Conflict Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Violence</td>
<td>-</td>
<td>0.37</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>War Incidence</td>
<td>-</td>
<td>0.59</td>
<td>0.36</td>
<td>0.56</td>
<td></td>
</tr>
<tr>
<td>Conflict Size</td>
<td>-</td>
<td>-0.04</td>
<td>0.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>log Loss Exchange</td>
<td>-</td>
<td>-</td>
<td>0.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conflict Duration</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This table presents the correlation coefficients for relevant pairs of dependent variables. Note that Conflict Size, Loss Exchange, and Conflict Duration can only be calculated for tribes where Political Violence=1.
**Section 5. Empirical analysis**

Table 3 presents bivariate correlations between the measures of tribal structure and military behavior described above. The table presents means and standard deviations for each dependent variable within the subsets of tribal, band-level, and segmentary polities.

There is only one of these relationships for which we have clear theoretical priors: since more cohesive tribes should have been in a better position to coordinate military politics, we expect these tribes to have achieved relatively favorable battlefield outcomes, and that is indeed what Table 3 indicates in terms of loss exchange rates.

While we do not have strong theoretical priors about how tribal structure should relate to other dependent variables, Table 3 indicates that tribal polities have higher means than segmentary polities on all five measures of military behavior. On average and all else being equal, tribal polities were about fifty percent more likely than segmentary polities to engage in political violence and they were almost twice as likely to participate in major “Indian Wars.” Tribal polities fought conflicts that lasted about fifty percent longer than segmentary polities, and that caused about twenty percent more casualties in total. The consistency of these patterns across multiple measures lends credibility to the notion that tribal polities were more willing to engage in and sustain armed conflict. For four of the five of the dependent variables, band-level polities have higher means than segmentary polities. In another four of five instances, band-level polities have lower means than tribal polities (and for the exception of conflict duration, the means are essentially identical.) These correlations are largely ordered in the manner we would expect if political structure influenced military behavior and did so more strongly when tribes were organized at the level of the tribe instead of the band.
Many of these correlations are statistically significant. The bottom row of Table 3 presents the results of one-tailed t-tests, indicating for each dependent variable the probability that tribal polities have higher means than segmentary polities as the result of random chance. All but one of those probabilities is below 7 percent. The weakest statistical relationship is between tribal structure and conflict size, where there is still a reasonable chance (70 percent) that the data reflect a genuine correlation.

Section 3 explained why we should expect to see larger tribes being more willing to use force (but not necessarily more effective in doing so) in the absence of political structure. Table 4 presents results that are consistent with these expectations by displaying correlation coefficients between tribal population and each of the five dependent variables, both in the full sample and for segmentary polities only. As expected, these correlations are stronger within the subset of segmentary polities for all of the variables except loss exchange rates, where the correlation coefficients are nearly identical between the subset and the full sample.
The next logical step in the analysis is to combine political structure and tribal population in a multivariate analysis. In doing so, it is important to select empirical models that are appropriate for estimating each dependent variable. *Political Violence*, for instance, is a dummy variable, and so a binary-choice probit model is used here. *War Incidence* and *Conflict Size* are count variables, suggesting negative binomial regression. *Conflict Duration* is best estimated using a duration model such as Cox proportional hazards. *Loss Exchange* is the most ambiguous variable from the standpoint of choosing an appropriate empirical model, so to generate straightforward and interpretable results, the analyses below predict this outcome using ordinary least squares regression.

Table 5 applies these tools to analyze how tribe-level organization, band-level organization, and tribe population correlate with each of the five measures of military behavior. These results mirror the descriptive statistics presented earlier. Tribe-level political organization is positively correlated with each of the five dependent variables, and it is more strongly correlated with those outcomes than band-level political organization on four of those measures. (Once again, band-level polities are shown to wage slightly longer conflicts than tribe-level polities on average,

<table>
<thead>
<tr>
<th></th>
<th>Political Violence</th>
<th>War Incidence</th>
<th>Conflict Size</th>
<th>log Loss Exchange</th>
<th>Conflict Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>0.21</td>
<td>0.31</td>
<td>0.31</td>
<td>0.06</td>
<td>0.32</td>
</tr>
<tr>
<td>Population of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segementary Polities only</td>
<td>0.24</td>
<td>0.37</td>
<td>0.36</td>
<td>0.06</td>
<td>0.38</td>
</tr>
</tbody>
</table>

This table presents correlation coefficients between tribal population (for all tribes and then for segmentary polities only) and each dependent variable.
though the results are nearly identical.\footnote{Note that in interpreting hazard models, coefficients below 1.0 indicate longer processes, on average.} Tribe population follows its expected relationship with all of the dependent variables, including a lack of significance in predicting loss-exchange. It is unsurprising that the results from the multivariate analyses are so similar to the results of the bivariate analyses given that tribe population and political organization are weakly correlated.\footnote{The correlation coefficient between tribe-level organization and logged tribe population is just 0.09 and the figure for band-level organization is just 0.06.}

There are two directions in which one could extend the empirical analysis from here. One would be to expand the number of variables under consideration by adding controls for region,

### Table 5. Multivariate analysis

<table>
<thead>
<tr>
<th></th>
<th>Political Violence (probit)</th>
<th>War Incidence (nbreg)</th>
<th>Conflict Size (nbreg)</th>
<th>log Loss Exchange (ols)</th>
<th>Conflict Duration (cox)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tribe-level organization</td>
<td>0.582** (0.25)</td>
<td>0.477* (0.28)</td>
<td>0.064 (0.36)</td>
<td>0.558*** (0.21)</td>
<td>0.738 (0.17)</td>
</tr>
<tr>
<td>Band-level organization</td>
<td>0.332 (0.27)</td>
<td>-0.179 (0.39)</td>
<td>-0.388 (0.37)</td>
<td>0.129 (0.19)</td>
<td>0.724 (0.19)</td>
</tr>
<tr>
<td>Population (logged)</td>
<td>0.636*** (0.64)</td>
<td>1.451*** (0.27)</td>
<td>1.888*** (0.26)</td>
<td>0.151 (0.18)</td>
<td>0.335*** (0.08)</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.898** (0.75)</td>
<td>-5.525*** (0.92)</td>
<td>-0.436 (0.88)</td>
<td>-1.117* (0.60)</td>
<td></td>
</tr>
<tr>
<td>N†</td>
<td>161</td>
<td>161</td>
<td>107</td>
<td>93</td>
<td>107</td>
</tr>
</tbody>
</table>

\* p<.1  ** p<.05  *** p<.01. Robust standard errors.

These regressions employ models specific to each dependent variable, as discussed in Section 4. Note that lower coefficients in hazard models represent higher predicted values for the dependent variable.

\footnote{Seven missing observations results from incomplete coverage on tribal population. The number of observations for Conflict Size, Loss Exchange, and Conflict Duration are lower because only tribes that engaged in political violence can be coded on these variables. Loss Exchange has the lowest N because additional cases cannot be coded if there were no recorded casualties on one (or both) sides.}
culture, or other factors that may also relate to military behavior. It is not clear, however, how much these control variables would clarify the analysis, because regional and cultural geographies were highly correlated with political structure. Of the 57 tribes in California and the Northwest, for instance, none had tribe-level political institutions.40 By contrast, all 9 tribes in the data set belonging to the Iroquoian language family were tribal polities.41 Simply adding these variables to the analysis makes an enormous difference in the perceived correlation between political structure and military behavior, not only eliminating statistical significance from the tribe-level organization variable, but also reversing its sign in predicting four of the five outcome measures.

Yet it is inherently difficult to interpret empirical models that include these kinds of fixed effects without first developing a deductive framework for understanding how those factors interacted with tribal politics. One of the reasons Pacific coast tribes are thought to have had decentralized political structures, for instance, is that food was relatively abundant and easy to obtain without communal hunting or agriculture. If segments could be relatively self-sufficient in small, autonomous groups, they lacked an important incentive for political centralization and intertribal warfare. This discussion points to a more fundamental problem in examining the relationship between political structure and military behavior, which is that even if tribal politics took shape prior to most of the American Indian Wars, political institutions were still not randomly assigned. Instead of incorporating situational factors into the analysis as endogenous control variables, it may therefore be more revealing to leverage these interdependencies through an instrumental variables framework, and this is the subject of the next section.

40 The region with the highest percentage of tribal polities is the Northeast, with 22 of 31 tribes fitting this criterion.
41 By contrast, only 3 of 21 tribes from the Penutian language family and only 2 of 18 tribes from the Uto-Aztecan language family had tribe-level political organizations.
Section 6. Agriculture as an instrument for political structure

In order to evaluate the impact of political structure on military behavior, we would ideally utilize an instrument that is known to affect the former but otherwise to have no influence on the latter. Short of that, a useful instrument is one whose direct effect on military behavior biases the model against expected findings. There are three principal reasons why agricultural subsistence patterns may serve that role here.

First, there are theoretical reasons to expect that agriculture influenced Native American political structure. Scholars have argued that agriculture generates incentives to develop centralized political institutions that can manage greater population densities, protect private property, redistribute resources, and promote functional specialization. It is often argued that agriculture is one of the primary determinants of state formation in general,\textsuperscript{42} and scholars believe that agriculture is an especially important impetus for centralizing tribal politics,\textsuperscript{43} including in the North American context.\textsuperscript{44}

Second, agriculture and tribe-level politics are indeed strongly correlated ($r = .55$). Using information on each tribe’s economic structure from HNAI articles, it is possible to code a dummy variable for \textit{Agricultural Subsistence}, capturing whether or not a tribe’s food supply depended on agricultural cultivation. Table 6 shows that 84 percent of tribal polities (46 of 55) depended on agriculture for their subsistence, compared to just 27 percent of segmentary polities (20 of 73). Band-level polities actually had the lowest incidence of agriculture (23 percent or 9 of 39), but given the small sample sizes this proportion is not statistically distinct from segmentary

\textsuperscript{42} See Gat 2006 and Fukuyama 2011.
\textsuperscript{43} See Sahlins 1968 and Gat 2006: part 2.
polities ($p=.62$ in a two-tailed t-test). The claim that agricultural subsistence patterns predict tribe-level political organization is thus grounded in both theory and evidence.

Third, to the extent that agriculture influenced military behavior per se, there are strong reasons to think it was a liability. Historians of the American Indian Wars have argued that reliance on agriculture induced military vulnerability by making tribes dependent on fixed resources that opponents could destroy. U.S. forces often exploited this by burning abandoned crops. Historians have identified similar patterns in intertribal warfare, arguing that relatively agricultural tribes on the Plains (such as the Mandans, Hidatsas, and Arikaras) fell under the hegemony of the equestrian Sioux largely because the former depended on immobile resources; similarly, the Comanches may have come to dominate the Apaches because the latter were more reliant on agriculture and were thus forced to adopt a defensive posture. As a result of these dynamics, agricultural economies should have made tribes less able to sustain protracted, destructive conflicts. It is also possible that the increased riskiness of fighting would have inhibited a tribe’s willingness to engage in political violence; this factor

| Table 6. Bivariate relationships between political structure and agricultural subsistence |
|---------------------------------|--------------------------------------------------|
|                                  | Agricultural Subsistence                         |
| Tribal polities                 | 46 of 55 (84 percent)                            |
| Band-level polities             | 9 of 39 (23 percent)                             |
| Segmentary polities             | 20 of 73 (27 percent)                            |

45 By contrast, in comparing means for tribal versus segmentary polities, a two-tailed t-test is statistically significant at the 0.01 threshold.
46 See Calloway 1982 and Hämäläinen 2008, respectively. This discussion also indicates that, to the extent that agriculture was a military vulnerability, it was one that many tribes were unable to adapt for military purposes.
could have been endogenized into prewar political negotiations, but to the extent that agriculture
directly influenced a tribe’s propensity to wage war, we expect this correlation to be negative.

Table 7 indicates, however, that agricultural tribes were in fact more likely to engage in both
political violence and large-scale “Indian Wars,” and that these conflicts lasted longer, resulted
in more casualties, and had more favorable loss-exchange ratios for Native Americans. These
results are consistent with the relationships shown in the previous section between political
structure and military behavior. Given the strong connection between subsistence patterns and
political institutions, it is plausible to interpret the results of Table 7 as reflecting the fact that
more centralized tribes were more capable and willing to use political violence, and that these
dynamics tended to outweigh agriculture’s countervailing military liabilities.

Table 7. Agriculture as an instrument for tribal structure

<table>
<thead>
<tr>
<th></th>
<th>Political Violence (probit)</th>
<th>War Incidence (nbreg)</th>
<th>Conflict Size (nbreg)</th>
<th>log Loss Exchange (ols)</th>
<th>Conflict Duration (cox)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Subsistence</td>
<td>0.342 (0.21)</td>
<td>0.878*** (0.28)</td>
<td>0.521* (0.30)</td>
<td>0.700*** (0.16)</td>
<td>0.622** (0.13)</td>
</tr>
<tr>
<td>Population (logged)</td>
<td>0.646*** (0.23)</td>
<td>1.314*** (0.27)</td>
<td>1.760*** (0.27)</td>
<td>0.057 (0.16)</td>
<td>0.335*** (0.08)</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.821** (0.23)</td>
<td>-5.417*** (0.91)</td>
<td>-0.365 (0.91)</td>
<td>-0.916* (0.54)</td>
<td>-</td>
</tr>
</tbody>
</table>

N 161 161 107 93 106

*p<.1  **p<.05  ***p<.01. Robust standard errors.
Section 7. Discussion

This paper showed that tribes possessing central political structures were more likely to engage in violence, to wage large-scale “wars,” to fight conflicts that were more destructive, to fight for more protracted periods, and to achieve more favorable battlefield outcomes. The majority of these patterns are both statistically and substantively significant, and where coefficients fall beneath standard thresholds for consistency, the use of multiple measures suggests the relationships are not spurious. These relationships do not demonstrate causation, and it is unclear how to disentangle the role of political structure from culture and geography, but using agricultural subsistence patterns as an instrument for political structure reinforced the paper’s empirical findings.

These findings address unresolved historical debates about the American Indian Wars, but what do they imply for the study of armed conflict more generally? Despite basing the empirical analysis on a sample of 167 different tribes, it is important to keep in mind that each of those groups belonged to a specific context. Needless to say, there are many differences between the American Indian Wars and other armed conflicts. In closing this paper, it may thus be useful to make some observations about what some of these differences are, along with what they imply for interpreting empirical patterns in light of broader theoretical questions.

First, Native American political institutions are often thought to have been relatively non-hierarchical and non-coercive. As mentioned in Section 3, the most important functions that these institutions served may have simply been to provide a forum for obtaining consensus. Even the most centralized Native American political institutions bore little resemblance to many modern rebel or insurgent groups with more hierarchical structures, and they were even more
dissimilar to a modern state’s military apparatus. Yet this may only reinforce the salience of the empirical patterns presented here, because if Native American political institutions had relatively little coercive authority, then it is even more remarkable that they correlated with military behavior. This may be a relatively strong signal that intragroup politics matter in other conflict processes, as we should expect this relationship to be even stronger when political structures are more institutionalized.

A second key difference between the American Indian Wars and modern conflicts is that the former are often seen as being militarily primitive. Politically, socially, and culturally, these conflicts were as complex as any others. But all sides in the American Indian Wars employed relatively simple weaponry. Force sizes tended to be relatively small, and military strategies – at least on the part of U.S. and British forces – tended to revolve around fairly straightforward applications of almost pure coercion, while Congress and the War Department put relatively little thought into directing, funding, or developing military doctrine for frontier missions.

In some respects, these attributes may actually improve scholars’ ability to isolate certain dynamics of armed conflict. The American Indian Wars were fairly direct tests of combatants’ capability and willingness to sustain and inflict casualties – these are the central dynamics of a great deal of contemporary scholarship on political violence, and there are several methodological reasons why those dynamics are especially tractable in this context. The American Indian Wars provide a relatively large cross-section of experience with relatively high unit homogeneity; it is possible to gather information on tribes that fought and those that did not;

47 As Major General George Crook once put it, reflecting on his experience as one of the country’s most renowned “Indian Fighters,” sometimes “there was nothing else to do but go out and kill them until they changed their minds” (Bourke 1891: 213).
scholars have accumulated relatively systematic data on the tribes’ political and economic attributes; and because the tribes were not generally formed to fulfill military purposes, many of these attributes are relatively exogenous to armed conflict.

As a result of these properties, the American Indian Wars offer unusual analytic leverage not only when it comes to studying the relationship between political structure and military behavior, but potentially for other prominent dynamics of armed conflict as well. In general, the experience offers scholars an opportunity to speak to a major aspect of North American history while providing a novel window into contemporary theoretical and empirical debates.
References


Sarkees, Meredith Reid and Frank Wayman. 2012. Resort to War: 1816-2007. CQ.


