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Trade or raid: Acadian settlers and native Americans before 1755

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Abstract
Could North America have been settled more peacefully, with fewer property rights violations against Native Americans? To answer this question, we utilize the case of French colonists of Atlantic Canada (the Acadians) and a Native American tribe (the Mi'kmaq) between the seventeenth and eighteenth centuries in the areas around the Bay of Fundy in the modern provinces of Nova Scotia and New Brunswick. Under a relative state of anarchy, both the Acadians and the Mi'kmaq were able to minimize the relative returns to using violence by adopting rules of collective decision-making that favored consensus-building. By prioritizing consensus, distributional coalitions were faced with higher decision-making costs, making it difficult for concentrated interest groups within each society to capture the gains from fighting and spilling them over as external costs over the rest of the population. As a result, both the Acadians and the Mi'kmaq were able to reap the benefits of productive specialization and social cooperation under the division of labor.

Keywords Anarchy · Collective decision making · Property rights

JEL Classification D74 · N11 · P14

1 Introduction

Could North America have been settled more peacefully, with fewer property rights violations against Native Americans? If so, what institutional conditions could have allowed resources to be allocated via exchange rather than theft?

The general depiction of the relationship between settlers and natives is one that starts in the seventeenth century with tension and violence despite significant trade between the two groups (Bennett 1955; Demsetz 1967; Vaughan [1965] 1995; Washburn 1988; Carlos

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and Lewis 2010). In the United States, the relationship became increasingly violent with the American Revolution and reached its zenith after the Civil War (Leach 1988; Mahon 1988; Utley 1988; Hughes 1991; Roback 1992; Anderson and McChesney 1994; Anderson and Hill 2004; Gregg and Wishart 2012). In Canada, a similar pattern is observed (Wade 1988; Jacobs 1988; Surtees 1988).[1] This general pattern can be described as one in which raid becomes increasingly utilized over trade (Anderson and McChesney 1994).

There is, however, one striking exception to this pattern: the French settlements in the areas around the Bay of Fundy in the modern Canadian provinces of Nova Scotia and New Brunswick until 1755 (at which point the British Army and Navy deported most of the Acadian population). Historians and anthropologists agree that the French colonists of the area (known as the Acadians) and their Mi'kmaw[2] neighbors between the seventeenth and eighteenth centuries entertained exceptionally peaceful relations for more than a century. This contrasts starkly with other French settlers (in Quebec) and British settlers. In spite of the fact that many of the areas occupied by the Native Americans were high-quality farmlands (Gwyn 1998), violence between the two groups was non-existent (Clark 1968; Griffiths 1984; 1992; Faragher 2006; Hodson 2012; Kennedy 2014).

There are two further reasons to consider the region exceptional. First, according to historians it was exceptionally rich by colonial standards (Clark 1968; Griffiths 1992; Gwyn 1998; Kennedy 2014). In the present article, we will confirm this exceptional status by creating estimates of GDP per capita (their construction is detailed in Appendix A) using methods familiar to economic historians (Altman 1988; Broadberry et al. 2015; Lindert and Williamson 2016; Abad and van Zanden 2016; Geloso 2016, 2019; Geloso et al. 2017; Ridolfi 2017). Despite being based on the most conservative assumptions possible, these estimates show the Acadians to have been exceptionally rich. Most importantly, the Acadians were noticeably richer than the other French colonists in North America (those in Quebec), as well as their brethren in France.

Second, the region was institutionally exceptional. For lack of a better term, both the Acadians and the Mi'kmaq were essentially in a situation of statelessness (Clark 1968; Faragher 2006; Hodson 2012). There were no taxes on Acadians when the region was nominally French, and the British imposed only a symbolic tax, only occasionally trying to collect it (Kennedy 2014, p. 25). State officials were few in number, courts were virtually non-existent and the state was generally unable to enforce its will or provide military support (Kennedy 2014, pp. 39, 159). While there was a nominal state, Acadia was essentially a borderland and the state's reach was limited. Moreover, as historian Gregory Kennedy

[1] Similar to the United States, relations between Native Americans and settlers in Canada, which had worsened gradually and mildly between 1776 and 1867 (Surtess 1988), deteriorated rapidly after independence in 1867. Akin to the American colonial era, Native American policy for colonial Canada was mostly managed from the British capital, as it was the British who would shoulder the burden of conflict through sending troops. After American independence in 1776, the British were even keener on avoiding conflicts between Native Americans and Canadian settlers as they needed the Native Americans to supplement their own troops on the Canadian frontier (see Allen 1996). In terms of violence, the *Handbook of North American Indians* (Vol.4 on relations between settlers and natives, and Vol. 13 on Plains tribes) makes it clear that conflicts in Canada prior to 1867 were fewer and less intense than in the United States during the same period. Only after Canada became a country did violence increase. These differences between Canada and the United States from 1776 to 1867 suggest the possibility that in the presence of an involved and capable state, management by a colonial power imposes some restraints on the ability to raid. However, we leave this topic for future research.

[2] The plural of Mi'kmaw is Mi'kmaq. Most of the literature uses these terms, although older historians and anthropologists used the Micmac/Micmacs convention for writing.

puts it, "the state was *not able and not really* interested in helping the colonists" (emphasis added 2014, p. 92). The Mi'kmaq, for their part, have been consistently depicted as stateless (Heaman 2015, p. 129–130) and anthropological accounts point in the same direction (Thwaites [1898] 1959). As a result, both the Mi'kmaq and the Acadians relied on consensual tribal/communal decision-making institutions (Thwaites [1898] 1959, pp. 85–91) with little to no coercion.

In this paper, we argue that these exceptionalities are related. More precisely, we argue that the statelessness of the region explains how *private* predation came to be eschewed in ways that generated peaceful relations and high living standards.

There are two primary reasons that can explain the presence of relative peace in their situation. First, the statelessness caused by the frequent changes in imperial affiliation and the lack of interest in direct rule meant that the Acadians were left largely to govern themselves. As such, the Acadians had to bear the costs of fighting with the Mi'kmaq. In the presence of a weak state (which made the region close to being stateless without being actually stateless),[3] the formation of distributional coalitions that could externalize the costs of using violence was difficult to accomplish. This meant that the full cost of violence was borne by individual decision-makers, therefore incentivizing the use of trade for the allocation of resources instead.

Second, the absence of a state did not imply the absence of rules of governance. The Mi'kmaq and French colonists developed institutions (the council of *sagamores* for the former, and the parish assembly for the latter) for coordinating collective action. These institutions relied heavily on high levels of consensus in their decision-making and they possessed no coercive abilities. As a result, the emergence of concentrated interest groups proved more difficult. For such interest groups to form in each society in order to capture the gains from violence, the ability to shift the costs of fighting onto the rest of the population would have been required. Absent a strong state with military and administrative powers, this ability was nearly non-existent. Moreover, even if a coalition could be formed, the statelessness of both societies meant that it was virtually impossible to enforce rules imposed for the private benefit of those who designed the rules. We argue that these conditions largely favored the eschewing of violence and incentivized investments in securing long-lasting trading relations between both groups.

Our paper contributes to two literatures. The first contribution relates to the economic history of native and settler relations in North America (Dippel 2010, 2019; Carlos and Lewis 2010; Carlos 2018; Gregg and Wishart 2012; Courchene 2018). Our emphasis on the importance of an exceptionally weak state (to the point of statelessness) in explaining the peace suggests how North America could have been settled more peacefully. Thus, we help to explain the pattern of violence described above. The second contribution relates to the literature on the economics of anarchy (Anderson and Hill 1979, 2004; Friedman 1979; Benson 1989; Greif 1989, 1993; Sutter 1995; Stringham 2002, 2003, 2015; Leeson 2007a,b,c,d, 2009, 2014; Powell, Ford, and Nowrasteh 2008; Powell and Stringham 2009; Skarbek 2011, 2016; Kostelnik and Skarbek, 2013; Geloso and Salter 2020; Geloso and Leeson 2020). Our contribution is to illustrate an additional case study in which rules governing collective decision-making were both voluntary and self-enforcing. Moreover, we illustrate that, in the absence of an effective colonial government, the Acadians were able

[3] This is similar to the case of Medieval Iceland studied by Friedman (1979) and Solvason (1993). While the label of pure statelessness did not strictly apply, the state was weak enough that one could argue it was a close approximation. Acadia seems to have been a similar close approximation of statelessness.

to enjoy living standards that were *higher* than their counterparts in the neighboring French colony of Quebec, which had a much stronger and more potent state.[4] Living standards also matched those of state-governed New England.

The remainder of this paper is organized as follows. Section 2 presents the relations between Native Americans and colonial settlers in North America prior to the deportation of Acadians in 1755. Section 3 highlights the institutional conditions that facilitated social cooperation between the Acadians and the Mi'kmaq. Section 4 presents how trade over raid was accomplished in the region and the results in terms of living standards. It also discusses how the outcomes that followed the deportation of the Acadians in 1755 confirm our insights. Section 5 concludes.

2 Framing native American and colonial settler relations

The institutional context within which productive specialization and exchange emerged between Native Americans and colonial settlers can be framed in terms of the Political Coase Theorem (PCT) (see Acemoglu 2003; see also Holcombe 2018).[5] The Coase theorem states that when private property rights are well-defined and transaction costs are low, individuals will bargain to an efficient outcome, irrespective of the initial assignment of property rights (Coase 1960; Stigler 1966, p. 113). In Acemoglu's (2003) restatement, the Coase theorem implicitly assumes that parties to an exchange are full residual claimants and will therefore bear the full costs and benefits of the outcomes of their decision-making. If one party to an exchange breaks an agreement, or if both parties are disputing an agreement, the existence of reputational mechanisms and rules to adjudicate conflict will increase the cost of using violence. Failure to abide by an agreement, or rules for settling conflict, will result in a loss of reputation in future trading periods.

However, when applied to the context of political decision-making, Acemoglu (2003) argues that the Coase theorem will not lead to Pareto-efficient outcome. Under the context of the PCT as restated by Acemoglu (2003, p. 623), the logic of political decision-making is to concentrate benefits on well-informed and well-organized interest groups that represent a decision maker's constituency and to disperse the costs on the masses of population.[6]

[4] Few papers in that literature have attempted to measure the outcomes from anarchy. They tend to concentrate on the conditions that made statelessness an equilibrium. There are exceptions however. For example, Friedman (1979) uses a limited quantity of information to document living standards. Geloso and expand. Another exception concerns the case of Somalia (Leeson 2007a; Powell et al. 2008). We add to these exceptions.

[5] For a version of this argument that is better embedded in economic history, one should consult Ogilvie and Carus (2014). It can also be framed in terms of the recent contribution of Acemoglu and Robinson (2019) where societies that want to achieve growth and development must remain narrow corridor between lawlessness and authoritarianism. In that corridor, rulers provide security but they are constrained (either *de jure* or de facto) from abusing the tools that allow them to provide security. Related to this point, see also Piano (2019), Boettke and Candela (2020), Geloso and Salter (2020), and Piano and Salter (2020).

[6] One may conjecture that if such a situation is inefficient, then as Leeson (2020) would suggest, this raises another question: why will this situation prevail as the status quo? As Holcombe (2018, p. 253) argues, the point of the Coase Theorem applied to government (or the PCT) is not to conclude that transaction costs are low and that resources are allocated to their highest valued uses, but rather that when resources are not allocated to their highest-valued uses, the reason is that transaction costs stand in the way. In politics, special interest groups face low transaction costs of bargaining with each other and therefore can make public policy for their benefit. Because the masses face high transaction costs in organizing as an interest group, this excludes them from the political bargaining process. As a result, the "efficient" outcome in this case will be for resources to be allocated to the highest valued uses among individuals in the low-transaction-

Whereas a private actor faces costs in terms of state punishment and loss of reputation for reneging on contractual agreements, government officials only bear a loss of reputation. However, even these costs are not fully concentrated on the particular public actor, but spill over onto future generations of public actors. Therefore, inefficient (and sometimes disastrous) courses of action can be selected for the benefit of those who have disproportionate influence on political power, meaning that they concentrate benefits on distributional coalitions. Nevertheless, Acemoglu (emphasis added; 2003, p. 623) admits that "because the relationship between the state and the citizens is repeated, some commitment based on reputation and supported by the threat of future punishments may be possible. As a result, the extent to which the PCT will be applicable depends on the possibility of commitment through constitutions or other institutions and on how good a substitute this type of reputation-based commitment is for enforceable contracts. *The extent of distributional conflict between various social groups will also affect the relevance of the PCT*."

A broad outline of relations between Acadian settlers and the Mi'kmaq during the colonial era can be framed in terms of the decision over whether to trade or raid (Anderson and McChesney 1994). This form of decision-making is the same as the decision to contract to arrive at an efficient outcome in the PCT (Acemoglu 2003). The decision of whether to trade or raid is one based on the surplus from trade for settlers (S_s) and Mi'kmaq (S_m).[7] The surplus is determined by the differences between the gains of fighting (GF_s, GF_m) and the costs of fighting (CF_s, CF_m) and trading (CT_s, CT_m). For the Mi'kmaq or the Acadians to have a surplus from trade, the cost of fighting must exceed the gains from fighting and the costs from trade (Eq. 1) so that the sufficient condition for trade is the presence of a positive surplus from fighting (Eq. 2).

$$S_{sm} = CF_{sm} - GF_{sm} - CT_{sm} > 0 \tag{1}$$

$$S = S_s + S_m > 0 \tag{2}$$

However, there are situations when raid is preferred over trade even if there is a surplus from trade. These situations depend on the distribution of gains and costs from the use of violence which in turn affect the security of property rights and the benefits of trade (Umbeck 1981; Acemoglu 2003). Assume that the GF_{sm} are divided over population B (for beneficiaries of violence) and CF_{sm} and CT_{sm} are divided over N (for overall population), that $N > B$ and that there is a cost to collective action (θ) which is equal for everyone. Assume also that α is the share of GF_{sm} that go to B and that β is the share of CF_{sm} that go

Footnote 6 (continued)
cost group, but costs are dispersed among those in the high-transaction-cost group, who cannot bargain to mitigate them. None of this necessarily implies that there is not the possibility for the high-transaction-cost group to bargain with the low-transaction-cost group to allocate resources more efficiently. As Coase (1960, p. 34) states, "Pigovian analysis shows us that it is possible to conceive of better worlds than the one in which we live. But the problem is to devise practical arrangements which will correct defects in one part of the system without causing more serious harm." For example, it has historically been the case that authoritarian political elites have ceded power to a parliament as form of political exchange and unintendedly created a path toward the rule of law, which has reduced the transaction costs of devising more inclusive political institutions as well as greater security of the property rights among the masses of the population (see Kiser and Barzel 1991; Barzel 2000, 2002; Congleton 2011; Candela 2020).

[7] Anderson and McChesney (1994) use "negotiating" in their work, but we use the term "trade," hence our modification of the terminology.

to N.[8] Under the condition that the gains from fighting can be shared between B and policy-makers, as long as $\alpha GF_{sm}/B$ is greater than $(1-\beta)GF_{sm}/B$, CT_{sm}/N, and θ/B, B wants to raid. As long as $(1-\beta)CF_{sm}/N$ is smaller than $\beta GF_{sm}/N$, CT_{sm}/N and θ/N, then N will not resist the decision to raid even if they stand to lose.[9] When $N=B$, there is no ability to shift costs onto the majority and the benefits are equally shared. This implies that our attention should be focused squarely on what widens the differences between N and B: the size of both N and B as well as β.

If there are institutional settings that limit the difference between these two groups (i.e. limiting distributional conflicts), efficient outcomes will be easier to achieve. However, if the size of N grows larger relative to B, then the costs of organizing an interest group among B will tend to be smaller relative to N. Under these circumstances, B is better able to capture concentrated gains from political exchange, the costs of which are spread out over N (thereby increasing β) (Holcombe 2015, pp. 48–49). Relative to the situation in which $N=B$, this outcome will tend to be less efficient since the potential gains from trade for the population as a whole, or N, are foregone as the benefits of an increased use of violence becomes less costly and concentrated for B.

During the colonial era, the main beneficiaries of violence were colonists who stood to gain farmland. They were the B. It is doubtful that, alone (i.e. if $N=B$), they would have pushed for conflicts. First of all, the use of local militias implied that the costs of using violence would be concentrated on the beneficiaries themselves and could not be passed on to wider groups. Second, firearms on the frontier were expensive and Native Americans were also able to acquire them which negated the advantage of using violence.[10] Third, Native Americans arguably had the upper hand in terms of knowing the land, an advantage which Leach (1988, pp. 129–130) argues the settlers never managed to overcome.

To engage in conflict, there needed to be military help from Europe, which occurred on many occasions. This meant that most of the costs of conflict to settlers (CF_s) were borne by Europeans rather than by the colonists themselves. It also means that N includes not only the colonists but also the European taxpayers (thereby making $N>B$ and increasing β).[11] As such, foreign military support increased the use of raid relative to trade. For example, in 1665 when the population of Quebec stood at 3215 (Public Archives of Canada 1874, p. 2), the French Crown sent the regiment of Carignan-Saliéres to defend the colony. At 1,200 men strong (equal to roughly one third of the colony's population), the regiment campaigned against the Mohawks in the area of Montreal (Verney 1991). The costs of such operations were dispersed across the population of the French empire as a whole, with the benefits being concentrated among the settlers of Quebec. British colonists were also frequently engaged in conflicts with Native Americans in which British regulars were almost invariably involved (Leach 1988; Mahon 1988; Trigger 1989; Richter 1992, 2013). The financial costs of such conflicts fell heavily on Britain as the colonies represented net fiscal

[8] Under the constraint that α and β must be between 0 and 1, that $\alpha>(1-\alpha)$ and $\beta>(1-\beta)$.

[9] The narrower (wider) the distribution of the gains (costs) from violence, the greater the chances of violence being used. The wider (narrower) the distribution of the gains (costs) from violence, the greater the chances of using trade.

[10] Bouchard (1999, p. 81) priced muskets in New France (modern day Quebec) at somewhere between 10 and 30 livres between 1720 and 1740 while Geloso finds that incomes per person during the era fluctuated between 93 and 136 livres (2016, p. 131). This fails to include the cost of maintaining a working firearm.

[11] It is also important to point out that none of the colonies during the eighteenth century were net fiscal contributors to their empires: metropolitan governments expended more on them than they extracted in revenues (Davis and Huttenback 1982; Desbarats 1997).

drains on the treasury as a result of military expenditures (Davis and Huttenback 1982, pp. 43–49). Generally, state intervention was a necessary condition for fighting to be the selected course of action by settlers because it made $N > B$.

This state support from Europe created an incentive problem for European powers in a way that explains very well the historical pattern of violence in North America between Native Americans and settlers. Aware of the fact that some costs were not borne by them, settlers were often tempted to make local decisions, which could eventually lead to conflicts that distant, imperial governments did not desire.[12] This explains the efforts of colonial powers at curtailing relations between settlers and Native Americans (Roback 1992, pp. 11–17). Hughes (1991, pp. 27–28) points out that the British actively discouraged relations between settlers and Native Americans, declaring "null and void" any land transactions with the different Native American tribes that did not have governmental approval. This was a "minimal constraint," as such edicts were costly to enforce (Roback 1992, p. 14). However, once this minimal restraint was eased due to the Revolutionary War, settlers and other interest groups who stood to gain from violence were able to exert greater influence on the levers of power. This was exemplified in the policy of Native American removal and the use of the army in the post-Civil War era to fight Native Americans in the West and the Southern United States (Roback 1992; Anderson and McChesney 1994; Anderson and Hill 2004; Gregg and Wishart 2012).[13] As such, we should consider the evolution of relations between Native Americans and settlers as one in which the growing ability to distribute costs of violence on wider populations in order to capture the concentrated benefits of violence looms large. In other words, the evolution can be explained by a widening of the differences between B and N. Presented in this framework of the differences of B and N, it is easy to see the salience of the Acadian case—in which the state was exceptionally weak—to the topic of relations between Native Americans and settlers.

3 The Acadian and Mi'kmaw situation

Consulting the volume of the *Handbook of North American Indians* on White-Indian relations (Washburn 1988) reveals a striking pattern of violence between Native Americans and settlers for the sixteenth and seventeenth centuries: violence is most intense in the British colonies while there is also significant violence in Quebec, but virtually no violence in the regions settled by the French in Acadia (Leach 1988; Upton 1979). This is in spite of the fact that the land for farming in the area was considered of great quality (especially in the Annapolis and Saint-John valleys) (Clark 1968; Wynn 1979; Gwyn 1998), and

[12] One such example is the deportation of the Acadians in 1755. This was pushed for by the Massachusetts colony, and though London had explicitly disapproved, they ended up paying for it nonetheless (Geloso 2015). See more in Sect. 4.3.

[13] Gregg and Wishart (2012) considered the social cost of the removal of the Cherokees from the areas they occupied in Alabama, Tennessee, North Carolina and Georgia during the 1830s. This is an important example, as popular imagination concentrates largely on the postbellum era as the era of violence towards Native Americans. However, as Gregg and Wishart show, the budgetary cost alone represented 3% of the US GDP in 1830. For Cherokees, direct costs represented 17.13% of their GDP. For comparative purposes, another costly war in American history, World War Two, constituted a burden equal to 1.88% of GDP. The social costs for Cherokees were even higher.

over which conflict could have arisen in spite of the existence of the fur trade.[14] In fact, it was the quality of the farmland that later compelled many American settlers to advocate the deportation of the Acadians and the subjugation of the Mi'kmaq in the region (Faragher 2006, 2014). We discuss this last point in Sect. 4.3 as corroborating evidence to our argument.

In the region of Acadia, a combination of two factors limited the ability to form distributional coalitions which, in turn, limited violence. First, both the colonists and the Mi'kmaq can be considered as having been relatively stateless. This limited the ability to spread the costs of violence over a wider population (thereby reducing the difference between N and B). It also meant that the settlers were unconstrained by edicts prohibiting them from direct exchange with natives. The second is that the main institutions for local governance among both the Mi'kmaq and the Acadians relied on consensus-building. This prioritization of consensus limited the ability of concentrated interest groups to form. This is easily explained by the statelessness of both communities: any rule that was not commonly agreed upon would have been difficult to enforce because of the absence of state enforcement. Combined, these elements limited the formation of distributional coalitions (i.e. limited widening of the gap between B and N).

3.1 Relative statelessness in Acadia

Known today as the Canadian province of Nova Scotia, Acadia (see Fig. 1) was first colonized by French settlers in 1605. Between 1671 and 1755, its population grew from 500 to 16,000 (Clark 1968, pp. 121–131; Leblanc 1979). However, these numbers fell after 1755 as a result of the deportation by the British, which explains the temporal end point of our case. British settlers in Nova Scotia and New England had advocated for the deportation of the French settlers in order to obtain their lands (Faragher 2006, p. 83). In 1755, with the support of the British Royal Navy and Army (something to which we will return in Sect. 4.3), at least 7,000 Acadians were deported (Leblanc 1979, p. 102) to numerous American colonies and to Britain.

As for the Mi'kmaq, less is known regarding their exact numbers, though we are certain that their numbers were smaller. The pre-contact population of the Mi'kmaq has been estimated at between 3,000 and 3,500 (Clark 1968, p. 58) with their numbers dwindling to between 2,200 and 2,500 by the mid-eighteenth century (Gwyn 2003, p. 76; Bock 1978, p. 117).[15]

In terms of polity, the Mi'kmaq can easily be considered stateless.[16] A small nomadic people composed of many smaller local groups, most of the governance between Mi'kmaq occurred within these local groups (Thwaites [1898] 1959, pp. 85–91). Largely isolated within North America prior to the arrival of Europeans, there was very little room for specialization (through trade with other tribes) and thus the exchanges to be governed were relatively simple. In addition, the local group leader (the *sagamo* or *sagamore*) was

[14] Such conflicts between settlers and natives occurred in regions such as Quebec, New England and New York in spite of a much larger fur trade than in Acadia (Delâge 1970; Leach 1988). This suggests that comparative advantage was in itself not sufficient.

[15] The reduction in population is largely attributable to the introduction of diseases to which First Nations had never been exposed. However, the magnitude of their population decline places the Mi'kmaq among the groups that suffered least from this problem.

[16] See Leeson (2014, pp. 155–169) for other examples.

constrained by the ability of members of his group to defect to another group if unsatisfied with the local *sagamore*.

The polity of the Acadians can also be characterized as stateless. Unlike the French settlements in Quebec, Acadia was largely ignored by the French crown and changed hands frequently before finally being ceded to the British in 1713.[17] Under the French, there was never a strong bureaucracy, there were no courts to speak of, and also no state-imposed taxes (Kennedy 2014: 25). Once the British took possession of Acadia, they governed minimally as well. A purely symbolic tax, the *rente libératoire* (quit rent), was enacted, but its collection was occasional. The British imposed neither a militia requirement, nor a mandatory military recruitment (Harris 2008, p. 57). They did not impose an oath of loyalty upon the local population, preferring instead to ask for an oath of neutrality (Parmenter and Robison 2007), an indication of how little ability to govern the British believed they possessed.[18] Organized bureaucracies such as those observed in Quebec (the colony most comparable to Acadia due to shared language and approximate time of settlement) never emerged, and imperial authorities had very little influence over the Acadians (Harris 2008, pp. 55–65) such that Acadian settlers were left "largely to their own devices" (Harris 2008, p. 56).

An important illustration of this absence of state power relates to the legal transplantation of French feudal institutions of seigneurial tenure in Quebec and Acadia. Under seigneurial tenure, the crown grants land to a landlord (*seigneur*) who then concedes it freely to peasants in exchange for the ability to tax them—a burden that represented 5% to 14% of farm income (Dechêne 1992; Harris [1966] 1984).[19] The *seigneur* also enjoyed a number of legally-supported monopolies that fell under the rubric of seigneurial rights. Such a system required the support of the state. Whereas seigneurial tenure was successfully transplanted in Quebec (Grenier 2012), the system never took root in Acadia (Harris 2008, pp. 6062; Kennedy 2014, pp. 128–167; Griffiths 1992, pp. 20–23), largely because it required extensive state support. In Quebec, the seigneurs were active in ensuring that their rights under that system were enforced with the help of the state (Dickinson 1982; Geloso and Lacombe 2016; Geloso 2020). In Acadia, peasants simply did not pay taxes, nor did they grant much importance to the concessions made to *seigneurs* (Harris 2008, pp. 60–61). The enforcement of the system was so weak that settlements in Acadia are considered by historians as free ranging, similar to squatting and homesteading (Harris 2008, p. 61; Griffiths 1992, p. 21). The absence of seigneurial tenure in Acadia versus its presence in Quebec is indicative of the strength of the state in each area. Where seigneurial tenure was enforced, the state must have been strong. Where seigneurial tenure existed *de jure* but not de facto due to lack of enforcement, the state must have been weaker.

[17] Historians recognize that Acadia was a much less hierarchical society than Quebec was Heaman (2015). Historians also extend this judgment to the American colonies even though the comparative body of literature is smaller on this front (Griffiths 1992; Hodson 2012). In addition, attempts to impose formal rules were impeded by the lack of "administrative stability" and the inability to erect an "efficient bureaucracy" (Harris 2008, p. 56).

[18] Which earned the Acadians the nickname of the "neutrals." The British also were aware that they held no grip on the Acadian countryside (Harris 2008, p. 56).

[19] The *seigneur* could impose the frontage tax of the *cens*, the conceded land area tax of the *rente*, the land sale tax of the *lods et ventes,* as well as a wide array of ancillary taxes that depended on the features of his estate. The *seigneur* also imposed the mandatory minimum labor provision of two to three days of work per year (known as the *corvée*) which could be avoided by paying a fee amounting to twice the daily wage rate for unskilled workers.

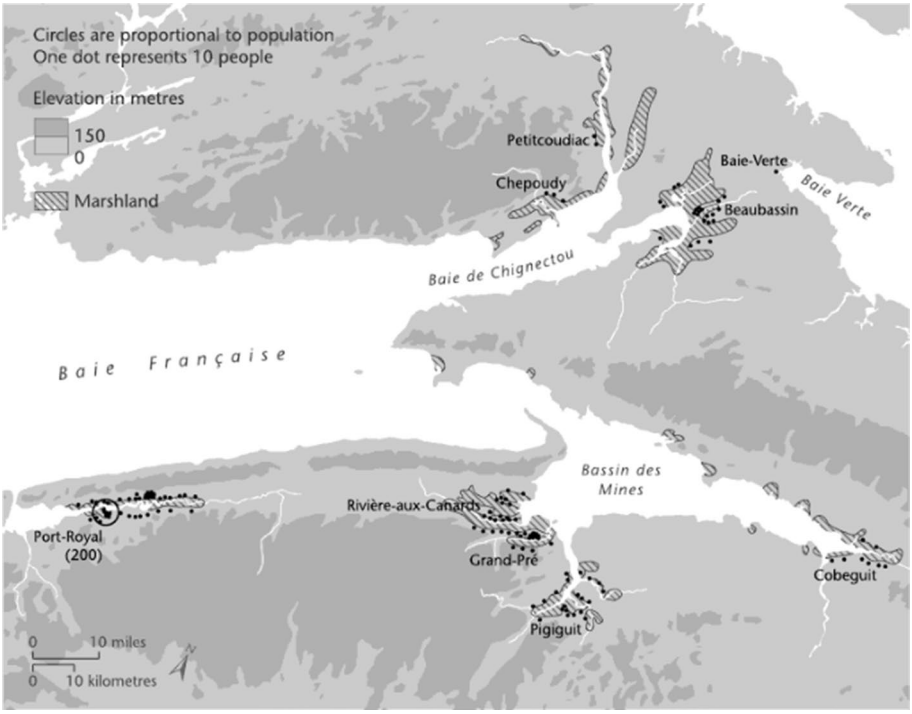

Fig. 1 Acadian Marshland Settlements around 1707. *Source*: Harris (2008: 58)

Thus, for Acadians and Mi'kmaq, these institutional setups meant that the costs of violence were borne largely by themselves and could not be shifted upon others. There was an inability for interest groups to use a state for the purposes of obtaining concentrated benefits and dispersing the costs on a wider public. In essence, the situation of relative statelessness limited the distance between B and N and the costs of fighting natives (settlers) could not be passed on to non-beneficiaries of violence (the term β in Sect. 2).

3.2 Inclusive decision-making

Because of the weak and relatively short arm of the state, "settlers formed parish assemblies to run their own affairs and … largely ignored political allegiances" (Heaman 2015, p. 38). Although a relatively unimportant governance institution in Quebec and France when compared to seigneurial tenure, the absence of government in Acadia meant that the parish assembly became a far more important focal point for governance, and the main mechanism for collective decision-making (Kennedy 2014, pp. 168–205). The "borderlands conditions of Acadia, such as military threats and the weakness of state institutions, reinforced the importance of the parish assembly in both civil affairs and political representation" (Kennedy 2014, p. 38).

In France, the parish assembly was constituted by the heads of households, which served to elect a churchwarden, select local tax collectors, and select deputies for the meetings of the Estates-General. While in France the parish assemblies tended to be poorly attended, in Acadia, participation among heads of households tended to be a

good deal higher (Griffiths 2004a, b, p. 384; Kennedy 2008, pp. 28–29). Given their statelessness, the Acadians changed the nature of the institution and used it for purposes different from those found elsewhere in the French-speaking world. Within the assemblies, decisions were taken using high majority thresholds (although they do not appear to have been defined), which tended to yield near-unanimous decisions (Griffiths 2004a, b, p. 384). The assemblies decided what course of action to follow as a colony through a designated delegate who would represent the parish and defend its interests for one year. Additionally, he acted as the community's main representative when dealing with both France and Britain. While both the French and British attempted to assert authority over the region, delegates would try to act as the vanguard of local autonomy while limiting the ability of colonial powers to exert excess power. As such, the French and British endeavored to impose authority through the very Acadian delegates who made certain to keep them at arms-length (and who did so successfully by only rarely taking sides in conflicts up until their deportation in 1755—see Sect. 4.3). Another important feature was that the delegates were expected to act as mediators in civil disputes which often involved property divisions and irrigation-management (Griffiths 2004a, b, p. 66–67; Kennedy 2008, p. 29). This feature of governance, to which we will return in Sect. 4.1, helps to explain the peaceful pattern of the relationship between Mi'kmaq and Acadians. Finally, delegates bore the responsibility of negotiating deals with the Mi'kmaq in the region (Griffiths 1992, 2004a, b; Kennedy 2008, 2014).

The setting was roughly similar for the Mi'kmaq. The Mi'kmaq were well spread out over a large territory. Each band would pick a chief (*sagamore*) who would be in charge of adjudicating conflicts and allocating hunting grounds within local groups. Within each group, the *sagamore* would generally come from one of the powerful families (Bock 1978, p. 115). However, whole households could change groups if unsatisfied (Bock 1978, pp. 115–116). Such an exit option acted as a constraint on the discretion of the *sagamore* within each local group. The *sagamores* of all the groups would meet as equals to decide over war, peace, and trade, and decisions needed to be unanimous (Jefferson 1994, pp. 6–7; Patterson 2009). When decisions concerned a wider realm than the Mi'kmaq, they would call a *Ricmaneu*, which was a form of general assembly extending to all groups with the same language and would sometimes include confederate groups outside the language (Thwaites [1898] 1959, pp. 85–91).

To summarize, the institutions of governance that emerged between the Acadians and Mi'kmaq were born out of the relative statelessness of the region. Unable to act as strong enforcers, collective decision-making required widespread approval and therefore tended towards inclusive consensus-making. The institutional outcomes of these decision-making processes limited the degree to which distributional coalitions could emerge, and therefore the degree to which the costs of violence could be externalized and dispersed across the wider population. This minimized differences between B and N above, notably because it was harder to shift the burden (β) of the gains from violence for B and N.

Thus, the combination of a context of relative statelessness and the institutions that emerged to coordinate collective action led to a preference for trade over raid. In the next section, we describe the ways in which peaceful relations were secured (Sect. 4.1), how wealthy the region was, especially in contrast with state-governed Quebec (Sect. 4.2), and how the story of the deportation of the Acadians in 1755 reinforces the elements of the two previous subsections (Sect. 4.3).

4 Relations between settlers and Mi'kmaq and living standards

4.1 Relations between Acadians and Mi'kmaq

Historians generally depict the relations between Mi'kmaq and Acadians as exceptionally peaceful (Clark 1968; Upton 1979; Griffiths 2004a, b; Harris 2008). David Jones argues that the Acadians "lived largely free of the continual threat of imminent native attack or insurrection, a luxury enjoyed by few other settler frontiers on the continent" (Jones 2004, p. 23), while historian Christopher Hodson speaks of an "enviable security" between the Mi'kmaq and Acadians (Hodson 2012, p. 30).

What explains such peaceful cohabitation? In such a state of relative anarchy, cooperation and trade are far from being foregone conclusions. Though the inclusive nature of collective decision-making among the Acadians and the Mi'kmaq did increase the cost of using violence within these respective groups, this does not immediately imply that relations across the two groups would have been peaceful. If, for example, the Acadians regarded the Mi'kmaq as a common enemy, and the transaction costs of trade across groups were prohibitively high, then each group may have collectively regarded violence as a lower cost mechanism of allocating resources compared with the costs of enforcing contractual exchange.

The Mi'kmaq and Acadians were, after all, two distinct groups with drastically different cultures. While self-governance can emerge between, and within, homogeneous groupings in order to capture gains from trade (Ellickson 1991; Greif 1993; Leeson 2014; Mazé and Ménard 2010), its potential to generate peaceful trade interactions is more limited between heterogeneous groups whose social norms, preferences, beliefs and knowledge diverge. As such, this could have led to increased violence. Moreover, one can reasonably ask why, if they could so easily coordinate for self-governance, they did not coordinate for the production of violence. Given the fact that the Acadians were very well-armed and were more numerous than the Mi'kmaq, this question is a reasonable one. Why then did the net effect of statelessness in Acadia lead to peaceful relations even though the Acadians had a reasonable chance of winning any engagement? The answer to this question is twofold. First, even though the Acadians were well-armed, their advantage was not overwhelming as a result of the fact that the Mi'kmaq were highly mobile and had much greater familiarity with the land. Secondly, and more importantly, in the situation of relative statelessness institutions emerged that incentivized productive specialization and exchange, the by-product of which was to raise the costs of violent conflict. This took the form of a commitment on the part of the Acadians to confine their settlements to certain areas in ways that tied their prosperity to that of the Mi'kmaq via the fur trade. The by-product of this commitment was capital-intensive investment, including the draining of marshland, land reclamation, and the erection of dykes, none of which would have occurred had the returns to engaging in violent conflict been greater than productively specializing and trading.

According to Demsetz (1967), the prices of fur pelts and hats in Europe during this period were increasing rapidly, largely because of soaring demand (see also Carlos and Lewis 2010), which incentivized the creation and definition of property rights in fur pelts in order to internalize the costs of overhunting. The Mi'kmaq had a comparative advantage in terms of trapping furs, and the Acadians had a comparative advantage in getting the furs to European markets. The Acadians also acted as intermediaries in the fur trade with New England, which was technically illegal during the era of French rule. They would obtain furs from Native Americans, which they would in turn trade with New Englanders

for foreign goods, luxuries and agricultural products (Clark 1968, pp. 179–185).[20] Specialization by both groups created an interdependency in which the absence of one would leave the other worse off. In essence, the rising gains from the fur trade also increased the relative cost of using violence. The situation provided strong incentives to find peaceful ways of achieving exchanges, which made Acadia one of the richest settlements in the New World even by conservative measures (see more below in Sect. 4.2).

One could retort that comparative advantages alone were sufficient to generate peacefulness. This, in the context of simplified modelling in Sect. 2, would simply entail that S_{sm} increased because the gains from trade grew larger. However, while true, this is woefully insufficient to ensure peacefulness. The fur trade in the region of Acadia was not negligible, but it was dwarfed by that of Hudson Bay, the Michigan region, Quebec, New York and New England (Clark 1968; Delâge 1970; Altman 1988; Carlos and Lewis 2011); the available numbers suggest a more than 20:1 ratio in terms of output. In these regions, violence between settlers and natives erupted frequently, taking the form of actual colonial wars during the seventeenth and eighteenth centuries (Leach 1988, p. 162) and continuing well into the nineteenth. Thus, alone, the comparative advantage was insufficient.

We can expand on Demsetz's analysis by considering how land reclamation increased the scope for trade and specialization in a way that established a credible commitment to trade by increasing the cost of resorting to violence. The Acadians recognized the wooded uplands and valleys (which were quite suitable for agricultural production as later economic history showed—see Gwyn 1998) as belonging to the Mi'kmaq, as this was where they preferred to hunt, fish and forage. The Acadians confined their settlements to the coastal lowlands where they adapted European dyking techniques to reclaim marshlands (Faragher 2006, p. 85).[21]

Dyke building meant the erection of barriers of roughly five feet in height with a base equal to twice the width. These barriers would be accompanied by *aboiteaux* (clapper-valve gates), which would drain the fresh water from the marshland while excluding salt water (Clark 1968, pp. 238–240). This allowed considerable farmland tracts to be created from the three different bays of the region (see Fig. 1). These lands were considered to be remarkably productive and quite well-suited for pastoral production. In essence, the settlers "created" land without infringing on the property rights of the Mi'kmaq, which "sealed a pattern of good relations with the Mi'kmaq" (Faragher 2014, p. 188).

Creating new land through the construction of dykes incentivized trade over raid in three ways. The first is that the delegates could jointly use their tasks as negotiators with the Mi'kmaq, and as civil mediators between settlers, by arguing that a particular settler's behavior was posing a risk to the relationship with Mi'kmaq and thus posing a danger

[20] In 1720, after the cession of the region to the British, governor Richard Philipps claimed that trade between Acadia and New England stood at 10,000 £—a large part of which consisted of fur pelts. There is uncertainty as to which type of monetary units Philipps was referring to (New England currency, Halifax currency, Sterling currency or French currency. Simultaneously, the Acadians also traded with the French colony of Cape Breton, situated in the northern part of Nova Scotia. In 1740, it is believed that they traded for 26,939 livres (roughly 3.87 livres per person in Acadia) of which 20.1% was from skins, hides or furs (Clark 1968, pp. 207, 255–259).

[21] We use the British spelling of dyke because it is the one used in the Canadian economic history literature on the topic (Saunders 1935; Clark 1968; Upton 1979; Wynn 1979; Griffiths 1992; Gwyn 1998; Faragher 2006, 2014; Kennedy 2008, 2013, 2014; Harris 2008; Hodson 2012; Caron 2015) and in the wider literature on farming in the area of New Brunswick and Nova Scotia (Longley 1936). We prefer to respect established conventions on the topic by using the British spelling.

to the wider group. Thus, the role of mediator reinforced the credibility of the delegate's promises to the Mi'kmaq. Second, the dykes were not individual endeavors. They were generally built and maintained by the whole community through the parish assembly (Griffiths 2004a, b, pp. 66–67). Thus, the assembly could be used to police the behavior of settlers, which further reinforced the credibility of the Acadians' commitment to settling the coastal lowlands in order to avoid the cost of conflicts. The assembly thus served to curtail opportunistic behavior that could hurt the broader community. The third, and most important, is that it generated further gains from trade and specialization between the two groups. The Mi'kmaq were seasonal nomads who hunted, fished and gathered (Clark 1968, pp. 59–61).[22] They consumed little in the way of agricultural goods. Dyke-building meant that the Acadians had opened up an agricultural base in a region where sedentary farming had never been present. This introduced a wider array of goods into the life of the Mi'kmaq people. Acadians would trade agricultural goods, cloth, tools and implements with the Mi'kmaq in exchange for hunting products (for winter consumption) and furs (to ship to Europe and/or New England). The act of productively specializing in agriculture by investing in costly, capital-intensive projects such as dykes established a credible commitment among the Acadians to respecting the property rights of the Mi'kmaq and to trading with them.

Besides the emergence of property rights through the fur trade and the creation of land, other institutions emerged that reduced the social distance between the groups, further facilitating exchange. This cultural intermingling would have acted to minimize the problems caused by differences in preferences, beliefs and norms. This would have allowed sustained exchanges between the two groups (Leeson 2008, 2009). Andrew Clark speaks of the "absorption of the Micmacs by the Acadian community" as well as of the "Micmac absorption of the Acadian" (Clark 1968; Griffiths 1992). This is not a far-fetched claim given the eagerness that the Acadians exhibited in adopting indigenous ways of life, such as hunting and clothing. A particular institution, noted by Patterson, (2009, p. 28) and Faragher, (2006, p. 85), that minimized social distance was intermarriage between the two groups. Faragher (2006, p. 85) also points out how jargon mixing between French and Mi'kmawi'simk (an Algonquian language widely shared between the different Mi'kmaq groups) was widely adopted throughout the countryside, further facilitating cultural toleration and exchange.

In essence, the relative statelessness of Acadia meant that there was a need to eschew conflict and secure a viable trading relationship. The institutional apparatus for governance that emerged in statelessness shaped incentives in a way that forced a commitment to trading over raiding. This was a stable, and reinforcing equilibrium as both groups grew richer (which we discuss in Sect. 4.2) and lasted until the deportation of the Acadians in 1755 (see Sect. 4.3).

4.2 Living standards

An alternative explanation for the peaceful relations between the Mi'kmaq and the Acadians under relative statelessness might argue that they were not due to superior gains from

[22] They hunted seal in January. In February and March, they hunted otter, beaver, moose, bear and caribou. As of April, they fished (smelt, herring, shad, sturgeon and cod later in the summer). During the summer, they also hunted pigeon, partridge, hare and rabbit. Foraging and gathering yielded such edibles as roots, blueberries, beechnuts, wild pears and cranberries.

trade, but to the fact that what existed to be seized was not worth the cost of violence. In other words, the region could have been too poor to be violent.

However, this would contradict important historical facts and prudent estimates of living standards. First, when the Acadians were forcibly deported in 1755, American settlers relished the idea of seizing their lands. Faragher (2006, p. 83) highlights a notable letter published in newspapers in New York, Pennsylvania and Maryland which presented the expulsion of the Acadians as a "Great and Noble Scheme" and a chance to obtain land "as good (…) as any in the World".

Second, a simple glance at agricultural statistics shows a rich region, especially when we compare Acadia to the other French colony in North America, Quebec. In 1701, numbers of cattle, sheep, and swine per capita stood at 1.59, 1.58 and 1.03, respectively, in Acadia (Public Archives of Canada 1874, p. 45). In Quebec in 1706, these same rates were much lower at 0.86, 0.11 and 0.45 per capita (Lunn 1942, p. 443; Public Archives of Canada 1874, p. 48). Given that livestock were not native to North America, and therefore had to be imported from Europe, such high numbers in Acadia suggest a considerable degree of productive specialization and exchange in order to obtain them. Additionally, available sources point to grain yields of 6.67 *minots* per *arpents* (8.7 bushels per acre) in Quebec (Garneau 1859, p. 104).[23] For Acadia, that figure is much higher at 15 bushels per acre (Clark 1968, p. 163, fn. 132). Moreover, the fact that historians estimate Acadian population growth rates far above those of the American colonies suggests the ability to accommodate a larger population, and explains why most historians identify the Acadians as a rich society for the time.[24]

Third, we can import tools used by cliometricians to measure the historical size of economies in the past. This should permit a comparison of living standards with relevant societies at the time. This can be done by following the methods pioneered by Altman (1988) and adapted by Geloso (2016, 2018) for the colony of Quebec. Using the available census data collected by French authorities in 1701 and 1707, we can employ such methods to directly compute output. The details of this computation, however, are lengthy at best. Readers are invited to consult the Appendix for detailed calculations and accompanying caveats. The estimates were constructed to be as conservative as possible and even mild loosening of some of the most conservative assumptions places Acadia much further ahead. From Table 1, we can see that Acadia appears to have been a relatively rich colony, probably on par with New England, but wealthier than France itself, its sister-colony of Quebec, and the Spanish colonies of Latin America.

Though less is known about the living standards of the Mi'kmaq, there is reason to be cautiously optimistic. Evidence for this stance can be found in the work of Carlos and Lewis (2001), who state that the fur trade in the Hudson Bay region increased the variety of consumer choices available to the Natives in terms of a wider selection of goods. In response to these new options, they responded in kind by increasing their supply of labor to the fur trade, which contributed in part to the achievement of a relatively high living

[23] The sources are not always precise as to which grain is being discussed, but wheat tended to be the main crop in both Quebec and Acadia.

[24] A good illustration of this relative wealth is exemplified in the work of Griffiths (1984) where the period from 1713 to 1748 is labelled as a *golden age*. The Acadian data provided by (Leblanc 1979) suggest a compounded growth rate for Acadia of 4.73% per year between 1710 and 1755. The data for Massachusetts and the whole of the thirteen colonies provided by Rabushka (2008) suggest slower growth rates of 2.57% and 3.25%, respectively.

standard in spite of recurrent violence in the region (Carlos and Lewis 2010). The peaceful nature of the Acadian-Mi'kmaq relationship and the extent of trade between the two groups paints a more favorable portrait of trade in the Acadian region than that offered by Carlos and Lewis for the Hudson Bay. Thus, it seems probable that living standards improved as a result of peaceful trade. Taken as a whole, these elements suggest that the colony had a large productive potential, which was evidently harnessed in a peaceful manner.

4.3 Deportation and its aftermath

In 1755, under the leadership of the governor of Massachusetts and without clear support from London, British forces began to forcibly remove the Acadians (Faragher 2006, pp. 365–367). Some 7,000 Acadians were deported and some 3,500 others fled to Quebec, or to French settlements on the Miramichi river (in modern day New Brunswick) (Leblanc 1979).

The main constituency supporting the expulsion were the settlers in New England who saw a chance to seize the land of Acadians—something they had advocated for since the late 1710s when the colony fell under nominal British rule (Geloso 2015, 2018). They had repeatedly used the facts that the settlers were French and that they had only sworn an oath of neutrality (rather than loyalty) to argue that the Acadians would ally with the French at the first opportunity. They also frequently highlighted the fact that the Acadians were friendly with the Native Americans in the region as a sign that they posed a threat (Geloso 2015, pp. 58–59).[25] The governor of Massachusetts was strongly incentivized to cede to their wishes as royal governors and customs officials were paid by the colonial assemblies which were elected by colonists, and assemblies frequently withheld salaries "until the governors agreed to assembly policy demands," even if this meant acting "in violation of direct orders from the Crown" (Zanella et al. 2003, p. 383). As such, settlers held important sway and were able to use the start of the French and Indian War to secure the deportation of the Acadians.

Once the Acadians were deported, the Mi'kmaq were no longer dealing with a stateless group of settlers. Rather they were dealing with settlers who had an organized state behind them, as well as a long history of distrusting the Mi'kmaq (Bock 1978; Upton 1979). The British Parliament and government poured considerable sums into developing the neighboring English-speaking colony of Halifax (Griffiths 1992, p. 79; Gwyn 1998, p. 28). This colony established more formalized rule in the region than had existed previously, which augmented the already well-established governmental apparatus of Massachusetts. In the presence of a state, there was a mechanism by which British settlers in both colonies could socialize costs. Consistent with our explanation, settlers were able to shift the burden of conflict onto a wider base, leading to a greater propensity for conflict.

British settlers thus entertained an uneasy and deteriorating peace with the Mi'kmaq (Upton 1979, pp. 61–97). As settler populations grew, Mi'kmaq land claims were recurrently ignored early on (Upton 1979, pp. 82–83). Colonial governors and legislatures frequently sided with settlers against the Mi'kmaq in disputes and settler infringements upon Indian lands were frequently supported by these entities. After the deportation, the

[25] Geloso (2015) observes that the reaction in London to the deportation generated a backlash that pushed colonial officials, when they took over the larger French colony of Quebec in 1760, to tolerate the French-Canadians (their faith, their institutions, and their customs) and to eschew any talk of deportation.

Table 1 GDP per capita in different regions of North America and Europe (where Quebec = 100%). *Sources*: The numbers for Quebec are cited in (Geloso 2017). The New England figures are from Lindert and Williamson (2016) who produced their income estimates through a social tables approach and which are expressed in welfare ratios. The figures for Peru and Mexico are expressed in 1990 Geary-Khamis dollars and are taken from Abad and van Zanden (2016). The low figure from Britain comes from Lindert and Williamson (2016) while the high figure is expressed in 1990 Geary-Khamis dollars in the work of Broadberry et al. (2015). The numbers for France are expressed in 1990 Geary-Khamis and come from the work of Ridolfi (2017). For more details, readers should consult section A.2. in the appendix to this paper

	1701	1707
Peru (low)	71.4%	62.4%
Peru (high)	79.3%	63.3%
Quebec	100.0%	100.0%
Mexico (low)	103.6%	90.7%
Mexico (high)	115.1%	91.9%
France (low)	118.4%	103.3%
France (high)	131.5%	104.7%
Acadia (low)	165.9%	-169.3%
New England	204.5%	220.2%
Acadia (high)	205.8%	207.5%
Britain (low)	197.9%	164.7%
Britain (high)	240.9%	254.0%

When needed, linear interpolations were used to arrive at the values in 1701 and 1707

British often reneged on promises made to the Mi'kmaq and they began to regulate their economic activities, notably through price and place-of-sale regulations that were enforced by military authorities (Chute 1999, p. 500). This led to recurrent violence between settlers and natives, though no formal uprising ever took place.[26] In the 1760s, "continued appropriation of indigenous village sites for shipyards, lumber mills, and farms led to serious clashes between settlers and Mi'kmaq" (Chute 1999, p. 501).[27] There were also fears that the Mi'kmaq would support any foreign invader that would allow them to overcome their numerical disadvantages.[28] With the arrival of American colonists loyal to the British crown following the American Revolution, the British further restricted the activities of the Mi'kmaq and reneged on promises to respect land claims (Patterson 1994). From that point, the Mi'kmaq simply accepted inferior legal status.[29]

[26] This is unsurprising given the Mi'kmaq were outnumbered by more than 20 to 1 (Bock 1978, p. 117; Upton 1979, p. 78).

[27] There was a notable incident in 1779, when a group of Mi'kmaq attacked local British settlers in Miramichi, raised a French flag and asserted support for the American revolutionaries. The uprising was subdued by British troops and the British forced the Mi'kmaq tribe of the area to change chiefs (Patterson 2009, p. 50).

[28] There was a fear in 1793 that there would be a French invasion (Upton 1793, p. 83), and fears of an American invasion in the early 1800s (Upton 1979, p. 86).

[29] Andrew Nurse (2004, p. 128) describes the post-1760 decisions of the Mi'kmaq in the following terms: "By 1760 the Mi'kmaq leadership had little option but to accept whatever deal was offered (…) the British Crown, in the form of the colonial administration (…) held sole legal authority over Nova Scotia with the legitimate right to make law unilaterally, including the regulation of the Mi'kmaq economy." From there, the British established Mi'kmaq reservations which they gradually reduced in size at the behest of local settlers (notably after the migration of Empire loyalists to Canada) and granted themselves the right to confirm the selection of chiefs (Bock 1978, pp. 117–119).

This resulted in diminished prosperity for the region. Relying on international trade to provide a rough comparison of economic activity in all of Britain's Canadian holdings (i.e. Quebec, Newfoundland and Nova Scotia), Geloso (2015, p. 64) found that Nova Scotia stagnated economically in this period while Quebec and other British colonies enjoyed significant growth (see also Shepherd and Walton 1972). Gwyn (1998) portrays the region as having experienced no growth until the 1850s and argues that it probably regressed from the 1740s to the 1790s. Whereas Quebec had been poorer than this region of Atlantic Canada at the turn of the eighteenth century, this was no longer true by 1775. Julian Gwyn (1998, p. 23) found wage data for unskilled farmhands in the areas once populated by the Acadians that suggest that the region was either equal to, or mildly poorer than, Quebec at that point (using a comparison with Geloso 2019 and Geloso and Lindert 2020). Moreover, Gwyn's data (1998, p. 24) suggest that wages continued to fall up to 1792 while those in Quebec increased modestly. In essence, the deportation came with an important reversal in the prosperity of the region.[30]

This empirical evidence for diminished prosperity is complemented by theoretical and qualitative evidence. First, the value of the land improved via marshland irrigation, which the British had seized, was tied to the fur trade with the Mi'kmaq. As trading relations with them deteriorated, the value of these lands also fell. Second, Gwyn (1998, p. 27) points out that as some time had elapsed between the deportation and the arrival of British settlers, the lands improved by the Acadians had been reclaimed by forests and marshes, so the new settlers needed to clear the land again. Furthermore, the rich technical knowledge needed to drain the marshlands had been deported with the Acadians so that the new settlers were unable to replicate the dyking process rapidly. This costly disruption of economic activity confirms our intuition. It was the attempt of the British crown to put an end to statelessness in the region (i.e. to assert formal control) that disrupted the pattern of peacefulness between settlers and Mi'kmaq. Thus, on top of making raids preferable to trades, the changes made the region noticeably poorer.

5 Conclusion

In order for individuals to realize the gains from productive specialization and exchange, institutional conditions must also reduce the returns to allocating resources through violence. We have argued that decisions over whether to trade or raid between settlers and Native Americans depended in large part on the institutional preconditions that structured collective decision-making, and, more specifically, whether these institutions were able to serve the interests of distributional coalitions by shifting costs onto broad populations while concentrating benefits squarely in their own hands.

The core idea is that the ability of distributional coalitions to push for violence while socializing the costs changes the relative return such that violence will increase even if trade is the superior alternative for resource allocation. To illustrate this point, we have drawn a broad outline of the pattern of Native American and settler relations, in which

[30] There are other pieces of supporting evidence as well. Using import per capita figures, which are frequently used as a proxy for income growth, Gwyn suggests that the region stagnated economically until the mid-nineteenth century (1998, p. 168), while available evidence for Quebec suggests that the region experienced mild growth up until the 1850s (Paquet and Wallot 2007; Geloso and Bédard 2018; Geloso and Lindert 2020).

the ability to form distributional coalitions played an important role, and have highlighted an exception to that pattern—that of the Acadians (settlers of French descent) and the Mi'kmaq who occupied the area around the Bay of Fundy in what are now New Brunswick and Nova Scotia.

The Acadian settlers in the area received little protection from the state, as its reach and capacities were limited, with the result that colonists were left to fend for themselves and had to bear the full costs of any raids on the Mi'kmaq. Additionally, local governance institutions induced a decision mechanism that favored consensus-building; while this meant high decision costs, it also served to limit the capacity to externalize the costs of using violence. Faced with this situation, the colonists preferred trading over raiding. To secure peaceful relations, French settlers confined their settlements to coastal lowlands where they drained marshes. In doing so they "created" new farmlands, while minimizing interference with the land used by the Mi'kmac. This increased the scope of specialization and trade with the Mi'kmaq and allowed the Acadians to further secure peaceful relations. The region appears to have been relatively rich even by conservative measures, and relations between the two groups have been described as exceptionally friendly for the time.

This example, in which decisions to trade or raid were made in a context of relative statelessness, offers an interesting counterfactual assertion. It suggests that if the state had been constrained in its ability to cater to concentrated special interest groups—and therefore not an apparatus for rent-seeking by colonials—the settlement of North America could have been more peaceful, and could have redounded to the benefit of both the European colonists and Native Americans.

This is fertile territory for future research. Indeed, economists have expressed a renewed interest in the effects of forceful interactions between the Native Americans and settlers (see Gregg and Wishart 2012; Dippel 2014; Redish 2019). We suggest that it was the ability of institutions to concentrate benefits on special interest groups seeking new land that inevitably tipped the scales in favor of raiding, and so we are proposing ways to create viable counterfactuals to allow us to determine whether North America could have been settled more peacefully. We see two potential directions for future research. The first is to examine other cases similar to Acadia to see if the findings are generalizable. The second is to analyze the role of the differences in Indian policy between Canada and the United States in determining national differences in violence, especially in the period from 1776 to 1867. Canadians' relations with Native Americans were essentially managed from London (who needed the Natives to complement defense efforts) while those of the Americans were managed domestically. This provides room for analysis of the importance of foreign restraints on violence. We believe that these two ways forward are the most promising.

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Appendix A: calculation of GDP

Censuses of 1701 and 1707

The method undertaken to compute GDP herein expands on the model developed by Morris Altman (1988) and refined by Vincent Geloso (2018). The approach is relatively straightforward, as it simply adds up different outputs weighed by a fixed vector of prices (Crafts and Harley 1992; Broadberry et al. 2015). However, this requires a broad range of macroeconomic information. In the case of Quebec, Altman and Geloso utilized data and research culled from censuses and tithe surveys conducted under both French and British rule, allowing them to create multiple estimates over time when combined with trade data and assumptions from secondary sources.

In the case of Acadia, there are not as many censuses to draw from, which is to be expected given the limited reach of the state in the region. However, this does not and should not imply the absence of useful census data. In fact, there are two very reliable censuses that can help estimate output: 1701 and 1707.[31] The 1701 census is notably nominal – the names of all the individuals within a household are included rather than simply those of the household heads (like we see in the 1707 census). They also offer the considerable advantage of containing important insights into the extent of improved land holdings as well as the size of the cattle, sheep and swine herds. Subsequent to this, there is no census that reports this type of information until the dispersion of the Acadians by the British in 1755.

Finally, it must be pointed out that the estimates offered here are biased downwards for two important reasons: first, the quantitative evidence for the extent of the fur trade is limited. As such, a conservative approach was adopted in estimating fur output and more than likely underestimates its true scope, as suggested by the qualitative evidence—especially that relayed by Andrew Clark (1968). Secondly, minor sectors of agricultural production are excluded (notably horse breeding and poultry), as well as the important value of capital goods investments in the form of dykes. Consequently, the resulting estimates are downwardly biased.

Geloso (2016, 2018) used both qualitative and quantitative evidence on Quebec to create a wide-ranging array of income measures that can be compared in order to use it as a pivot point between non-comparable measures for other countries. There are three methods to evaluate living standards that exist. Geloso calculated nominal incomes which he then deflated by the commonly-used bare-bones bundles to compare with New England and Britain.[32] However, in comparing Quebec with France, Peru, Mexico and another measure for Britain, he was obliged to shift to the Geary-Khamis dollar approach developed by Angus Maddison (2007).[33] As such, comparisons are in different units. These two approaches cannot be used for Acadia because of the absence of price vectors for the

[31] The 1701 census is available in the 1871 census of Canada, fourth volume, which compiles summaries for most censuses prior to that point (Public Archives of Canada 1874). The census of 1707 is detailed in the work of Clark (1968, pp. 234–235) but does contains some errors in calculation. Readers should consult the compilations available here (https://139.103.17.56/cea/livres/doc.cfm?ident=R0231&cform=T), which are drawn directly from Library and Archives Canada (Series G1, Vol. 466–1).

[32] This approach is known as the welfare ratio approach. One should consult Allen (2001) for details about this approach, which is meant to create purchasing power parities that are superior to using exchange rates.

[33] Geary-Khamis dollars estimates do not exist for the American colonies. For Britain, estimates of income exist in both forms.

colony, meaning that the third approach used by Geloso must be adopted. This is possible since Acadia and Quebec used the same monetary system and were more or less similar colonies. This method proves to be the more conventional tack of computing GDP as a volume index where quantities are converted by a fixed vector of prices.[34] However, since Quebec's living standards are expressed in all available measurements, it can thus serve as a pivot point where all other areas are expressed as a percentage of Quebec. This allows a cardinal ranking of living standards which can be observed in Table 1 above.

Prices

As there is no wide vector of prices for Acadia when comparing with other regions, we had no choice but to use price vectors from 1739 for Quebec—the same used by Geloso (2016, 2018) to estimate the colony's GDP.

Grain output

We preserved the core assumptions made by Geloso and Altman to measure net output for wheat. This method is predicated on assuming that 75 per cent of cultivated land was allocated to the growing of wheat. Seed requirements are retrenched by assuming that two *minots* were sown per *arpent* which produces the estimate of net wheat output (1 *minot* = 1.107 bushels and 1 *arpent* = 0.845 acres). We also assumed that all other grain output was allocated as inputs into pastoral output, from which we retracted an additional 20% of net wheat output to reflect feed for animals. Censuses, however, did not report actual output of grain, meaning we must import an approach to help calculate yields per unit of land must be imported. In this case, we opted to create a low and high bound. The low bound uses Garneau's estimate of 6.66 minots per arpent which applies to Quebec (Garneau 1859, p. 104). The high bound uses the figure of 11 minots per arpent provided by Dechêne (Dechêne 1992, p. 186) for the region of Montreal. This high estimate is roughly the same as that of Acadia, suggesting the possibility that the reality is closer to the upper bound (Clark 1968, p. 163, fn.132).

Pastoral output

The estimation of output is based on the method developed by Geloso (2016) and influenced by the work of Winifred Rothenberg for the farmers of Massachussetts circa 1800 (1979, p. 995). In terms of dressed meat (which accounts for losses in transformation), a cow weighed 221.3 lb, an ox weighed 402.4 lb, and a steer weighed 189.9 lb. Rothenberg also observed how the percentage of oxen, cows, and steers that were slaughtered differed significantly (the rates of slaughter stood respectively at 20%, 12%, and 50%). Thanks to Rothenberg's assumptions, we can isolate the total quantity of meat produced from cattle. To divide cattle into finer categories, we use herd composition data from Dépatie (1988). To estimate the meat produced from pigs and sheep, we use the price for lard and beef as there are no prices for pork and mutton. The dressed weight and slaughter rate for pigs are also drawn from Rothenberg. For sheep, we imported the method of Geloso et al. (2017)

[34] See notably Gerschenkron (1947) for a detailed methodological discussion of this approach.

where one-third of sheep were slaughtered and each one weighed 60% of its life weight (75 lb).

Wool and dairy output

With regard to production of wool, Altman multiplies the quantity of sheep reported by 1.3 lb while Geloso relies on the 1851/52 census figure of 2.2 lb per sheep (Public Archives of Canada 1874, pp. 219–221). Both figures are used to derive the lower and upper bounds of wool output. As for dairy output, Altman estimates 44 lb of butter equivalents per cow; different versions of this calculation appear in other papers. However, in a later article Altman (1998) places the proportion at twice that amount. By comparison, authors like Lewis and McInnis (1984) put it at 92 lb per cow (as per their work on the 1851 census of Canada East). Evidence assembled by Geloso et al. (2017) points to findings that are much closer to this higher bound. Nonetheless, in his output on Acadia, Clark (1968, pp. 168, 243–244) highlights qualitative evidence of contemporary observers who argued for the low productivity of cows. As such, we will use both bounds to create a range estimate.

Firewood

Altman's (1988) research places firewood output at 13 *livres* per capita while Geloso (2016, 2018) assumes that, given environmental constraints, it would have been impossible to survive with any less than 20 (French) cords of firewood; he therefore set this as the bare minimum required to be produced.[35] Given the small size of the Acadian population and the availability of land, firewood was a relatively cheap commodity.

Fisheries

The output of fisheries was not measured often for the Acadian region. What is more, the issue of estimating output is rendered more complicated by the fact that the Acadian fishing fleet was complemented by transient ships from France. In his work, Andrew Clark references a report by Lieutenant-Governor Thomas Caulfield of Nova Scotia who, in 1715, estimated that the inhabitants of the Minas region (where 38% of the Acadian population reported in the 1707 census resided) had between 30 and 40 vessels which they built themselves (Clark 1968, p. 247). Cautiously, we will assume that these ships represent the entirety of the fleet.

To arrive at the value of output, we rely heavily on the work of Balcom (1984). For 1718, in the French colony of Cape Breton (northern Nova Scotia), he calculated that fisheries yielded 156,500 *quintaux*[36] when there were 626 ships engaged in the region—this means that each one produced 250 *quintaux* (Balcom 1984, pp. 35, 47). The price in 1739 for a *quintal* is obtained by dividing the value of cod exports by the quantity of cod *quintaux* exported (20 *livres* per *quintal*) (Balcom 1984, pp. 17, 35). The average output of a ship in 1718 is multiplied by the 1739 price (which allows us to maintain comparability with the Geloso price dataset) and then deflated by 40.9% to account for the value of inputs

[35] French cords are smaller: 48 cubic feet as opposed to 128 cubic feet.

[36] The plural of a *quintal* which weighs 48.95 kg.

needed to produce cod (Balcom 1984, p. 58). The low bound and high bound of the values of cod output is based on the ranges provided by Caulfield.

Furs

The ability to estimate fur as a commodity proved highly problematic as there are few estimates of actual output, a large part of which was exported illegally (Murray 1938). Several methods were attempted and produced important differences which could not be properly evaluated in terms of plausibility.

As a result, we had to adopt a conservative approach based on the potential Mi'kmaw labor force involved trapping furs. Julian Gwyn estimated there to be "perhaps less than three hundred potential trappers" throughout the eighteenth century (2003, p. 76) for a total population hovering between 2200 and 2500 (between 12% and 13.6% of the population were trappers). When furs were shipped, they were measured by pack (a compact bale of furs weighing 80 to 90 lb) (Gélinas 2000, p. 414).[37] In the Hudson Bay region, the York Factory, operated by the Hudson Bay Company, received an average of between 23.48 and 26.68 skins per trapper.[38] If we use the proportions suggested by Gwyn (2003, p. 76), we arrive at a labor force of between 1,032 and 1,173 trappers. The number of skins traded at the York Factory (Carlos and Lewis 2011, pp. 189–191) are then divided by the number of trappers. While this is a shortcut, we presume that all skins are beaver skins. Given a weight of 1.3 lb per skin (Wien 1990, p. 305, fn.55), this shows us how each trapper in the region was providing between 30.5 and 34.7 lb of skins. Nothing in the sources for Acadia lends support to such high proportions, so we have chosen to scale these proportions by half. This is an arbitrary decision, but it does line up better with our understanding of the fur trade in the mid-eighteenth century (Gwyn 2003, pp. 71–72). The total value was deflated by 13% (an assumption used by both Altman and Geloso in their estimates of Quebec's GDP) to avoid double counting. We also excluded the 25% tax which Altman and Geloso argue are already embedded in the price of furs.

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[37] Lunn (1942, p. 118) suggests 70 to 80 lb, but it is important to note that she is referring to the French pound (489.5 g) as opposed to the British pound (453.6 g).

[38] To arrive at this estimate, we took the population figure of 8,600 from the middle of the eighteenth century for this region as given by Carlos and Lewis (s2011, p. 72).

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