

The Wrongs of Property Rights: The Erosion of Indigenous Communal Land Rights and its Welfare Consequences

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Abstract

I propose a theoretical economic model in which privatizing an Indigenous reserve by dividing it up into individual, fee simple plots can lower the welfare of Indigenous groups. Drawing on the demonstrated effects of the erosion of Indigenous culture and communal property rights, the paper suggests one partial explanation for why the self-assessed subjective wellbeing of Indigenous Peoples in North America is the worst among all demographic groups. While recognizing the complex nature of Indigenous economies, for analytic purposes I set out a simple model with only two produced goods, food and a cultural good. I show that a community's wellbeing can be higher with communal property than with private property, despite the standard free-riding problem associated with communal property—a result that is consistent with the Theory of the Second Best. This theory suggests why the Dawes' Act in the U.S. and similar attempts in Canada reduced the welfare of Indigenous individuals and have lessons for the current policy initiatives in Canada, such as that pertaining to Indigenous land rights policy. I also argue that the consequences of privatizing Indigenous reserve land could be far more serious than what can be captured in the simple model presented here using neoclassical tools.

Key Words: Indigenous Peoples, property rights, communal land, welfare

JEL Classification Nos.: P14, P51, Q15, J15, Z1, D10, D12, I10, I12

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1. Introduction

“The land does not belong to us; we belong to this land.”

-- Akiwenzie-Damm (1996, p. 21)

‘Indigenous Peoples’ is a term I will use for groups referred to as First Nations Peoples, the Métis, and the Inuit in Canada, and American Indian/Alaskan Native people in the U.S. The breaking up of communally owned reserves into individual, privately owned plots—fee simple property, as they are called—which has been tried in the past, has been proposed in contemporary policy circles as a means to raising the wellbeing of Indigenous Peoples.¹ In this paper, I offer a theory to answer the question: How would the division of commonly owned Indigenous reserve land into privately owned individual plots impinge on the wellbeing of the Indigenous Peoples in North America? The answer hinges on the effects on the erosion of Indigenous cultures. The results of my analysis may also contribute one possible answer to the more general question (left for future research): Why are measures of wellbeing among Indigenous Peoples so poor relative to those of other demographic groups in Canada and the United States?

Indigenous Peoples are unambiguously the demographic groups that experience the worst average outcomes of all North American groups in the terms of wellbeing, socioeconomic status, and health outcomes. In an early study, Fernando (2002), using a national sample of Canadian data from 1997, examined the extent to which subjective wellbeing was correlated with ethnicity per se after economic, health, demographic, and other variables were accounted for. He found that those identifying as Indigenous had the lowest self-assessed wellbeing of all the ethnic/demographic groups. More recently, in 2016, the community wellbeing index, which aggregates community averages over four socioeconomic measures (income, education, labor force activity, and housing) was 19.1 points lower (on a scale of 0 to 100) for First Nations communities relative to non-Indigenous ones, which amounted to about 25% difference between the two indices.² Cooke (2019) reports the recent Human Development Index for Registered Indians in Canada. The index, which is the average of normalized scores for health, education,

¹ This has a long history, starting at least from arguments that led to the Dawes Act in the U.S. (see Carlson (1981a) for a review), for Canada see Chrétien (1969) and more recently Flanagan, Alcantara, and Dressay (2010).

² *Report on Trends in the First Nations Communities, 1981 to 2016.*

and per capita income), was 0.73 in 2016 for Registered Indians, while it was 0.84 for non-Indigenous Canadians. The latter ranked as 12th on an international ranking scale, while the former would have ranked as 52nd. The life expectancy of Indigenous individuals in the United States is about 5 years less than that of non-Indigenous peoples. The incidence of most of the highly prevalent diseases (heart disease, diabetes, respiratory disease, liver disease, alcohol-related disease, PTSD, and many others) is higher than those among the rest of the population.³ In 2018, the poverty rate was 25.1% for Indigenous Americans, as opposed to 8.1% for whites, and the unemployment rates were 6.6% and 3.5%, respectively.⁴ In Canada, the life expectancy is considerably lower (up to nine years) for First Nations Peoples than non-Indigenous Peoples; infant mortality rates are much higher in regions with high concentration of Indigenous peoples.⁵ To be sure, the privatization of Indigenous land is by no means the only, or even the main, reason for the conditions in which Indigenous peoples live; the historic loss of land, the ongoing threat of loss of natural resources, and underfunding of schools on reserves, lack of access to clean drinking water, the stifling federal regulations that inhibit growth, have much to do with it. Given the grim statistics cited above, however, it is imperative that we consider the nontrivial issue of whether privatizing Indigenous reserves actually improves the wellbeing of Indigenous Peoples. In this paper, I focus on the wellbeing, not income, of the Indigenous Peoples of Canada and the United States.

In proposing a framework for analysis, I attempt to imbed ideas that are central to many Indigenous cultures and identities. I investigate the possibility that the erosion of culture and communal property rights can cause a decline in the level of Indigenous wellbeing. To do so, instead of foisting standard neoclassical theory in identifying the most proximate causes, I adopt an approach that takes a more deliberate view of what Indigenous Elders, leaders, and scholars say about the important aspects of Indigenous culture. I attempt to bring the assumptions of the theoretical model to be in alignment with “the truth of lived experience”, to invoke a telling phrase of Murray Sinclair, Chair of Canada’s *Truth and Reconciliation Commission*. This is particularly important because the policy prescriptions that can arise with assumptions more

³ <https://www.ihs.gov/newsroom/factsheets/> See also Barnes et al (2010), Blanchflower and Feir (2021), Feir and Akee (2019), Espey et al (2014), and Walls and Whitbeck (2011) for more detailed analyses.

⁴ 2018 U.S Census and 2018 Bureau of Labor Statistics data

⁵Tjepkema, Bushnik, and Bougie (2019); *Key Health Inequalities in Canada: A National Portrait*. See Feir and Akee (2019) for a detailed analysis on mortality.

pertinent to the Indigenous Peoples may be very different from those generated by standard neoclassical theory. It is a recurring claim that land is of central importance in Indigenous societies. Land was often the lynch-pin around which Indigenous identities, cultures, and economies were and are built. This is reflected in the claim “I belong to the land,” which is in sharp contrast to the western, neoliberal view of property that asserts “This land belongs to me” [Noble (2008)].

Using the analytic tools of neoclassical economics, but not necessarily its underlying premises, I model how this difference in the concept of property rights translates into the unique functioning of many Indigenous economies. In the model I propose, culture is a collective activity that contributes to Indigenous Peoples’ wellbeing. I compare, in terms of wellbeing, the performance of a traditional Indigenous community with a cultural good and that of one based on private property with a cultural good, all else constant. I demonstrate the potential welfare superiority of communal ownership of land over that of private ownership, despite the standard argument about free-riding when ownership is common. This superiority stems from the fact that, when there are two externalities at play that undermine efficiency in the neoclassical sense, eliminating one (by privatizing land, in this instance) can actually *worsen* the outcome when externalities inherent in the cultural good are important—in line with the Theory of the Second Best [Lipsey and Lancaster (1956)].

For reasons that my model will make clear, I offer the erosion of traditional land rights as the core reason that the U.S. government’s allotment of reserve land as private property to Indigenous Peoples (The General Allotment Act of 1887, also known as The Dawes Act) was an abject failure insofar as raising wellbeing among Indigenous people. Although Canada has not had the legislative equivalent of the Dawes Act, there have been many Canadian attempts at privatizing reserve land to ostensibly incentivize Indigenous Peoples—and these, too, have either been resisted or have failed in raising living standards.

Indigenous Peoples were subjected to a great deal of historical trauma, which was the result of a continuous series of upheavals encountered over the past five centuries that left no time for the recovery of cultural roots [Brave Heart and DeBruyn (1998), Wesley-Esquimaux and Smolewski (2004), Wiechelt and Gryczynski (2019)]. There is an established literature in economics that has

demonstrated the persistent effects of major historical events⁶, and the concept of ‘historical trauma’ has been applied to long-term psychological and health consequences of trauma over generations.⁷ In the context of Indigenous Peoples, Feir, Gillezeau, and Jones (2021) have recently demonstrated that Indigenous groups that were very bison-dependent and so were most affected by the extinction of the bison towards the end of the 19th Century still show diminished physical stature and also lower incomes today.

Canada’s *Truth and Reconciliation Report* (2015) has unambiguously stated that the residential school system by which Indigenous children were removed from their parents’ homes and educated in boarding schools was an explicit mechanism intended to force assimilation of Indigenous children into white culture. In a careful piece of pioneering research, Feir (2016a) has demonstrated that those who went through the reserve schools graduated with higher frequency, were employed at higher rates, and were more likely to live off-reserves subsequently. More recently, Feir and Auld (2021) found that residential schooling in Canada had salutary effects on the adult health (height and body-mass index), especially in Indigenous children born after the 1960s. Gregg (2018) has performed a similar exercise for the U.S., complementing Feir’s (2016a) work on Canada. Forced assimilation does seem to have resulted, to some extent, in assimilating Indigenous Peoples into mainstream society in Canada and the U.S. This assimilation has come at a cost. Feir (2016a) and Gregg (2018) empirically show the negative effect of this success on Indigenous languages. Feir (2016b) shows that the residential school attendance by mothers had a negative intergenerational effect. Jones (2016) shows the effects on smoking, drinking, greater social distance and concern for suicidal thoughts. These are some of the empirically documented downsides of assimilation.

Given the paucity of extant theoretical treatments, my paper attempts to take a small theoretical step towards identifying the sources of the costs of one potential type of Indigenous assimilation: the enforcing of private property. All property rights are social conventions and, implicitly or explicitly, are based on relationships between people because it is these relationships that determine the boundaries between them [Singer (2000)]. While this is more apparent in the case of Indigenous property rights, it is also true of the western concept of private property. In the

⁶ See Nunn (2009) for a review of the literature.

⁷ See Sotero (2006) for an overview, with special reference to Indigenous Peoples.

opposite direction, the adoption of a system of property rights also dictates the relationships between people in the society [Nedelsky (1993)]. Indigenous concepts of landed property are not based on market values but on non-material, metaphysical, values that put the land beyond individual ownership; it is viewed as belonging to the collective [Small and Sheehan (2008)].⁸ Inflicting the western concept of fee simple private property on an Indigenous community will inevitably affect the members' relationships and culture. This switch, in turn, may have effects on the actions of the community members and the ensuing outcomes. These are precisely the effects captured in this paper's rendition of an Indigenous community's interactions.

To demonstrate how the erosion of communal land rights can impinge adversely on the wellbeing of Indigenous peoples, I model an Indigenous economy where cultural attachment to land is taken seriously. In invoking assumptions for my model, I stay "close to the ground" as it were, consulting studies in other disciplines. As the subject of this paper does not lend itself to a one-dimensional approach in theorizing, while adopting a fundamentally economic methodology here, I endeavor to draw on insights and findings from anthropology, sociology, and psychology and work them into my modelling.

This paper demonstrates that, when what many Indigenous Peoples deem crucial to Indigenous cultures is incorporated into economic analysis, there is no presumption that the standard neoclassical prescriptions for reforming land rights have much validity. In fact, an Indigenous community's welfare can decline with privatization, for reasons that have to do with the attendant deleterious effects on culture. Under privatization, there is overproduction of the material good (a measure of income) at the expense of culture. For Indigenous Peoples, income is a poor proxy for wellbeing. These theoretical results plausibly explain the failure of the Dawes Act of 1887 in raising Indigenous wellbeing in the United States and are consistent with the extant empirical work done on Canada and the United States. Consequently, this paper's findings are potentially important considerations for contemporary Canadian and American policy with regard to Indigenous land rights.

Given the primacy of land—*communal* land—to many Indigenous Peoples, the importance of its loss or its fragmentation into individual plots transcends the mere loss or division of real estate.

⁸ The recent and important verdict of the Canadian Supreme Court in *Delgamuukw v. British Columbia* reflects precisely this collective ownership of Aboriginal Title that was ascertained.

To the extent that communal land is inextricably tied to Indigenous identity, its loss often undermines the sense of self in a way that those steeped in the neoliberal tradition cannot easily comprehend. When self is damaged, a lot of other serious consequences seem to follow, as the literature in Indigenous studies and psychology suggest—lack of motivation, alcoholism, drug abuse, and suicides [Walls and Whitbeck (2011), Wesley-Esquimaux and Smolewski (2004), Chandler and Lalonde (1998)]. That being the case, as a matter of public policy we cannot separately address them in policies without first addressing the primary determinants, namely, land, culture, the history of dispossession with violence, and treaties reneged on. Policy analyses that adopt an ahistorical approach, like that used in narrow models, could be seriously wrong because they would misidentify the causes. So, even though what this paper offers is an attempt at adapting neoclassical tools to reflect Indigenous views, the importance of land far exceeds what can be captured in a formal, limited model.

Being the dominant paradigm in economics, however, neoclassical economics exercises a “conceptual hegemony”—to borrow a term coined by Tomm (2013) for jurisprudence into economics where it is equally applicable. In effect, Indigenous claims have to be couched in the language of neoclassical economics to be taken seriously and this disempowers Indigenous world views because the dominant paradigm has no place for Indigenous beliefs.⁹ In this paper, I attempt to include Indigenous views on land while using the tools of neoclassical economics in the hope that the loss in the translation when undertaken by a non-Indigenous academic is not so great as to render the effort worthless.

Before proceeding, I must mention an inevitable difficulty in the theoretical modeling of Indigenous communities. Besides the large number of Inuit and Métis communities, there are around 630 First Nations communities in Canada and about 575 in the United States, with no single view that can be identified as “the” Indigenous view. A simple model, therefore, lays itself open to the charge of essentialism because, to maintain tractability, it must necessarily sidestep the enormous variation that exists. Standard neoclassical economics (which typically assumes universal preferences but permits different constraints) cannot be charged with essentialism. But in the Indigenous context, many of its assumptions, especially about preferences, are not merely

⁹ As the Indigenous political philosopher Turner (2004, p. 66) put it, “The dominant culture has dialogued with Aboriginal peoples on the assumption that Aboriginal peoples’ ways of understanding the world can be explained away...”

inaccurate but misleading. In seeking to understand Indigenous points of view using the tools of neoclassical economics but not its putative “objective” assumptions, I hope I shall be forgiven for opting for relevance and sidestepping the variation.¹⁰

The rest of the paper is as follows. In Section 2, a basic model of a hypothetical Indigenous community’s economy is modeled and the welfare under communal property is compared to that under private property, with that in the former shown to be superior when culture is an important aspect of preferences. Evidence on the model’s assumptions on the special status of land and the ethic of sharing in Indigenous culture is provided in Section 3. Section 4 formally treats how Indigenous attitudes of “belonging to the land” play out in the model’s equilibrium, and the welfare superiority of some Indigenous cultural arrangements is seen to be strengthened. Section 5 discusses the history of attempts in the United States and in Canada at privatizing reserve lands and brings out the relevance of this paper’s theoretical results for contemporary policy on Indigenous land rights in Canada. Section 6 concludes with a summary of this paper’s findings, some general observations, and a suggestion for future research.

2. A Simple Model of an Indigenous Community’s Economy

In this section, I propose a simple model of the economic choices in an Indigenous community. The model setting is one in which an Indigenous people with a common culture and language share the same land. As noted, there is a great deal of variation across the communities of various Indigenous Peoples, and it would be a mistake to attempt to homogenize them. Nevertheless, in the interest of simplification I set up a model of a *hypothetical* Indigenous community. The purpose in this section and in Section 4 is to model a hypothetical Indigenous community in a manner that would resonate with the world view of at least some Indigenous communities. Depending on the community in question, there will be varying degrees to which this model conforms to the reality. I must emphasize that I am constrained here by what is expedient for modeling; the scope for heterogeneity is limited by the needs of tractability. There is no intention here to “essentialize” particular features of cultures as defining *all* Indigenous Peoples.

¹⁰ As the Anishinaabe scholar Mills (2010, p. 110) asks us to contemplate, “Imagine a world view in which truth value is derivative of lived experience, not a claimed association with objectivity.”

From my reading of the literature, what stands out clearly is that Indigenous economies are not things apart from Indigenous cultures; economic life is woven into the fabric of everyday cultural life. One sharp difference from the western tradition is that, in contrast to the individualism and the nuclear families that are characteristic of Western Europeans (and European immigrants to North America, Australia, and New Zealand), the Indigenous kinships systems comprise extended families [Red Horse et al. (1978), KILLSBACK (2019)]. Thus the allocation of food, childcare activities, etc. is best modeled as a sharing arrangement. This sharing aspect of many Indigenous cultures is built into the model of this section.

Another frequently emphasized aspect of life for Indigenous people is the great importance of land in daily life. This is not just because hunting, gathering, farming all require land as an essential input. It stems from the view that many Indigenous Peoples see themselves not as individuals in possession of themselves but as individuals who commonly owe their existence to the land. (This special role of land is discussed in detail in Sections 3 and 4.) Thus land forms an integral part of the lives of Indigenous Peoples; the cultural activities (storytelling, ceremonies, rituals, etc.) were and are largely collective activities in which ancestral land figures importantly. Of course, there is also a strictly individual consumption of food and leisure because the evolutionary process of natural selection has also shaped humans to be individuals. Individual leisure activity is dictated by the “I” aspect of the sense of self; the collective cultural activities are more influenced by the “Us” aspect of self.

Before spelling out the model, I should clarify the land tenure system I shall be assuming here for the analysis. It may be argued that, in reality, Indigenous communities did and do have various forms of property rights, including private property¹¹¹². This is indeed correct: a variety of property rights exist, depending on the circumstances and the nature of the resource. Bailey (1992) has examined the various land tenure systems that exist within Indigenous communities and identified conditions under which incentives are maximized by private property and by common property. If there are scale economies, advantages to group production, risky outputs etc., the latter is favored. Otherwise, private property is assigned. But it has to be emphasized that when a community gives its resources for private use such as housing, fishing, hunting,

¹¹ Many examples can be found in the volume edited by Anderson (1992) and in the paper by Hoelle (2011).

¹² Alcantara (2003) gives an informative history of the evolution of Indigenous property rights in Canada and describes its strengths and weaknesses.

agriculture, etc., it is always on a *usufruct* basis [Hoelle (2011)].¹³ That is, the private “owners” can only receive the flow benefits of the resources, but this right can be revoked by the community because of disuse or abuse. The person or family with these rights cannot appropriate Indigenous land and sell it for profit. This important distinction has to be kept in mind because the explicitly usufruct nature of the resource among Indigenous Peoples does not inculcate a sense of exclusive ownership as in the western, economic concept of private property—and this is consistent with the belief “I belong to the land; the land does not belong to me”. Thus, to avoid a tiresome taxonomy in the modeling below, I compare only two sharply different scenarios: common property and property that is private in the neoclassical sense. In my analysis, I shall simply model food production using land (hunting/fishing and/or farming) in the former scenario as communal.

I may write down the utility function, $u(c, G, \ell)$ of a typical person in an Indigenous community as a function of their consumption of food (c), their group cultural activity (G), and their private leisure activity (ℓ). For tractability, I shall work with the following simple Cobb-Douglas form, $u(c, G, \ell)$, of the utility function:

$$(1) \quad u(c, g, \ell) = c^\alpha G^\beta \ell^\gamma,$$

where the exogenous parameters in the exponents satisfy $0 < \alpha < 1$, $0 < \beta < 1$, and $0 < \gamma < 1$, restrictions that ensure diminishing marginal utility. I assume that each person has 1 unit of time available. If t is the amount of time she devotes to food production, g that devoted to the group cultural activity and ℓ to the private leisure activity, the time constraint may be written as $t + g + \ell = 1$. The function in (1) will be referred to as the “egoistic” utility function of a typical community member in order to distinguish it from one that incorporates other-regarding preferences (to be introduced later).

¹³ Sometimes Indigenous communities have private property with institutional practices like the potlatch. Johnsen (1986) has argued that the ostentatious gift-giving activity observed among Southern Kwakiutl Indians was, in fact, a mechanism for protecting the property rights of their communities in the salmon fishery from encroachers. I offer an alternative explanation. The inefficiency of over-exploitation associated with a common property fishery is corrected by private property in a usufruct sense. The mutual sharing, in my view, in competitive potlatches may well have been a way of maintaining the equal sharing ethic common in many Indigenous cultures while fixing the common property inefficiency at the same time.

For convenience, I model hunting/gathering/farming as the economic activity of the community. For brevity, I shall refer to this activity as production. Assume there are $n (\geq 2)$ people in the Indigenous community. I posit that the output, Q , of food is given by the production function

$$(2) \quad Q = AL^{1-\mu}T^\mu,$$

where L and T denote, respectively, the land area and total effort applied, and A the total factor productivity of the technology, and $0 < \mu < 1$. The total amount of land in the economy is hereafter normalized to 1 unit.

I model an Indigenous community operating under two different regimes of property rights. The one taken as the norm among many Indigenous Peoples is common property, for reasons explained. Land cannot be claimed exclusively in the sense that it can be privately sold or disposed of. The other scenario modeled is one in which they operate—or are forced to operate—under the notion of private property as understood in the western, neoclassical sense of exclusive, fee simple property rights. In this case, the Indigenous Peoples here hypothetically abandon the cultural notion of “I belong to the land,” and reverse it by claiming “I own this land” and food production occurs on individual plots.

2.1 Model with Common Property

Here I take the land of an Indigenous community as commonly owned and food production is jointly undertaken. Denoting the production effort of individual i by t_i , $i = 1, 2, \dots, n$, we may write the total effort as $T = \sum_{i=1}^n t_i$. With an ethic of equal sharing, the consumption, c_i , of person i will be given by $c_i = Q/n$. While the ownership of the asset land is usufruct, the sharing of the flow output from it (food) does not derive from this but, rather, from a social convention.¹⁴

Thus, the utility maximizing problem of a person i can be written as

$$(3) \quad \max_{t_i, g_i, \ell_i} (A(t_i + T_{-i})^\mu/n)^\alpha (g_i + G_{-i})^\beta (\ell_i)^\gamma$$

subject to $t_i + g_i + \ell_i = 1$,

¹⁴ Whether the food is cultivated privately on usufruct land and then shared or is cultivated jointly, there will be a moral hazard in the application of effort—which is the important thing to capture. I have opted for the latter route.

where T_{-i} and G_{-i} are the total time contributions to production and to the group cultural activity, respectively, by all members other than i . That is, $T_{-i} = \sum_{j \neq i}^n t_j$ and $G_{-i} = \sum_{j \neq i}^n g_j$. We shall eliminate the time constraint by setting $\ell_i = 1 - t_i - g_i$.

Note that the cultural good is a pure public good for the community.¹⁵ There are two activities of the Indigenous community in this model that entail externalities: production for food consumption and participation in group cultural activities. Increase in individual effort in each case benefits the individual and also benefits the group. In food production, any shirking by an individual lowers output but the shirker bears only $1/n$ of the fall in output because of the equal-sharing arrangement. In the cultural activity, which is a pure public good, any shirking lowers the cultural output but the shirker bears the full decline in this output. Shirking in the contribution to the cultural good is more serious and, therefore, is less prone to moral hazard, all else constant. This emphasizes the need to incorporate culture in the model, which is so important to many Indigenous communities.

I examine below the Nash equilibrium.¹⁶ It is easy to show that, in the symmetric Nash equilibrium, the time allocations $\{t^*, g^*, \ell^*\}$ of any member of the community is given by¹⁷

¹⁵ In his influential paper on why religious sects may self-impose restrictions that seem to stigmatize themselves in the eyes of the rest of society, Iannaccone (1992) refers to an analogous religious good as a ‘club good’.

¹⁶ It may be objected that (the less-tractable) cooperative behavior may be more appropriate than Nash behavior in a community-oriented setting. But by showing the effects of culture under the assumption of Nash behavior, I am rigging the case against myself; with cooperative behavior, the role of culture would be even more pronounced.

¹⁷ Taking the (monotonic) logarithmic transformation of the objective function in (3), we may rewrite the optimization, apart from an additive constant, as

$$\max_{e_i, g_i} \quad \alpha\mu \ln(t_i + T_{-i}) + \beta \ln(g_i + G_{-i}) + \gamma \ln(1 - t_i - g_i).$$

The first order conditions are as follows:

$$t_i: \quad \frac{\alpha\mu}{t_i + T_{-i}} = \frac{\gamma}{1 - t_i - g_i},$$

$$g_i: \quad \frac{\beta}{g_i + G_{-i}} = \frac{\gamma}{1 - t_i - g_i}.$$

The second order conditions for a maximum are satisfied because the objective function is strictly concave. Invoking symmetry and dropping subscripts, we see from the two first order conditions that

$$g = \frac{\beta}{\alpha\mu} t.$$

Using this in either of the first order conditions, we obtain the Nash equilibrium allocations shown in (4).

$$(4) \quad t^* = \frac{\alpha\mu}{\alpha\mu+\beta+n\gamma}; \quad g^* = \frac{\beta}{\alpha\mu+\beta+n\gamma}; \quad \ell^* = \frac{n\gamma}{\alpha\mu+\beta+n\gamma}.$$

An increase in the community size reduces the time devoted to the common production and to group cultural activities, which may be expected given our standard intuition of moral hard of teams [Alchian and Demsetz (1972)]. This captures the self-interested aspect of the production of the consumption good (food) and the cultural good: free-riding off the common effort makes more time available for private leisure.

The equilibrium egoistic utility, U^* , of a member of this community can be readily shown by substitution of (4) into (1) as

$$(5) \quad U^* = \frac{A^\alpha}{n^{(1-\mu)\alpha-\beta-\gamma}} \frac{(\alpha\mu)^{\alpha\mu} \beta^\beta \gamma^\gamma}{(\alpha\mu+\beta+n\gamma)^{\alpha\mu+\beta+\gamma}}.$$

2.2 Model with Private Property

Land as private property in the neoclassical concept is *not* the norm among Indigenous Peoples. Nevertheless, as discussed later, the governments in the U.S. and Canada on various occasions have sought to privatize land on reserves (or reservations in the U.S. context) by dividing up common land into individual parcels. To investigate the effect of this, assume that of the total land of 1 unit, each community member gets a private allocation of $1/n$ unit. The difference now is that each member is the sole proprietor of their own food production, apply their own effort on it, and solely consume the output without sharing. Since the fixed factor land goes from 1 to $1/n$ in this case, the output, q_i , of person i 's assigned land becomes

$$(6) \quad q_i = A(1/n)^{1-\mu}(t_i)^\mu.$$

Thus the (egoistic) utility maximizing problem of a person i can be written in this case as

$$(7) \quad \max_{t_i, g_i, \ell_i} (A(t_i)^\mu/n^{1-\mu})^\alpha (g_i + G_{-i})^\beta (\ell_i)^\gamma$$

subject to $t_i + g_i + \ell_i = 1$.

As before, we can eliminate by using the time constraint and setting $\ell_i = 1 - t_i - g_i$. By mimicking the steps that led to (4), we obtain the solution, denoted by $\{t^\dagger, g^\dagger, \ell^\dagger\}$, as

$$(8) \quad t^\dagger = \frac{n\alpha\mu}{n\alpha\mu+\beta+n\gamma}; \quad g^\dagger = \frac{\beta}{n\alpha\mu+\beta+n\gamma}; \quad \ell^\dagger = \frac{n\gamma}{n\alpha\mu+\beta+n\gamma}.$$

Using (1), (6), and (8), we obtain the Nash equilibrium utility, U^\dagger , of a typical member of the community as

$$(9) \quad U^\dagger = \frac{A^\alpha}{n^{(1-\mu)\alpha-\alpha\mu-\beta-\gamma}} \frac{(\alpha\mu)^{\alpha\mu} \beta^\beta \gamma^\gamma}{(n\alpha\mu+\beta+n\gamma)^{\alpha\mu+\beta+\gamma}}.$$

By comparing the equilibrium solutions in (4) and (8), we obtain the following proposition.

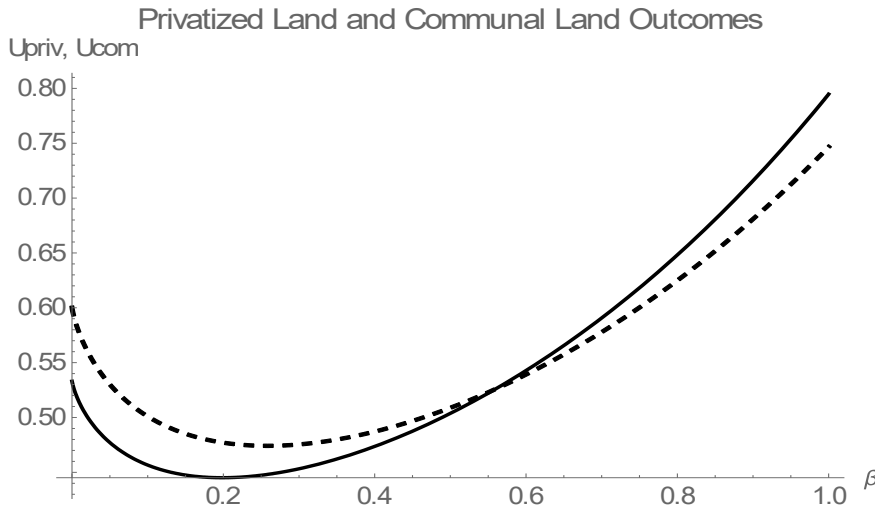
Proposition 1: When the communal land of an Indigenous community is privatized through individual allotments to its members, the time devoted to (i) food production increases, (ii) group cultural activity decreases, and (iii) private leisure decreases.

The reason behind the above result is that, with privatization of land, the reward to individual effort in food production is not diluted by sharing with others, thereby increasing food production effort at the cost of cultural activities (which also entails team production) and private leisure. Standard neoclassical arguments suggest that privatization of land should curb the moral hazard in team production à la Alchian and Demsetz (1972). Naturally, as a corollary, the consumption of food will increase and, if this were a measure of wellbeing for Indigenous communities (which it is not), this would register an increase, too.

That food production theoretically increases with privatization is obvious.¹⁸ The crucial question here, however, is not what happens to food production with privatization, but rather what happens to the level of wellbeing, that is, the utility in the equilibrium. It might appear that the privatization of land should certainly lead to a higher welfare because an externality involving team production has been remedied. But this is not necessarily so, as we see when we compare (5) with (9). Since this comparison entails expressions that are highly nonlinear in the parameters, I make the point with a simple simulation that has a compelling intuitive explanation.

¹⁸ Nevertheless, it is not without interest. For it may explain why Sahlins (1972) in his study of hunters and gatherers was surprised by the limited amount of time they devoted to subsistence activities and thus characterized them as “The Original Affluent Society”.

Figure 1: Equilibrium (egoistic) utilities under privatized and communal land ownership as a function of the importance of cultural activities. (Parameter values: $A = 1$, $\alpha = 0.3$, $\gamma = 0.3$, $\mu = 0.6$, $n = 5$)



In Figure 1, the equilibrium utilities of the representative Indigenous person in the model is compared in the privatized equilibrium (dashed) and the communal equilibrium (solid) as a function of the parameter β , which measures the importance of the cultural good in the preferences. (These two utilities are denoted by U_{priv} and U_{com} , respectively, along the y-axis in Fig. 1.) The U-shapes of the two schedules are irrelevant because, when β changes, the functional form changes and so comparisons of the utilities for different values of this parameter are meaningless. However, the comparison of the utilities in the private and communal equilibria for the *same* value of β is meaningful. When β is “low”, that is below about ≈ 0.55 in the Figure, the privatized outcome dominates in ordinal ranking. However, for higher values of β , the communal equilibrium dominates in ranking. In other words, the privatized equilibrium is better when the cultural activity is relatively unimportant but the communal equilibrium is better when the cultural activity is important in the preferences. In the latter case, private land allotment of the common land of an Indigenous community lowers the utility of a typical member in the Nash equilibrium.

The reason for this is interesting. Private allotment increases food production effort at the expense of cultural effort and private leisure. But since this outcome is the result of endogenous

choices, one may think that the private land outcome should be better than the common land one—as, indeed, it is when β is low. However, cultural activity entails team production, too, and the reallocation of individual effort to private food production ignores the externality inflicted on other community members in the generation of the group cultural good. In going from two activities that entail team production to only one does not guarantee an increase in the equilibrium utility. This, in fact, is but an example of the influential *Theory of the Second Best* of Lipsey and Lancaster (1956). Their general insight was that when there is one irremovable distortion in an economic system, there is no guarantee that getting rid of other distortions would improve welfare. In fact, welfare may be improved by introducing more distortions, depending on the context. Moral hazard in team production is one such distortion from the standard assumptions under which the equilibrium outcome is Pareto optimal. In the present context, since there is an externality in the team production of cultural activities, the introduction of a second activity with team production (hunting & gathering) actually increases welfare.¹⁹

When land is privatized, effort gets redirected to private production, exacerbating the problem of moral hazard in cultural production. In Nash behavior, under the assumed premise of purely egoistic preferences, each person does not take into account this negative externality on other community members. When the cultural good is important, the equilibrium outcome can be worse than when land becomes privatized. Since the switch in the ordinal ranking of the welfares occurs only at high values of β , we see why this outcome is particularly relevant to Indigenous communities (for many of which, culture is very important).

So far, the important Indigenous conviction “we belong to the land” has not figured in the analysis. I incorporate this in Section 4. But I first provide evidence for two important assumptions of the model in the next section.

3. Evidence for the Model’s Assumed Premises

In this section, I provide some evidence for two important premises of my model: the importance of land (and its common ownership) in many Indigenous cultures, and the attendant ethic of

¹⁹ Iannaccone’s (1992) model, which involves the externality involved in a club good and the moral hazard of individuals, showing that sacrifice and stigma by the introduction of an inefficient constraint could raise the welfare of a religious sect may also be viewed as another example of the Theory of the Second Best.

sharing. Given the paucity of quantitative evidence, I shall quote frequently from the writings and sayings of Indigenous Elders and scholars, given that even the Supreme Court of Canada now accepts oral testimony as evidence (as in e.g. *Delgamuukw v. British Columbia*) because of the importance of the oral tradition in Indigenous cultures.

3.1 The Importance of Land to Indigenous Peoples

A reading of the testimony of numerous Indigenous people in Canada and the U.S. reveals an exceptionally deep attachment to land. Since the historical trauma following the loss of land and the erosion of culture still plagues Indigenous Peoples, it is important to learn about the source of this bond. In this subsection, I provide a brief overview of the reasons as I understand them.

As the quote at the beginning of the paper suggests, among Indigenous Peoples the view is often that it is not individuals who own the land; rather it is *they who belong to the land*. This special meaning of land to Indigenous Peoples has even been recognized by the Supreme Court's decisions in Canada [Slattery (2000)]. If land is claimed by an Indigenous community as 'theirs', the claim is a collective one, not an individual one [Akiwenzie-Damm (1996), Noble (2008)].²⁰ The reason why land cannot be typically claimed by individuals and bought and sold resides in the belief that ancestral land is sacred. The economy is not compartmentalized in many Indigenous societies but is inextricably interwoven with religion and culture.

Among Indigenous Peoples, it is the entire land of the nation that is considered sacred. Why is this? Indigenous religions largely have Creation stories that interpret the nation's land as a gift from the Creator, and it is a deeply embedded belief of communities that they should live within the bounds of the territory thus gifted and act as its stewards.²¹ Therefore, there arose numerous communities in North America, each localized in a particular geographical area that is deemed sacred to the community. The culture and religion that subsequently arose were specific to the

²⁰ There were other usufruct uses of property, as noted before [Bailey (1992), Hoelle (2011)].

²¹ Here is the full quote from Akiwenzie-Damm (1996, p. 21): "We are fundamentally different from anyone else in this land, fundamentally different from Canadians. The basis of the difference is the land, our passion for it and our understanding of our relationship with it. We belong to this land. The land does not belong to us; we belong to this land. We believe that this land recognizes us and knows us. In the broadest and most fundamental ways we are inextricably connected to this land. It holds the bones of our ancestors. This land provides for us and for our children. It is a birthright granted to us by the Creator. In return it is our responsibility to care for and protect the land. It is our connection to the land that makes us who we are, that shapes our thinking, our cultural practices, our spiritual, emotional, physical and social lives. Our cultures and spirituality arise from our relationship with the land."

land, even though there are broad commonalities. This geographical specificity of the culture and belongingness gives rise to a deep attachment among numerous Indigenous communities to the land of their forebears, and is the source of the belief “We belong to the land”.

Furthermore, Indigenous culture is infused with the idea of mutual belongingness to the nation’s particular landscape, the animals, and the earth through an indivisible but conscious bond—for, in this view, what others may construe as inanimate is seen by Indigenous Peoples as conscious [Booth (2003)]. The Indigenous scholar Mills (2010, pp. 115-116) says, “[F]or the Anishinaabek, everything is alive. In our language, Anishinaabemowin, almost everything is considered alive—even rocks, drums or tea kettles.... For most (but certainly not all) Canadians personhood is a category limited to *Homo sapiens sapiens*, yet Anishinaabe world views hold that many animate non-human beings are fully persons, with temperaments, volitions and preferences.” And again, “Because everything is made by the Great Spirit, all life is imbued with the sacred: from the smallest insect to the biggest animal; from the tiniest grain of sand to the largest galaxy, all is alive and everything is intimately and spiritually connected.” (p. 118) From this view, there seems to arise a deep sense of the sacred that informs the lives of Indigenous Peoples. It is for this reason that, when the particular land Indigenous Peoples believe has been given them as its stewards is taken away, the loss is accompanied by a profound sense of grieving and a deep longing for its return.²² Indigenous identity is so deeply fused with the land that the person feels everything it is perceived to contain, visible and invisible, is their very self.

The Truth and Reconciliation Committee’s Report reveals how deeply the Indigenous connection with land and the environment runs. “As Elder Crowshoe explained further, reconciliation requires talking, but our conversations must be broader than Canada’s conventional approaches. Reconciliation between Aboriginal and non-Aboriginal Canadians, from an Aboriginal perspective, also requires reconciliation with the natural world. If human beings resolve problems between themselves but continue to destroy the natural world, then reconciliation remains incomplete. This is a perspective that we as Commissioners have repeatedly heard: that reconciliation will never occur unless we are also reconciled with the earth.” (*TRC*, p. 18) In other words, even reconciliation with the natural world is viewed as part of the Truth and

²² As Booth (2003, p. 333) puts it: “A sense of embeddedness in the rest of the world has profound implications for how one chooses to live and interact with others. It is also one reason why the displacement of Native Americans from their lands, and the subsequent damage to the land, was and is so socially and psychically devastating.”

Reconciliation process in the eyes of Indigenous Peoples—so important is land and the environment to Indigenous ways of life. The Métis Elder Ghostbuster trenchantly captures the difference between the Métis use of land as “living *with* the land,” and the western use of land as “living *off* the land” [Jobin (2020, p. 106, emphasis in the original)].

Indigenous literature in reference to land is replete with analogies to that human relationship which is universally deemed to be the most sacred and unbreakable: the relationship to one’s mother (though this sentiment has been borrowed by well-meaning environmentalists and made somewhat commonplace nowadays). “Tribal territory is important because the Earth is our Mother (and this is not a metaphor, it is real). The Earth cannot be separated from the actual being of Indians.” says Leroy Little Bear (2000), for example.²³ Attachment to the land in which one is raised may be common, but there are very few cultures other than the Indigenous in which people would identify the land with their *being* and vice versa. In other words, the Indigenous concept of property is *ontological* in nature (that is, it pertains to being) as opposed to the western concept where property is defined by geographical territory [Bryan (2000)]. Egan and Place (2013, p. 136) talk about how, for Indigenous Peoples, everything is bathed in spirit and objects have relationships to kin: “The point is not to romanticize or essentialize indigeneity or Indigenous worldviews, but rather to recognize that there are other ways of understanding land and property and geography, where the world is not divided neatly into exclusionary categories of inanimate and animate, human and non-human, and where the idea of land as a commodity that can be broken up into pieces and sold for profit is alien.” In the light of such worldviews, we begin to understand why the Anishinaabe Nation Elder Fred Kelly says of the effect on the Indigenous of the dispossession of land, “[T]o take the territorial lands away from a people whose very spirit is so intrinsically connected to Mother Earth was to actually dispossess them of their very soul and being; it was to destroy whole Indigenous nations.” (TRC, note 1, p. 225)

The courts in Canada have been taking seriously the particularly deep attachment of Indigenous Peoples to traditional lands. A good example is the case of *Platinex Inc v. Kitchenuhmaykoosib Inninuwug First Nation*, which arose because Platinex was involved in mining that was contested by the First Nation. Although the outcome favored the company, the judge’s statement in the

²³ The paper by Bakht and Collins (2017), which also quotes Little Bear, documents the sacredness of land among Indigenous Peoples the world over.

Ontario Court of Appeal is revealing: “It is critical to consider the nature of the potential loss from an Aboriginal perspective. From that perspective, the relationship Aboriginal peoples have with the land cannot be understated. The land is the very essence of their being. It is their very heart and soul. No amount of money can compensate for its loss. Aboriginal identity, spirituality, laws, traditions, culture and rights are connected to and arise from this relationship to the land. This is a perspective that is foreign to and often difficult to understand from a non-Aboriginal viewpoint.”²⁴ When even Canadian courts, firmly embedded as they are in common and civil law, are beginning to arrive at this position, it is incumbent on economists to take seriously the especial importance of land to Indigenous Peoples.

The attachment to land is reinforced by the performance of collective rituals, storytelling, drama, and other social activities among Indigenous Peoples [Akiwenzie-Damm (1996)] and also in most religions [Mazumdar and Mazumdar (2004)]. These activities would acquire an even greater significance when the land and nature itself form the basis of a group’s daily cultural and religious life.²⁵ The collective activities would lead to the forging of even stronger interpersonal bonds. These activities, by their very nature, would tend to diminish the “I” component of identity and to enhance the “Us” component.

Kant, Vertinsky, and Zheng (2016) make the important point that, since the value system of Indigenous Peoples is very different from those of westerners, different factors will inform Indigenous subjective wellbeing. After extensive discussion with Indigenous Elders on factors considered important, the authors collected data from 316 First Nations households in Canada and examined the correlation between general life satisfaction and satisfaction with various domains that are important to Indigenous Peoples—domains such as social, cultural, and land use, finance, health, housing, etc. Their empirical estimation found that the correlation of general life satisfaction was quantitatively much stronger with the social, cultural and land use domain

²⁴ <https://miningwatch.ca/blog/2006/9/15/analysis-platinex-inc-v-kitchenuhmaykoosib-inninuwig-first-nation-case>

²⁵ “It is not a matter of ‘worshipping nature,’ as anthropologists suggest: to worship nature, one must stand apart from it and call it ‘nature’ or ‘the human habitat’ or ‘the environment.’ For the Indian, there is no separation. Man is an aspect of nature ...” Matthiessen, quoted in Booth (2003, p. 334)

than with satisfaction in the financial domain.²⁶ This provides some quantitative evidence for the importance of land and culture to Indigenous Peoples.

In sharp contrast to Indigenous views, in Western economies land is largely but not entirely viewed mainly as an input in production—whether agricultural, manufacturing, retail, or residential services.²⁷ Much of its value stems from the fact that it is viewed as an economic asset that can be bought and sold in land markets. One’s attachment to a piece of land is built into one’s assessment of its present value, which may somewhat exceed what others are willing to pay for it—a phenomenon that is not uncommon and is referred to as the endowment effect [Kahneman, Knetsch, and Thaler (1990)]. The unwillingness of some Indigenous Peoples to entertain the idea of trading Indigenous land for money may be viewed as an extreme case of the endowment effect, but there is much more to it than this. The reluctance to trade would especially arise because there is no adequate substitute available for land deemed sacred. Individuals can obviously own land as private property in all liberal democracies, as justified by Locke’s (1698/1967) theory of private property. Even though Locke conceded, in alignment with the Judeo-Christian tradition, that the Creator granted humans the collective dominion over all land, he argued that each individual had a right to survive and thus to do what was needful for survival. From this, Locke derived his theory that when a person confers labor on piece of common land, it may be appropriated as private property—with the proviso that there is enough left over for others.

In sum, the above discussion shows why land, having ontological significance, is of utmost importance to many Indigenous communities. The importance far exceeds that which might be attributed to societies with economies that merely rely on land for hunting, gathering, and farming. Given the holistic nature of many Indigenous cultures, land, interpersonal relations, and spirituality are interwoven in generating a sense of identity and wellbeing among Indigenous

²⁶ Barrington-Leigh and Sloman (2016) examined the difference in this self-perceived measure of wellbeing between Aboriginal and non-Aboriginal people in the Canadian prairies. They found that, while income correlates positively with life satisfaction in the general population the world over, the correlation is insignificant for off-reserve Aboriginals and significantly negative for on-reserve Aboriginals. This cautions us to not assume that incomes can proxy for subjective wellbeing among Aboriginal people.

²⁷ Land is not always viewed entirely in monetary terms. So as not to “otherize” the Indigenous Peoples, we may note that some people from the general population are usually willing to defend, and often die, to protect their countries against foreign aggression.

Peoples.

3.2 Communal Ownership of Indigenous Land and Sharing

In modeling an Indigenous community in this paper, there is no presumption that land is used mainly for agriculture, though in North America Indigenous groups have practiced agriculture since prehistoric times. Land in production also stands in for an essential input into hunting, trapping, and fishing. For these activities, since the animals and fish are migratory, it is clear that land would tend to be communally owned and shared across Indigenous communities. The near extinction of the bison by the 1880s, partly as a strategy of the U.S. Army to subdue Indigenous Peoples through starvation [Smits (1994)] and partly due to international trade [Taylor (2011)], increased the importance of agriculture to Indigenous Peoples, at least in the Plains.

Hurt (1987, Ch. 5) documents what little is known about land tenure in Indigenous agriculture in America. His review clarifies that Indigenous land was communally owned. While individual plots were assigned, often on the basis of family lines, they were for use only. When not used, they reverted to the community, which suggests that these usufruct rights cannot be interpreted as property rights in the western sense as has been recently done by Flanagan, Alcantara, and Dressay (2010). Land tenure was established in terms of the household or lineage—sometimes matrilineal and sometimes patrilineal. There could be no absolute claim of individual possession in the nature of fee-simple property rights, that is, an individual could not sell it. In fact, even the community could not dispose of the land freely because it belonged to the future generations, too. Because Indigenous communities in America practiced subsistence farming, the demand for land from each community was limited. And because a community had no rights on unused land, this resource did not lend itself to preemptive appropriation of the sort one saw on the arrival of European settlers, where even land that is not used could be owned under the fee-simple property rights regime.

As seems to have been the case in all subsistence economies, many Indigenous communities routinely practiced sharing. Enloe (2003) discusses hunter-gatherer societies in general and argues that, from ethnographic studies, food sharing is seen to be a universal and important practice that, in fact, played a role in human evolution. The sharing of effort is seen in the

cooperative hunting of large animals and also in the transportation of the carcasses; sharing of the carcass in consumption was expedient because of the absence of refrigeration. Sharing in general arises in periods of scarcity because it is a risk sharing mechanism. It is not difficult to see why sharing would become a social norm. Such arrangements were stronger between kin, it is true, but it is also undertaken with non-kin with the understanding of reciprocity.

Morales and Thom (2020) write about sharing in Hul'qumi'num communities on Vancouver Island. For Hul'qumi'num people, the authors claim, sharing is one of the legal principles, which naturally reflects the way in which resources are owned and shared. Drawing on Blomley (2010), the authors point out that property is determined in terms of relationships across peoples rather than being neatly defined by geographical boundaries as in the western concept of property. So there can be overlapping claims on a given piece of geographical territory—ownership is not a mutually exclusive, constant sum phenomenon, in other words—and this implies joint ownership, sharing, and mutual respect. Even where resident groups owned hunting or fishing grounds, sharing with outside groups was possible but this required permission and reciprocity. Morales and Thom (2020, p. 150) sum up the land rights as follows: “Common property tenures are enshrined in laws of Island Hul'qumi'num peoples, guided by the nuances of complex kin networks and strategic residence choices.” This is consistent with the general view that the desired social relations of the society determine, and are determined by, property rights.²⁸

Natcher (2009) characterizes Aboriginal communities in northern Canada, which basically engage in hunting, fishing, gathering, etc., as social economies in which sharing and reciprocity are cardinal features. Relying on other research, he argues that “[T]he economies of Aboriginal peoples not only entail highly specialized modes of resource production, but also involve the transmission of social values...” (p. 84) In other words, cultural norms dictate production and exchange, of which sharing is an important component and is also key to promoting the Aboriginal communities' continuity. Collings, Wenzel and Gordon (1998) describe sharing practices of wildlife food obtained by hunting among Holman Inuit even during contemporary times. Bodenhorn (2000) gives a detailed description of the elaborate, institutionalized sharing rules among the Alaskan and Canadian Inuit Peoples. Ziker (2007) discusses food sharing

²⁸ As Singer (2000, p. 139) puts it, “Our choice of a particular property regime alters the social world. It will determine what expectations people have a legal right to expect. It will impose duties and vulnerabilities in a certain pattern.”

amongst Indigenous groups in Northern Siberia. While there is a bias towards sharing with kin (presumably for plausible evolutionary reasons), he finds that sharing also occurs with more distant relatives. Sharing is seen as a commitment to participating in a cultural and social arrangement.

In a recent paper, using a sample of 22 modern, small scale groups (18 from America and 4 from Siberia), Ahedo et al (2019) did not find any significant bivariate correlations between sharing practices and any of their ecological, geographic, and economic variables. The authors suggest that sharing practices may be driven by complex cultural variables and cannot be attributed to local conditions. This inference is not inconsistent with the premise of my paper that highlights the role of culture.

The evidence presented in Subsections 3.1 and 3.2 reveal that my hypothetical model's assumptions regarding the importance of land to numerous Indigenous communities and the prevalence of sharing practices find considerable resonance in the literature. My model's premises appear to reasonably approximate, to the extent possible, the lived experience of many Indigenous Peoples.

4. Analytically Conceptualizing “Belonging to the Land”

In this section I make an attempt to incorporate into a model, however inadequately, but in a manner consistent with the persistently articulated Indigenous belief outlined in the previous section that it is they who belong to the land, not the other way around. In the field of social psychology, the need to belong is recognized as one of the most fundamental human needs [Baumeister and Leary (1995)]. By belonging is meant the actions of interacting positively with a significant number of others in a group on a regular basis. There are many ways in which humans fulfil this need. Indigenous cultures seem to fulfill this with the holistic manner that the cultures are conceived.

In an essay entitled ‘Owning as Belonging/Owning as Property’, Noble (2008) brings home the importance of the distinction between the two approaches. In economics, by “owning” is meant the right to exclusive use of an object, which can be alienated and disposed of at will. In contrast,

when owning is conceived as belonging, as in many Indigenous traditions, the emphasis is on the nature of the transactions and obligations accompanying the property that is deemed communal.

To my understanding, the Indigenous concept of “belonging to the land” automatically brings into one’s preferences others who also belong to the same land because mutual belonging requires mutual recognition and respect. Right away, we see that this conception requires a departure from the egoistic perspective that is articulated by the claim, “The land belongs to me.” Indigenous cultural beliefs of belonging immediately attenuate the “I” aspect of self and magnify the “Us” aspect. Working collectively on the land and engaging in cultural activities could be seen as sacred in themselves, thereby increasing their utility worth because they enhance the sense of belonging.²⁹

How does the key sense of belonging translate into transactions between the members of a community? I model this by incorporating it into other-regarding preferences exhibiting increased altruism towards community members relative to the general population. Since empirical and experimental work in economics has not investigated this link between belonging and altruism, I shall briefly offer a plausible theoretical justification supported by findings from the field of psychology. In his *The Theory of Moral Sentiments*, Adam Smith argued that we empathize with others essentially by imagining ourselves in their shoes and sensing how we would feel in their place. Furthermore, our empathy is more pleasant if the other person’s sentiments are in agreement with ours: “...whatever may be the cause of sympathy, or however it may be excited, nothing pleases us more than to observe in other men a fellow-feeling with all the emotions of our own breast; nor are we ever so much shocked as by the appearance of the contrary.” [Smith (1759/2000, Ch. II)] It would follow that the intensity of our empathy is greater towards people who share our views. Indeed, this probably explains the widely observed proclivity for favoritism towards people who, we believe, belong to the same in-group (and so share our views). In the field of psychology, there is a history of research done over four decades showing that there is a positive correlation between empathy and altruism (see Batson, Lishner, and Stocks (2015) for a review). Furthermore, if community members consider themselves as belonging to the same land and view the land as their mother, as Indigenous Peoples frequently

²⁹ The idea that people may work even for modern organizations in a manner that bolsters their sense of belongingness is foreign to standard economic modeling but, nevertheless, there is empirical evidence to suggest its importance [Green, Gino, and Staats (2017)].

claim, then community members would view themselves as siblings because they are children with a common parent. That there are in-built prosocial attitudes and behaviors towards siblings is a fact that is too universal to warrant justification here.

The strength of family ties is an important characteristic of societies. Schultz et al. (2019) demonstrated a correlation between kinship ties and individuality, among other things. Societies with strong kinship ties—arising from marriages between cousins, for example—exhibit a greater cultural proclivity for obedience, respect towards elders, deference to authority, etc. The authors posit that this arises because, when kinship ties are strong, people reside in extended families, not nuclear ones. It is therefore significant that, in sharp contrast to western societies, Indigenous communities are organized according to lineages and clans, where a substantial proportion of the people belonging to the community are related by blood or marriage even in contemporary urban settings [Red Horse et al. (1978), Killback (2019)]. These kinship and social arrangements themselves engender feelings of concern for others in the community, and also presumably serve as informal enforcement mechanisms that ensure norm conformity. As a result, Indigenous interpersonal ties were stronger than those between the European colonizers. There are also evolutionary reasons for being more favorably disposed towards members of the same group through preferences [Eaton, Eswaran, and Oxoby (2011)]. In an insightful review, Castenello (2002) identifies the extended family as the primary institution for mediating individual, social, and political interactions. Barrington-Leigh and Sloman (2016) find that, in the Canadian prairies, Aboriginal peoples (especially on reserves) place much more weight on family and friends than the general population. This lends some quantitative empirical support for the other-regarding preferences that I posit below.

In the light of this discussion, it is not a great leap to infer that, in Indigenous societies, the very nature of the cultures implies that other regarding preferences and altruism are important. A person is not concerned exclusively with their own consumption of various goods, as captured by the egoistic utility function in (1), but also places some importance on those of others in the community. Subscripting the individual-specific consumptions of person i by i , as before, we may write the utility of this person with other-regarding preferences, $v_i(\vec{c}, G, \vec{\ell})$, as given by

$$(10) \quad v_i(\vec{c}, G, \vec{\ell}) = u_i(c_i, G, \ell_i) + \sigma \sum_{j \neq i}^n u_j(c_j, G, \ell_j),$$

where \vec{c} and $\vec{\ell}$ denote the vectors of consumption levels of the production output and private leisure of the entire community, respectively. The functions $u_i(c_i, G, \ell_i)$ are assumed to retain the form given in (1). The parameter σ , with $0 \leq \sigma \leq 1$, captures the extent of a community member's concern for all the others who also belong to the same land. I refer to σ as the 'belongingness' parameter that induces altruism towards other community members. For simplicity, σ is assumed to be the same for all individuals in the community, with its magnitude being determined by the specific culture. The first term on the right hand side of (10) captures person i 's egoistic concern for oneself, and the remaining terms capture the person's concern for others in the community. When $\sigma = 0$, we are back in the scenario with purely egoistic preferences, considered earlier in Section 2. At the other extreme where $\sigma = 1$, each member places the wellbeing of every other member on par with their own (that is, they treat their neighbors as themselves). In this extreme case, each member's objective would clearly coincide with the Benthamite social planner's. The above rendition of "belonging to the land" also allows us to model the idea that the system of property rights impinges on the social relations between community members by defining their boundaries, as discussed in the Introduction. Preferences are captured by $\sigma = 0$ under private property, and by $\sigma > 0$ under communal property.

Person i has control only over their own decisions, and so under Nash conjectures will maximize (10) by their choice of t_i , g_i , and ℓ_i subject to the time constraint $t_i + g_i + \ell_i = 1$.³⁰ As before this constraint can be used to eliminate ℓ_i and perform an unconstrained optimization with respect to t_i and g_i . Taking the derivatives of (10) with respect to t_i and g_i , simplifying the corresponding expressions after invoking symmetry and dropping the subscripts, solving the two first order conditions and using the time constraint we obtain the solution for the "belonging equilibrium", denoted by the triplet $(\tilde{t}^*, \tilde{g}^*, \tilde{\ell}^*)$, as³¹

$$(11) \quad \tilde{t}^* = \frac{\alpha\mu\rho}{\alpha\mu\rho + \beta\rho + n\gamma}; \quad \tilde{g}^* = \frac{\beta\rho}{\alpha\mu\rho + \beta\rho + n\gamma}; \quad \tilde{\ell}^* = \frac{n\gamma}{\alpha\mu\rho + \beta\rho + n\gamma},$$

³⁰ As noted in an earlier footnote, Nash behavior understates the effect of "belongingness" on equilibrium wellbeing.

³¹ Mimicking the steps in subsection 2.1, the following are the two first order conditions after symmetry is invoked:

$$e_i: \quad \frac{\alpha\mu\rho}{nt} = \frac{\gamma}{1-e-g},$$

$$g_i: \quad \frac{\beta\rho}{ng} = \frac{\gamma}{1-e-g},$$

where $\rho = 1 + (n - 1)\sigma$. With some manipulation, we can easily derive the allocations in (11).

where $\rho = 1 + (n - 1)\sigma$.

The egoistic component of the individual utility, \tilde{U}^* , for a typical band member generated in the Nash equilibrium is given by

$$(12) \quad \tilde{U}^* = \frac{A^\alpha}{n^{(1-\mu)\alpha-\beta-\gamma}} \frac{(\alpha\mu\rho)^{\alpha\mu}(\beta\rho)^\beta\gamma^\gamma}{(\alpha\mu\rho+\beta\rho+n\gamma)^{\alpha\mu+\beta+\gamma}}.$$

From the above, the following result immediately follows.

*Proposition 2: An increase in the parameter σ that captures belongingness monotonically increases the equilibrium component of the egoistic utility of each community member.*³²

Thus, the belief ‘I belong to the land’—rather than the other way around—is a conception of ownership that induces greater cooperation amongst Indigenous Peoples. This occurs by reducing the free-riding in the activities of food production and cultural production at the expense of private leisure. The result in Proposition 2 further strengthens what we saw earlier even without the sense of belongingness to land, which says that an Indigenous community with private property can be welfare-dominated by one that has common property.

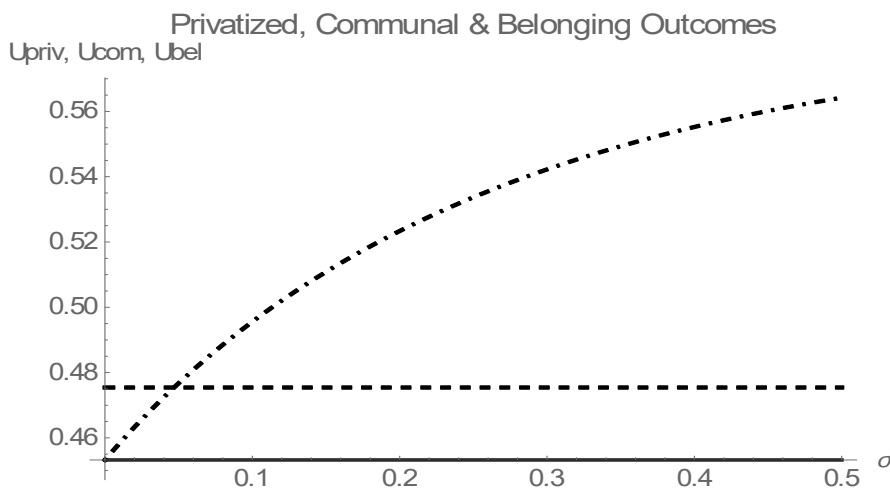
Suppose that without a sense of belongingness (that is, $\sigma = 0$), the private property equilibrium welfare-dominates the communal equilibrium because the cultural good is not sufficiently important in the preferences. Even in this case, a sense of belonging to the land can induce concern for other community members so as to render the *egoistic* component of equilibrium welfare higher than in the private equilibrium. Figure 2 compares the egoistic components of the utility in the privatized (dashed), communal (solid), and belongingness equilibria (chained) as a function of the parameter σ .³³ (These schedules are denoted, respectively, by U_{priv} , U_{com} , and U_{bel} along the y -axis in Fig. 2.) Naturally, the two former schedules are independent of σ . For the parameter values indicated in the Figure, the privatized welfare dominates the communal welfare, both of which are entirely egoistic and, therefore, independent of σ . But as σ increases

³² This can be readily seen by rewriting the expression in (12) as $\tilde{U}^* = \frac{A^\alpha}{n^{(1-\mu)\alpha-\beta-\gamma}} \frac{(\alpha\mu)^{\alpha\mu}(\beta)^\beta\gamma^\gamma}{(\alpha\mu+\beta+n\gamma/\rho)^{\alpha\mu+\beta+\gamma}}$. An increase in σ leads to an increase in $\rho \equiv 1 + (n - 1)\sigma$, and this reduces the denominator.

³³ When the belongingness parameter σ changes, the functional form of the utility function in (11) naturally changes because the weights put on the egoistic and other-regarding components of the utility change. In Figure 2, I am plotting only the equilibrium levels of the *egoistic component* of the utility function as σ changes. The functional form of this component is independent of σ , though its value in equilibrium most certainly depends on σ .

from 0, the egoistic component of the belongingness equilibrium increases. When σ is sufficiently high, the belongingness equilibrium welfare dominates the privatized equilibrium. Thus, when σ is high, if land is privatized and the collective sense of belonging is demolished, welfare would decline. This is the *cost of ignoring culture* when it is important to Indigenous communities.

Figure 2: Compares the egoistic component of equilibrium utilities in privatized, communal and belongingness scenarios as a function of the belongingness parameter σ . (Parameter values: $A = 1$, $\alpha = 0.3$, $\beta = 0.3$, $\gamma = 0.3$, $\mu = 0.6$, and $n = 5$)



Note that, as σ increases, the equilibrium becomes more cooperative even though the members are assumed to entertain (non-cooperative) Nash conjectures. This occurs because, when σ is positive, the wellbeing of others is given some consideration in each member's objective and, therefore, in the allocation of effort. (In fact, when $\sigma = 1$, the equilibrium outcome reproduces the Benthamite social optimum.) Thus the belongingness parameter σ also becomes a proxy for the extent of the cooperativeness embedded in Indigenous culture.

Is it conceivable that greater cooperation through the cultural perspective of belonging to the land reduces the inefficiency in common food production and perhaps eliminates it altogether? Yes, it can reduce the inefficiency but never eliminate it *relative* to the private property outcome of subsection 2.2. The reason is that the private property equilibrium is not the correct

benchmark of efficiency; in that equilibrium, there is *overproduction* of food. To see this, consider the limiting scenario where $\sigma = 1$, which as we have seen would reproduce the Benthamite social planner's solution. In this case, we have $\rho = n$. Using (11), we obtain the output of the community in the belonging equilibrium for $\sigma = 1$, denoted by \tilde{Q}^* , as

$$(13) \quad \tilde{Q}^* = A \left(\frac{\alpha\mu}{\alpha\mu + \beta + \gamma} \right)^\mu.$$

In the private property equilibrium, the total output is the sum of outputs on n individual plots, each of size $1/n$. Thus, the total output of the community in the private property equilibrium, denoted by Q^\dagger , is given by $Q^\dagger = nA \left(\frac{1}{n} \right)^{1-\mu} (t^\dagger)^\mu$. Substituting from (8), this reduces to

$$(14) \quad Q^\dagger = An^\mu \left(\frac{n\alpha\mu}{n\alpha\mu + \beta + n\gamma} \right)^\mu.$$

Comparing the expressions in (13) and (14), we obtain the following result.

Proposition 3: In the private property equilibrium, the food production of the Indigenous community exceeds that in the Benthamite welfare optimum.

The increase in output of Indigenous land due to its reallocation as private property says nothing about welfare. Since the private production is excessive, the welfare is lower than what could be generated if the time devoted to food production were reduced and that devoted to cultural production increased. The above proposition emphasizes that we cannot take the private property output as the efficient benchmark against which to compare the Indigenous food output in the belongingness equilibrium. In the light of this, we see that the usual practice of using income as a proxy for welfare is misguided for Indigenous Peoples.

When the move from communal ownership to individual ownership takes place, in reality the culturally-induced cooperative behavior that occurs in the former case is lost and causes the decline in welfare. The ontological notion of property is dropped in favor of the egoistic one (that is, the community goes from the scenario with $\sigma > 0$ to one with $\sigma = 0$), and the tacit cooperation induced by concern for others is forfeited. This theoretical comparison is made with the total amount of land held constant; a given amount of land simply gets subdivided. This

results in a welfare loss because the territorial boundary imposes a “boundary” even on social relations, as described by Nedelsky (1993) and Singer (2000).

I must emphasize that there is a distinction to be made here between the importance of land in reality to Indigenous societies and land as it has been modeled in this paper; the importance of the former greatly exceeds that of the latter. In many Indigenous societies, land is the lynch-pin of Indigenous culture, a part manifestation of which is the culture of sharing. Land in my model plays only the role of a production input in food and, therefore, understates the importance of land in Indigenous cultures. When land is privatized, with the aggregate amount remaining constant, it is accompanied by a corresponding division between “self” and “others”. The introduction of a physical boundary also introduces a psychological boundary, and the latter reduces the equilibrium welfare of Indigenous Peoples with the privatization of reserves even as it incentivizes the greater production of food.

As far as I understand, for many Indigenous Peoples it is not possible to separate communal land and culture. Economists may see a clean conceptual separation between the institutions of property and those of culture. But this is not actually possible in reality. To assume that they can be separated is an unwarranted assumption for which there is no evidence, as far as I know. An egoistic orientation that sets up boundaries with respect to property (‘mine’ and ‘not mine’) also sets up boundaries in culture by drawing sharp distinctions between ‘me’ and ‘not me,’ between ‘self’ and ‘other’, between ‘I’ and ‘Us’. The pivotal role of land in many Indigenous cultures also shows that its cementing function does not depend on Indigenous communities being largely agricultural ones. The welfare effects of the division of land into private property will hold even when Indigenous peoples are workers in modern enterprises, writers, lawyers, academics, and the like. It is the “I belong to the land” conviction rather than the specific economic use of the land that is the key.

Historically, however, the total amount of Indigenous land certainly was not held constant but experienced a sharp decline. This, naturally, would have led to a dramatic decline in Indigenous wellbeing—due to the loss of land and also, if the remaining land is subdivided, due to the loss of cooperation [Carlson (1981a)]. Furthermore, the current level of Indigenous wellbeing is seriously affected by endogenous outcomes such as worse health, more prevalent substance abuse, trauma, lower investment in human capital, among other things, that are the results of the

appropriation of Indigenous land, low employment and income levels, and the erosion of cultures.

Although welfare and not income is the focus of this paper, we may ask as an empirical matter: How does income compare across various tenure regimes on Indigenous land? Aragón and Kessler (2020) investigated in First Nations reserves in Canada the effect of creating individual land holdings that could be transferred, though these fell short of the fee simple rights that would be construed as private property in the usual sense in the rest of Canada. In particular, they examine two sorts of property rights: certificate of possession, which confer legality to possessions, and land leases. They found that, while the land tenures improved investment in housing, they did not improve the incomes of those Indigenous members who were living on the reserves.³⁴ Pendakur and Pendakur (2018) extended the analysis to a broader range of treaties, and in Pendakur and Pendakur (2021), they confirmed these results and also demonstrate that self-government decreases income inequality.³⁵

5. Relevance to Indigenous Land Policy

The privatization of the land of Indigenous Peoples based on the western concept of property rights contributes to the loss of culture that is cherished by Indigenous communities. It is difficult for a person to claim “This is my land” in an exclusive sense and also adhere to the belief “I belong to this land” at the same time. The adoption of an egoistic perspective must come at the expense of the cultural perspective and with an attendant decline in welfare on this count.

It is important in this context, therefore, to consider the historical attempts in the United States and in Canada to dislodge the entrenched belief among many Indigenous communities in communal ownership of land and replace it with that in individual private property. I first outline the General Allotment Act (or the Dawes Act) of 1887 of the United States, and follow it up with repeated attempts in Canada to bring about the same effects as this Act.

³⁴ Using data from areas in Canada with modern treaties between First Nations people and the federal government regarding land in the neighborhood of reserves, where the jurisdictions of the First Nations, the government, and between various Indigenous communities were previously unclear, Aragón (2015) found that the treaties increased incomes in these areas, with positive spillovers.

³⁵ One might wonder why these communities opted for some forms of private property if, as I claim, they can lower welfare. I believe that it is because these changes were accompanied by *self-government*, a very empowering transition—and this is very different from private property being thrust on them by the state government (as in the Dawes Act). For a different but insightful reason, based on the role played by Canadian government bureaucrats in masking privatization as restorative justice, see Schmidt (2018).

5.1 *The General Allotment Act, 1887*

By the 1870s, there was increasing sentiment among politicians and Christian religious groups that the way to solving the “Indian problem” lay in assimilating Indigenous Peoples into mainstream American culture. To accomplish assimilation, it was seen as necessary that Indigenous cultures had to be erased and the people “civilized” by the adoption of agriculture and conversion to Christianity. Assimilation was to be a prelude to becoming enfranchised as American citizens (which ultimately came with the Indian Citizenship Act in 1924). For assimilation to be accomplished, however, it was believed that the practice of communal ownership of land had to be destroyed. Individual selfishness was the vision that would inform one of the most influential pieces of legislation pertaining to Indigenous Peoples: the reform sought to break up and replace communal ownership and feeling with selfishness.³⁶ As Stremlau (2005) has pointed out, the target of the reform was the *communal* ownership of land because this gave rise to kinship relationships that were given precedence over individual interests. (In terms of the model in the previous section, the attempt was to reduce $\sigma > 0$ to $\sigma = 0$.)

The Dawes Act became law in 1887. Quite apart from the perceived sense of racial superiority of European Americans, who saw it as an obligation to civilize Indigenous Peoples and to Christianize them, the Act also resulted from pressure from European settlers and land speculators who wanted to lay hold of any land found in ‘surplus’ [Otis (1973)]. As Carlson (1981b, Ch. 4) describes the goals of the Act, “The reformers hoped the Dawes Act would accomplish at least six things: break up the tribe as a social unit, encourage individual initiative, further the progress of Indian farmers, reduce the cost of Indian administration, secure at least part of the reservation as Indian land, and open unused lands to white settlers.” (p. 79) With the exception of a few reservations (deemed ‘civilized’), the Dawes Act gave 160 acres of reservation land to every Indigenous family head, 40 acres to every adult over 18 years of age,

³⁶ A few years before 1887, Senator Henry Dawes, upon seeing some smoothly running Indigenous reserves, had this to say: “They have got as far as they can go, because they own their land in common... *There is no selfishness, which is at the bottom of civilization.* Till this people will consent to give up their lands, and divide them among their citizens so that each can own the land he cultivates, they will not make much more progress.” (Lake Mohonk Conference Proceedings, 1885, p. 43, *emphasis added*.) Fourteen years after the Dawes Act became law, President Theodore Roosevelt had this to say in his first annual speech: “The General Allotment Act is a mighty pulverizing engine to break up the tribal mass. It acts directly upon the family and the individual. Under its provisions some sixty thousand Indians have already become citizens of the United States. We should now break up the tribal funds, doing for them what allotment does for the tribal lands; that is, they should be divided into individual holdings.” <https://www.presidency.ucsb.edu/documents/first-annual-message-16>

and 40 acres to every Indigenous person younger than 18. The land that was given to Indigenous persons was fee-simple, private property that could be bought and sold after 25 years, during which period the land was held in trust by the federal government and at the end of which the Indigenous person was to become a citizen of the U.S.³⁷ Native Americans did not have the choice of accepting or refusing. The surplus lands left over after this allocation was sold to white settlers.

Matters may have been compounded by the Homestead Act (1862-1934), which gave away 160 acres of free land to those who wanted to farm. The homesteaders, through their aggressiveness and hunger for land, facilitated the process by which Indigenous land got appropriated [Allen (1991)] and perhaps also forced the government to protect Indigenous property by assigning fee simple property rights [Wilm (2020)]. In the decades that followed, land ownership among Native Americans hemorrhaged. The Dawes Act was repealed in 1934 by the Indian Reorganization Act, and during the period in-between Indigenous land holdings fell from 138 million acres to 48 million acres [Akee (2020)]. In the near half-century of operation, the Dawes Act may not have achieved its goal of assimilating Native Americans, but it did dramatically reduce Indigenous land holdings and destabilize the cultures.

In the light of the results of my model, we see that even if we assume the U.S. government's intention of private allotment of reservation lands through the Dawes Act of 1887 was to improve the wellbeing of the Indigenous Peoples, it need not have worked—as, indeed, it did not [Carlson (1981a), Roback (1992)]. The reformers in the Dawes Act sought to weaken the culture of the communities because, as noted, sharing was perceived as an ethic that thwarts economic development; enlightened self-interest was seen as the driver of development [Carlson (1981b, Chapter 4)].³⁸ Carlson (1981a), based on a standard model of agricultural production, offered a theoretical reason for why the Dawes Act actually discouraged Native Americans from becoming farmers, and so food production on privatization decreased. He argues that the land plots that were allotted had so many restrictions on them (e.g. initially they could not be used as collateral or leased) that the Native Americans were incentivized to abandon farming and sell their land

³⁷ As it turned out, Indigenous owners could lease out the land and, later, even sell it, before the 25 years expired.

³⁸ An Indian agent is quoted by Otis (1973, p. 18) as saying in 1882, “I do not think that the results of labor ought to be evenly distributed irrespective of the merits of individuals, for that would discourage effort; but under the present communistic state of affairs such would appear to be the result of the labor of many.” This is standard neoclassical thinking that emphasizes the moral hazard in teams.

when they could. My model predicts an increase in food production upon privatization of reservation land because it does not account for all the institutional restrictions that were placed but, despite this, shows that Indigenous welfare could decline when the cultural good is deemed important.

In a recent study, Akee (2020) examined the effect of the Nelson Act of 1899 (a modified application of the Dawes Act to the state of Minnesota) that provided private plots to the Indigenous people to encourage farming. He found that farming actually declined among Indigenous individuals who were allotted private land. In fact, land- and home-ownership among them declined, which Akee attributes to lack of experience in dealing with property taxes, land sales, and accessing credit. As a result, peoples belonging to the poorest groups in the country lost a most important asset. They became renters and increased their participation in the labor market, which were not the intended goals of the Nelson Act. This graphically reveals some of the consequences of promoting assimilation through the erasure of Indigenous cultures.

The theoretical result of the previous section suggests why the re-allotment of reservation land as private property among Native Americans undertaken by the Dawes Act may have done more damage than good in a welfare sense. Theory implies that it loosened cultural bonds and reduced the degree of the tacit cooperation in the communities. The reality was that Native American communities were hurt even in a material sense. Carlson (1981a, p. 137; 1981b) pointed out that, contrary to the view that Native Americans had no property rights system in place before 1887, the truth was that the Dawes Act merely replaced an earlier system by its own. Roback (1992) insightfully observes that the Dawes Act essentially dismantled Indigenous systems of dealing with externalities without replacing them.³⁹ Recent findings of Baragwanath and Bayi (2020) may be interpreted as one example of the Indigenous efficacy in the control of externalities.⁴⁰

³⁹ “Allotment failed because it privatized land among individuals without understanding the existing family and tribal structure or the property rights structure that accompanied it. The Indians had developed these structures to solve their own problems and to internalize the externalities they faced. When the Department of the Interior made a conscious policy to break down Indian tribal and family life, these problem-solving structures were broken down as well... The irony is that the culture dissolved in its ability to keep order and produce wealth among its members, but this was not accompanied by a transfer of loyalty to white institutions and culture.” Roback (1992, p. 23)

⁴⁰ They found that deforestation in the Brazilian Amazon was causally reduced when the Indigenous Peoples’ territories were restored to full (collective) property rights. This shows that Indigenous institutions of management are well equipped to deal the externalities that plague the destruction of the Amazon forests, and that they work well

Anderson and Lueck (1992) compared the agricultural performances of land under three different land tenure systems in Indigenous land in the US. These three are the standard fee-simple land, individual trust land, and tribal trust land. The latter two have various constraints imposed on land that, among other things, prevent the Indigenous from accessing credit in the manner that fee-simple property does. The authors found that, compared to that in fee-simple land, the agricultural productivity of an acre of land is 85%-90% for tribal trust land and 30%-40% for individual trust land. But, because culture and tribal integrity considerations may be important, the authors did not jump to the conclusion that trust land systems should be replaced by fee-simple system. In this, I am in complete agreement with them. As my analysis above indicates, there is nothing normative about the decline in output when culture matters; the fee-simple outcome is not the right benchmark.

In the private allocation of Indian land starting after the Dawes Act, the land was held in trust by the government, with the proviso that it could be converted to fee-simple land if the owners showed they had been culturally assimilating. But this proviso ended in perpetuity in 1934. Dippel and Frye (2021) recently compared aspects of the owners in 1940 of the allocated land in the same community that was converted to fee simple by 1934 with those that were not. They found that the former households earned higher incomes and sent their kids to school longer. But this, they found, was due to their cultural assimilation and *not* due to the fee simple nature of their land.

5.2 Canadian Attempts at Privatizing First Nations Reserves

The attitude of the Canadian government (pre- and post-Confederation) towards Indigenous Peoples was partly one of offering protection against exploitation by European immigrants. This is why Indigenous Peoples were given a special status in the Royal Proclamation of 1763 [Tobias (1983)]. This did not, of course, prevent colonial dispossession of Indigenous land, as insightfully chronicled by Harris (2004) for British Columbia. But the long-term goal in Canada

when the Indigenous Peoples are given full rights. See Ostrom and Hess (2008) for examples of efficient management of the commons in non-Indigenous scenarios.

was to ultimately assimilate Indigenous Peoples into the rest of Canadian society.⁴¹ Assimilation is a way of eliminating future claims being made by Indigenous peoples on the lands which belong to the Indigenous, as compellingly argued by Wolfe (2006). This assimilation was to occur in three domains: economically by adoption of agriculture, culturally by the shedding communal ownership of property and opting for individualistic fee simple ownership, and religiously by conversion to Christianity.

By about 1830, the government's attention started to shift towards faster assimilation leading to enfranchisement. The 1857 *Gradual Civilization Act* linked the education of a male Indigenous person over 21 to becoming enfranchised and no longer being deemed an Indian. An enfranchised Indigenous person would be given 50 acres of land from the reserve as their own—an early attempt at privatization of reserve land. This attempt at encouraging citizenship with the inducement of private property instead of communal property failed dramatically. In 1867, in the *Indian Act*, in which the government assumed sweeping powers over Indigenous issues, an Indigenous person obtaining a degree or joining the clergy would become a citizen, receiving a part of the reserve land for themselves and foregoing Indian status, the mandatory forfeiture being repealed only in 1961 [Canadian Encyclopedia (2020)]. Indigenous Peoples in Canada finally got the right to vote in 1960, without having to lose their status as 'Indian'. In 1969, the Minister of Indian Affairs and Northern Development, Jean Chrétien, in the government of Pierre Trudeau issued the so-called White Paper that proposed to do away with the *Indian Act* and the treaties in one stroke, thereby unburdening the Indigenous of reserve lands, rendering it private property, and also eliminating the government's fiscal responsibility towards Indigenous Peoples. The proposal, which was a wholesale attempt at privatization of reserve land and enfranchising all Indigenous Peoples as ordinary Canadians with no particular status, was vehemently rejected and the government withdrew the proposal.

In Canada, too, as in the United States, we see that Indigenous Peoples' communal ownership of land was deemed an impediment to becoming 'civilized' and enfranchised. Also impelled by the desire for land, European settlers claimed that Indigenous Peoples did not engage in agriculture (for only land on which labor was bestowed was counted as owned, and so the activities of

⁴¹ Even as late as the 1920s, the Indian Superintendent Duncan Campbell Scott said, "I want to get rid of the Indian problem. Our object is to continue until there is not a single Indian in Canada that has not been absorbed." Quoted in Manuel and Derrickson (2015, p. 9).

hunting, fishing, trapping etc. did not count). Carter (1991, and 2019, Ch. 6) documents the fact that, in 1880s Saskatchewan, Indigenous communities were quite successful in agriculture. However, the Indian Commissioner, Hayter Reed, forced Indigenous farmers to individually practice subsistence peasant farming on 40 acres of land, which was presumed to be enough to feed a family. To thwart sharing and cooperation, Reed actively placed impediments to prevent the joint buying of machinery to exploit scale economies and to participate in local markets.⁴² Carter (1991) observes that the Canadian government undermined Indigenous agriculture at a crucial juncture of its development. Possibly, this was to demonstrate that Indigenous Peoples could not succeed in agriculture and, therefore, could be relieved of “surplus land” to make it available to settlers.⁴³ So we see that, despite the fact that Canada had no legislation like the Dawes Act, there were repeated attempts at privatizing reserve lands in Canada.

5.3 Relevance to Contemporary Canadian Debates on Privatizing Reserve Lands

In the current climate in Canada, there is an initiative to move towards privatizing reserve land, to which my paper has some relevance. In 1999, the First Nations Land Management Act was passed, whereby First Nations could voluntarily opt into administering their own land codes instead of it being mediated by the dictates of the *Indian Act*. This Management Act was about governance and not privatization per se.

In 2006, First Nations Tax Commission initiated a move to introduce opt-in private, individual, fee simple plots on reserve land through a scheme called the First Nations Private Ownership Act (FNPOA), which has not succeeded yet in being passed in Parliament. This proposal has been strongly endorsed by Flanagan, Alcantara, and Dressay (2010) in their book *Beyond the Indian Act.*, inspired by the logic of De Soto (2003). The variation on the Dawes Act in this proposal is that, if privatized reserve land were to be used as collateral, in the event of default on the loan the

⁴² “He boasted that under his administration ‘the policy of destroying the tribal or communist system is assailed in every possible way, and every effort made to implant a spirit of individual responsibility instead.’” Carter (1991, p. 355).

⁴³ South of the border, Cheyenne communities were similarly handicapped by an absence of the U.S. government help in their agricultural endeavor [Bateman (1996)].

land will revert to the First Nation, not the provincial Crown, and so the land would stay within the reserve.⁴⁴

Moving to individually owned plots in reserves will diminish cultural solidarity, for property then gets defined by geographical boundaries rather than by relationships. In terms of my model, this would emphasize the ‘I’ component of self at the expense of the ‘Us’ component. Thus, in contemplating the sale of a plot to a non-Indigenous person or entity, it will lower an Indigenous owner’s perceived cost of the externality on the reserve’s attenuation and, therefore, raise the person’s willingness to sell. And the larger the share of non-Indigenous owners in the reserve, the lower would be the cultural force on Indigenous owners to *not sell*.⁴⁵ In this manner, the entire Indigenous reserve will tend to unravel once private property is adopted by a community. In other words, even though the adoption of private property is voluntary, it is not innocuous. It undermines the collectivity by emphasizing selfishness—not by fiat, as did the Dawes Act, but by tacitly introducing a wedge between the individual and the collective. Neoliberalism, with its emphasis on individual freedom, is not optimal when there are externalities. But the decision to adopt private property is a collective choice of the community, not an individual one. Thus, it becomes very important to ensure participation by all the community members in expressing their vote. For, once the choice of adoption of private property is made, the dissolution of the reserve may become inevitable.

If economic assimilation with the rest of Canada is deemed to *require* fee simple private property as a necessary condition, given the special cultural status of Indigenous land, this will very likely result in cultural assimilation, too. Spurring economic development by integration with a globalized world through institutional changes like private property may spell the end of Indigenous aspirations to self-determination. The fact that only a couple of First Nations (the Nisga’a and the Tsawwassen) out of some 630 First Nations in Canada have opted for fee simple land ownership suggests that the FNPOA proposal is missing something that is important to the communities. Since the choice is voluntary, an understanding of the irreversibility of an action

⁴⁴ There have been several insightful critiques earlier of the proposal (see Dempsey, Gould, and Sundberg (2011), Pasternak (2015), Fabris (2017), Carter and Kermoal (2020)).

⁴⁵ Castro-Rea and Altamirano-Jimenez (2008) point out that 0.3% of non-Indigenous Americans live on reserves, making it difficult for Indigenous Peoples to self-govern.

that would set the reserve on a slippery slope to inevitable disappearance probably explains the refusal on part of the overwhelming majority of communities.

All this is not to suggest that economic development requires private property. Proponents of the privatization of reserves often equate Indigenous communal ownership with communism, a serious error because such a view ignores the crucial role of Indigenous culture. When the lynch pin of Indigenous societies—the glue that is culture—is discounted, one is left only with the well-recognized and standard moral hazard problems of communism. But in reality there is no presumption that private property is a necessary condition for economic development.

In any case, the limited evidence to date on the effects of western property rights on the welfare of the Indigenous peoples is not encouraging [Aragón and Kessler (2020)]. The erroneously presumed efficiency of private property rights in the Indigenous context bears repeating. This claim may have validity in other societies and economies where the destruction of culture is not at stake. In my analysis above of Indigenous communities, which takes Indigenous goals seriously, the maximization of income or wealth is not the highest priority. Privatizing property rights would necessarily lead to a *de facto* abandonment of the deep cultural belief “I belong to the land”.

We cannot ignore the history of the fur trade in bringing devastation to the lives of the Indigenous Peoples through market forces. It induced Indigenous communities to abandon traditional ways of life to specialize in hunting to supply the European demand for fur that ultimately led to the undoing of the Indigenous suppliers according to Innis (1962) and to the dismantling of informal property rights regimes that conserved beaver stocks [Carlos and Lewis (1999)]. In an illuminating analysis, Taylor (2011) brings home the importance of international trade in decimating the American bison stock, though he does not examine the effect of the extinction of the bison on Indigenous communities *per se*. Feir, Gillezeau, and Jones (2021) have recently demonstrated the lasting effect of this resource loss on the wellbeing of Indigenous Peoples. In the light of the experience of persistent attempts at privatization of Indigenous land and subsequent exposure to markets, policies that are ahistorical in their approach to the problems confronting Indigenous Peoples are understandably and rightly met with much circumspection by the communities.

6. Conclusions

This paper demonstrates the point that the erosion of Indigenous communities' property rights on land lowers the communities' wellbeing even when the total amount of land is held fixed; the mere division of communal property to individualized private property lowers welfare through its impact on culture-based actions. If we were to take into account the substantial amount of the "surplus land" that was historically lost to Indigenous Peoples with privatization, not to mention outright appropriation, the welfare loss would be far greater. This would perhaps partly explain the contemporary gap in the subjective wellbeing of Indigenous Peoples and the rest of the Canadians and Americans.

I have sought to capture the idea that many Indigenous cultures are intimately bound up with ancestral land. The modeling of the implications of the special Indigenous meaning of land has been modeled and this shows that the neoclassical presumption of the optimality of private property in production is not necessarily correct in this context. Since Indigenous cultures are imbued with deep attachment to land, the effects of fragmenting communal ownership of land goes far beyond what has been modeled here with neoclassical tools that have their limitations. Loss of land, in reality, leads to an unraveling of Indigenous cultures with far reaching consequences. Among those documented in the literature as being associated with the historical loss of Indigenous land and culture are loss of identity, loss of motivation, psychological trauma, PTSD, and addiction.⁴⁶

It may be mentioned that my theory, which incorporates a cultural good and other-regarding preferences (altruism, in this instance) at its core, could be somewhat more general in its application. In the case of some Indigenous Peoples, we have seen that altruism is associated with a common attachment to land. Other scenarios with the same two core features but with altruism arising in a different manner would generate the same results. For example, in a religious Israeli kibbutz the joint performance of rituals has been shown to be associated with more altruism toward members of the kibbutz [Ruffle and Sosis (2007)]. If religion is modeled as a club good, as is done in Iannaccone (1992), my theory might explain the existence of

⁴⁶ See Thayer et al (2017), Bremner (2006), Wesley-Esquimaux and Smolewski (2004), Wiechelt and Gryczynski (2019), Walls and Whitbeck (2011).

kibbutzim.⁴⁷ Kanter (1972) examined many so-called “utopian societies” in America in the 18th and 19th Centuries. These societies tended to be communal in nature but most of them lasted only for a few years, the religion-based ones lasting somewhat longer. What is different about Indigenous bands is that they have lasted for millennia. This resilience strongly suggests something very special about Indigenous cultures (relative to the utopian societies) and points to the importance of the Indigenous worldviews—which we cannot afford to ignore.

A particular worldview tends to produce cognitive incapacity to appreciate another worldview and clashes can result from the subsequent incomprehension [Tanner (2004)]. I had earlier alluded to the constant reference of Indigenous Peoples to nature and land as ‘Mother Earth’, eliciting the strongest sentiments of which humans are capable and thereby imbuing land with life, agency, and spirit. Mainstream economics, with its insistence in being impersonal and “objective” in its analysis, economizes on the use of such concepts. In doing so, it discounts what may arguably be the most important aspects of numerous Indigenous cultures—spirituality, agency, reciprocity, respect, continuity. As such, it is likely to yield policy prescriptions that are quite inappropriate to the context. Economic transactions and markets are necessarily embedded in social relationships [Granovetter (1985)]. Neoliberal thinking—the dominant ideology in the West over the past four decades—with its faith in the efficacy of markets, assumes that atomistic actors who are supposedly impervious to social influences can optimally solve the problems of resource allocation. We should be cautious in invoking a superficial version of neoclassical economics in contemporary debates pertaining to Indigenous land policy.⁴⁸ My paper illustrates part of the substantial cost incurred in not exercising caution.

An understanding of Indigenous relationships to land and the sharing of its fruits in which markets play little role—however inadequate and limited this understanding may be for non-Indigenous persons—seems to be one the keys to more appropriate policies on Indigenous land. Furthermore, it may even inform Indigenous policies in general, such as those pertaining to health, languages, and education—for, given the centrality of land in Indigenous cultures, the effects of land policy bleed into those on all of these issues. The Indigenous writer Thomas King

⁴⁷ Abramitzky (2011) explains the prevalence of equal-sharing kibbutzim in Israel with a model that does not have a cultural good but, instead, invokes its risk-sharing properties.

⁴⁸ In the light of this and Indigenous history, we can understand why see the privatizing of reserve lands may be seen as a continuation of colonial domination, as Dempsey, Gould, and Sundberg (2011) argue.

may have given us a very helpful, if pithy, clue when he wrote, “Land. If you understand nothing else about the history of Indians in North America, you need to understand that the question that really matters is the question of land.”⁴⁹

Much remains to be done on the effects of the erosion of traditional land rights on the wellbeing of Indigenous peoples. In very insightful papers on the health condition of Indigenous Peoples, Chandler and Ball (1990) and Chandler and Lalonde (1998) have argued that cultural continuity is crucial to maintaining a sense of identity and that damage to identity is, in turn, responsible for a host of problems with regard to mental health and incidence of suicides. Ownership of traditional land is surely an important ingredient of identity. The very high suicide rates among youths of the First Nations, the Métis, and the Inuit that Kumar and Tjepkema (2019) document may well be related to the erosion of land rights and culture among the Indigenous Peoples. Hallett, Chandler, and Lalonde (2007) examined data from 152 First Nations in British Columbia, Canada, in which youth suicide rates varied considerably across First Nations. How exactly the extent of communal land ownership correlates with mental health and suicide rates correlate among the Indigenous is one among several serious empirical issues worthy of future research.

⁴⁹ *The Inconvenient Indian: A Curious Account of Native People in North America*, Doubleday Canada, Toronto, 2012, p. 218.

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