From Anarchy to the State: A Case of Nagaland*

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Abstract

What happens when a state absorbs a historically stateless, tribal society, and what are the consequences and mechanisms of such a process? This paper uses a spatial regression discontinuity design to study the long-run effects of state exposure in a region in northeast India. At the turn of the 19th century the British Empire in the eastern front of India drew an imperial border that divided a tribal people into administered versus un-administered regions. I find that regions falling within the former British administrative border have higher years of schooling, higher rates of literacy, and more wealth today. Villages in the formerly administered regions also have better public goods/services and a smaller agricultural share in the labor force. Using census data I am also able to study time varying effects of this historical state exposure—gaps in literacy rates are very persistent with little signs of convergence even 70 years after independence in 1947. In uncovering deeper channels that are potentially driving these results, I find evidence of the emergence of pro-social traits: those formerly under the British state identify more strongly with non-kin members, reflecting an expansion of the in-group. This paper thus contributes to our understanding of the immediate changes that occur in a society transitioning from tribe to state.

Keywords: State, society, persistence, institutions, culture, identity.

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In establishing the rule of law, the first 500 years are always the hardest.

Gordon Brown

1 Introduction

The transition from anarchy, by which I mean the absence of government, to more formal state structures is one virtually every society has experienced at some point in its past. But the fact that the vast majority of people today are a part of states is not necessarily a consequence of endogenous, historical state formation but rather a result of having being absorbed into states, often by annexation and conquests (Scott (2017); Diamond (1998)). Despite this recurring fact of societal evolution we know very little of the immediate consequences (as well as mechanisms) of such a process. A number of influential studies document strong correlations between long-run exposure to states and economic growth and political stability (Putterman and Weil (2010); Bockstette et al. (2002)). But what about at the relatively early stages of state exposure?

This paper takes advantage of a natural experiment to get some answers to these questions. In the late 19th century the British Empire brought under its administration a historically stateless, tribal population in northeast India. With an intention to 'pacify' the warring tribes in the region the British established what Weber (2004) calls a 'legitimate monopoly of violence within a defined territory.' A rich set of theories—eg., Bisin and Verdier (2017), Tabellini (2008)—predict that exogenous shocks to the rules of the game can produce a dynamic interaction between institutions and culture that over time allows societies to achieve new economic possibilities. In the case of my study region, over the decades under foreign rule the native peoples came to gradually adopt new, colonially-constructed identities which, I argue in the paper, expanded the composition of the in-group and allowed for economic growth that persist to this day.

Nagaland, a small state in north-east India inhabited by a historically stateless, tribal population, has an interesting and rather unique experience of having its western population ruled under British India and its eastern side left non-administered. A wide set of evidence in the form of reports, letters, and other documents support strongly a case for a quasi-exogenous nature of the border drawing. In particular, bureaucratic disagreements between colonial officers that resulted in an arbitrary border serve as my identification strategy.[1]

[1] Reed (1942) gives a detailed account of annexation and administration of the northeastern region of

Using a regression discontinuity design at the colonial border, I find that those living in regions formerly administered have today about 1.5 more years of schooling and 25% more wealth than those in regions formerly un-administered. To address some of the criticisms in the persistence literature for overlooking the period between treatment in the past and outcomes in the future, I also study time-varying effects of colonial rule using census data going back to 1971. Gaps in literacy rates remain very persistent with no signs of convergence. Also, gaps in the labor force start to appear over time as those in the formerly administered regions become less reliant on agriculture.

I then look into potential channels of persistence. The peoples of this region prior to annexation were village-based societies (what anthropologists term as acephalous). For administrative purposes the British named the newly-annexed region the 'Naga Hills District.' Over the decades under formal state administration what appears to have happened is a gradual emergence of new identities. Numerous historical narratives show how starting around the 1920s the local population begun identifying with this new Naga identity, a group that encompassed distant people not linked by kinship, as opposed to the pre-colonial period where the clan and the village comprised the main unit of cooperation and identification. This trait, as evidenced from more recent surveys, persists well into the present era. Looking at responses from 2008, more than sixty years after independence, I find that those formerly administered identify more strongly with the Naga identity. This, I argue, potentially reflects an increase in the scope of cooperation and/or more generalized trust (Durante et al. (2021), Tabellini (2008)).

I also produce a list of narratives supporting a quasi-exogenous nature to the border drawing. Though initially having taken a resolute non-interference policy toward the native tribes of present-day northeast India (and also present-day Burma), the British were ultimately pushed to extend their rule to the region. The never-ceasing raids by unconquered villages into already annexed regions forced the British to expand their territory and gradually absorb the many tribes into the empire. In the case of Nagaland once a wide enough buffer zone was created in the western region, colonial expansion stopped. Rivers were used to demarcate the frontiers of the empire. Frequent requests—as time went on—by ground officers to continue marching eastward were vetoed by higher-level officials living thousands of miles away (Reed (1942)).

One important discourse that this paper extends is on the political economy of *Zomia*, a geographic area popularized by James C. Scott in his seminal work, The Art of Not Being Governed (Scott (2009); Van Schendel (2005)). According to Scott, Zomia—the highlands

India. Chapter 3 deals with the colonial expansion to the area that later came to be called the Naga Hills District.

of Southeast Asia with a population of 100 million—is made up numerous tribes who for two millenia have been evading states in the valleys. He argues that

"hill peoples are best understood as runaway, fugitive, maroon communities who have, over the course of two millennia, been fleeing the oppressions of state-making projects in the valleys—slavery, conscription, taxes, corvée labor, epidemics, and warfare..... Virtually everything about these people's livelihoods, social organization, ideologies, and (more controversially) even their largely oral cultures, can be read as strategic positionings designed to keep the state at arm's length."

Scott's narrative, however, ends around the early-twentieth century when colonial powers, with their superior weapons and distance-breaking technologies, annexed vast tracts of the highlands into imperial territory. What happened when the peoples of this region finally got incorporated into states? Did the "livelihoods, social organization, ideologies" of the tribes evolve in response? A large body of work has examined the colonial experience in Africa and the Americas (Lowes and Montero (2021); Valencia Caicedo (2019); Dell (2010); Bergeron (2019)). Zomia, however, remains poorly understood. My study explores the consequences of the colonial (and post-colonial) epoch in this area and suggests counters to Scott's argument.

This study also adds to the growing literature on kinship and development (Ghosh et al. (2023); Schulz et al. (2019); Henrich (2020); Schulz (2022); Bahrami-Rad et al. (2022)). These studies focus primarily on the historical Catholic Church and its ban on cousin-marriage as well as policy interventions in the marriage market. My study differs from earlier ones, first, by studying the interaction of the British state and the Protestant church (American Baptist), but also suggesting a much more rapid shift and economic evolution than those experienced historically by Europe. It also proposes alternate paths societies may take—reinventing identities—in the cultural evolutionary process.

The third contribution of this paper is to the literature on state expansion. Most quantitative studies focus on crop appropriability for taxation or resource extraction as precursors to the growth of states (Mayshar et al. (2022); Dell (2010)). Few have looked at another cause: power projection. A case in point is the Roman conquest of the many *Germanic* tribes north of their territory wherein expansionist policies were crafted around a desire to establish their military and cultural superiority on the so called barbarians. Similar stories can be found in Chinese state expansion southward. One of the few studies in this vein is the recent one by Fernández-Villaverde et al. (2020) in which they run simulations to understand differences in state centralization between China and Europe. Likewise, Lecce et al. (2022) look at how historical experiences can produce differences in a society's reaction to state annexation.

Lastly, this paper is one that takes seriously the idea that the transition from anarchy to

the state involves not just economic changes but also the weakening of kinship ties, theories that have long occupied social scientists (Goody (1983); Macfarlane (1978); Henrich (2020)). It also proposes that new identities may have to take the place of older ones in order to sustain new equilibria.

2 Historical context

Figure 1: Physical Map of Northeast India.

My study region is the state of Nagaland, a highland state in the northeastern region of India inhabited by an indigenous people who today collectively identify as *Naga*. In the terminology of Van Schendel (2005) and Scott (2009) this region forms the western frontier of the *Zomia* country.[2] Prior to the arrival of the British the highlands of the northeast region (comprising 5 states today, all formed post-independence) as well as those of Burma, remained by-and-large outside the ambit of state structures.[3] The "hill-valley" dichotomy,

[2]Scott's narrative on the many stateless societies of Highland Southeast Asia ends with the colonial era, when state structures were finally able to penetrate deeply among the indigenous peoples.

[3]A similar story can be said of the many provinces of southwestern China, a rugged region that even the mighty centralized Chinese state struggled for centuries to bring within their fold.

expounded by anthropologists like Edmund Leach, was one of state-based (valley) versus stateless (hill) societies. Whereas the valley states were hierarchical (ruled by a king and a standing army) the hill regions were self governing at the village level (led by petty chiefs or village elders). The former kept detailed written accounts of their existence while the latter remained an oral culture. Relations between and among these two groups oscillated between trade and warfare. The latter took the form of raids by hill village on hill village as well as hill village on valley region. Chronicle accounts from the valley states speak of the constant need of their king and armies to lead punitive expeditions up the hills to either punish or project their power.[4] But such acts had effects that were rather temporary, as seen by the fact that the religion and language of the valley often ended right where the mountains began. In other words the valley states, with their fairly limited technology, never quite established what Weber might call 'a legitimate monopoly of violence over the hill region.' But this would all change with the coming of European powers.

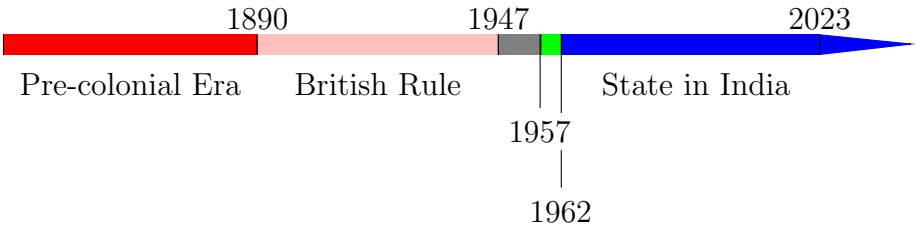

Figure 2: Historical timeline. 1947 is the year of independence. In 1957 the eastern and western regions were administratively unified and named the Naga Hills-Tuensang region. In 1962 they were granted statehood within the constitution of India.

Initially, though, the British were scarcely interested in governing the hill regions, and were instead much more keen on annexing the more fertile and centralized valley states. And so they did. But once the valley regions were brought under Pax Britannica, those from the hills, continuing in the age-old tradition, would often raid the newly annexed territories in the plains. Aided by their superior military technology and bureaucratic efficiency the British responded by taking over vast tracts of the hills under their administration, something no power before had succeeded in doing so so systematically.[5] Even though I focus on a small subset of this vast highland region (for identification reasons), the manner of annexation and, later, administration was similar in spirit to just about all of the other peoples of *Zomia* (the

[4] See The Ahom Buranjis, The Chronicles of Manipur.

[5] One military invention of the time was the screw gun (1870s). This compact cannon could be transported with more ease up rugged mountains. Years later Kipling, in a poem named after the weapon, would write, "We've chived the *Naga* and the *Looshai*..... For you all love the screw-guns."

Mizos (formerly called *Lushais*), *Kachins, Karens, Tsingphos, Chins*, etc).

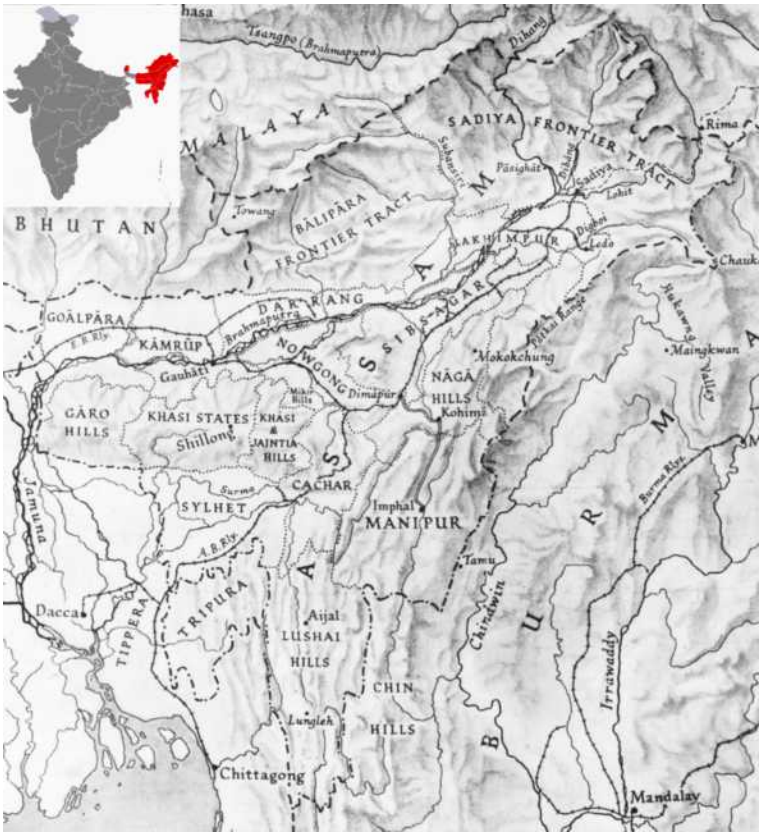

Figure 3: The northeastern region of India. Map taken from *The Excluded Areas of Assam* by Robert Reid (1944), The Geographical Journal, Jan.-Feb., 1944, Vol. 103, No. 1/2, pp. 18-29.

2.1 Local population characteristics

A feature of the indigenous Naga people, as pointed out by every anthropologist familiar with the region, is that they are a village-based society (Mills 1922, Hutton 1928, Furer-Haimendorf 1976, Wouters 2017). People identify first with their village.[6] Customary laws applied to dealings within a village only. Consequently, skirmishes between villages were often dealt with war. Most glaringly the practice of headhunting colored the lives of the people, serving as a rite-of-passage for boys. This is best reflected in the fact that every village locates itself on a hilltop or close to it and never at a valley, giving the village a strategic advantage in the face of an attack. In addition the religious, economic, and political

[6]Of the 1155 ethnic groups in the Ethnographic Atlas, 45% are classified as acephalous (level 0). Only 11% fall under states (levels 3 or 4). The remaining two levels in between are classified as belonging to either petty chiefdoms or large chiefdoms.

life of the people did not extend beyond the village, so much so that languages often differ from village to village, each unintelligible to the other. The former District Commissioner Hutton (1965) wrote-

> "At the time of the British acquaintance with them, many villages were still isolated from their neighbours by thickly forested hills and by rivers unfordable for several months in the year, and they tended to be on terms of head-hunting warfare with their nearest neighbours, or at best of an armed and ever suspect truce, almost every village being an independent political entity."

The in-group, therefore, was the village. Each was heavily fortified with bamboo spikes, and the main entrance was guarded by a huge door and village sentries. The state of things—institutionalized warfare—seems to have been a very stable equilibrium. Chronicles of neighboring kingdoms that go back centuries document the hills tribes as being extremely warlike. Why this was so remains an open question. The rugged mountains and thick jungle hypothesis of state impediment seems to be the best one. It was only when distance-reducing technologies of western powers (Scott (2009)) entered this region of southeast Asia that the many historically stateless societies got absorbed into colonial states.

Technology-wise, the evidence points to a late-Neolithic epoch. Though metals were used (in the form of spears and machetes), iron smelting was not yet known. Metal was rather obtained from trade or raids with the neighboring groups in the plains. No evidence of writing exists, and, with the exception of the southern region where irrigated rice cultivation was known, the practice of slash-and-burn dominated.

2.2 Colonization and boundary drawing

The British had by 1839 annexed the neighboring state of Assam to the west of present-day Nagaland (see Figure 1). Tea-estates sprung up near the foothills. However, it was never in the intention of the British to move east or south and take over the mountains inhabited by numerous indigenous peoples. Two reasons forced the empire to eventually expand into the hills. One was a desire to find a route to Burma which required a march through some of the jungles. Second, and perhaps less obvious, was the need to subdue the constant raids by the hill villages on British settlements in the newly established Assam state. But early proposals saw resistance from the top-most authorities. Respoding to requests to annex the Naga territory the Governor-General of India in 1850, Dalhousie, said,

> "I dissent entirely from the policy which is recommended of what is called obtaining a control, that is to say, of taking possession of these hills, and of

> establishing our sovereignty over their savage inhabitants. Our possession could bring no profit to us, and would be as costly as it would be unproductive. The only advantage which is expected from our having possession of the country by those who advocate the measure, is the termination of the plundering inroads which the tribes now make from the hills on our subjects at the foot of them. But this advantage may more easily, more cheaply, and more justly be obtained by refraining from all seizure of the territory of these Nagas, and by confining ourselves, to the establishment of effective means of defence on the line of our own frontier."

The annexation of Nagaland was gradual, starting in 1866, and moving from two directions, the south and the northwest. More interesting was the nature of this expansion—a cycle of events was to occur. Initially intended to prevent raids a newly annexed village was made to submit their authority to the British. But this was soon followed by further raids by villages outside the border, from what was called the 'trans-frontier' region. To prevent this the border was expanded to include these new perpetrators who were then raided by those beyond the newly created border. And so on and so on.[7] As of 1884 the western and south-western regions were annexed and christened "The Naga Hills district" of Assam province. Ambitions to proceed further were already in the making. In the words of the Chief Commissioner, dated 31st October, 1887,

> "Now it seems to be admitted by all who have from time to time considered this question, that is our destiny, if not our duty, to bring these wild tribes more and more under control, and there can be no doubt that in time the tract in question, and a great deal more besides, will come to be included in our ordinary fully administered districts."

Experience in another hill district to the south, the Lushai Hills district, gave the upper-rank officials caution. In the fiscal year 1891 expenditures amounting to 500,000 rupees stood against revenues of a meagre 7,000 rupees. In the face of this impending reality the northern regions (what in Figure 4 (below) would comprise the northern areas west of the boundary line) were annexed and incorporated into the district.

By the turn of the century the southern region too was brought under British administration. These are the episodes that gave us the border in Figure 3, a line that established the official Naga Hills district until Independence Day on 15th August, 1947.

[7] One can notice the village-based nature of the people by the fact that in the absence of any centralised political authority it was necessary for the British to annex the territory village by village.

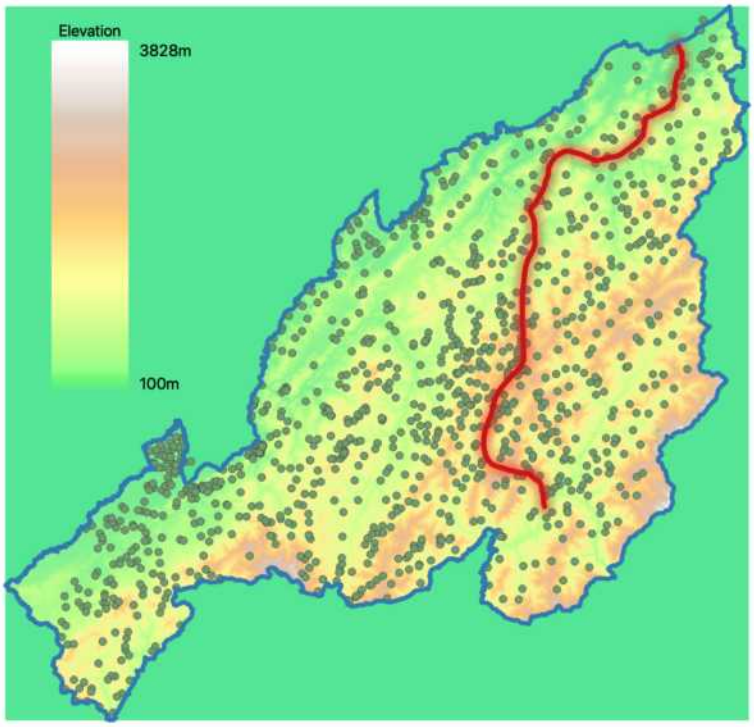

Figure 4: Topography of Nagaland state. Dots indicate village locations (exhaustive list of villages geocoded from 2011 Census). The red line is the region I focus for my study.

2.2.1 Narratives suggesting a quasi-exogenous nature to further annexation

Then, we ask, what was the basis on which this 'final' boundary was drawn? Why did it stop where it did? The colonial officers, as we continue to discover, were torn on this issue. First, the border as we see it in Figure 4 had a distinct geographical flow: rivers—and in some regions, large streams—were used to demarcate the colonial boundary, the *Dikhu* and *Tizu* rivers being the major ones. In the words of the then Deputy Commissioner in 1903, "A river is a natural feature, which the meanest savage understands, and is, to a great extent, a dividing line between villages and village interest, which the crest of the hill most certainly is not." Rivers, according to him, were easy to identify for the locals unlike, say, a mountain crest. A similar historical account comes from the Roman Empire. To demarcate their territory from the raiding Germanic tribes up north, they used the Rhine and Danube rivers wherever they could, a line that later scholars would call the *Limes Germanicus*.

Soon after, however, it became clear to on-ground officers, that if long-term stability of the annexed territory was to be achieved a complete annexation of all the trans-frontier regions was necessary. Inter-village fueds from across were worrying the administered villages. In a 1905 letter by the Deputy Commissioner (D.C) to the Government of India (in Delhi) it was clear the mood was unambiguous,

> "If the present awful condition of affairs is to cease, the only solution as far as I can see is annexation."

The Government of India took over seven months to respond. Unsympathetic to the request they emphasized the "the principle of accepting no responsibility for the protection of life and property beyond the administrative line of British territory"..... and "had no desire to hasten the day when the outlying tribes would fall under the administration." The main reason cited was finance.

That very year Major H.W.G Cole, the former D.C, wrote about the need to "accept as inevitable the ultimate absorption of all non-administered territory between India and Burma." The then D.C, A.W. Davis, went on to say that "we shall have no real peace until we have absorbed the whole hill area...."

In response to these further requests the Government of India acquiesced and wrote directly to the Secretary of State in a letter dated 16th July, 1908. Four months later, on the 13th of November, a rejection letter was issued which concluded as follows-

> "I am therefore compelled to withhold my sanction from the measure which you submit for my approval."

A few years later the Great War came to be and all expansionist policies were set aside. Many ground officers would later write of their regret in being unable to convince the higher authorities. The sentiment is captured well by Christoph von Fürer-Haimendorf, an anthropologist who worked with a few villages in the northern part of Nagaland in the 1930s, and who had close affiliations with the then Deputy Commissioner. He would in 1969 write of those who remained outside British rule as follows: "it was [historically] accidental.....that during the British period their villages had remained outside the administered region then known as the Naga Hills district."[8]

After independence the non-administered region was brought under political control by the Indian state and named the Tuensang Frontier District. In 1957, the Tuensang Frontier Division was merged with the Naga Hills District (then still a district within Assam state) to form an administrative unit called the Naga Hills Tuensang Area (NHTA). In 1962 NHTA became a fully-fledged state and renamed Nagaland.

[8]Taken from *The Konyak Nagas; an Indian frontier tribe*, 1969.

2.3 What did it mean to be administered?

The first policy of the British was to ban all tribal feuds and warfare. All weapons were confiscated and village fortifications were to be removed (Reed (1942)). Prior to annexation the tribes in this region were known for their practice of head-hunting, which involved chopping off the head of an enemy following a raid. So deeply institutionalized was this practice that participation in it served as a rite-of-passage for boys.[9] With the new foreign rule, this practice was forever ended. Military outposts and jails were established and a large security personnel was stationed.

In terms of administration the British established a two-tier system of village governance, what came to be called the *gaonbura-dobashi* system of governance. A *goanbura* (which is an Assamese word for 'village elder') was selected from each clan in a village. To legitimize his role he was given a plain-red shawl, a concrete mark of authority that over time would become highly-coveted.[10] The role of the *goanbura* was to collect a house tax and report monthly to the District Commissioner. These revenues were expected as payment for protection and security. In other words, it created a social contract between state and society.[11] The *dobashi* (meaning 'man of two words') served as interpreter to the colonial officers and acted as their eyes and ears in the village. They were powerful and each was put in charge of several villages. Carefully selected based on their knowledge of customary law the *dobashis* also assisted in dispute resolution (Sema, 1985).

The British officers were keen on interfering as little as possible except in settling feuds. But as they came to realize over time, this was not so easy. Perhaps the most consequential effect of colonial rule came through the missionaries who would soon make their way through the jungles, relying very much on the security of the officers. Prior to annexation the American Baptist missionaries grew interested in proselytizing the hill tribes. One of them had in fact made his way to an outskirt village. But his efforts were tightly constrained with constant threats from other villages. So difficult was this early attempt that he would at times have to flee back to the plains until tensions settled. It was only after annexation by the British that mission activity spread significantly. And where the colonial border stopped

[9]The effect on head-hunting ban was apparent for certain visitors. In 1937 the D.C, in one of his once-in-a-while visits across the border, was accompanied by the anthropologist Christoph von Fürer-Haimendorf (mentioned earlier) who noted the discrete jump in atmosphere as they entered a trans-frontier village. "Walking through the village," he would note, "you recognize the houses of the renowned heroes, for the taking part in a successful head-hunting raid means another plaited cane ball on the string hanging from the gable of the house; on one string I counted no less than thirty trophies [skulls]."

[10]During the Second World War Ursula Graham Bower, a documentarian working with the locals, was put in charge of mobilizing some villagers to serve as non-combatant officers and spies. Some of her men requested the government issue them the red shawl so as to legitimize their authority as employees of the British state.

[11]From the Gazetteer of Naga Hills and Manipur, 1905.

so did missionary activity.

Lastly, by missionary activity I mean two things: conversion and human capital investments (education and healthcare). But in the case of the Naga Hills District actual foreign missionary presence was trivial compared to the local population (roughly 15-20 American/European missionaries over a span of 70 years).[12] Much of the proselytizing and cultural transmission works occurred, instead, via a local-to-local channel. This was, in large part, a result of both the state and missions having as their objective the need to reduce the isolation of villages so as to diminish historical hostilities. As Eaton (1984) points out, "One way this [breaking village isolation] was done...was by training village students in Impur or Kohima where they were mixed with 300 to 800 other youths from scattered origins, and then sent as primary teachers not to their native villages, but to some other village...." In fact by 1951, four years after independence, roughly half the population within the border was Christianized.[13]

3 Theory

The banning of all inter-village warfare can be interpreted in this study's context as a shock to the existing 'rules of the game.' For this policy to bind the British had to establish themselves physically in the region (annexation). This required them to connect all the villages by bridles paths and roads so as to patrol the region when required. In addition, an administrative apparatus was set up and put under the charge of a Deputy Commissioner and his subordinates. The models of Bisin and Verdier (2017) and Tabellini (2008) predict that such an exogenous shock should then drive interactions between institutions and culture. It appears, based on this paper's findings, that a shift in norms began as people gradually perceived themselves as belonging to a larger group. To use the terminology of Platteau (2015) society seemed to transition from limited to more generalized morality: villagers in the administered region started building ties with more distant and unrelated people.

One important effect of administration in the Naga Hills District, I argue, was a codification of the Naga identity. As mentioned in the previous section policies of state and church centered at breaking down old barriers: over time a sense of inter-tribal oneness took form among the natives. Social Identity Theory tells us that such an identification with a new group then feeds into one's utility and proscribes how one is to treat those within the group (Akerlof and Kranton (2000); Tajfel (2010)). Reading historical accounts we observe how the natives seem to have come around this by creating institutions around this

[12] Eaton (1984) gives a rich account (using several primary sources) of mission and state interactions.
[13] Census of India, 1951.

new Naga identity. One well-known case is the Naga Club founded by a group of literates and local administrators in 1918 "with the objective to unite the Nagas and look onto the socio-economic and political upkeep of the Naga society."[14] This was, to my knowledge, the first endogenously formed institution that spanned the entire district. Likewise the emerging Christian population established the Naga Hills Baptist Church Council in 1937, ten years before independence from the British. In other words, we observe over a long run a kind of two-way causal relationship, first, from institutions (state structures) to culture (identity) and then back to new, locally constructed institutions built around this new identity. This would've further strengthened identity as time went on.[15] Survey results sixty years after independence suggests that indeed a sense of commonness did emerge and persists to recent times.

But why would looser kinship ties facilitate growth? A growing body of work supports the idea that non-relational ties are superior for tacit knowledge transmission over those based on kin networks. For example De la Croix et al. (2018) show how the correlated nature of kin-based learning diminishes the growth of knowledge. Apprenticeship-based learning, on the other hand, allows for learning from a much wider pool of teachers. To develop along the lines of the latter, however, societies need to build impersonal institutions to overcome moral hazard problems that don't come up when everyone in the small village knows everyone else. The predictions of the model—that societies making such a transition will simultaneously build new institutions—seem to hold true in this paper's setting.

Lastly, in Bisin and Verdier (2017) and Tabellini (2008), the relationship between institutions and culture can be either that of strategic substitutes: enforcement institutions (eg., the police) can crowd out culture if society delegates cooperative norms to the state. The study by Lowes et al. (2017) on the expansion of the Kuba kingdom seem to suggest such a substitution at play (state formation leads to less cooperation). There is another path, however, that a society can take—that of a complementarity between institutions and culture. For example, Heldring (2021) hypothesizes that state formation in Rwanda created a culture of obedience to the state. My study suggests in-group expansion as another path of complementarity between institutions and culture.

[14] Taken from the Morung Express, Daniel Shiu.

[15] Chophy (2021) gives a local-based account of the state and missions cooperating (and also disagreeing) in the socialization process of the native population.

4 Data and outcome variables

For the colonial boundary I georeference Robert Reid's map of Assam province (Reid (1944)). Reid was the then governor of undivided Assam. In 1944, as governor, he published an essay of the territory he was put in charge of. The survey (including the map) eventually found its place in The Geographic Journal.[16]

To study the long-term persistence of British rule I use DHS data from 2015. My main outcomes of interest are literacy rates, years of schooling, and wealth. Literacy is coded in 3 categories: "cannot read at all", "able to read only parts of sentence", and "able to read whole sentence". I treat the first two as capturing being illiterate and recode them to 0 and recode 'able to read whole sentences' as 1. Wealth is an index that takes five values, from 0, poorest, to 5, richest.

In addition I make use of census data going back to 1971. This allows me to study trends in literacy rates as well labor force composition. The 1971 and 1981 census were scraped from scanned copies while the latter census years (1991-2011) were obtained from the Socioeconomic High-resolution Rural-Urban Geographic Platform for India (SHRUG) compiled by Asher et al. (2021). Using another source (`data.gov.in`) I obtain census data (2011) that has information on various public goods/services availability at the village level.

To study identity-related questions I use data from the Center for the Study of Developing Societies (CSDS-Lokniti). The NGO conducts election-related surveys in every state in India during the assembly elections. I obtain data for Nagaland for the year 2008. The outcome variables from this dataset capture an individual's support for the administrative unification of fellow Naga people living in neighboring states.

5 Identification Strategy

The nature of my setting allows for a regression discontinuity at the colonial border as an identification strategy. The idea is that villages close to the border will have similar characteristics, including unobservables, and thus comparing villages just inside with those just outside the historical border will capture the effect of colonial rule. In the spirit of Dell et al. (2018) I use the following semi-parametric regression specification-

$$y_{iv} = \alpha + \beta \times \text{British}_v + \delta X_i + f(\text{geographic location}_v) + \epsilon_{iv} \tag{1}$$

where y_{iv} is the outcome of interest of individual i living in village v, $British_v$ is a dummy

[16] See *The Excluded Areas of Assam* by Robert Reid (1944), The Geographical Journal, Jan.-Feb., 1944, Vol. 103, No. 1/2, pp. 18-29.

variable that takes the value 1 if village v was a former colony, X_i is a set of individual specific controls that include age, age squared, gender, and $f(\text{geographic location}_\text{v})$ is the RD polynomial that controls for smooth geographical variation for village v. β is our main coefficient of interest. It measures the effect of being just inside the colonial boundary on our outcome of interest. For my main tables I use a linear polynomial in distance to the colonial boundary as my functional form and pick two bandwidths: 10 kms and 20 kms.

To study time-varying effects of colonial administration I also estimate the following equation-

$$y_{vt} = \alpha + \sum_{t \in T} \beta_t \times \text{British}_{v,t} + \gamma_t + f(\text{geographic location}_v) + \epsilon_{vt} \tag{2}$$

where $T = \{1971, 1981, 1991, 2001, 2011\}$, $\text{British}_{v,t} = 1$ if at time t village v was an administered village and 0 otherwise, and γ_t is a time fixed effect.

Lastly, to study village level differences in modern times I run the following regression-

$$y_v = \alpha + \beta \times \text{British}_v + f(\text{geographic location}_v) + \epsilon_v \tag{3}$$

where y_v is average outcome of village 'v'.

In Figure 4, I focus on the red highlighted part of the colonial border. This is because the southermost region witnessed heavy bombing during the Second World War, and previous studies caution us that such military fighting can have persistent, negative effects (Dell and Querubin (2018)). My concern is the displacement caused by the war since people relocated to the capital city (Ltu (2019)). Lastly, the DHS jitters geocode locations to protect the identity of respondents. I address the concerns around this in section 8.

6 Results

I begin by looking at the evolution of human capital over time. Figure 5 depicts binned scatter plots of literacy rates of villages from 1971 to 2011. Gaps remain very persistent through the decades. Literacy rates in the formerly-administered villages are, on average, 15 to 20 percentage points higher. Not surprisingly, we see spillovers over time as the formerly non-administered villages benefit from proximity to the border. In fact, after independence it was the more educated ones from the former colony villages who introduced those in the east with their new institutions and educational system, as well as new religion, beginning first with those at a more geographically convenient location and gradually moving further

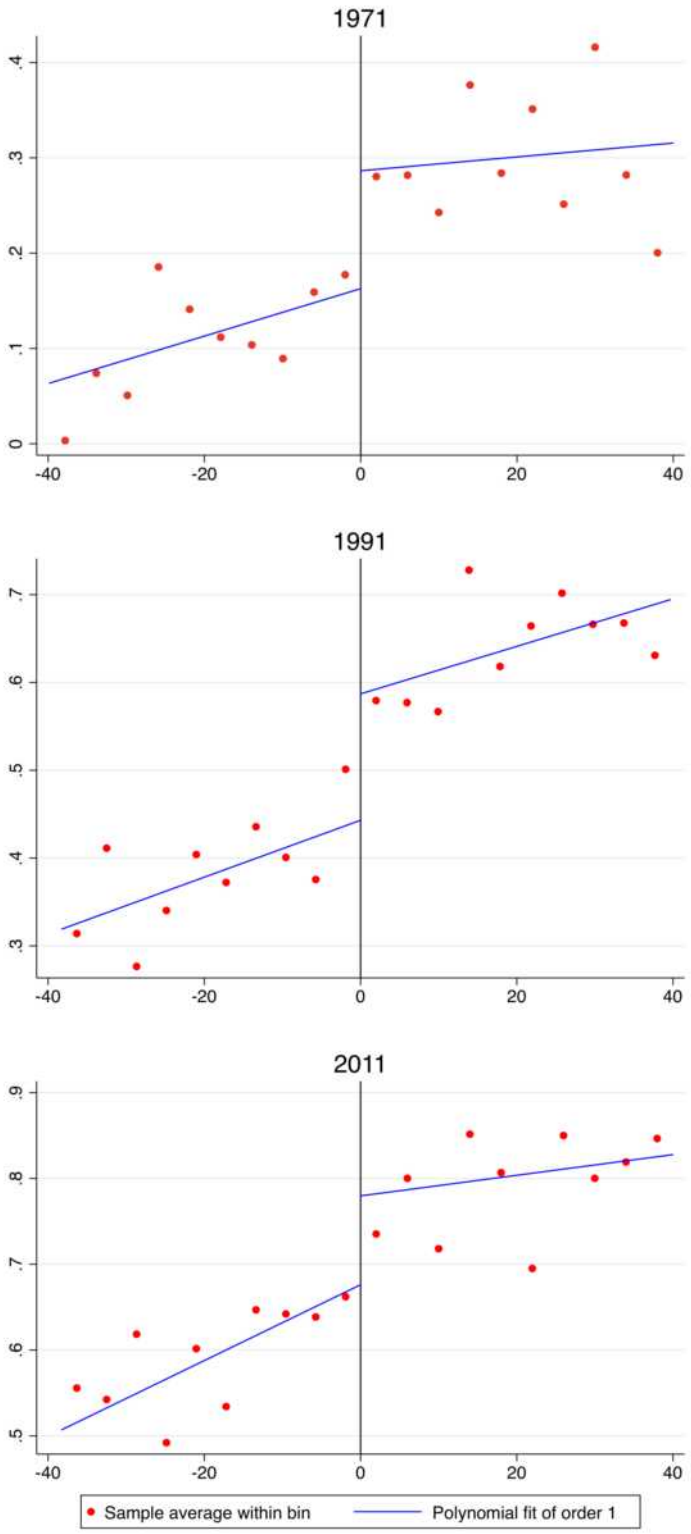

Figure 5: Binned scatter plots for literacy rates across time. Each dot represents average village literacy rates using 4 kilometer bins.

east over the decades.[17] Table 1 gives the regression output of specification 2 using a linear polynomial in distance to the border and the outcome variable as village literacy rate. We see that the gaps in literacy rates have remained persistent over the decades, well into modern times, with no hints of convergence.[18]

Table-2 reports the estimates of β from equation (1) for years of schooling, literacy, and wealth respectively, with odd (even) numbered columns representing a bandwidth of 10 (20) kilometres within the border.[19] The unit of observation is an individual from the DHS 2015 data. The polynomial function used for the estimates in Table 2 is a linear function in distance to the border.

[17] See Chophy (2021) for more details about identity and proselytizing among the eastern region by the western villages.

[18] Starting in 1991 literacy rates were counted only for those 6 years of age and above.

[19] For each regression using the DHS data I cluster standard errors at the village level. For other results for which available data is aggregated at the village level clustering occurs at the sub-district level.

Table 1: RD results using Census Data (1971-2011)

Dependent variable	Literacy Rate	
Bandwidth	10 km	20 km
	(1)	(2)
British_{1971}	0.121***	0.157***
	(0.026)	(0.019)
British_{1981}	0.098***	0.174***
	(0.034)	(0.030)
British_{1991}	0.174***	0.201***
	(0.033)	(0.027)
British_{2001}	0.189***	0.229***
	(0.027)	(0.025)
British_{2011}	0.155***	0.184***
	(0.029)	(0.023)
Observations	1,312	2,099
R-squared	0.526	0.560
Mean literacy_{1971}	0.222	0.215
Mean literacy_{1981}	0.357	0.354
Mean literacy_{1991}	0.514	0.516
Mean literacy_{2001}	0.587	0.574
Mean literacy_{2011}	0.737	0.728

Notes: Robust standard errors (in parentheses) are clustered at the sub-district level. The unit of observation is a village. Each regression uses a linear polynomial in distance to the border. *** p<0.01, ** p<0.05, * p<0.1

Looking at column 1 of Table-2 we see that those living in villages formerly administered by the British have about 1.4 more years of schooling. A similar pattern follows for literacy and wealth, with those living in the formerly administered villages being more literate (15 percentage points difference) and having about 25% more wealth.

One worries if this is a simple river-effect. To look into this, I consider the *Doyang* river on the administered side. It is the largest river in the state, and certainly the best known. More importantly, this was the initially intended border at the early stages of annexation. However, the British marched eastward implying that villages immediately to the east and west of the Doyang were under colonial administration. Table 3 reports results using a 20 kilometer bandwidth and a linear ordered polynomial in distance to the river. We can confirm that those on either side of the Doyang river do not systematically differ on my main outcomes (literacy, schooling years, wealth). Table A4 in the appendix considers higher ordered polynomials.

Figure 6 plots coefficients alongwith 95% confidence intervals for labor share in services. We see that for women gaps start opening in the 1990s as those formerly administered gravitate towards services and away from agriculture. For example, in 2011, formerly-administered villages have 8 percentage points higher share of their labor force employed in services. For men the gaps are not significant. Table A1 in the Appendix reports the regression results.

Table 2: Main RD results, DHS 2015 (linear polynomial in distance to the border)

Dependent variable	Schooling Years		Literacy Rate		Wealth Index	
Bandwidth	10 km	20 km	10 km	20 km	10 km	20 km
	(1)	(2)	(3)	(4)	(5)	(6)
British administered	1.368***	1.764***	0.135***	0.184***	0.475***	0.641***
	(0.341)	(0.304)	(0.034)	(0.030)	(0.141)	(0.110)
Observations	1,751	2,965	1,746	2,956	1,751	2,965
R-squared	0.131	0.128	0.106	0.114	0.056	0.092
Mean dep. var	6.890	6.540	0.716	0.675	2.995	2.915

Notes: Robust standard errors are clustered at the village level. The unit of observation is an individual. The sample includes women and men between 15 and 49 years. Literacy rate lies between 0-100%, years of schooling between 0 and 15, and wealth between 1 (poorest) and 5 (richest). *** p<0.01, ** p<0.05, * p<0.1

Table 3: Placebo check using the Doyang river

Dependent variable	Schooling Years		Literacy Rate		Wealth Index	
Bandwidth	10 km	20 km	10 km	20 km	10 km	20 km
	(1)	(2)	(3)	(4)	(5)	(6)
West side	0.352	0.495	0.031	0.038	-0.135	0.210
	(0.390)	(0.341)	(0.042)	(0.034)	(0.218)	(0.176)
Observations	483	850	486	847	486	850
R-squared	0.069	0.109	0.122	0.076	0.035	0.014
Mean dep. var	8.144	8.402	0.827	0.841	3.232	3.231

Notes: Robust standard errors are clustered at the village level. Data is from the DHS. I create a dummy variable 'West side' that takes value 1 if an individual is from a village west of the Doyang river and 0 otherwise. Each regression controls for age, age squared, gender, and a linear polynomial in distance to the river. Figure A3 in the appendix shows a bridge constructed by the British in the 19th century across the Doyang. *** p<0.01, ** p<0.05, * p<0.1

7 Potential Mechanisms

To understand the potential mechanisms driving our main results I use the 2011 Census, the latest year for which data is publicly available. The data is collected at the village level and includes information on various village amenities and services. I geocode the villages so as to run spatial RD regressions. In all specifications I report results based on a linear polynomial in distance to the colonial border withing a 20 kilometer bandwidth. The data codes a public good/service as 1 if it's available in a village, and 2 if not. I recode the latter to 0 so as to run linear probability regressions.

7.1 Roads and public schools

The Census data 2011 provides details of public goods/services provision. Panel A of Table 4 reports the results for road connectivity. The coefficients on the colonial dummy is significant for 'other district roads' and 'national highways.' However, in Panel B of Table 4 we don't see differences in public school status for the villages on either side of the border.

7.2 Identity Creation as a key mechanism?

So far I have presented a few mechanisms that appear to be driving my key outcomes. Here I want to point to deeper cultural forces at play, namely the formation of a larger sense of identity, one that extends the in-group beyond the primordial village identity to a pan-ethnic one. By the 1920s a sense of oneness emerged among the administered villages, the sense that they should unify as a common Naga people. Interestingly, to the area south of the British Naga Hills District is a vast region inhabited by a people that the British also classified as Naga (Hodson (1911)). However this region was administered indirectly under the princely state of Manipur. In the decades following independence a movement demanding the creation of Greater Nagaland emerged. This was conceptualized as the administrative unification of all Naga inhabited regions spread out across 4 states in India and one administrative zone in Burma (Myanmar).[20] I analyse people's views on this demand via survey responses.

7.2.1 Survey responses

The Center for the Study of Developing Societies (CSDS-Lokniti) conducts election-related surveys in every state in India during the assembly elections. For Nagaland state I was able to obtain their data for the year 2008. One of the questions asks if an individual respondent

[20]The states in India include Nagaland, Manipur, Assam, and Arunachal Pradesh. In Burma the concerned location is the Naga-Self Administered Zone in Sagaing Division.

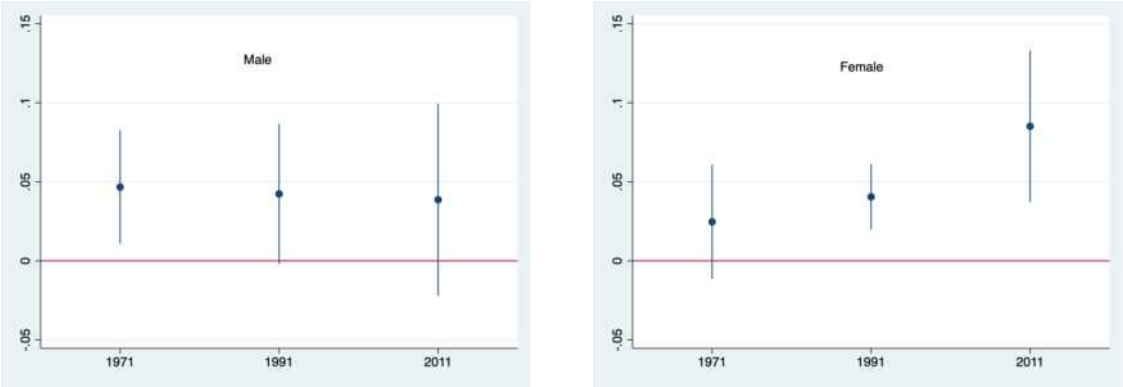

Figure 6: Point estimates with 95% CI from Table 7. These estimates are based on specification 3, and use a linear polynomial in distance to the colonial border. The dependent variable is share of village in services. The left graph is for men and the right for women.

Table 4: Data Source: Census 2011

	Panel A: Road Connnectivity			
Dependent variable	Major district roads	Other district roads	National highway	State Highway
	(1)	(2)	(3)	(4)
British	0.060	0.283**	0.114*	0.032
	(0.075)	(0.109)	(0.062)	(0.057)
Observations	426	426	426	426
R-squared	0.027	0.056	0.044	0.044
Mean dep. var	0.324	0.448	0.066	0.134
	Panel B: Public Schools			
Dependent variable	Primary	Middle	Secondary	Senior
	(1)	(2)	(3)	(4)
British	0.065*	-0.052	0.046	0.017
	(0.033)	(0.094)	(0.049)	(0.012)
Observations	426	426	425	426
R-squared	0.013	0.003	0.015	0.004
Mean dep. var	0.932	0.357	0.114	0.006

Notes: Robust standard errors (in parentheses) are clustered at the sub-district level. The unit of observation is a village. Each regression uses a 20 kilometer bandwidth and a linear polynomial in distance to the border. The dependent variables are binary taking value 1 if a village has the public good/service, and 0 otherwise. *** p<0.01, ** p<0.05, * p<0.1

has *heard of the demand of 'Greater Nagaland'*, taking the value 1 if yes, and 0 otherwise. I run a simple OLS regression of the survey answers on the colonial dummy, controlling for age and gender only. Column 1 of Table 5 reports the coefficient on the colonial dummy for the above mentioned question. Those in the administered region are 34% more likely to be aware of the movement (only half of those in the non-administered region had heard of it). The outcome variable in column 2 is a binary variable asking if the respondent has an opinion of the movement. Column 3's outcome variable is a 5-point Likert scale based on the question *To what extent do you think the demand of Greater Nagaland is justified?* and takes values as follows: 1, fully unjustified; 2, somewhat unjustified; 3, no opinion; 4, somewhat justified; 5, fully unjustified. From Table 5 we observe much stronger support for the movement among the historically treated group.

An interesting aspect of this question is that it captures a desire for new institutions (formal state administration) built around the Naga identity. Thus, the results of this section capture, perhaps, an equilibrium outcome of the joint evolution of identity and institutions.

7.2.2 Networks

If, as illustrated in the previous subsection, a sense of larger belonging did emerge—in particular, with non-kin folk—one must see it reflected in some measure of behavior. To see this I consider the pool of candidates who ran for the 2023 State Assembly Election (166 total) and observe their presence on twitter.[21] What is neat about this measure is that unlike other social media platforms like Facebook or Instagram, Twitter is used primarily to interact with strangers and not with family or relatives. The results in Table 6 report OLS results for the probability that a candidate has a twitter account: much higher for the formerly administered region. There are many interpretations to this. First, the fact that candidates from the formerly administered regions are more likely to have a twitter account could potentially reflect a stronger desire to reach out to strangers. Alternatively it could be a behavioral response to the fact that they contest in regions that have more voters on twitter.

7.3 Concerns about migration

One concern is that people might migrate across the border leading to biased estimates. The customary rules regarding village identity reassures us against this. The way villages are organized is as follows: each village is made up of a number of clans (phatries). Clans live in their respective *khels* (localities) within the village. Most importantly, each clan traces

[21] The data is as of April 2023, a month after the most recent state assembly elections.

Table 5: Opinion survey on identity

Panel A: Full rural sample			
	(1)	(2)	(3)
VARIABLES	Heard about movement	Have an opinion	Movement justified
British	0.300***	0.412***	0.539***
	(0.077)	(0.089)	(0.087)
Mean dep. var	0.836	0.604	3.473
Observations	649	649	649
R-squared	0.104	0.111	0.042
Panel B: Within 30 kms of the border			
British	0.263**	0.374***	0.221**
	(0.097)	(0.103)	(0.088)
Mean dep. var	0.760	0.515	3.178
Observations	376	376	376
R-squared	0.123	0.128	0.014

Notes: Standard errors are clustered at the polling station level. The non-administered regions make up 15% of the survey sample in Panel A and 24% in Panel B. All regressions control for age and gender only. Columns 1 and 2 use a linear probability model. Column 1 takes value 1 if respondent has heard about the ethnic movement and 0 otherwise. Column 2 takes value 1 if respondent has an opinion about the movement and 0 otherwise. Column 3 measures the degree of support for the movement and takes values as follows: 1 if fully unjustified, 2 if somewhat unjustified, 3 if indifferent, 4 if somewhat justified, 5 if fully justified. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Twitter Presence

Dependent variable	Twitter (1)	Twitter (2)
British	0.249***	0.250***
	(0.077)	(0.071)
Specification	LPM	Logit (margins)
Mean dep. var	0.439	0.439
Observations	166	166
R-squared	0.056	0.042

Notes: Robust standard errors (in parentheses) are clustered at the constituency level. *** p<0.01, ** p<0.05, * p<0.1. The unit of observation is a political candidate running for the state assembly elections, 2023. The dependent variable "twitter" is binary and takes value 1 if a candidate is on twitter and 0 otherwise. I exclude the constituencies of the capital city of Kohima and the commercial city of Dimapur.

ancestry to a common ancestor. One cannot simply enter another village and expect to be absorbed if they do not pass down from the same lineage. An analogous case is the caste identity in most other parts of India whereby one simply cannot switch castes as they please. These identities are remarkably sticky.

Figures A1 and A2 in the appendix plot the densities of villages across the border. One does not see a one-sided clustering that might invalidate the RD assumption for identification if villages relocated themselves at the border in a strategic manner.

8 Robustness checks

8.1 Alternate specifications of the RD polynomial

Tables A2 and A3 in the appendix present results for alternate specifications of the RD polynomial, f(geographic location), and for higher order powers. These include linear, quadratic, and cubic polynomials in distance to the capital and a two-dimensional function of latitude-longitude. Results appear very robust for our various specifications. The exception is the linear polynomial in latitude and longitude for which the coefficients for human capital are not statistically significant at conventional levels.

8.2 Concerns about geocode displacement in the DHS sample

The DHS displaces geocode locations by upto 5 kilometres for 99% of rural areas. This is likely to lead to a downward bias in my estimates as those formerly administered are coded as non-administered, and vice versa. To address this I use a donut regression by dropping observations within 5 kilometers of the border and using only those located between 5 and 20 kilometers. Table A5 in the appendix show that the coefficients, if anything, do get larger.

9 Conclusion

This study looks at the transition a society makes from anarchy to state structures, a process most societies in the world have gone through at some point in their past. It does so by exploiting a natural experiment during the European colonial era. Among the natives, those brought under British administration are faring better today economically. I begin by showing that the nature of the colonial border drawing was done in a haphazard way. I then show how the formerly administered regions score much better on outcomes like literacy rates, schooling years, and wealth. I also find gaps in the labor force as the administered villages move towards services.

I then point to another key contribution this paper makes to the literature by giving structure to the mechanisms involved in such a complex process. In particular I argue that identity-creation is a strategy society adopts as it tries to scale up from tribal structures to more impersonal relationships. This is likely a pattern that occurred in vast parts of the world as societies moved away from identifying with their tribe and instead seeing themselves as part of larger more impersonal groups, aided primarily by states. The exogenous nature of my setting gives us a clean way of causally identifying a state-effect. Results from a survey make a case that the formerly administered are more likely to identify with non-kin members and also display a desire to form larger institutions beyond kinship. This study also tests predictions of very recent theoretical models. Compared to previous theories that posit that either culture causes institutions or vice versa, this new strand views historical economics as a two-way interaction between culture and institutions. The results I find suggest that such a interaction is most likely at play.

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Appendix

Table A1: RD results using Census Data (1971-2011)

	Labor share in services	
	(1)	(2)
VARIABLES	Men	Women
$British_{1971}$	0.047**	0.025
	(0.018)	(0.018)
$British_{1991}$	0.042*	0.041***
	(0.022)	(0.010)
$British_{2011}$	0.039	0.085***
	(0.031)	(0.024)
Observations	1,382	1,374
R-squared	0.092	0.118
Mean $share_{1971}$	0.122	0.038
Mean $share_{1991}$	0.160	0.040
Mean $share_{2011}$	0.266	0.130

Robust standard errors (in parentheses) are clustered at the sub-district level.
*** p<0.01, ** p<0.05, * p<0.1

Robustness to other polynomials functions

Table A2: Polynomial in distance to the capital city of Kohima

	(1)	(2)	(3)
VARIABLES	Literacy rate	Schooling years	Wealth Index
		Linear	
British	0.178***	1.662***	0.592***
	(0.031)	(0.304)	(0.112)
Observations	2,956	2,965	2,965
R-squared	0.104	0.122	0.096
		Quadratic	
British	0.217***	2.042***	0.701***
	(0.027)	(0.272)	(0.116)
Observations	2,956	2,965	2,965
R-squared	0.127	0.154	0.133
		Cubic	
British	0.230***	2.227***	0.767***
	(0.026)	(0.255)	(0.108)
Observations	2,956	2,965	2,965
R-squared	0.132	0.166	0.155

Robust standard errors are clustered at the village level.
*** p<0.01, ** p<0.05, * p<0.1

Table A3: Polynomial in latitude and longitude

VARIABLES	(1) Literacy rate	(2) Schooling years	(3) Wealth Index
		Linear	
British	0.049	0.644	0.396**
	(0.040)	(0.394)	(0.152)
Observations	2,956	2,965	2,965
R-squared	0.125	0.141	0.107
		Quadratic	
British	0.109**	1.365***	0.582***
	(0.044)	(0.439)	(0.184)
Observations	2,956	2,965	2,965
R-squared	0.065	0.075	0.121
		Cubic	
British	0.106**	1.331***	0.574***
	(0.044)	(0.444)	(0.185)
Observations	2,956	2,965	2,965
R-squared	0.066	0.077	0.122

Robust standard errors are clustered at the village level.
*** p<0.01, ** p<0.05, * p<0.1

Table A4: Placebo check using the Doyang river (20 kilometer bandwidth)

VARIABLES	(1) Literacy rate	(2) Schooling years	(3) Wealth Index
		Linear	
West side	0.039	0.495	0.210
	(0.035)	(0.341)	(0.176)
Observations	847	850	850
R-squared	0.076	0.109	0.015
		Quadratic	
West side	0.041	0.520	0.220
	(0.033)	(0.327)	(0.174)
Observations	847	850	850
R-squared	0.083	0.118	0.031
		Cubic	
West side	0.043	0.528	0.224
	(0.032)	(0.326)	(0.174)
Observations	847	850	850
R-squared	0.085	0.119	0.033

Robust standard errors are clustered at the village level. Data is from the DHS. I create a dummy variable 'West side' that takes value 1 if an individual is from a village west of the Doyang river and 0 otherwise. Each regression controls for age, age squared, gender, and a linear polynomial in distance to the river. Figure 9 below shows a bridge constructed by the British in the 19th century across the Doyang. *** p<0.01, ** p<0.05, * p<0.1

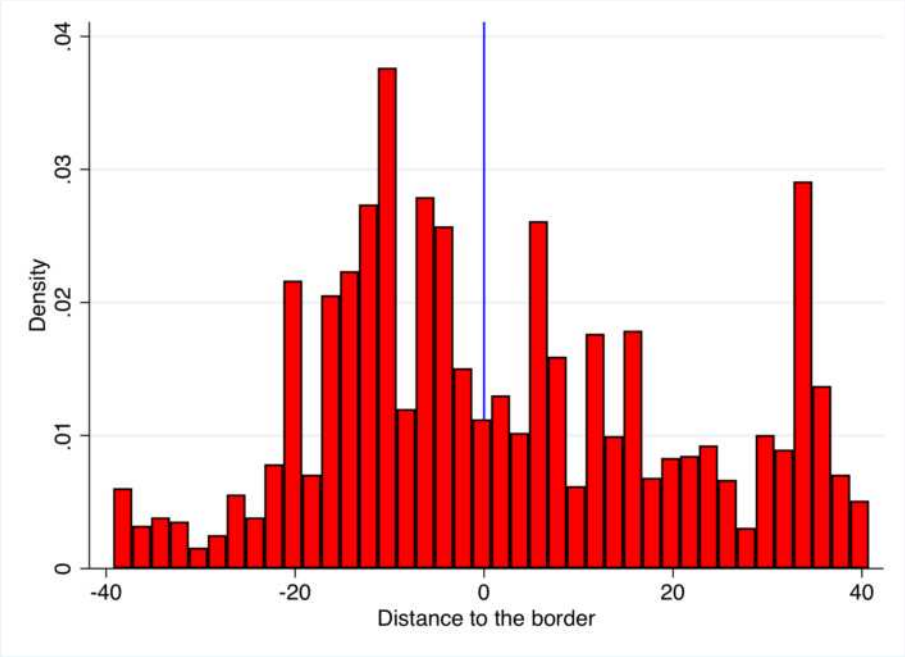

Figure A1: A histogram showing the distribution of DHS villages. The blue vertical line indicates the colonial border. The x-axis plots distance to the border in kilometers; positive (negative) values denote villages within (outside) the colonial border.

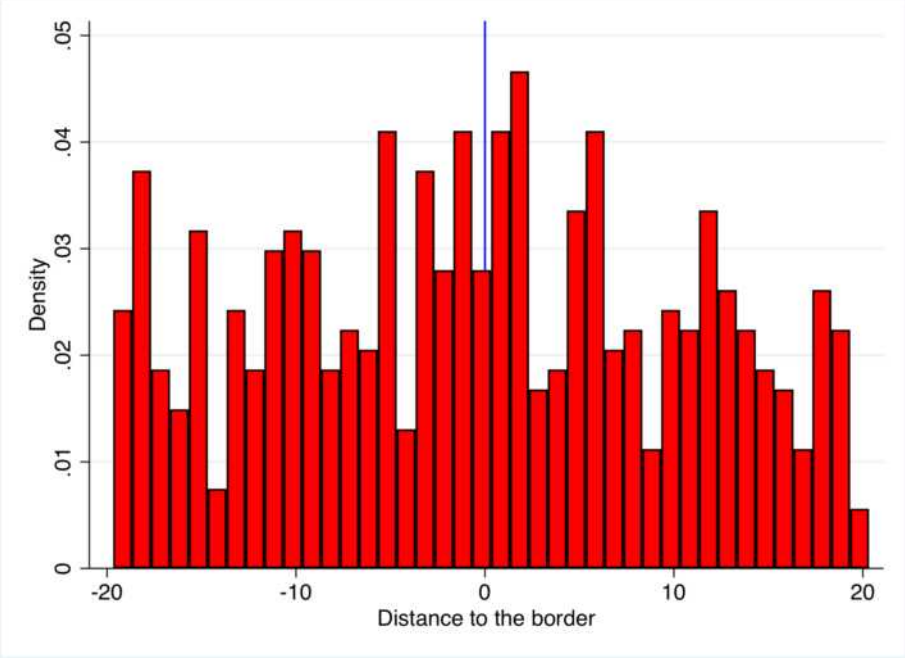

Figure A2: A histogram showing the distribution of the 1971 census villages. The blue vertical line indicates the colonial border. The x-axis plots distance to the border in kilometers; positive (negative) values denote villages within (outside) the colonial border.

Table A5: Donut regression (5-20 kilometer bandwidth)

	(1)	(2)	(3)
Dependent variable	Literacy rate	Schooling years	Wealth Index
East side	0.214***	2.095***	0.792***
	(0.035)	(0.364)	(0.129)
Observations	2,213	2,217	2,217
R-squared	0.118	0.140	0.129

Notes: Robust standard errors are clustered at the village level. The unit of observation is an individual. The sample includes women and men between 15 and 49 years. Literacy rate lies between 0-100%, years of schooling between 0 and 15, and wealth between 1 (poorest) and 5 (richest). *** p<0.01, ** p<0.05, * p<0.1

Figure A3: British-constructed bridge across the Doyang river taken by Connie Shakespear, 1900-1902.

Outposts held by the Naga Hills military police battalion.

Name.	Distance from Headquarters.	Strength.	
		Officers.	Men.
Tamlu	126 miles	1	50
Mokokchung	53 ,,	1	100
Henima	76 ,,	1	25
Khonoma	11 ,,	1	25
Tesima	7 ,,	...	3

TABLE XII.

Kohima Subsidiary Jail.

		1891	1901
Average daily population	Male	17	20
	Female	...	...
Rate of jail mortality per 1,000 ...		...	...
		Rs.	Rs.
Expenditure on jail maintenance ...		2,693	1,013
Cost per prisoner* (excluding civil prisoners)		66	22
Profits on jail manufacture ...		...	1,343
Earnings per prisoner†		...	71

* On rations and clothing only.
† Calculated on the average number sentenced to labour.

((a)) Details on jails and outposts in the district

TABLE XV.

Medical.

Particulars.	Kohima Subdivision.			Mokokchung Subdivision.		Total District.		
	1891.	1891	1901.	1891.	1901.	1891.	1891.	1901.
Number of dispensaries	1	3	3	1	1	1	4	4
Daily average number of in-door patients	16·18	7·24	13·00	...	...	16·18	7·24	13·00
,, ,, ,, out-door	30·36	15·20	36·57	7·76	23·18	30·36	20·96	60·05
Cases treated	1,081	4,273	10,651	1,274	7,859	1,081	5,549	18,510
Operations performed	11	121	119	27	42	11	148	161
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Total income	3,024	4,206	4,009	304	699	3,024	4,560	4,708
Income from Government	2,919	3,724	3,556	304	699	2,919	4,028	4,255
Subscriptions	...	434	249	...	...	...	434	249
Total expenditure	3,024	4,301	3,987	304	699	3,024	4,503	4,686
Expenditure on Establishment ...	1,355	2,004	1,778	...	334	1,355	2,004	2,112
Ratio per mille of persons successfully vaccinated.		Not available				(a)	19	122
Cost per case		Do.				...	Rs. A. P. 0-3-11	Rs. A. P. 0-1-9

(a) Figure for 1891-92.

((b)) Medical Expenditures

Particulars.	1900-01	1901-02	1902-03	1903-04
Kohima Subdivision.	Rs.	Rs.	Rs	Rs
House tax	40,889	41,443	42,112	33,893
Total revenue	41,610	42,039	42,112	34,837
Mokokchung Subdivision.				
House tax ...	18,096	19,520	17,832	23,820
Total revenue ...	18,098	18,520	17,832	29,813
Total District.				
House tax	58,984	59,963	59,944	57,713
Other heads	724	575		7,957*
Total revenue	59,708	60,559	59,944	64,650

((c)) Land revenue, 1901-1904

Particulars	No. of institutions.	Expenditure on institutions maintained or aided by public funds in 1900-01 from				Expenditure per scholar.
		Provincial Revenues.	Fees	Other sources.	Total.	
		Rs.	Rs.	Rs.	Rs.	Rs. As. P.
Training and Special School	1	28	...	957	985	25 4 1
Middle English Schools ...	1	1,649	207	...	1,856	23 11 4
Lower Primary School ..	16	1,620	...	...	1,620	8 2 3
Total	18	3,297	207	957	4,461	14 1 10

((d)) Education expenditure

Figure A4: Scans from the Gazetteer of Naga Hills and Manipur by B.C. Allen, 1905 (Allen (2010)).