Appendix for "Endogenous Colonial Borders: Precolonial States and Geography in the Partition of Africa"

We organize the supplementary material into three distinct sections. The main appendix is Appendix A, which is 28 pages. Here we provide supporting information to establish the conventional wisdom and summarize our data on major border revisions (Appendix A.1), for the regressions using grid cells (Appendix A.2), for the regressions using ethnic groups (Appendix A.3), and for the bilateral-border analysis (Appendix A.4).

The remaining appendices are supplemental and provide extensive notes to justify the coding decisions for our two original variables. We believe this information is essential to establish the validity of our new data. In the article, we reference specific entries that reviewers may be interested in, but we stress that this additional material is not required for reviewers. Appendix B is the first supplemental appendix with extensive coding notes for our polygons of precolonial states (20 pages). Appendix C is the second supplemental appendix with a brief case study for all 107 bilateral borders in Africa (113 pages). All references appear at the end of the appendix.

A Main Appendix

A.1 Supporting Information for "It Didn't Happen at Berlin"

A.1.1 Conventional Wisdom on Arbitrary African Borders

- Encyclopedia of Africa (Appiah and Gates 2010): "Rivalry between Great Britain and France led Bismarck to intervene, and in late 1884 he called a meeting of European powers in Berlin. In the subsequent meetings, Great Britain, France, Germany, Portugal, and King Leopold II negotiated their claims to African territory, which were then formalized and mapped."

- Michalopoulos and Papaioannou (2016, 1803) consider the "Scramble for Africa as a 'quasi-natural' experiment." "During the 'Scramble for Africa,' that starts with the Berlin Conference of 1884–1885 and is completed by the turn of the twentieth century, Europeans partitioned Africa into spheres of influence, protectorates, and colonies. The borders were designed in European capitals at a time when Europeans had barely settled in Africa and had limited knowledge of local conditions. Despite their arbitrariness, boundaries outlived the colonial era" (p. 1802). On the basis of their statistical analysis of ethnic groups, they conclude, "[w]ith the exceptions of the land mass of the historical ethnic homeland and the presence of lakes, there are no significant differences between split and non-split homelands along a comprehensive set of covariates ... These results offer support to a long-standing assertion within the African historiography regarding the largely arbitrary nature of African borders, at least with respect to ethnic partitioning" (p. 1803).

- Christensen and Laitin (2019): "The infamous Berlin Conference of 1884–85 set administrative boundaries in Africa and granted vast territories to the leading European powers ... Berlin set the colonial boundaries and determined, in large stretches, the borders of contemporary African states" (p. 167–68, 174). They also cite Michalopoulos and Papaioannou's evidence as establishing "the arbitrariness—statisticians would say as-if randomness—with which borders were drawn in Berlin ..." (p. 173).

- Herbst (1989) and Herbst (2000, Ch. 3): "[t]he overwhelming importance of imperial military and geopolitical interests in the scramble for Africa meant that the Europeans necessarily ignored factors that are generally considered relevant to the partitioning of land." He also supports the view that "[t]he arbitrary division of the continent by the European powers [exhibited] little or no respect for preexisting social and political groupings, or even, sometimes, for 'natural' geographical features" (Herbst 1989, 675).

- Scholars commonly cite an estimate by Barbour (1961, 305) that 44% of African borders are parallel/meridian lines, 30% are mathematical (i.e., non-astronomical) lines, and 26% are geographical features (Herbst 2000, 75; Englebert 2002, 88; Abraham 2007). Similarly, Alesina, Easterly and Matuszeski (2011, 246, 251) assert, "[e]ighty percent of African borders follow latitudinal and longitudinal lines ... Africa is the region most notorious for arbitrary borders"; and Yakemtchouk (1971) claims, "Some eight-tenths of African borders are unrelated to traditional and ethnic boundaries" (p. 70).

- Englebert (2002, 84–88): "With borders inherited from the colonial scramble for Africa ... they usually lack geographical congruence with the institutions of the precolonial era." In

the Democratic Republic of the Congo, he mentions that "several precolonial kingdoms and states . . . [were] partitioned with neighboring colonies . . . These are not exceptional cases . . . Colonial partition seemed to be the norm rather than the exception. In many cases, the existence of an integrated precolonial system did not prevent partition by colonials."

- Abraham (2007): "A 'tea and macaroon' approach to boundary delimitation during the process of colonisation—culminating in the Berlin Conference of 1884-1885—rendered [territorial disputes] inevitable" (p. 62).
- Examples from popular press: "In 1885 European leaders met at the infamous Berlin Conference to divide Africa and arbitrarily draw up borders that exist to this day."[1] "The Partition of Africa began in earnest with the Berlin Conference of 1884-1885, and was the cause of most of Africa's borders today."[2] "The Berlin Conference spanned almost four months of deliberations, from 15 November 1884 to 26 February 1885. By the end of the Conference the European powers had neatly divided Africa up amongst themselves, drawing the boundaries of Africa much as we know them today."[3] "At the Berlin Conference, the European colonial powers scrambled to gain control over the interior of the continent. The conference lasted until February 26, 1885 — a three-month period where colonial powers haggled over geometric boundaries in the interior of the continent, disregarding the cultural and linguistic boundaries already established by the indigenous African population."[4]

A.1.2 Did the Berlin Conference Matter in Other Ways?

Our evidence on the timing of border formation rules out claims that the Berlin Conference played an important role in determining specific borders (e.g., Appiah and Gates 2010 and Christensen and Laitin 2019; see Appendix A.1.1). But the Berlin Conference may have affected later borders by affecting macro-level claims or by determining rules for claiming territory. Neither appears well supported, which further raises the need for a new model of African border formation.

The Berlin Conference undoubtedly influenced some macro-level claims. For example, to bolster their positions at the Conference, Britain accelerated its process of gaining treaties along the Niger river and Germany claimed territories in various parts of the continent in 1884 (Craven 2015, 40–41). However, many macro-level claims in place as of the mid-1880s cannot be attributed to Berlin, such as Britain's in southern Africa and France's in Algeria. More important, micro-level borders are not mere derivatives of macro-level claims, and most later borders did not exhibit an obvious path dependence with earlier ones.[5] Europeans followed a rough notion of a hinterland doctrine: a power with claims to the coast had a right to its hinterland.[6] However, this principle was too

[1] https://www.dw.com/en/130-years-ago-carving-up-africa-in-berlin/a-18278894.
[2] https://www.blackpast.org/global-african-history/partition-africa.
[3] https://www.sahistory.org.za/article/berlin-conference.
[4] https://www.thoughtco.com/berlin-conference-1884-1885-divide-africa-1433556.
[5] An exception was West Africa, where many later borders extended initially short rays that emanated from the coast. However, even in these cases, most initial borders were later revised to replace straight lines with water bodies and roads.
[6] France used this policy to determine intraimperial spheres: "The French postulate that the inland regions of Sudan have different outlets depending on their proximity to the coast. Each of the four French colonies bordering the Atlantic is therefore assigned the hinterland for which it is the logical outlet" (San-

imprecise to determine even rough spheres of influence at the meso level, let alone specific borders at the micro level (Wesseling 1996, 127). For example, in the late 1880s in East Africa, Britain and Germany agreed not to annex territory located in the "rear" of the other's coastal territory (Hertslet 1909, 888–89), but the vagueness of the idea "left considerable room for misunderstanding in the future" and was explicitly rejected by statesmen such as Prime Minister Lord Salisbury (Louis 1963*a*, 9–10). The ensuing Anglo–German Agreement of 1890 yielded, among other concessions, British control over Uganda. This agreement reflected Germany's desire to gain the small island of Heligoland in the North Sea, as opposed to an inevitable extension of its coastal possessions (some of which, such as Witu, it relinquished).

In its concluding General Act, the Conference decreed rules of effective occupation for claiming territory (Hertslet 1909, 484–85). Such rules, even if successful, would not predict micro-level border features. Nonetheless, the formal rules appear to have simply acknowledged that Europeans were claiming territory without discernibly altering this behavior. The standards for effective occupation were vague, a product of British resistance to this principle, and applied only to coastal settlements—many of which were already occupied (Crowe 1942, 190–91; Wesseling 1996, 124–30). In practice, as we highlight, "effective occupation" came to mean treaties with local rulers. This created scope for African participation, despite their lack of representation at Berlin.

Despite minimal impact on specific borders, the Berlin Conference may have influenced the eventual annexation of African territory. Whereas treaties with local rulers where protectorates (i.e., they granted Europeans control over external but not internal affairs), Europeans later ignored these limitations and imposed local governance institutions. Alexandrowicz (1973, 148) interprets the stipulations of the Berlin Conference as an agreement among the powers to permit such rights of annexation (see also Craven 2015, 42–49).

A.1.3 Major Revisions to Colonial Borders

In the article, we describe our standards for coding the initial year of border formation and major revisions for all 107 bilateral borders in Africa. In Figure A.1 we plot the frequency of different types of revisions over time. Within the main categories, territorial transfers can be either large (45 total cases, 43 in the 20th century), small (17, 17), or a transfer only of an enclave (3, 2); changing the features of the border can entail switching from lines to local features (22, 14), clarifying what the local features are (28, 19), altering the local features (4, 2), or changing the location of a straight-line border (4, 3); and new segments were added 26 times (including 13 in the 20th century). In Table A.1, we list every large territorial transfer.

We also digitized colonial maps of 1887, 1895, and 1902 from Sanderson (1985*a*). We combined these maps with our detailed notes on each bilateral border to code which border segments in each year corresponded with the final colonial borders. This process allows us to correct inevitable inaccuracies in historical maps. We then calculated two sets of figures for each map to quantify how colonial claims and borders evolved over time. First, we computed (suing polygons of claimed territories) the percentage of all African territory claimed by Europeans, disaggregating by coastal and interior (300 km from coast). Second, we computed (using polylines of borders) the total length of borders in their final form as a percentage of the total length of borders in 1960.

douno 2015, 20–21).

Figure A.1: Major Border Revisions Over Time

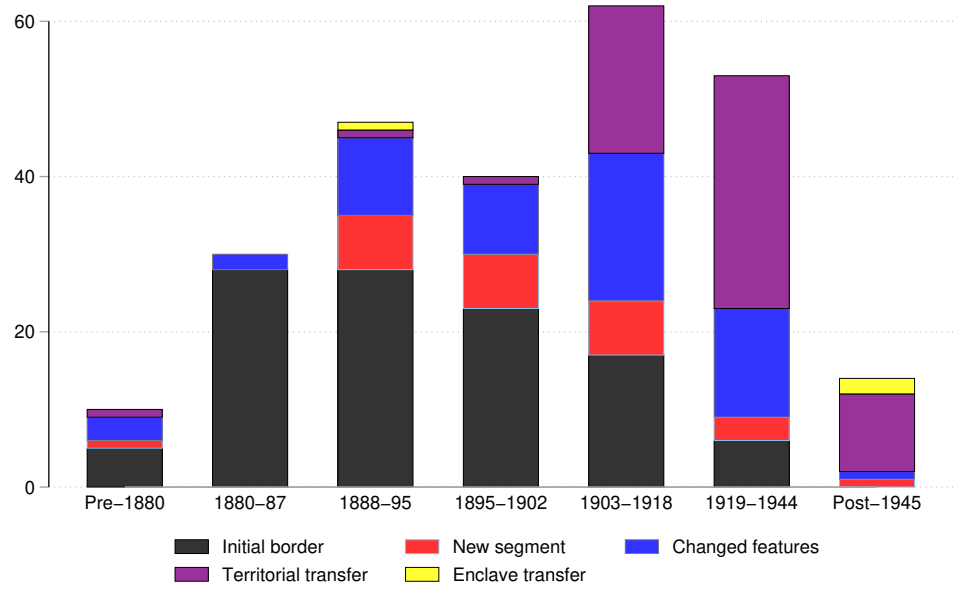


Table A.1: Large Territorial Transfers Since 1900

Gaining state	Losing state	Year	Territory	Approx. sq.km.
Kenya	Uganda	1902	Eastern Province	84,000
Zambia	Angola	1905	Lozi territory	88,000
Ethiopia	Kenya	1907	Menelik's claims	225,000
Sudan	DRC	1910	Lado Enclave	39,000
Cameroon	AEF	1911	Neukamerun	295,000
Western Sahara	Morocco	1912	Cape Juby	33,000
Uganda	Sudan	1914	Part of Lado Enclave*	47,000
Ghana	Togo	1919	British Togoland	34,000
Nigeria	Cameroon	1919	British Cameroons	53,000
AEF	Cameroon	1919	Neukamerun	295,000
Rwanda	Tanzania	1924	Gisaka district	7,000
Somalia	Kenya	1925	Jubaland	110,000
Kenya	Uganda	1926	Rudolf Province	37,000
Chad	Niger	1931	Tibesti mountains	134,000
AOF**	Burkina Faso	1932	Upper Volta	274,000
Libya	Sudan	1934	Sarra Triangle	72,000
Somalia	Ethiopia	1936	Ogaden	327,000
Burkina Faso	AOF**	1947	Upper Volta	274,000
Ethiopia	Somalia	1954	Ogaden	327,000
Morocco	Western Sahara	1958	Cape Juby	33,000
Cameroon	Nigeria	1961	Southern Cameroons	43,000

* Other parts of northern Uganda were transferred to Sudan (see Sudan–Uganda).

** Upper Volta was split between three AOF colonies in 1932 (Niger, Soudan/Mali, and Cote d'Ivoire) and reconstituted in 1947 (see Burkina Faso–Ivory Coast and Burkina Faso–Mali).

A.2 Supporting Information for Grid-Cell Regressions

Section A.2.1 presents data sources for variables. Section A.2.2 presents the corresponding regression tables for Figure 6 and related robustness checks. Section A.2.3 changes the reference category in the PCS regressions by including both PCS variables (both PCS border cells and PCS interior cells) in the same model. Section A.2.4 discusses issues related to spatial dependence, assesses robustness checks for Conley SEs, and performs an alternative procedure for calculating SEs using the wild bootstrap. Section A.2.5 computes Oster bounds to assess the sensitivity of our estimates to unobservables using information from observables.

A.2.1 Data Sources for Variables

1. **Top 10 River**: Equals 1 for grid cells/ethnic homelands with any of the 10 longest rivers in Africa; 0 otherwise. Top 10 rivers are Nile, Congo, Niger, Zambezi, Ubangi, Kasai, Orange, Limpopo, Senegal and Blue Nile. *Source: "Rivers and lake centerlines" shapefile from Natural Earth (2023).*

2. **Any River**: Equals 1 for grid cells/ethnic homelands with a river; 0 otherwise, *Source: "Rivers and lake centerlines" shapefile from Natural Earth (2023).*

3. **Minor River**: Equals 1 for grid cells/ethnic homelands with a river but not a top 10 river; 0 otherwise, *Source: "Rivers and lake centerlines" shapefile from Natural Earth (2023).*

4. **Watershed**: Equals 1 for grid cells/ethnic homelands with a major watershed; 0 otherwise. We only code major watersheds because almost all cells contain minor watersheds. *Source: constructed using FAO maps of Hydrological basins in Africa from Food and Agricultural Organization of the United Nations (2022) and cross-referencing with maps from Vivid Maps (2001).*

5. **Top 10 Lake**: Equals 1 for grid cells/ethnic homelands with any of the 10 largest lakes in Africa; 0 otherwise. Top 10 lakes: Lake Victoria, Tanganyika, Malawi, Chad, Turkana, Albert, Mweru, Tana, Kivu, and Edward. *Source: "Rivers and lake centerlines" shapefile from Natural Earth (2023).*

6. **Any lake**: Equals 1 for grid cells/ethnic homelands with a lake; 0 otherwise. *Source: "Rivers and lake centerlines" shapefile from Natural Earth (2023).*

7. **Minor lake**: Equals 1 for grid cells/ethnic homelands with a lake but not a top 10 lake; 0 otherwise. *Source: "Rivers and lake centerlines" shapefile from Natural Earth (2023).*

8. **Share of Desert**: Percentage of the surface area classified as non-vegetated or sparsely vegetated for each ethnic group. For grid cells, we code a dummy variable indicating whether a cell resides in non-vegetated or sparsely vegetated areas. *Source: UNESCO Vegetation Map of Africa by White (1983).*

9. **Logged Land Area**: Logged surface area of each ethnic homeland in $1000s$ of km^2. For grid cells, the same value of the ethnic group containing the cell. If a cell falls into multiple groups, we compute the average weighted by the land area of each group in cell. *Source:*

Michalopoulos and Papaioannou (2016). Original Source: Global Mapping International, Colorado Springs, Colorado, USA.

10. **Distance to the Coast**: The shortest geodesic distance of the centroid of each grid cell/ethnic homeland from the coast, measured in 1000s of km.

11. **Suitability for European Settlement**: The index takes into account climate, rainfall, elevation and tsetse fly prevalence that influenced prospects for European settlement. For ethnic groups, we use the average suitability index. For grid cells, we code a dummy variable indicating whether the cell is suitable or not. *Source: Alsan (2015).*

12. **Agricultural Intensity**: $1-6$ scale index reflecting the intensity of agriculture for each ethnic group. 1 means a "complete absence of agriculture", 2 for "casual agriculture", 3 for "extensive or shifting cultivation", 4 for "horticulture", 5 for "intensive agriculture on permanent fields", and 6 for "intensive cultivation where it is largely dependent upon irrigation". For grid cells, we use the value for the ethnic group containing the cell. If a cell falls into multiple ethnic groups, we calculate the average weighted by group area in cell. *Source: Murdock (1967); variable* `v28`.

13. **Population Density in 1850**: Average population density of each cell/ethnic homeland in 1850. *Source: Utrecht University (2022).*

14. **Population Count in 1850**: Total population of each ethnic homeland in 1850. Constructed using population density in 1850 and areas of ethnic homelands.

15. **Ecological Diversity**: An index between 0 and 1 that measures how ecologically diverse each ethnic homeland is. For grid cells, the same value of the ethnic group containing the cell. If a cell falls into multiple groups, we compute the average weighted by the land area of each group in cell. We compute the index for major lakes not included in Fenske (2014) following his method using White's vegetation data. *Sources: Fenske (2014); White (1983).*

16. **TseTse Suitability Index (TSI)**: The standardized Z-score of the potential steady-state TseTse population that takes into account temperature and humidity requirements for TseTse viability. The underlying spatial data are a collection of points. We compute the average TSI for the points in each ethnic homeland/grid cell. Some coastal cells do not contain any point and we take the value of the nearest point for those cells. *Source: Alsan (2015).*

17. **Contested Areas**: Dummy variable that equals 1 for grid cells/ethnic homelands containing contested coastal areas; 0 otherwise. Contested coastal areas are areas along the coast between two natural harbors or precolonial trading posts claimed by distinct powers by 1887. We first code colonial claims over natural harbors and precolonial trading posts, then identify two neighboring points claimed by different powers and extend from these points 90° inland for 300km to identify contested areas (see Figure A.2). *Source: Ricart-Huguet (2022), which we extend to the whole continent.*

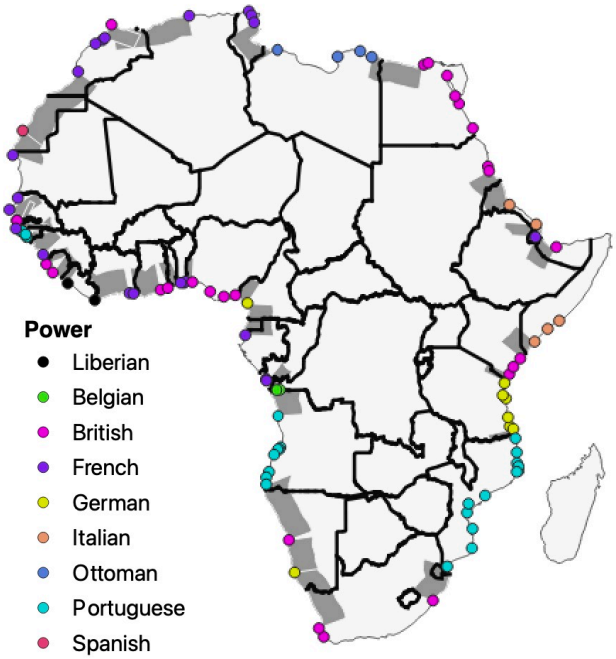
18. **Jurisdictional Hierarchy**: The number of jurisdictional levels beyond the local community, with 1 representing stateless societies, 2 for petty chiefdom, 3 for larger paramount chiefdom or their equivalent, and 4 or 5 for large states. Organizations not held to be legitimate, e.g., imposed colonial regimes, are excluded. *Source: Murdock (1967); variable* `v33`.

19. **Slave Exports**: For ethnic groups, the logged number of slave exports scaled by land area of the ethnic group (log(1+ exports/km^2)). For grid cells, the same value of the ethnic group containing the cell. If a cell falls into multiple groups, we use the average weighted by the land area of each group in cell. *Source: Nunn (2008).*

20. **Historical Natural Resources**: For ethnic groups, the number of historical natural resource sites scaled by group land area. For grid cells, a dummy variable indicating whether a cell contains any historical natural source cite. *Source: Ricart-Huguet (2022), which we extend to the whole continent.*

21. **Regions**: For ethnic groups, we use five conventional regions of Africa based on existing country borders. For grid cells, we construct five regions based on latitudes and longitudes. North: cells north of 18° N, roughly everything at or north of the Sahara desert (excludes Sahel); South: cells south of 15° S, roughly everything south of Lake Malawi; West: cells between 18° N and 14.5° S and west of 14° E, roughly everything West of Lake Chad that is not Northern Africa; East: cells between 18° N and 15° S and east of 14° E, roughly everything east of Lake Tanganyika that is not Northern or Southern Africa; Central: all remaining cells.

Figure A.2: Contested Coastal Areas (Trading Posts and Natural Harbors)



Note: Precolonial trading posts and natural harbors in colored dots; country borders in black lines. In gray, areas within 300km of the coast between two natural harbors or precolonial trading posts that were claimed by two distinct powers by 1887. We use these areas to code the variable CONTESTED AREAS. Appendix Table A.4 shows that cells in contested areas are more likely to contain colonial borders.

A.2.2 Regression Tables for Figure 6 and Robustness Checks

Table A.2: Correlates of Precolonial States

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample	Full	SSA	Full	SSA	Full	SSA	Full	SSA
Dependent Variable	PCS BORDER IN CELL				CELL INSIDE PCS			
Top 10 river	0.04*	0.06**	0.03+	0.05**	0.04*	-0.02	0.02	-0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)
Minor river	0.02**	0.03**	0.03**	0.04**	-0.01	-0.02**	0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Watershed	0.03**	0.03**	0.02*	0.02+	0.04**	0.01	0.04**	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Top 10 lake	0.12**	0.13**	0.17**	0.18**	-0.07**	-0.07**	0.01	0.02
	(0.03)	(0.03)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)	(0.02)
Minor lake	0.15**	0.13**	0.13**	0.12**	-0.05**	-0.07**	-0.05**	-0.04**
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)
Cell in desert	-0.07**	-0.05**	-0.06**	-0.05**	-0.03**	-0.03**	-0.01	-0.05**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Latitude			0.00**	0.00**			0.01**	0.01**
			(0.00)	(0.00)			(0.00)	(0.00)
Longitude			0.00**	0.01**			0.01**	0.01**
			(0.00)	(0.00)			(0.00)	(0.00)
Contested areas			0.06**	0.08**			-0.00	-0.01
			(0.01)	(0.01)			(0.01)	(0.01)
Logged group area			-0.03**	-0.03**			-0.03**	-0.04**
			(0.00)	(0.00)			(0.00)	(0.00)
Distance to the coast			0.01	0.02+			0.01	0.02*
			(0.01)	(0.01)			(0.01)	(0.01)
Hist. natural resources			0.01	0.02			0.03+	0.02
			(0.02)	(0.02)			(0.02)	(0.02)
Logged slave exports			0.00+	0.01**			0.01**	0.01**
			(0.00)	(0.00)			(0.00)	(0.00)
Suitability for			0.01	-0.01			-0.04**	-0.07**
European settlement			(0.01)	(0.01)			(0.01)	(0.01)
Agricultural intensity			-0.00	0.01*			-0.01*	-0.01*
			(0.00)	(0.00)			(0.00)	(0.00)
Population density in 1850			1.36**	1.90*			0.57	0.47
(in 1000s/km^2)			(0.41)	(0.74)			(0.40)	(0.46)
Ecological diversity			0.02	0.02			0.03+	0.05**
			(0.02)	(0.02)			(0.01)	(0.02)
Tsetse suitability index			-0.02**	-0.03**			-0.03**	-0.05**
			(0.00)	(0.01)			(0.00)	(0.01)
Constant	0.10**	0.10**	0.11**	0.04	0.10**	0.11**	0.10**	0.04+
	(0.00)	(0.00)	(0.02)	(0.03)	(0.00)	(0.00)	(0.02)	(0.02)
Region FE	NO	NO	YES	YES	NO	NO	YES	YES
N	10341	7228	9913	6816	10341	7228	9913	6816
Adjusted R^2	0.03	0.02	0.10	0.08	0.01	0.00	0.13	0.14

Note: The table reports regression results for correlates of precolonial state formation in Africa. The dependent variables are PCS BORDER IN CELL and CELL INSIDE PCS. We include a wide range of geographic variables and socioeconomic variables as covariates. All models are OLS with robust standard errors in parentheses. Our goal is to explore variables correlated with PCS borders that might also affect colonial border formation, thus we report less conservative standard errors to avoid Type II errors.
$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$

Table A.3: Regression Table for Figure 6: Geography (Top Panel)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent Variable: COUNTRY BORDER IN CELL							
Any river	0.11**							
	(0.03)							
Major (top 10) river		0.19**					0.18**	0.19**
		(0.06)					(0.06)	(0.06)
Minor river		0.09**					0.08**	0.07**
		(0.03)					(0.03)	(0.03)
Any lake			0.13**					
			(0.04)					
Major (top 10) lake				0.35**			0.34**	0.33**
				(0.09)			(0.09)	(0.09)
Minor lake				0.03			0.01	0.01
				(0.03)			(0.03)	(0.03)
Watershed					0.10**		0.10**	0.10**
					(0.03)		(0.03)	(0.02)
Cell in desert						-0.07**	-0.04+	-0.03
						(0.02)	(0.02)	(0.02)
Distance to the coast								0.00
								(0.02)
Suitability for European settlement								0.05+
								(0.03)
Tsetse suitability index								0.04**
								(0.01)
Constant	0.13**	0.13**	0.14**	0.14**	0.13**	0.18**	0.12**	0.13**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.04)
Lat & lon	NO	NO	NO	NO	NO	NO	NO	YES
Region FE	NO	NO	NO	NO	NO	NO	NO	NO
N	10341	10341	10341	10341	10341	10341	10341	10341
Adjusted R^2	0.02	0.02	0.01	0.01	0.01	0.01	0.04	0.06

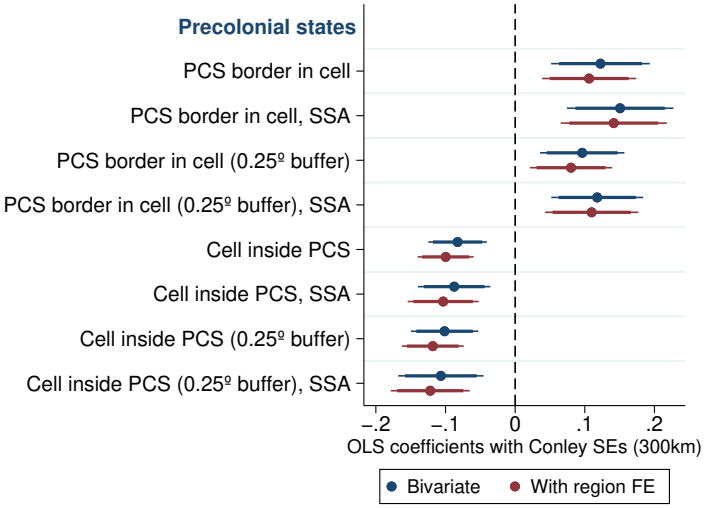
Notes: This regression table accompanies the top panel of Figure 6. All models are OLS with Conley standard errors in parentheses with a distance cutoff of 300 km. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A.4: Regression Table for Figure 6: Precolonial States (Bottom Panel)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample	Full	Full	Full	Full	SSA	SSA	SSA	SSA
Dependent Variable	COUNTRY BORDER IN CELL							
PCS border in cell	0.10**				0.12**			
	(0.03)				(0.04)			
PCS border in cell (0.25° buffer)		0.07*				0.09**		
		(0.03)				(0.03)		
Cell inside PCS			-0.09**				-0.09**	
			(0.02)				(0.03)	
Cell inside PCS (0.25° buffer)				-0.11**				-0.11**
				(0.02)				(0.03)
Top 10 river	0.20**	0.20**	0.20**	0.20**	0.22**	0.22**	0.22**	0.22**
	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)
Minor river	0.07*	0.07*	0.07**	0.07**	0.07**	0.07**	0.08**	0.08**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Top 10 lake	0.29**	0.28**	0.30**	0.30**	0.29**	0.28**	0.31**	0.31**
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Minor lake	0.00	0.01	0.01	0.01	-0.00	0.00	0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Watershed	0.09**	0.09**	0.10**	0.10**	0.10**	0.10**	0.10**	0.10**
	(0.03)	(0.03)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
Cell in desert	-0.02	-0.02	-0.03	-0.03	-0.04	-0.04	-0.05+	-0.05+
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
Contested areas	0.09**	0.09**	0.09**	0.09**	0.08*	0.08*	0.08**	0.08**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
Ethnic group border in cell	0.01	0.01	0.01	0.02+	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Logged group area	-0.01	-0.01	-0.01	-0.01	-0.01	-0.00	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Distance to the coast	0.03	0.03	0.03	0.03	0.01	0.01	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
Historical natural resources	-0.05*	-0.06*	-0.05*	-0.05*	-0.06+	-0.06*	-0.05+	-0.06+
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Logged slave exports	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)
Suitability for European settlement	0.05	0.05	0.04	0.04	0.05+	0.06+	0.05	0.05
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Agricultural intensity	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Population density in 1850 (in 1000s/km^2)	-0.84*	-0.81*	-0.66*	-0.66*	-1.26*	-1.23+	-0.98	-0.99
	(0.34)	(0.34)	(0.31)	(0.31)	(0.63)	(0.65)	(0.65)	(0.65)
Ecological diversity	-0.07	-0.07	-0.06	-0.07	-0.10*	-0.10*	-0.10+	-0.10+
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Tsetse suitability index	0.04**	0.04**	0.04**	0.04**	0.04**	0.04**	0.03**	0.03**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	0.14*	0.13*	0.15*	0.15*	0.18*	0.18*	0.19**	0.19**
	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)
Lat & lon	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES
N	9913	9913	9913	9913	6816	6816	6816	6816
Adjusted R^2	0.07	0.07	0.07	0.07	0.09	0.08	0.08	0.08

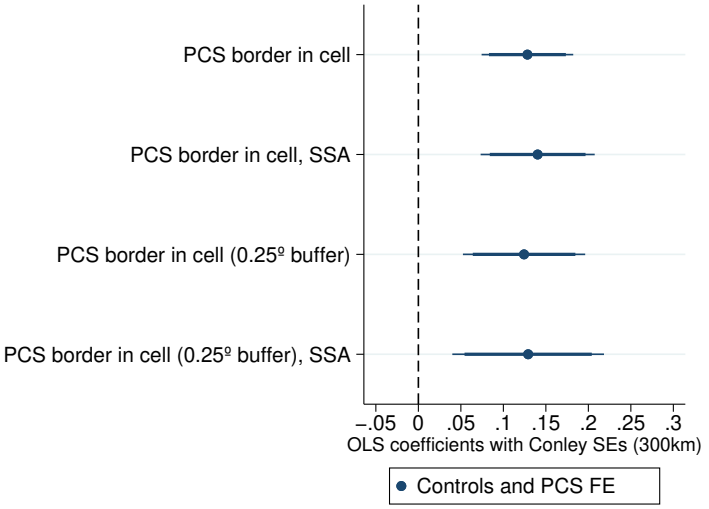
Notes: This regression table accompanies the bottom panel of Figure 6. OLS coefficients with Conley standard errors in parentheses (distance cutoff = 300 km). This table contains fewer observations than Table A.3 because Agricultural intensity contains missing values; the results do not change. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Figure A.3: Precolonial States and African Borders without Controls



Notes: This figure presents a series of coefficient plots similar to those in the bottom part of Figure 6 but without the battery of control variables.

Figure A.4: Correlates of African Borders with PCS FE

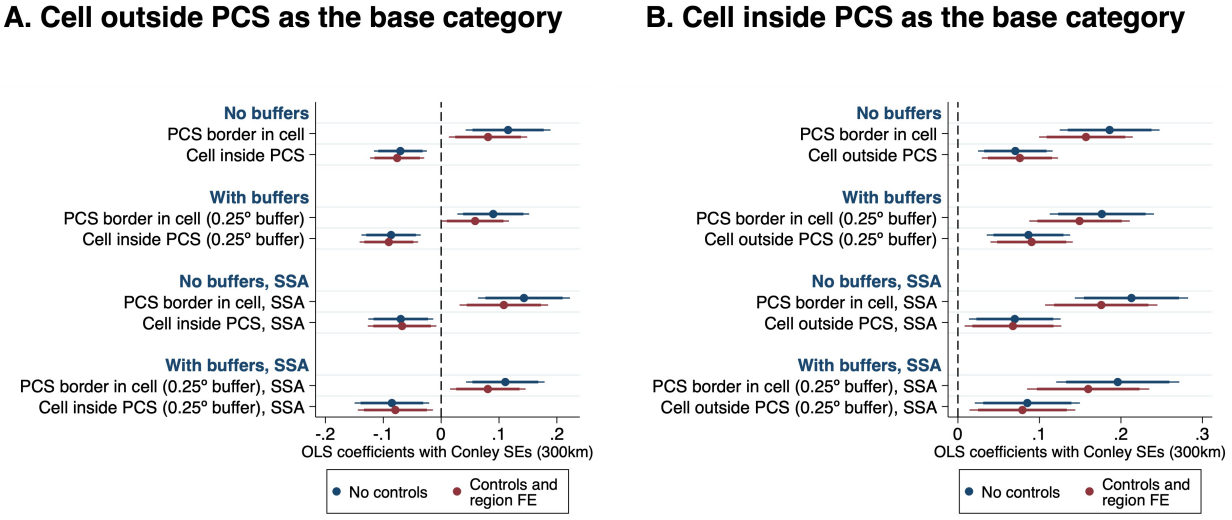


Notes: This figure presents coefficients from models that add fixed effects for PCS to the specification. Using PCS FE causes cells outside PCS to drop and essentially compares cells with PCS borders to cells inside PCS while stratifying on the PCS, which guards against any source of omitted variable bias common to each PCS.

A.2.3 Changing the PCS Reference Category

We use our PCS dataset to divide grid cells into three categories: cells containing a PCS border, cells inside a PCS, and cells outside a PCS. Figure A.5 includes two PCS variables in the same models while leaving the third as the base category. In Panel A, the base category is Cell outside PCS. In Panel B, the base category is Cell inside PCS. Panel B shows that both cells with a PCS border and cells outside of a PCS are more likely to contain a colonial border than cells inside PCS, consistent with our theoretical implication that colonizers left precolonial states unsplit. Additionally, Panel A shows that cells with PCS borders are more likely to contain colonial borders than cells outside PCS in all specifications. Overall, these results suggest that the positive and significant coefficients for PCS border in cell in Figure 6 are not driven only by differences between cells containing PCS borders and cells inside PCS.

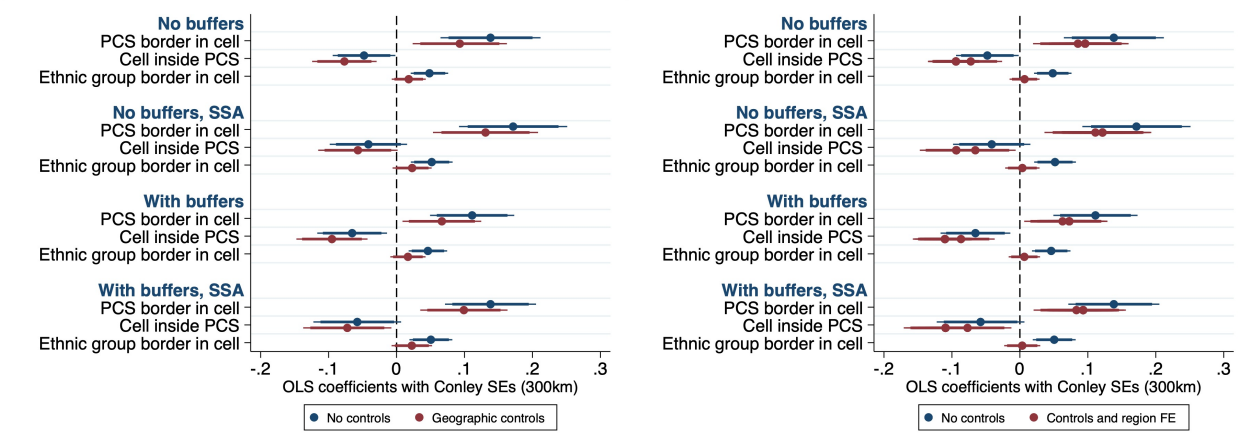
Figure A.5: Correlates of African Borders with both PCS Variables



Notes: This figure presents a series of coefficient plots similar to Figure 6 but with two PCS variables in the same models leaving Cell outside PCS as the base category in Panel A and Cell inside PCS as the base category in Panel B.

We conduct another robustness check to directly incorporate borders of ethnic homelands. We further divide cells outside PCS into cells that contain the borders of a Murdock ethnic homeland (ETHNIC BORDER IN CELL) and those that do not, include the former in the same regressions with PCS BORDER IN CELL and CELL INSIDE PCS, and leave the later as the reference category. The results are shown in Figure A.6, where the left panel reports models with no controls and with only geographical covariates, and the right panel reports models with the full set of covariates and region FE. Although non-PCS Murdock borders are positively associated with borders in the bivariate specifications, this correlation is not robust to adding either geographic or all covariates. However, we caution that this specification is somewhat difficult to interpret because of the incongruity between our polygons and Murdock's.

Figure A.6: Correlates of African Borders with PCS Variables and Ethnic Borders



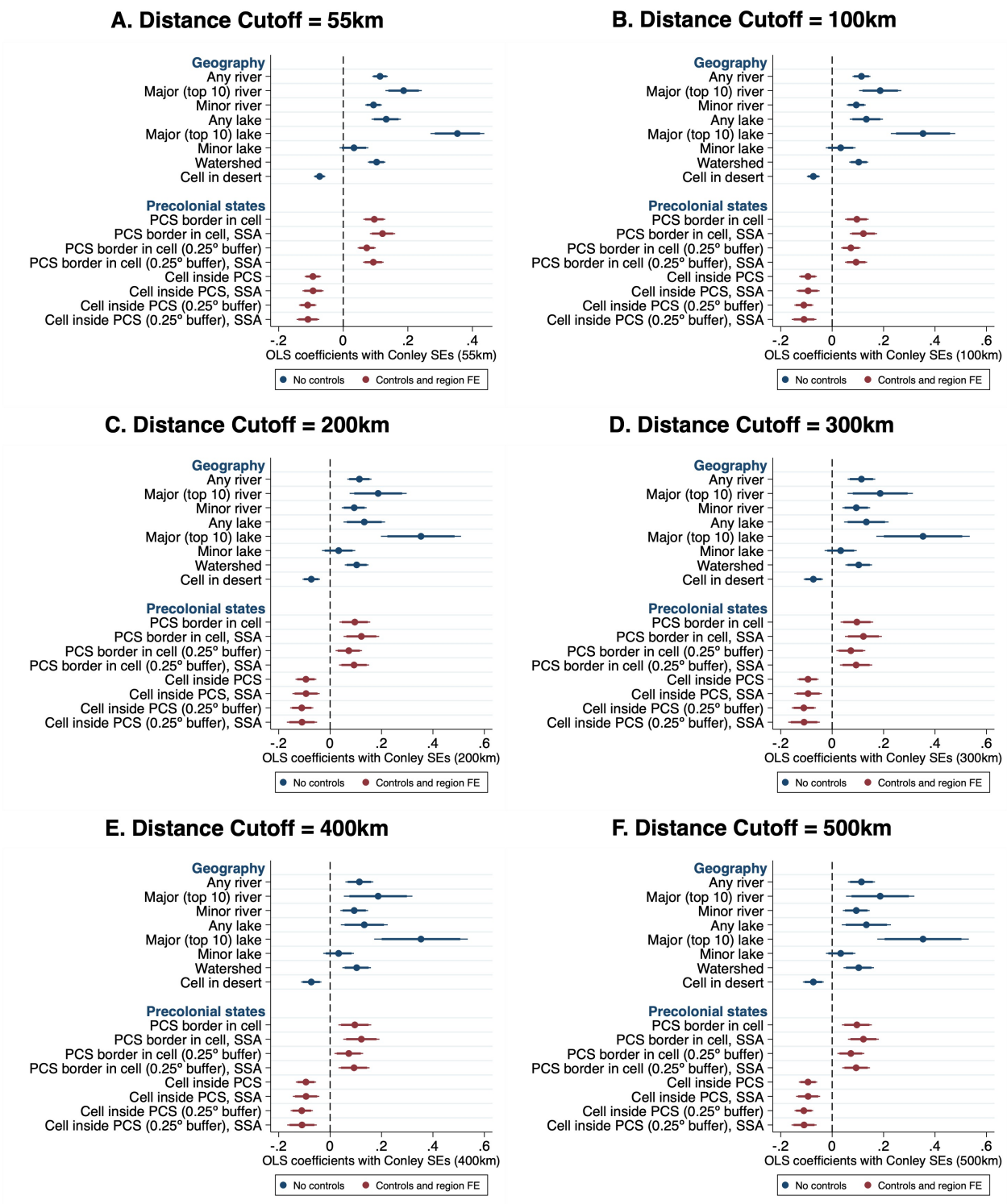
A.2.4 Spatial Dependence and Conley Standard Errors

Spatially proximate units may be highly correlated in their unobservables; but, as the distance increases, the correlation gradually dissipates. In our analysis, any cell proximate to a cell containing a country border is itself highly likely to contain a country border. Conley standard errors, which we use in all specifications, account for such spatial dependence. This method adjusts the variance-covariance matrix by incorporating information about the spatial distance between observations. To compute the variance-covariance matrix, the method uses a uniform kernel function to weight pairs of observations such that the weight equals 1 if two observations are within a specified distance threshold, and 0 otherwise. The kernel function thus distinguishes between observations that are near and those that are far. The choice of the cutoff distance affects the standard error estimates; in Appendix Figure A.7, we verify that our results are robust to various distance thresholds.

One assumption inherent to calculating Conley SEs that cannot, formally, be relaxed is uniform spatial dependence. That is, the covariance measure depends on distance but not direction. This assumption might be violated because our outcome and main explanatory variables are lines. For example, if a country border is horizontal in a cell, then the cells north and south of it are less likely to contain a border than cells west and east of it. We address this possibility in two ways.

First, if violations of uniform spatial dependence within a given radius have a significant impact, then standard error estimates should vary drastically upon varying the radius. However, as shown in Appendix Figure A.7, this is not the case. Our results are qualitatively unchanged for any distance cutoff ranging from 55km, capturing a single neighboring cell, up to 500km, which corresponds with large tracts of territory.

Figure A.7: Correlates of African Borders with Various Distance Cutoffs

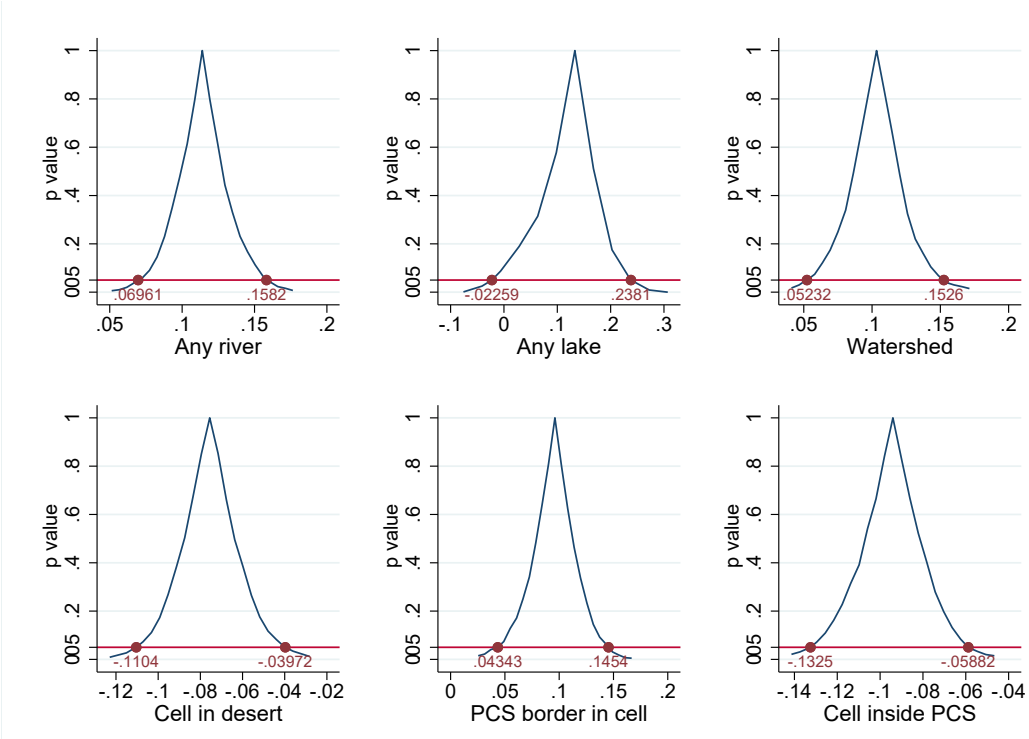


Notes: This figure presents a series of coefficient plots similar to Figure 6 but with varying distance cutoffs.

Second, in addition to Conley standard errors, we also cluster our observations by artificially-constructed rectangular regions, because neighboring cells may be related in many ways. Technically, the off-diagonals in the variance-covariance matrix are unlikely to be 0 for grid cells that are sufficiently near each other. We are conservative and create large clusters of roughly 10ºx10º (roughly 550 km at the equator). We compute standard errors using the wild bootstrap, a method designed "for regression models with heteroskedasticity of unknown form" (Roodman et al. 2019, 1) with a small number of large clusters, precisely our case here. This allows us to account for flexible forms of spatial correlations among neighboring cells not restricted by the uniform spatial dependence assumption.

Our results, reported in Figure A.8, present the "confidence set"[7] at the 95% level for each main explanatory variable in Figure 6. For example, our main model in Figure 6 yields an estimated coefficient of 0.10 for PCS border in cell. Table A.4 shows that 95% confidence set for PCS border in cell fall within the range of 0.07 to 0.16. The same is true for any river, watershed, cell in desert and cells inside PCS; any lake is the only variable with a wide 95% confidence set that hoovers just below 0. The results suggest that our main results are robust to alternative ways of modeling spatial dependence.

Figure A.8: Distribution of p-values Using Wild Cluster Bootstrapped Standard Errors



[7]The confidence set consists of all values of estimated coefficient for which the bootstrapped p-value for the test of the null is equal to or greater than 0.05.

A.2.5 Oster Bounds

We assess how likely it is that unobserved confounding variables account for the effect of pre-colonial states. Oster's (2019) test computes the share of variation that unobservables would need to explain, relative to the observables included in the model, in order to reduce the coefficient of interest to zero. This share is denoted by δ. For instance, $\delta = 2$ indicates that unobservables would need to be twice as important as observables for the coefficient to be zero (Oster 2019, 195).

The implementation of the Oster (2019) test requires specifying a value of R^2_{max}, which denotes the R^2 from a hypothetical regression that included both observed and unobserved controls. For example, $R^2_{max} = 1.5R^2$ means that including unobservables would increase the observed R^2 by 50%.

To bias against our results, and because our setting is observational, we use very large values of R^2_{max}: 1.5, 2, and 3 (Oster 2019 uses 1.3 in her article). That is, we assume that our R^2 could be up to three times as large due to unobserved confounders even though all models in Table A.5, just as in Figure 6, already include a battery of controls and region fixed effects.

Table A.5 shows that our main explanatory variables in Figure 6 (PCS border in cell and cell in PCS) are very robust to unobservables. We observe that $\delta > 1$ even when $R^2_{max} = 3 * R^2$.

We also calculate the bounds on the effect of each variable (β) on the likelihood of having a country border in that cell assuming $\delta = 1$ (that is, assuming that unobservables explain as much variation as observables). The range excludes 0 for all values of R^2_{max}. The two results convey the same idea: unobservables would need to be more than three times as important as observables for the effect of our main explanatory variables to become zero.

Table A.5: Assessing Possible Bias from Unobservables

PCS border in cell	$R^2_{max} = 1.5R^2$ $= 0.11$	$R^2_{max} = 2R^2$ $= 0.14$	$R^2_{max} = 3R^2$ $= 0.21$
δ (unobservables/observables)	5.00	2.71	1.41
Bounds on β (for $\delta = 1$)	(0.10, 0.09)	(0.10, 0.07)	(0.10, 0.04)
Cell in PCS	$R^2_{max} = 1.5R^2$ $= 0.10$	$R^2_{max} = 2R^2$ $= 0.14$	$R^2_{max} = 3R^2$ $= 0.21$
δ (unobservables/observables)	57.82	30.84	15.98
Bounds on β (for $\delta = 1$)	(-0.09, -0.10)	(-0.09, -0.11)	(-0.09, -0.13)

Notes: The bounds are (β, β'), where β is the effect estimated from the main regression model and β' is the effect with $\delta = 1$ and the R^2_{max} specified in the column. Bounds are calculated using the STATA package `psacalc` (Oster 2019).

A.3 Supporting Information for Ethnic Partition Regressions

We conducted supplementary regressions using ethnic groups as the unit of analysis. We also discuss the important shortcomings of using the Murdock data for assessing the relationship between precolonial states and ethnic partition.

A.3.1 Data and Results

Data. We largely follow Michalopoulos and Papaioannou's (2016) setup for assessing the correlates of ethnic partition. They identify partitioned groups using Murdock's Ethnolinguistic Map (1959), digitized by Nunn (2008), that describes and geo-locates ethnic groups in Africa at the time of European colonization. There are 825 ethnic homelands after dropping uninhabited areas and small islands. Given inevitable error in the Murdock-drawn "ethnic homeland" boundaries, they (and we) code as partitioned any group for which at least 10% of their territory falls into more than one country. We additionally coded, for each partitioned group, whether the border segment that split the group was primarily squiggly or a straight line (following the conceptual distinction in Alesina, Easterly and Matuszeski 2011).

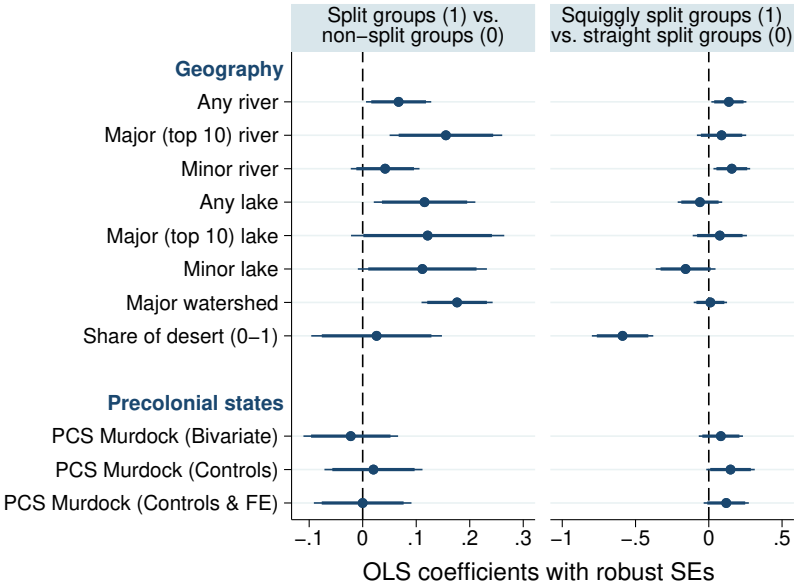
Our measure of precolonial states is based on Murdock's jurisdictional hierarchy variable and we refer to it as PCS MURDOCK. We count as a precolonial state any group that scores three levels or higher, which correspond with what Murdock labels as "states." Given our theoretical assessments, a binary variable is easier to interpret than the original ordinal measure used in the literature, although the patterns of significance are the same if we use the original ordinal measure (not reported). We do not anticipate differential rates of partition for polities with less developed hierarchies because the absence of reasonably credible traditional claims to rule a broad territory should prevent European colonizers from identifying focal points.

Rivers and lakes are possibly the most important geographic focal points because they are highly visible and fixed. We measure whether each ethnic homeland contains a TOP 10 RIVER, a MINOR RIVER, or ANY RIVER (Michalopoulos and Papaioannou's 2016 measure). Many international borders also involve segments of smaller rivers that are locally salient. We also measure whether an ethnic homeland contains a TOP 10 LAKE, a MINOR LAKE or ANY LAKE (Michalopoulos and Papaioannou's 2016 measure). Different measures allow us to capture rivers and lakes of varied importance and conduct a more comprehensive assessment of their role in border formation. To assess our theoretical expectations about border formation in areas lacking clear focal points, we include SHARE OF DESERT.

Results for geography. Figure A.9 presents a series of linear models examining the impact of physical and political geography on ethnic group partition. The left panel compares ethnic groups split across international borders with non-split groups. The right panel compares groups split by a squiggly border with those partitioned by a straight line. Across the entire sample, 229 of the 825 ethnic groups (28%) are partitioned across multiple countries. In 78% of the 229 split groups, a majority of the border is squiggly.

The top panel presents OLS estimates for geography. The regressions for major river (minor river) control for Minor (major) river, and likewise for lakes, to create more sensible comparison groups. All other geographic models are bivariate. Visible geographic focal points—rivers, lakes, and

Figure A.9: Correlates of Ethnic Partition



Notes: This figure summarizes a series of OLS estimates with explanatory variables in rows and the DVs in columns. It presents point estimates and both 95% and 90% confidence intervals calculated with robust standard errors. Left panel: 229 split groups and 596 non-split groups. Right panel: 178 squiggly-split groups and 51 straight-split groups. The top panel shows estimates for geographic variables. The disaggregated rivers and lakes regressions include controls for both major/minor. Other models in the top panel are bivariate. The bottom panel presents three estimates for precolonial states: bivariate, same set of control variables from the grid cell analysis, those plus region FE. Including agricultural intensity causes 53 observations to drop in the left panel and 6 observations in the right panel.

major watersheds—covary with an elevated likelihood of ethnic group partition, consistent with our theoretical expectations. Ethnic homelands containing a river or a lake are more likely to be partitioned: 31% of groups with any river in their territory were partitioned compared to 24% among groups lacking this feature, and the figures are similar for lakes (38% vs. 26%). The effect of river on partition is primarily driven by major rivers as opposed to minor ones: 40% of groups with a top 10 river were partitioned compared to 28% among groups with only minor rivers in their territory. Major watersheds affect the likelihood of partition: 39% of groups with a major watershed in their territory were partitioned compared to 22% among groups without a major watershed. Rivers also affect the *type* of partition. The presence of any river increases the likelihood of a squiggly split (80% versus 66% otherwise). Lakes, on the other hand, do not affect the type of split. Unlike inherently squiggly river borders, some international borders involving lakes follow the squiggly median line between shores (e.g., Lake Tanganyika) whereas others cut across the lakes with straight lines (e.g., Lake Victoria), leading to a null aggregate effect. Overall, the statistical results suggest that water bodies influenced border formation.

As expected, an ethnic group's percentage of desert area does not affect the likelihood of partition. However, a larger desert area increases the likelihood of ethnic partition via a straight-line border. These results are consistent with the expectation that European powers competed for better-quality land and drew borders more carefully in those areas while dividing territories haphazardly

in deserts, where there was a lack of both economic interests and focal points.

Results for precolonial states. The bottom panel of Figure A.9 shows results for PCS MURDOCK. We first present the bivariate result. Since PCS MURDOCK is endogenous, next we control for the same set of geographic and other covariates used in the grid cell analysis. Finally, we control for region fixed effect to compare groups within similar regions of Africa.

In our main analysis with grid cells, we demonstrate that precolonial states are less likely to be partitioned. We do not replicate this finding with Murdock ethnic groups. The coefficients for PCS MURDOCK on the left panel are close to 0 and insignificant. Furthermore, the raw magnitudes are small: 27% of groups with PCS MURDOCK=1 were partitioned compared to 29% with PCS MURDOCK=0. The coefficients on the right panel are positive but insignificant, suggesting that PCS MURDOCK may not affect the type of split.

A.3.2 Shortcomings of the Murdock Data

The Murdock data are too noisy to use for assessing the relationship between precolonial states and partition. This helps to account for why we find strong correlations in the paper using our data but null correlations using Murdock's. We offer two criticisms of Murdock: (1) Ethnic groups exhibit a conceptual mismatch with the spatial reach of historical states, and (2) Murdock's jurisdictional hierarchy variable exhibits considerable measurement error.

Table A.6: Partitioned Ethnic Groups with Precolonial States: Murdock

Murdock group	Country	Our assessment		Murdock group	Country	Our assessment
Delim	Western Sahara	Not a state		Regeibat	Mauritania	Not a state
Esa	Somalia	Not a state		Ronga	Mozambique	Not a state
Fon	Benin	Not partitioned (Dahomey)		Ruanda	Rwanda	Not partitioned
Gil	Morocco	Not a state		Rundi	Burundi	Not partitioned
Hamama	Tunisia	Not a state		Runga	Chad	Not a state
Hiechware	Botswana	Not a state		Songhai	Mali	Not a state
Imragen	Western Sahara	Not a state		Sotho	South Africa	Agree
Ishaak	Somalia	Not a state		Subia	Namibia	Not a state
Jerid	Tunisia	Not a state		Swazi	Swaziland	Agree
Kgatla	South Africa	Not a state		Tabwa	Congo DRC	Not a state
Mandara	Nigeria	Not a state		Tama	Sudan	Not a state
Manga	Niger	Not a state		Tienga	Nigeria	Not a state
Masalit	Sudan	Not a state		Tlokwa	South Africa	Not a state
Mashi	Zambia	Not a state		Tripolitanians	Libya	Not a state
Mpezeni	Zambia	Not a state		Tunisians	Tunisia	Not partitioned
Popp	Benin	Not a state		Wakura	Nigeria	Not a state

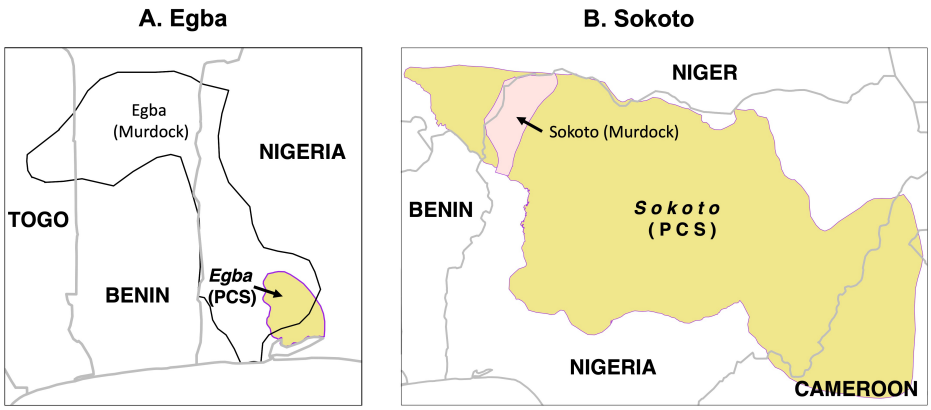
Notes: This table lists every ethnic group for which Murdock codes the ethnic group with a jurisdictional hierarchy score of 3 or above, and Michalopoulos and Papaioannou (2016) code the group as partitioned. The assignment to countries is from Michalopoulos and Papaioannou (2016).

To substantiate these points, in Table A.6, we sample every "positive-positive" case from the regressions presented above, that is, every case with PCS MURDOCK=1 and the ethnic group is partitioned according to the criterion in Michalopoulos and Papaioannou (2016). For only two of the

32 cases do we find evidence that members of the ethnic group indeed created centralized political institutions *and* the core area of the historical state was partitioned across international borders. To make this assessment, we first compare the Murdock groups with high jurisdictional hierarchy scores to the list of states from our coding exercise. We conclude that 26 of these ethnic groups did not belong to historical states. Among the groups that belonged to precolonial states, we then assessed that only two of the six corresponding states were partitioned in the sense of core areas of the state were divided across colonial borders (based on the data and historical information we compiled on PCS). Thus, the large number of positive-positive cases that drive the null findings for precolonial states and ethnic partition almost entirely reflect noise.

To further highlight the conceptual mismatch between ethnic groups and states, amid more general concerns about measurement error in Murdock's polygons, we present two examples. In Panel A of Figure A.10, we present the Murdock polygon for Egba in white and ours in yellow. As we discuss in Appendix B.2, we incorporate the historical state governed by the Alake of Egba; as we note, if anything, our polygon is too big. But Murdock instead measures the location of members of ethnic groups, which he suggests is much larger—hence yielding a false positive if the goal is to assess whether the historical state was partitioned. There are two other problems with the Murdock in this case, as well. First, Murdock codes Egba as two levels of political hierarchy above the village level, that is, a paramount chieftaincy rather than a state. However, historical sources argue that Egba was the most powerful state to emerge in Yorubaland following the collapse of the Oyo Empire early in the nineteenth century (see Appendix B.2). Second, Murdock's Egba polygon is undoubtedly too large even given the goal of measuring ethnic groups (see the map in Forde 1951).

Figure A.10: Comparing Murdock Polygons



In Panel B, we examine the Sokoto Caliphate. In this case, our polygon is much bigger, and corresponds with the extent of the historical state. This is an odd entry in Murdock. The Sokoto Caliphate was governed by ethnic Fulani, and many of the new emirates displaced historical Hausa states. Sokoto was a state, not an ethnic group, and thus should not appear in his data set at all. Further, his Sokoto polygon corresponds roughly with the Sokoto emirate only, not the entire empire. Finally, and strangely, Murdock incorrectly codes Sokoto as exhibiting only one level of hierarchy above the village level. In sum, in both this and the Egba case, even if we correct the jurisdictional hierarchy score, the Murdock polygon is simply too inaccurate for empirical purposes.

A.4 Supporting Information for Bilateral-Border Analysis

We present a case study for all 107 bilateral borders in Africa in Appendix C. We use the information from these case studies to code three original variables: (a) the year of initial border formation and all years with subsequent major revisions, (b) the primary and secondary physical features of each border, and (c) causal process observations that assess whether a historical political frontier affected the border. We discussed the first variable in Section 2, and we provide coding rules for the latter two in Section A.4.1. These case studies also provide narratives to understand the macro- and meso-level elements of border formation, in addition to micro-level features of the border. We provide regional overviews of these broader factors in Section A.4.2. Finally, in Section A.4.3, we provide summaries for all twenty-nine PCS that we code as directly affecting a border.

A.4.1 Sources and Coding Rules

Our main general sources are Hertslet (1909) and Brownlie (1979). The first, published by the British War Office in 1909, contains text for every inter-European treaty and every intra-British arrangement, through the mid-1900s. Brownlie (1979) also contains passages from many of these treaties; the value-added of this encyclopedia relative to Hertslet (1909) is to provide information on (a) events occurring after 1909, (b) intraimperial borders within the French empire (although we also consulted numerous additional French-language sources), and (c) the actual alignment and delimitation of borders (for which we also consulted Google Maps). Wesseling (1996) provides a detailed history of the period and McEwen (1971) provides detailed information on bilateral borders in East Africa. We consulted over 100 additional sources, cited throughout Appendix C, that provide more detailed histories of specific empires, regions, colonies, and historical states.

We assess the physical features that comprise each border. The most common features are rivers, lakes, watersheds,[8] mountains, and straight lines (both parallels/meridians and non-astronomical). For each bilateral border, we identify one or two features that are primary in the sense of constituting the plurality (and usually the majority) of the length of the border. In some cases, this is obvious. For example, the Zambia–Zimbabwe border consists entirely of the Zambezi River. In Botswana–Namibia, there are two primary features, but these are also unambiguous: parallel and meridian lines comprise the entire east-west border, the Zambezi River determines the entire north-south border, and both segments of the border are roughly equal in length. Other cases lack an obvious primary feature(s) and we make a more subjective assessment based on the length of the different features, the frequency with which the treaty documents mention different features, and historical context (usually putting more weight on features that were discussed earlier by European statesmen as more important). Secondary features are ones that comprise smaller segments of the border.

We also code causal process observations (CPO) for the effect of historical political frontiers (HPF). According to Collier (2011), a CPO is distinct from a standard entry in a data set (e.g., to use in regression analysis) because a CPO is an assessment about the causal *process*, rather than a descriptive fact. Thus, by asserting that a HPF directly affected a border, we make a counterfactual claim that the border would likely have been located elsewhere were it not for the presence

[8] Sometimes called watershed boundaries or drainage divides, these are land ridges that separate water flowing into different rivers.

of the HPF. Our standards for making such an assessment are that local agents were actively involved in the negotiations about the border and/or the foundational documents for the borders explicitly mentioned the particular historical political frontier. By incorporating information from both the treaties themselves and the assessments of historians, we uncover substantial amounts of information about this causal process. Many HPF that we identify as directly affecting borders are precolonial African states (PCS). We have a denominator for this type of HPF because of our quantitative data set. This enables us to discuss PCS that we *do not* code as affecting borders in the case studies. Other HPF include white settlements (mainly in southern Africa); Ottoman territories in North Africa; Liberia; and Africans who lived either in decentralized polities or more state-like ones that, for various reasons, are not included as PCS in our quantitative data set. We coded a separate category of indirect effect for cases in which Europeans competed over a particular historical state but we lack direct evidence that this competition ultimately affected the border in any discernible way (e.g., territory allotted to the Sultan of Zanzibar along the coast of East Africa), or a border alteration was derivative to an HPF-affected border revision elsewhere. For example, when Europeans deemed that Barotseland (PCS) was larger than previously assessed, a substantial amount of territory was transferred from Angola to Northern Rhodesia (Zambia), which in turn affected each of their borders with German South West Africa (Namibia).

A.4.2 Region-by-Region Summaries

North East Africa and the Nile. Competition over the Nile River was the main macro-level factor that shaped borders in the region construed broadly as North East Africa, stretching from Egypt to the northern limits of the DRC and Uganda and, in the east, to the Horn of Africa. The key meso-level objects of contention were precolonial states (Egypt, its historical dependency of Sudan, the Mahdist state, Ethiopia, Darfur, and Wadai) and the Nile Valley. Ironically, the Nile itself ultimately played a minimal role as a micro-level border feature because Britain eventually monopolized control over the Nile Valley.

In 1882, plans for joint British-French rule over Egypt fell through and Britain gained sole control over Egypt. Subsequently, France's challenges to British suzerainty over the Nile and actions by militarily powerful African states shaped territorial claims. Britain could not occupy Sudan, Egypt's historical dependency located farther up the Nile, because of the rise of the Mahdist state. To create a buffer against French expansion, Britain supported Italian paramountcy over the Horn of Africa (including over Ethiopia) and territorial expansion by the Congo Free State along the Nile. In response, France blocked much of Leopold's dream of controlling the Nile in 1894; and supported the Emperor of Ethiopia, who militarily defeated Italy in 1896. Ethiopia's victory forced Europeans to reconsider their territorial claims throughout the Horn and removed a key barrier against France marching to the Nile. After Britain militarily defeated the Mahdist state in 1898, advancing British and French troops met at Fashoda, a town along the Nile. France backed down, which resulted in the settlement of Anglo-French borders throughout Africa.

North Africa. Proximity to southern Europe, combined with declining Ottoman control, were the macro-level factors that shaped European involvement in North Africa. France became the dominant European power in coastal North Africa and the Sahara, although Spain and Italy were also present in the region.

Historical political frontiers were a key meso-level feature that affected spheres of influence in the coastal regions: PCS Morocco, PCS Tunisia (nominally Ottoman), and Ottoman Tripoli. Farther south, the Sahara Desert was the most important meso-level feature. All these states stretched into the desert; however, even when powers claimed limits on the basis of historical states, these frontiers were more inherently ambiguous in desert areas. Because of the vast desert territory in North Africa, borders in this region consist primarily of straight lines. Yet even in the desert, the micro-level border lines are less arbitrary than commonly assumed. The location of straight-line borders was often affected by the presence of streams (wadis, *oueds*), wells, and caravan routes. These local features mattered greatly for Africans on the ground. French administrators took into account the homelands of nomadic groups, notably the Tuareg, to determine the location of intraimperial borders. In general, "the [French] colonial logic was to preserve the old limits in order to manage the conquered territories more easily [...] Lines replaced zones, but these zones were effectively old borders."[9] In fact, "This colonial appropriation of borders was so strong that it ended up making the military and colonial administrators, as well as the societies concerned themselves, forget that their origin was most often local, regional and negotiated with the populations and the political authorities."[10]

West Africa. From Senegal to Nigeria, Europeans had extensively traded with coastal West Africans; until the nineteenth century, most notoriously in slaves. Precolonial states such as Asante, Dahomey, and Yoruba polities intimately shaped both slaving and legitimate commerce. Four European powers (Britain, France, Portugal, Germany)[11] and Liberia competed to secure preferential trading arrangements. This macro-level competition resulted in control over various natural harbors and historical trading posts (see Figure A.2). Consequently, West African states tend to be smaller and narrower than elsewhere.

Political and economic geography along the coast shaped only the broad contours of West African colonies. Precolonial states and rivers were meso-level objects of interest that shaped micro-level border formation. Throughout the region, Europeans signed treaties with local rulers to establish their claims on the coast and farther inland. For example, Britain and France competed to control the Niger River. British agents from the Royal Niger Company secured treaties throughout modern-day Nigeria. These actions led to disputes with France about the limits of the Sokoto Caliphate and Borgu states, which affected the borders with Niger and Benin, respectively. Elsewhere, states such as Futa Jalon, Samori's empire, and Ouagadougou (Mossi) determined the limits of French claims as they expanded west from their long-standing stronghold at the mouth of the Senegal River. As France militarily defeated these groups, they also used their frontiers to guide intra-French colonial borders. As in North Africa, French administrators intensely gathered information about their territories to determine internal administrative frontiers that would minimize costs of administration, which required incorporating local political and economic realities.

Equatorial Africa. At the macro level, European competition to control the Congo and its basin resulted in the Berlin Congo Conference of 1884–85, following exaggerated claims of potential

[9] Boilley 2019, 4.

[10] Lefèbvre 2015.

[11] This excludes powers, such as the Dutch, who had relinquished their claims earlier in the nineteenth century.

wealth by famous explorers such as Henry Morton Stanley and Pierre Savorgnan de Brazza. The Congo Free State gained immense territorial in Equatorial and Central Africa as a result of complicated jockeying among the major powers and their respective desires for a neutral buffer state. In total, six European powers (Britain, France, King Leopold/Belgium, Germany, Portugal, Spain) occupied territory in Equatorial Africa and the Congo region, spanning from Cameroon in the northwest to the southeastern frontiers of the Congo Free State.

The Congo and its watershed affected borders not only at the macro level, but also the meso level (circumscribing the frontiers of the Congo Free State) and micro level (specific segments of the Congo Free State's borders). Other major rivers, such as the Ubangi and Kasai, also mattered at the meso and micro levels. Precolonial states were less important than elsewhere simply because much of the region lacked states in the 1800s, although various PCS along the Cameroon–Nigeria border and on the southern frontiers of the Congo Free State were important meso-level objects of contention. Early treaties secured by the French explorer Brazza with local-level rulers (not coded as PCS) were also used to settle territorial claims with German Kamerun.

East Africa. Europeans had little interaction with East Africa until the 1880s. The dominant non-European power in the region to this point was the Sultanate of Zanzibar. Britain had established treaty relations with the sultan in the 1860s, which Germany challenged in the 1880s. Early borders along the coast reflected these macro-level factors; in fact, the Sultan was granted a long stretch of territory along the coast, although later border revisions erased this frontier. Beyond the coast, borders in East Africa also reflect macro-level competition over the eastern frontier of the Congo Free State and British efforts to expand northward from their territories in Southern Africa.

Precolonial states and major lakes were the meso-level factors that determined most non-coastal borders. Buganda, located along Lake Victoria, was the territorial core of British Uganda; and Bunyoro and Nkore rounded out British claims vis-à-vis the Congo Free State and Germany. Rwanda and Burundi, clustered along Lakes Kivu and Tanganyika, were administered differently than the rest of German East Africa, and later separated as their own colony under Belgian rule. Other Great Lakes, including Albert, Edward, Malawi, and Tanganyika are each primary features of a border, and Lake Turkana was previously the primary component of the Kenya–Uganda border. Europeans sought access to these lakes to stimulate trade. This is exemplified by Britain's failed attempts to access to Lake Tanganyika from the north via a narrow corridor between the Congo Free State and German East Africa; hence complementing gains by the British South Africa Company to access Lake Tanganyika from the south.

Southern Africa. Three European powers shaped the macro dynamics of border formation in southern Africa. Britain was the main power in the region, dating back to its conquest of Cape Town in the early nineteenth century. From this port city, British and Boer settlers expanded in a northwest direction throughout modern-day South Africa. Portugal had long-standing territorial claims along the east and west coasts, including a relatively concrete claim to Delagoa Bay (modern-day Maputo Bay). Germany entered the region later, in 1884, and annexed parts of South West Africa not previously claimed by Cape Colony or Portugal. Early claims were largely confined to the coasts, although white settlers had moved farther north. In the late 1880s, Britain and Portugal began to compete for interior territory in Central Africa, with Britain ultimately gaining

control over much of the disputed territory.

Throughout the region, precolonial states, frontiers of white settlement, and major water bodies often determined precisely or at least roughly where a power's claims ended. Therefore, these local features constituted the main meso-level objects of contention. As white settlers expanded throughout modern-day South Africa, they came into contact with traditional Sotho, Swazi, and Zulu states. The former two states lost territory to Europeans, but African agency in the form of strategic alliances with Britain secured their status as colonies distinct from white-controlled states. The Zulu were militarily defeated, but their homeland rounded out territories claimed by Britain vis-à-vis Portugal. This territory was of strategic interest to Britain to block the Boer republics from gaining access to the sea. When Britain (and its main agent, Cecil Rhodes' British South Africa Company; BSAC) sought to expand farther north, alliances with the Tswana, Ndebele, and Lozi were pivotal for blocking Boer and Portuguese expansion.[12] These rulers were not duped into treaties they did not understand. Instead, given threats posed by other African states and by Boer expansion, they strategically sought to ally with Britain to secure their territory; although the Ndebele were later defeated militarily by BSAC. Opportunities for white settlement shaped not only the frontiers of South Africa, but also expansion into Zimbabwe (via BSAC) and Britain's claim to Malawi (missionaries in the Shire Highlands). Major water bodies often shaped the frontiers of these settlements, including the Orange and Limpopo Rivers in South Africa and Lake Malawi in Malawi. Britain, Portugal, and Germany each sought access to the Zambezi River, which shaped both inter- and intraimperial borders.

Table A.7: African bilateral borders: region-by-region

Region	**# borders**	**HPF (direct effect)**		**Water body*** **(primary feature)**		**Straight line (primary feature)**		**Border formation (median year)**	
		Any	*PCS*	*Any*	*Major*	*Any*	*Lat/long*	*First*	*Final*
Northeast	17	76%	59%	35%	18%	59%	24%	1897	1908
North	14	64%	36%	7%	0%	79%	36%	1905	1916
West	27	63%	48%	74%	7%	22%	19%	1895	1911
Equatorial	17	24%	24%	82%	29%	18%	12%	1886	1919
East	14	64%	57%	93%	50%	14%	0%	1890	1910
Southern	18	67%	39%	94%	50%	44%	22%	1890	1891
Total**	**107**	**60%**	**44%**	**66%**	**24%**	**37%**	**19%**	**1891**	**1906**

*Includes watersheds as derivatives of water bodies.

**Tallies can exceed 100% because some borders are coding as having water bodies and straight lines as co-primary features.

[12]Of these, only the Tswana are not included as a PCS in our data set because they lack a discernible polygon for us to digitize. BSAC also secured a treaty with the Gaza, but London blocked annexation in support of long-standing Portuguese territorial claims.

A.4.3 Summarizing PCS and Direct Effects on Borders

- **Asante:** Britain fought wars with the Asante empire throughout the nineteenth century. The British Gold Coast was explicitly divided from French territories to incorporate Asante within British territory. See Ghana–Ivory Coast.
- **Borgu:** France challenged Britain's suzerainty over Borgu territory. The "Race for Nikki" in 1894 and consequent interactions with African rulers made clear that Borgu consisted of distinct states. In 1898, they settled by dividing Bussa (Britain) and Nikki (France). See Benin–Nigeria.
- **Borno:** Following the collapse of its traditional ruling dynasty in the 1890s, Borno was originally divided between Nigeria and Cameroon. During WWI, the restored Shehu of Borno aided the British war effort. Afterwards, Britain set the borders of Northern Cameroons (governed as part of Northern Nigeria) to incorporate Borno, which officially joined Nigeria at independence. See Cameroon–Nigeria.
- **Buganda:** Britain's treaty with the *Kabaka* of Buganda was the foundational document in Britain's establishment of the Uganda Protectorate and its initial borders. Treaties with the rulers of **Bunyoro** and **Nkore** rounded out British claims in southwest Uganda. The distinctiveness of Buganda from coastal areas and lobbying by PCS elites were cited by British officials as crucial considerations for not merging Uganda into Kenya. See Tanzania–Uganda and Kenya–Uganda.
- **Dagomba:** Dagomba was originally divided between Gold Coast and Togoland. After WWI and lobbying by the Ya Na against the partition, Britain set the borders of British Togoland (governed as part of the Gold Coast) to incorporate Dagomba, which officially joined Ghana at independence. See Ghana–Togo.
- **Dahomey and Egba:** France contested Britain's control over Yorubaland; after the collapse of the Oyo Empire, no African ruler controlled the entire region. They settled in 1889 with Britain controlling Egba (the western-most major Yoruba state) and Britain recognizing French control over Dahomey. See Benin–Nigeria.
- **Darfur and Wadai:** Britain and France contested the Darfur/Wadai boundary. The Sultan of Darfur pressed for expansive territorial limits and used his army (which Britain had not disbanded) to fight France over contested claims. In 1919, the powers settled dividing the disputed petty sultanates. See Chad–Sudan.
- **Egypt:** Britain's conquest of the nominally Ottoman province of Egypt was key to its claims over the Nile Valley, the driving macro-level factor that influenced borders throughout this region. Britain explicitly aimed to recreate frontiers of Egypt and Egyptian-controlled Sudan when determining the borders for both colonies. See Egypt–Sudan.
- **Ethiopia:** Ethiopia expanded its empire throughout the 1890s and militarily defeated Italy's attempt at colonization in 1896. Ethiopia gained recognition of its expanded frontiers from multiple European powers, reversing their earlier dismissals of the emperor's territorial claims. See all the Ethiopia entries, especially Eritrea–Ethiopia.

- **Futa Jalon:** France's 1881 treaty with Futa Jalon secured its control over western Guinea from competing British and Portuguese claims; see Guinea–Guinea-Bissau. After France militarily defeated the state, its frontiers became internal administrative borders; see Guinea–Mali.
- **Gaza:** The ruler of Gaza signed a treaty with the British South Africa Company to obtain guns. London rejected this treaty to pacify Portuguese claims, which were used to split Mozambique from Southern Rhodesia. See Mozambique–Zimbabwe.
- **Lozi:** The Lozi king sought a British alliance to protect against attacks by the Ndebele. Portugal agreed that Lozi lay within the British domain, but the two powers disagreed about its limits. International arbitration over this question yielded a major border revision in 1905. See Angola–Zambia.
- **Lunda and Kazembe:** The Congo Free State (CFS) thwarted other European powers to establish military control over the collapsing Lunda state, and Britain gained a treaty with Kazembe. A major border revision in 1894 divided CFS from the British sphere along the frontiers between these states. See Congo (Bel.)–Zambia.
- **Morocco:** Following the Agadir crisis with Germany in 1911, the core areas of the PCS Morocco were incorporated into the French sphere. However, successive Sultans of Morocco have argued for expansive historical territorial limits that spanned into Spanish (Western) Sahara. See Morocco–Western Sahara.
- **Mossi:** France's military occupation of Ouagadougou and other Mossi states thwarted competing British and German claims; see Burkina Faso–Ghana. The distinctiveness of the Mossi and their strategic alliance with France helps explain why the French created the Mossi-dominated colony of Upper Volta; see Burkina Faso–Mali.
- **Ndebele:** British control over the feared Ndebele state provided the territorial platform for northern expansion into present-day Zimbabwe. Settling the contested frontier between the Ndebele and the Bamangwato* (a Tswana group who sent a deputation to London in 1895 to lobby against a proposed transfer from crown rule to the BSAC) formed the basis of the Botswana–Zimbabwe border. See Botswana–Zimbabwe.
- **Porto Novo:** France's treaty with the coastal state of Porto Novo was explicitly used to separate its territory from British Lagos. See Benin–Nigeria.
- **Rwanda and Burundi:** The original CFS borders incorporated part of Rwanda. Germany challenged this border and established military control in Ruanda-Urundi. An official border settlement in 1910 recognized German control; see Congo (Bel.)–Rwanda. After WWI, German East Africa was separated into Belgian (Ruanda-Urundi) and British (Tanganyika) mandates. The original border would have partitioned Rwanda to facilitate a British railroad, but lobbying (including by the Rwandan mwami) yielded a revision; see Rwanda–Tanzania. In the 1960s, lobbying by elites from each country at the United Nations yielded separate independence for Rwanda and Burundi; see Burundi–Rwanda.
- **Sokoto:** France accepted British suzerainty over the Sokoto Caliphate, but contested the limits of the Caliphate. This contention had historical basis, as African leaders continually

fought against the expanding Caliphate. After several unsatisfactory borders, they settled in 1904 with France gaining control over smaller polities to to the north (Damagaram, Gobir) not controlled by Sokoto. See Niger–Nigeria.

- **Sotho:** The Sotho state allied with the British against Boer incursions. The Sotho ruler participated in various boundary agreements between the 1840s and 1860s that established the contemporary frontiers. Later, lobbying by Sotho leaders (deputations to London, petitions) influenced the decision to not incorporate Lesotho into the Union of South Africa. See Lesotho–South Africa.
- **Swazi:** The Swazi state allied with whites to guard against the Zulu and to prevent wars that could have dismantled the kingdom. The Swazi ruler participated in various boundary agreements, although it lost parts of its claimed territory. Later, lobbying by Swazi leaders influenced the decision to not incorporate Swaziland into the Union of South Africa. See South Africa–Swaziland and Mozambique–Swaziland.
- **Tunis:** France's conquest of the nominally Ottoman province of Tunis established its paramountcy in North Africa, and explicitly used Tunisia's historical frontiers to set colonial borders. See Algeria–Tunisia.
- **Zulu:** Britain fought wars with the Zulu throughout the nineteenth century. At the end of the century, it annexed Zulu territory to block Boer republics from gaining access to the sea, which also split British and Portuguese claims. See Mozambique–South Africa.

B Digitizing Precolonial States

B.1 Constructing a PCS List

We use the seven regional maps of continental Africa in Ajayi and Crowder (1985) to create a list of candidate precolonial states (PCS). We consulted three sources to determine which cases to code as states in our data set: Stewart (2006), Paine (2019), and Butcher and Griffiths (2020). We included in our data set any polity listed as a state in all three sources: Asante, Benin, Borno, Buganda, Bunyoro, Burundi, Cayor, Dahomey, Darfur, Ethiopia, Futa Jalon, Jolof, Kazembe/Lunda (E), Lesotho, Luba, Mwata Yamvo/Lunda (W), Nkore, Rwanda, Sokoto, Wadai, Walo, Zulu.

By contrast, we omitted any polity that none of the three sources identify as a state. Finally, for other polities identified in the Ajayi and Crowder maps, at least one but not all three sources listed it as a state. We consulted additional sources to assess which of these to include in our data set. Paine (2019) provides a detailed case-by-case appendix that helps to adjudicate some disputed cases. Based on his notes, we code the following cases as states: Bemba, Bundu, Kasanje, Lozi, Ndebele, Porto Novo, Salum, Sine. His notes also justify coding the following cases as non-states: Ovimbundu, Tio, Zande. We additionally include Egypt, Morocco, and Tunis; there is no ambiguity about their status as states, and they are omitted in one source, Paine (2019), because he includes only Sub-Saharan Africa. For the handful of remaining cases, we provide brief notes to justify our coding choice (all of which we code as states except Adamawa, Calabar, Other Christian Ethiopian states, and Unyanyembe):

- Adamawa: This was not an independent state. Instead, it was founded as an emirate within the Sokoto Caliphate in 1806 (Hogben and Kirk-Greene 1966, 428-446; Stewart 2006, 7).
- Borgu: There were several main states of the Bariba people, including Bussa, Nikki, and Kaiama. Whether these states were unified or autonomous is subject to uncertainty. In the 1890s, the British and French each sent expeditions in an attempt to claim as much territory as possible (see Appendix C.2.8). Overall, it is clear that these polities were states in the sense of having ruling dynasties and control beyond the village level.
- Calabar: The polygon from Ajayi and Crowder is Old Calabar, centered at Duke Town (modern-day Calabar), in contrast to New Calabar. The latter is the entry in Stewart (2006), the only source that mentions this polity, and hence no sources list the Ajayi and Crowder polygon of Calabar as a state.
- Dagomba: ruling dynasty that dates back to the 14th century, although the state became tributary to the Asante between the 1740s and 1874. We code this as a state because the ruling dynasty survived throughout 1874 and afterwards (Stewart 2006, 68). Owusu-Ansah (2014, 88) provides details on political institutions.
- Damagaram: "Powerful precolonial state centered around Zinder and encompassing the current southeastern corner of Niger ... Damagaram eventually controlled eighteen chieftainships and emerged as the dominant power north of Kano ... It remained independent of Fulani control during the Fulani jihad and even lent assistance to other Hausa elements driven out of their lands, helping found Maradi" (Decalo 1997, 108–9). Although nominally a vassal state of Borno, Damagaram was de facto independent. Following a civil war in Borno

over a disputed leadership succession in the mid-nineteenth century, "the tendency on the part of vassal Zinder to assert its independence and even to dominate the outlying principalities of Munio, Gummel and Machena gathered momentum . . . Zinder and the north-western vassal state practically ceased to have any political relations with Kukawa" (Anene 1970, 259-60). Lefebvre p. 96 discusses the entry fees that caravanners had to pay, which ensured them freedom of movement in return.

- Futa Toro: Ruling dynasties in this area date back to at least the end of the fifteenth century. A jihad defeated the Denianke dynasty in 1776 and established an Imamate that lasted until defeated by France in the 1860s. See Suret-Canale and Barry (1971) for details on the pre-jihad political institutions.
- Gaza: Military leader Soshangane consolidated a ruling dynasty in the 1830s. The territorial reach of the state shifted over time, as Soshangane's grandson Ngungunhane "succeeded to the throne [in 1884], moving the capital southward to Manjacaze in what is now Gaza province, closer to Portuguese centers of power" (Darch 2018, 171).
- Gobir: Historical Hausa state. Extensive fighting with Sokoto in the early nineteenth century caused it to move its capital several times, although its king list persisted (Stewart 2006, 112; Cahoon n.d.). Sometime between 1835 and 1860, "Gobir's independence was reasserted at Tibiri" (Decalo 1997, 153), which corresponds with the polygon in Ajayi and Crowder (1985). A dissent faction seceded in 1860 that was "eventually conquered by the legitimate forces of Gobir in Tibiri" in the early twentieth century (Decalo 1997, 153).
- Igala. This was a notable state in the Niger-Benue confluence. The *Ata*, or divine king, sat atop a hierarchy of officials. Armstrong (1955, 86-8) provides details on Igala institutions.
- Mossi. There were four main Mossi kingdoms (Zahan 1967), including Ouagadougou, the entry in Butcher and Griffiths (2020).
- Other Christian Ethiopian states: A&C's maps for Northeast Africa list various pre-1890s states. For reasons described in Appendix B.2, we include only Ethiopia in our data set.
- Swazi: The Swazi people were organized under a single state in 1770, also known as the Dlamini kingdom. See Kuper (1963) for details on their political institutions.
- Unyanyembe: Coded as not a state. Discussions of Unyanyembe in existing research focus mainly on Mirambo, the warlord who created a brief empire in modern-day Tanzania (we do not code his polity as a state given our criterion of including only states formed before 1850). See Oliver and Atmore (2005, 90-96) and Stewart (2006, 160).
- Yoruba states (Egba, Ibadan, Ijebu, Oyo): See the description in Appendix B.2. All of these are coded as a state.

We restrict the sample to states that originated before 1850. Some later states emerged as reactions to early European colonization and their "precolonial" borders were affecting by military engagements with Europeans, e.g., Mahdist state, Samori, and Tukulor (Crowder 1971). Other later states were essentially personalist fiefdoms with "porous and intrinsically unstable" institutions and constantly shifting borders, such as Msiri, Tippu Tip, and Mirambo (Reid 2012, 116–18).

B.2 Coding Notes on PCS Polygons

We digitized numerous historical maps to georeference in ArcGIS the set of African precolonial states. For most precolonial states, we use the maps in Ajayi and Crowder (A&C; 1985), and for each we consulted at least one verification map. In some cases, we deemed that the A&C map missed important details, and digitized the verification map instead. To the extent possible, we use maps that capture African states on the eve of colonization, that is, roughly between the 1850s and the 1880s, depending on the region.

To maximize accuracy when georeferencing precolonial states, we used shapefiles of geographic features, such as rivers, lakes, coastlines, towns, and cities. For most maps, we used about ten control points for digitization, although the exact number depended on how easily the digitized image mapped onto the shapefiles. We used the World Geodetic System from 1984 (WGS 1984), which is standard in GIS.

In a few cases, two neighboring polygons (A and B) partially overlap if we use one map for polygon A and another map for polygon B. We split the difference in cases of overlap unless there was clear evidence that one map is more precise than the other.

Asante (and Dagomba)

Overview. We use the polygon for Asante from the A&C map "West Africa c. 1850," and that for Dagomba from the A&C map "West Africa c. 1884." We verified the validity of the Asante polygon using the map from Wilks (1975, 45); it corresponds with what he labels as the "Greater Asante" region. We verified the validity of the Dagomba polygon using the map from Manoukian (1952).

Details. We chose the earlier date for the Asante polygon because colonial interference in the southern part of what became the Gold Coast Colony contributed to imperial breakup (Nugent 2019, 113). Farther north, and without support from Britain, Dagomba reclaimed its independence in 1874 following subjugation as an Asante tributary state since the eighteenth century (Manoukian 1952, 15). Hence, we use the polygon with the later date for Dagomba, which reflected its boundaries on the eve of imperial partition. For these reasons, the A&C polygons for Asante and Dagomba that we chose overlap. We altered the Asante polygon to exclude the territory that Dagomba governed independently post-1874.

Regarding the boundaries of Asante, Wilks (1975) provides extensive details on the structure of the empire and its boundaries. He provides a detailed history on attempts by European explorers and administrators in the nineteenth century to record the extent of Asante influence, including areas that paid tribute. "Despite the changing status of various provinces, it is possible nevertheless to determine with reasonable accuracy the extent of Greater Asante at certain fixed points in time. Thus both Bowdich and Dupuis showed a high measure of agreement about its composition in the second decade of the nineteenth century, though neither was able to distinguish methodically between inner and outer provinces . . . While the boundary between inner and outer provinces cannot be determined with great accuracy, sufficient evidence is extent to show that, like that of the metropolitan region, it was an administratively maintained one" (53–54).

Regarding the boundaries of Dagomba, "The Dagomba state occupies all the Dagomba Administrative District except a small area in the south-east occupied by the Nanumba state" (Manoukian 1952, 3). The location and shape of Dagomba in the accompanying map is nearly identical to that in A&C, except A&C appear to include also the small amount of territory that belonged to Nanumba. The Dagomba State Council represented title holders from thirteen different chiefships (who each controlled various villages) within the kingdom. Manoukian (1952) indicates no ambiguity about which chiefships belonged to the Dagomba state.

Benin

Overview. We use the polygon for Benin from the A&C map "West Africa c. 1884." We verified the validity of the polygon using the map in Bradbury (1967).

Details. The A&C polygon corresponds closely with the core territory of the Kingdom of Benin depicted in Bradbury (1967, 4), including the specific detail that the western boundary corresponded with the Ose River. Bradbury describes the decline in Benin's territory and influence during the 19th century. Indeed, the A&C polygon for Benin in their map "West Africa c. 1850" is larger than the one in 1884. Bradbury (1957, 18) provides additional details: "For the purposes of this Survey the Benin kingdom is regarded as being coterminous with the present-day Benin Division, the unit over which the authority of the Oba (king) was recognized after the restoration of 1914. The Edo of this area represent the solid core of the old Benin empire and, apart from minor revolts, they have given allegiance to the Oba over a period probably not less than 450 years—and possible for very much longer."

Borgu

Overview. We use the polygon for Borgu from the A&C map "West Africa c. 1884." We verified the validity of the polygon using the map in Crowder (1973).

Details. Crowder (1973) discusses the misunderstood relationship among the different Borgu/Bariba states. Prior to setting foot in the area, Europeans had heard almost as much about the state of Bussa as about Benin, and thus were shocked when they traveled to its capital to find a very small village (19). Instead, Nikki was the largest and most important of the five major Borgu states. The core of Nikki ended up in the French colony of Dahomey, although some of its dependencies were partitioned into Nigeria. Overall, Dahomey gained roughly 300,000 Borgu inhabitants compared to only 40,000 in Nigeria, which gained the other four states: Bussa, Illo, Wawa, and Kaiama (23). The myth of Bussa supremacy arose because it was the first of these states and held the most important relics (29). Overall, "This confusion as to who was sovereign in Borgu seems to have arisen from a failure to distinguish between the actual political power of the individual Borgu states, which fluctuated during the nineteenth century, and the reverence in which they held Bussa as the original Kisra foundation" (30). Nor was Nikki paramount among the states: "the position of the monarchs of Bussa and Nikki was not a strong one. With little authority over their dependent rulers, and always subject to challenge by rival claimants, their control over their 'states' was in no way comparable to that of the emirs of the Sokoto caliphate. In the case of Bussa, both Wawa and Illo, which paid him tribute, were in practice usually autonomous" (34). The distinct Borgu states

labeled in the A&C map are identical to those in the Crowder (1973) map, which he attributes Mallam Musa Baba Idris. This is an extra validity check because our polygon jointly encompasses all the Borgu states. The map is accompanied by detailed notes about boundaries and the relationships among the states.

Borno (and Damagaram)

Overview. Our polygon for Borno comes from Figure 4 in Hiribarren (2017, 44), which depicts "Borno ca. 1850–1893." We use the area that he labels as "Borno Proper." For Damagaram, we use the polygon from the A&C map "West Africa c. 1884." We verified its validity using the aforementioned map from Hiribarren (2017). In Appendix B.1, we explain why we code Damagaram as an independent state despite nominally owing vassalage to Borno.

Details. In A&C, Borno appears in the Central Sudan map (and is mentioned in the West Africa maps). Because of fluctuating boundaries throughout the nineteenth century, the A&C map for the "19th century" (unlike most of their maps, they do not specify a year) does not reflect the political realities at the end of the century. Indeed, the A&C West Africa map contradicts the A&C Central Sudan map, as the former depicts Damagaram as independent whereas the latter depicts it within Borno. The A&C Central Sudan map is also problematic for depicting Borno's eastern boundary far east of Lake Chad, which yields our preference for the map from Hiribarren.

We use Hiribarren's polygon for "Borno proper" because Borno lost effective control of most of its tributary states, which comprised its outer provinces, during the nineteenth century. The outer provinces in Hiribarren's map include Zinder, Machina, Muniyo, Bedde, Kerri-Kerri, Margi, Kotoko, and Logone; below, when these names arise, we mark them with an asterisk as a guide for readers. Hiribarren's map also labels Sokoto, Adamawa, Mandara, Bagirmi, Kanem, and Manga as distinct neighboring states.

In the early 19th century, Borno controlled various vassal states even after military defeats against Sokoto. "The vassal states to the west and north of Bornu included Bedde*, Munio*, Manga, Gummel, Damagarin (Zinder)* and Kanem ... To the east of the Chad lay the states of Bagirmi and Wadai, which acknowledged a vague sort of subservience to Bornu" (Anene 1970, 258). However, Borno lost effective control of most of this territory during the 19th century: "Bornu never recovered Hadeija and Katagum from the Fulani [see the Sokoto entry for details] ... Bornu virtually lost Wadai. In Bagirmi the curious situation developed in which Bagirmi paid tribute to both Bornu and Wadai. Shortly after the assertion of independence by Wadai, Kanem was also wrested from Bornu by the Tuareg ... The civil war which involved Umar and his brother on the one hand, and Umar and the surviving member of the Sef dynasty on the other, did not help to arrest the shrinking of the frontiers of Bornu. Under Umar the tendency on the part of vassal Zinder* to assert its independence and even to dominate the outlying principalities of Munio*, Gummel and Machena* gathered momentum ... Kanem fell under the suzerainty of Wadai. Zinder* and the north-western vassal state practically ceased to have any political relations with Kukawa" (Anene 1970, 259-60).

During the nineteenth century, in a correspondence over boundaries sent by the Shehu of Borno to the Sultan of Sokoto, the Shehu labeled Bedde* as a buffer region between the two states: "Between our kingdoms are the pagan Bedde tribes, on whom it is permissible to levy contribution:

let us respect this limit: what lies to the east of their country shall be ours: what lies to the west shall be yours" (quoted in Hiribarren 2017, 20). In 1900, the Shehu of Borno signed a boundary agreement with the Sultan of Bagirmi. The English translation of this treaty states that the rulers "fixed the river Shari, the well-known river, as a common boundary between their territories" (Hiribarren 2017, 66). The Shari River corresponds exactly to the edge of what A&C's Central Sudan map labels as a contested area between Borno and Bagirmi, with the area to the west of the river corresponding with territory that unambiguously belonged to Borno, and to the east was the contested area. The contested area, in turn, corresponds with the provinces that Hiribarren labels as Kotoko* and Logone* (each of which lie between the Logone and Shari rivers).

In sum, this evidence establishes the Borno lacked control over almost every outer province in Hiribarren's (2017) map, which justifies our choice to include only Borno proper in our polygon for Borno. Similar maps of Borno as that shown in Hiribarren appear in Crowder (1966, 79) and Hogben and Kirk-Greene (1966). By contrast, maps for earlier periods show a larger territorial extent of Borno, such as that in 1800 from Lovejoy (2016, 70).

Buganda

Overview. We use the polygon for Buganda from the A&C map "East Africa 1885." We verified the validity of the polygon using the maps in Fallers (1960) and Beattie (1971).

Details. The A&C polygon for 1885 is larger than the one for Buganda in the A&C map "East Africa 1800," which reflects Buganda's expansion during the nineteenth century. "Buganda was perhaps the largest and most powerful of [the interlacustrine] kingdom-states at the time of the arrival of Europeans, extending from its centre at the ruler's court on the northern shores of Lake Victoria to the east to extract tribute from southern Busoga, across the lakes to control at least partially the Sesse Islanders, to the north to the borders of powerful Bunyoro, and to the south through Buddu" (Fallers 1960, 13). The eastern frontier depicted in the maps from Fallers (1960) and Beattie (1971) was the Victoria Nile River, adjacent to Busoga. This connects into Lake Kyoga to form part of the northern border. The remainder of the northern border (when including the Lost Counties) is the Kafu River, which connects to Lake Albert. Bunyoro is to the north of this boundary. The map in Fallers (1960) includes the "Lost Counties" that Buganda gained from Bunyoro in the 1890s, whereas the map in Beattie (1971) does not. The A&C map does not include the Lost Counties. However, it does include Busoga, which neither of these two maps include as part of Buganda proper. Specifically, the A&C map extends east of the Victoria Nile River to encompass this tributary area to Buganda.

Bundu and Futa Toro

Overview. We use the polygons for Bundu and Futa Toro from the A&C map "West Africa c.1850." We verified the validity of these polygons using the map from Suret-Canale and Barry (1971, 410).

Details. The eastern boundary of the Futa Toro polygon is not immediately obvious from the A&C 1850 map, and all of Futa Toro is eclipsed by early French colonization in the 1884 map. Our verification map makes clear that the A&C polygon for Futa Toro has its eastern boundary

at Bakel, a town that coincides with the split in the Senegal River. We thus use the lower portion of the river (eastward of the split) and the trade route shown in the map as the western boundary of the polygon. As Suret-Canale and Barry (1971) describe, "The Futa-Toro or Senegalese Futa extends along all the central valley of Senegal from Bakel up the river and down as far as the delta. It is a sort of oasis between the semi-desert region of Mauritania to the north and the Ferlo to the south, an area, which is deprived of water throughout the dry season" (409). For Bundu, "Bundu grew at the expense of its neighbors, the Malinke of Bambuk, who were driven back onto the right bank of the Faleme or else forced to migrate to Gambia" (431-32).

Bunyoro

Overview. We use the polygon for Nyoro from the A&C map "East Africa 1885." We verified the validity of the polygon using the map in Taylor (1962).

Details. Describing the kingdom in the 1950s after it had been subsumed into Uganda, Beattie (1971, 9) writes: "The kingdom was bounded on the west by Lake Albert, beyond which lies the Congo; on the north and east by the Victoria Nile [north of which are] the Acholi and Lango districts, and until 1964 [when the Lost Counties were returned to Bunyoro] its southern boundary was the Kafu-Nkusi river system, which separated Bunyoro from the neighbouring Buganda kingdom." The A&C polygon corresponds perfectly with the river and lake boundaries. The border with Buganda is less precise and indicates a buffer region (there is an arrow from Buganda pointing to Nyoro, indicating Buganda expansion).

The Bunyoro kingdom shrunk over time, which a comparison between A&C's 1800 and 1885 maps picks up. "Banyoro believe, and so far as the evidence goes they are certainly correct, that in former times their kingdom was very much larger than it was in its last years. Even as late as Speke's visit in 1862 it was a great deal more extensive than neighbouring countries. But in historical times its territory was much reduced by the incursions of their traditional enemies the Baganda, latterly aided by the British, and there is reason to believe that this diminution had been going on for some generations earlier. Even after the recovery from Buganda in 1964 of the two 'Lost Counties' of Buyaga and Bugangaizi, Bunyoro was only a small residue of the former Kitara empire" (Beattie 1971, 27-28).

Central Africa

Overview. We use the polygons for the following states from the map in Vansina (1966, 167), "The Peoples of Kasai and Katanga Around 1890": Bemba, Kazembe, Luba. For Lunda, we modify a polygon from the map in Vansina (1966, 167), "States in Katanga and Eastern Rhodesia Around 1800." For the nearby kingdom of Kasanje, we use the A&C map "Central Africa 1800–1880," which yields a polygon nearly identical to that in the Vansina (1966, 167) map, "Western Central Africa Around 1850." We also verified the validity of these polygons using maps from Whiteley (1951) and the *Encyclopaedia Britannica* entry for "Luba-Lunda states."

Details. Vansina's (1966) maps in this region are considerably more detailed and assessed closer to the eve of the partition of Central Africa, compared to the A&C map "Central Africa 1800–1880." Thus we use the Vansina maps for all the polygons except Kasanje, as the A&C and Vansina

polygons are nearly equivalent. Vansina provides detailed description of all these cases in his book, which confirms at minimum that the states were indeed located along the rivers and lakes shown in his maps.

The most complicated case is Lunda, which had essentially disintegrated in the 1880s just prior to European penetration of the area. Indeed the Vansina map that depicts the other states in 1890 simply has a label for the general location of Lunda without depicting boundaries, reflecting its recent territorial collapse. We use as our starting point the territorial outline of Lunda shown in Vansina's 1800 map, and modify it based on his description of events in the 1880s. In effect, we use his polygon from 1800 while excluding all territory located west of the Kasai River, based on the following description from Vansina (1966, 223–24): "[1874] was the first time that the Cokwe had intervened in a succession crisis in Lunda land . . . The Cokwe took the Kete by surprise and captured a rich booty in slaves. But they had also crossed the Kasai into the nucleus of the Lunda kingdom. . . . It was during Mbumba's reign that the great Cokwe expansion west of the Kasai began. . . . In 1880 Musefu was killed during one of these campaigns and the field was open for the Cokwe, who were also strengthened by their alliance with Mukaza. They destroyed all the Lunda chieftainships east of the Kwilu and west of the Kasai — Mai and Mwata Kumbana included—between 1885 and 1887."

Dahomey

Overview. We use the polygon for Dahomey from the A&C map "West Africa c. 1884." We verified the validity of this polygon using the map in Lombard (1967, 71).

Details. "On the eve of European penetration the Dahomey kingdom stretched from the important coastal ports of Whydah and Cotonou to the eighth parallel, excluding Savé and Savalou. Savalou formed a small allied kingdom. East to west, it extended from Ketu, on the present Nigerian border, to the district around Atakpame in modern Togo. Towns like Allada (the capital of the former kingdom of Ardra), Zagnanado, Parahoue (or Aplahoué), and Dassa-Zoumé came under the suzerainty of the Dahomean kings. Even the Porto Novo kingdom was at one time threatened by Dahomean forces at the time of the treaty agreeing to a French protectorate. The Dahomey kingdom thus stretched almost two hundred miles from north to south, and one hundred miles from east to west. Its population has been estimated roughly at two hundred thousand" (Lombard 1967, 70). Based on the map from (Lombard 1967, 71), Atakpame appears to correspond with the part of the Dahomey polygon that juts westward into modern-day Togo. "Atakpame appears to have existed for much of the nineteenth century in a sort of neutral zone between Asante and Dahomey, though this did not protect it from attack by the one when the influence of the other over it disturbed the balance of power" (Wilks 1975, 57–58).

Darfur and Wadai

Overview. We use the polygons for Wadai and Dar Foor from the Africa Map of 1890 from the *Americanized Encyclopaedia Britannica Vol. 1* (1892), available at https://maps.lib.utexas.edu/maps/historical/history_africa.html. We verified the validity of this map using the maps and qualitative description of boundaries from Theobald (1965).

Details. The boundaries between our polygons for Darfur and Wadai correspond closely with the limits of the tributary areas shown in A&C inset map "Wadai and Darfur in 1850." However, we cannot directly use that map because it does not provide the entire outline of each state. The larger A&C map "The Central Sudan in the 19th Century" also contains polygons for Wadai and Darfur. However, this map is insufficiently detailed about the boundary region between the two and it depicts the boundary of Wadai as much farther west than is described in historical sources (as well as in A&C's own inset map).

Theobald (1965, 1) describes the fluctuating western frontier of Darfur, which "historically extends from about latitude 10°N. to 16°N., and from longitude 22°E. to 27° 30'E., forming a rectangle some 450 miles long and 350 miles broad and its widest limits, and enclosing an area of nearly 140,000 square miles ... its distinct natural frontiers; for to the north, the Libyan desert stretches for a thousand miles to the Mediterranean; to the east, a broad belt of sand-hills provides a barrier against Kordofan; and to the south, the tsetse fly limits the movements of animals beyond the Bahr El Arab. Only to the west is there a continuation of the same geographical conditions; and thus it is *only in that direction that the frontiers of Darfur have substantially varied*, and have been decided by political events, rather than by factors of soil, vegetation and climate" [our emphasis].

Later, Theobald describes "the debatable border lands of Dars Tama and Gimr in the north, Dar Masalit in the centre, and Dar Sila in the south ... 'the old frontier between Darfur and Wadai' [did not] mean anything ... [because] there was not, and never had been, any stable, clearly defined, and generally recognized frontier between Darfur and Wadai" (64, 69). Theobald (1965, 53) presents a map of Darfur in 1904 that shows the western frontier with Wadai and shows the petty sultanates on the frontier.

Egypt

Overview. We use the polygon for Egypt from the A&C continent-wide map "European Colonies and African States on the Eve of the 1884–1885 Berlin Conference," with one alteration. The problem with their polygon is that the southern frontier of the Egyptian state was too far south relative to the territory that Britain gained in 1898, given gains by the Mahdist empire in the preceding decade. To fix this, we incorporated the map from Milner (1894). He depicts the northern frontier of the Mahdist state in Sudan, which we use as the southern border for Egypt. We verified the validity of our polygon using the map in Holt and Daly (2014); note that Wadi Halfa lies just above the northern boundary of the Mahdist state in both.

Details. The boundaries of the modern Egyptian state created by Muhammed Ali originally extended well beyond the Egypt polygon we use in our dataset; see the A&C polygon for Egypt in their continent-wide map or Holt and Daly's (2014) map of Egyptian Sudan. However, the emergence and rapid expansion of the Mahdist state in Sudan in the 1880s conquered much of this territory, including victory at the Battle of Khartoum of 1885 and then expansion northward. This is an unusual case in which Britain nominally established colonial control over Egypt in 1882, but victories by a non-European state eroded the colonial territory. Consequently, when joint Anglo-Egyptian forces defeated the Mahdist state in 1898, the territorial realities of Egypt differed from seventeen years prior. Hence, for our purposes of measuring the territorial reach of states on the eve of a period in which a colonial border could have been drawn, it would not be appropriate to

use A&C's polygon for Egypt in 1884 without alteration. Britain was unable to draw boundaries in a region in which it was militarily defeated, whereas the A&C map includes Khartoum as belonging to Egypt rather than the Mahdist state. By contrast, the map from Milner (1894) accurately portrays the later stabilization of the frontiers between Egypt and the Mahdist state. The natural geographic boundaries of the Mediterranean Sea, Sinai peninsula, and Red Sea form the northern and eastern boundaries, and the western boundary is in the Saharan desert.

Ethiopia

Overview. We use the polygon for Ethiopia from A&C's map "North East Africa 1890–1896." We verified the validity of our polygon using the map and accompanying description in Zewde (2001, 17).

Details. Modern Ethiopia emerged from a cluster of Christian Ethiopian states, which had themselves arisen from the fragmentation of the old Ethiopian Empire. Thus we code a single precolonial state in this region, rather than distinct Christian states (e.g., Shawa despite appearing on A&C's maps and receiving mention in Stewart 2006). Shawa had a separate ruling dynasty until it was incorporated into the Ethiopian Empire in 1856 (despite retaining its own local negus, or king). In 1889, the king of Shoa became the Emperor of Ethiopia (Stewart 2006, 201-2). For our polygon, we include the solid purple and pink areas from A&C's map, which indicate Menelik's Empire in 1890, and do not include the additional areas of conquest in the 1890s. The accompanying text in their atlas details the specific events that yielded new pieces of territory.

Futa Jalon

Overview. We use the polygon for Futa Jalon from Carpenter (2012, 75). This is closely related to the polygons presented in A&C for Futa Jalon. However, in the A&C West Africa maps, the northern frontier of Futa Jalon is combined with the Senegalese state of Wuli. See also the map in Person (1974, 264-65).

Details. "The periphery of Futa Jallon in the late nineteenth century consisted of a number of small, politically and culturally independent polities, federations, and communities. Some had long been frontier communities, even before the emergence of the Futa federation, and had historically resisted impositions by larger states. Some had been pushed to the periphery during the Fulbe consolidation of power in Futa Jallon in the eighteenth and early nineteenth centuries. Others, while perhaps once part of one of the larger federations, nevertheless maintained substantial independence, an autonomy that became more pronounced after the weakening of Kaabu and Futa Jallon. In the nineteenth century these communities came to define the territorial limits of Futa Jallon. When the centers of power shifted after 1850 with the collapse of Kaabu and the decline of Futa Jallon, this frontier became territory contested by the likes of Alfa Yaya and Musa Molo—individuals in control of peripheral territory and looking to extend their control by pushing into the frontier. The small communities on the frontier, using the resources available to them, resisted the regular incursions from these individuals and, in the case of Coniagui and Sangalan, remained independent during this dynamic period in the history of southern Senegambia . . . At the periphery of northern and northwestern Futa Jallon lay a corridor of small and independent communities. From northeast to southwest these communities included Sangalan, Bassari, Badiar,

Coniagui, Bedik, Pachessi, Landouman, and Nalou. The corridor formed a crescent running northeast to southwest crossing the upper Faleme, upper Gambia, upper Kuluntu, upper Geba, upper Corubal, upper Cacine and upper Nuñez rivers" (Carpenter 2012, 67-68, 73).

Gaza

Overview. We use the polygon for Gaza from the A&C map "Southern Africa 1798–1848." We verified the validity of the polygon using the maps from Julien (1977, 181), Bonner (1983, 100), and Shillington (1987, 40).

Igala

Overview. We use the polygon for Igala from the A&C map "West Africa c.1850." We verified the validity of the polygon using the map from Armstrong (1955).

Details. The historical Igala state corresponds with the Igala Division of British Nigeria, the boundaries of which Armstrong (1955, 77) describes. See also Armstrong (1955, 81) and Imoagene (1990, 20-1, 39-41). The A&C polygon for Igala in 1850 is nearly identical in shape to the polygon in the 1884 map, however, a small portion of the Igala polygon is cut off in the latter map because of British encroachment on the Niger River.

Lesotho

Overview. We use the polygon for Lesotho from the A&C map "Southern Africa 1798–1848." We verified the validity of the polygon using the map from Sheddick (1953).

Details. The A&C polygon extends farther west than the modern-day country of Lesotho, which is consistent with descriptions of the partition of the Sotho: "The Southern Sotho are located in a compact territory centred about the Colony of Basutoland. To the west of Basutoland lies what the Basuto know as the 'Conquered Territory,' that is, the eastern Orange Free State. Basuto are distributed over this latter region, most of them being tenants on European farms" (Sheddick 1953, 9). The accompanying map shows the dispersion of Sotho west of the boundaries of the country of Lesotho. Historically, the Southern Sotho lived "almost entirely within the limits of the upper reaches of the Orange River basin, together with a part of the high veld near the River Caledon" (Brownlie 1979, 1109).

Lozi

Overview. We use the polygon for Lozi from the A&C map "Central Africa 1800–1880." We verified the validity of the polygon using the map from Turner (1952).

Details. The boundaries of the Lozi kingdom, especially in the west, are uncertain. The A&C polygon appears largely accurate, if somewhat too small (arrows point outward from the territory shaded by the polygon, which indicates expansion during the century). Treaties with Britain "retained for the Lozi the land lying west of the Zambezi which the Portuguese had claimed, but in fact the Lozi rule had extended farther to the west than the international boundary laid down

by the King of Italy. The Lozi also withdrew from the present Caprivi Strip to the north bank of the middle Zambezi in the face of German colonisation and they had already abandoned their holdings toward Wankie before Ndebele threats ... The Barotse Province of today is considerably smaller than the area of the old kingdom. The Ila, Tonga, Toka, and Lyeba countries were taken over by Government, as well as the Kaonde district of Kasempa. In 1941 a Commission decision excised from Barotse Province the northernmost district of Balovale, after the local peoples had asserted their independence. The grounds of the decision were not made public" (Turner 1952, 13-14).

Our Lozi polygon is rounder than most others (see Figure 4), which properly reflects uncertainty about its historical frontiers. Ultimately, "[t]he extent of the area which may legitimately be considered the kingdom of Barotseland is not easily ascertained ... The problem is unusually difficult because the Lozi did not send princes or senior councilors to govern outlying provinces. Because the Lozi were not threatened by powerful tribes until about the middle of the nineteenth century, and because trade with the Valley was advantageous to many smaller tribes outside it, such direct rule was not considered necessary. ... Outside the Valley, therefore, as for example among the Subiya of Sesheke and the Nkoya of Mankoya, Lozi influence was exerted through *mandumeleti*, Lozi indunas representing the King of Barotseland. ... Like company officials in the 1890s, Lozi informants make extravagant claims as to the extent of the area to which representative indunas were despatched" (Caplan 1970, 7–8). Yet despite this uncertainty, Caplan nonetheless concludes that "the evidence is persuasive" that the indunas were indeed located in some areas that were not included in Northern Rhodesia.

Morocco

Overview. We use the polygon for Morocco from the A&C map "North Africa c. 1870–1890 A.D." We verified the validity of the polygon using the map from Ganiage (1985, 194).

Details. For our polygon, we include only the Bled el-Makhzen region (which is solid-colored on the A&C map), and not the Bled el-Siba (which is dashed-colored). As the accompanying text from A&C states: "As late as the end of the nineteenth century [the Morocco Sultan's] spiritual primacy was recognised as far away as Timbuktu and parts of Libya, but the actual area that he controlled was very much smaller. The territories were generally divided into two parts: the Bled el-Makhzen, where the Sultan could collect taxes and appoint officials; and the Bled el-Siba (literally the Land of Wild Beasts), where his influence was almost purely religious. These areas varied according to the power of the Sultan, but generally the plains of the Atlantic seaboard were bled el-Makhzen, and the mountains of the Atlas and the Rif were Bled el-Siba." The polygon for Morocco is the same in the three earlier periods depicted in A&C's maps (both Bled el-Makhzen and Bled el-Siba), which suggests the stability of this territorial arrangement.

Mossi

Overview. We use the polygon for Mossi from the A&C map "West Africa c.1884." We verified the validity of the polygon using the map from Zahan (1967).

Details. The A&C polygon corresponds closely with the detailed map of Mossi kingdoms in Za-

han (1967, 153). Both list the four major kingdoms: Ouagadougou, Tenkodogo, Fada-n-Gourma, Yatenga. Zahan depicts internal boundaries that correspond roughly with the divisions among Mossi kingdoms in the A&C map. This is an extra validity check because our polygon jointly encompasses all four Mossi kingdoms. Zahan briefly describes the origins of each kingdom and then states: "Within five generations, according to these traditions, the Mossi kingdoms and principalities attained the form they possess today, and since that distant epoch interconnexions have been maintained among them and are still recognized in terms of kinship" (154).

Ndebele

Overview. We use the polygon for Ndebele from the A&C map "Southern Africa 1798–1848." We verified the validity of the polygon using the map from Hughes and van Velsen (1955).

Details. The Ndebele kingdom, formed in the 1820s and 1830s, was originally located north of the Vaal River in the Transvaal region of modern-day South Africa. Pressure from Boer settlers led to northern migration and relocation of the kingdom onto the Zimbabwe plateau (Shillington 1987, 48–51). The Hughes and van Velsen (1955) map lacks precise boundaries for Ndebele. However, the rough area depicted for Ndebele corresponds with the A&C polygon, and the town of Bulawayo is in the center of each. "Before their conquest by the B.S.A. Company the Ndebele used to occupy and area extending roughly from Lat. 19° 00' S to 20° 30' S and from Long. 27° 30' E to 29° 30' E. On the north and north-west the largely waterless country of sandveld forest, the so-called Gusu country, formed an effective if indeterminate frontier to the zone of permanent Ndebele settlement. On the south there was little permanent settlement beyond the Matopos and Malungwane ranges, while on the east their country ended at the hills of Mashonaland, the so-called Amaswina mountains. On the west Ndebele rule extended farther than serious Ndebele settlement, as there were numerous chiefs who had been left in control of their own people but who admitted the overlordship of the Ndebele king. In those days Ndebele rule extended well into what is now the Bechuanaland Protectorate" (Hughes and van Velsen 1955, 43). The boundaries of the A&C polygon are similar, extending from Lat. 19° 6' S to 21° 5' S and Long. 27° 3' E to 29° 2' E. Brownlie (1979) claims that the Limpopo river "formed the northern limit of Boer settlement and the southern marches of the Matabele Kingdom" in the mid-nineteenth century.

Nkore

Overview. We use the polygon for Nkore from the A&C map "East Africa 1885." We verified the validity of the polygon using the maps from Karugire (1971).

Details. "Ankole [the colonial district] is a larger geographical area than Nkore, with which this study is concerned. It includes areas that were formerly independent of Nkore. The principal districts that were incorporated in the traditional kingdom of Nkore by the British at the beginning of this century were Buzimba, Budweju, Bunyaruguru, Igara, and the other parts of the former kingdom of Mpororo represented by the modern counties of Kajara, most of Rwampara, and most of Sheema" (Karugire 1971, 33). Generally, the location, shape, and size of the A&C polygon is accurate. However, based on Karugire's description and the accompanying maps in his book, the A&C polygon appears somewhat too large. The A&C polygon stretches to Lake Edward. By

contrast, the only part of Karugire's map that abuts Lake Edward is Bunyaruguru, which is one of the areas that he describes as not traditionally part of Nkore.

Porto Novo

Overview. We use the polygon for Porto Novo from the A&C map "West Africa c.1850." We verified the validity of the polygon using the maps from Mills (1970, 11, 36).

Details. The kingdom of Porto Novo does not appear in A&C's 1884 map for West Africa because it had already been colonized by France. The polygon for Porto Novo in 1850 is not clearly distinguished from that for Dahomey. However, by comparing the 1850 and 1884 maps, we can discern that the trade route depicted in the 1850 map (which itself follows the Oueme River up to the north point of the Porto Novo kingdom) forms the eastern boundary of Dahomey. Hence, we created the polygon for Porto Novo by using the area east of the Oueme River. Mills (1970) does not provide a detailed description of the boundaries of Porto Novo, but his discussion supports the boundaries depicted in these maps. On pg. 38 he refers to the "Porto Novo kingdom on the coast," which is intuitive because the town of Porto Novo is, as its name suggests, a port. When discussing the map shown on pg. 36, he states that "the present-day boundary traverses an area which appears to have been devoid of any tribal unit North of the probable limits of Porto Novo" (35), hence indicating that he believes this map properly captures the northern boundary of the kingdom.

Rwanda and Burundi

Overview. We use the polygons for Rwanda and Rundi from the A&C map "East Africa 1885." We verified the validity of the polygons using the map from d'Hertefelt and Scherer (1962).

Details. Each polygon is larger than the corresponding one in the A&C map "East Africa 1800," which reflects the expansion of each state during the nineteenth century. Regarding Rwanda, since the 1920s, when the colonial borders of Rwanda were finalized, the West of Rwanda has been delimited by Lake Kivu and the Ruzizi River right below it; the South by rivers Lua and Akanyaru (and the Kingdom of Burundi), and the East by the Kagera River. The Northern border is partly defined by the Kirunga mountains but is overall less well delimited. "On the one hand, the current Rwanda [1962] does not comprise all the regions upon which the authority of the central government extended in the past nor those where the king had less support/less authority. On the other hand, it comprises regions where, until the beginning of the 20th century, the authority of the king was very nominal. This is the case particularly in the northwest and the north" (15; translated from French to English by the authors). Regarding Burundi, "The current limits of Burundi are more or less arbitrary. Multiple regions like l'Imbo, the plain of the Ruzizi River and the Moso River used to be more or less independent. On the other hand, the Bugufi region, situated in the northeast of the ancient kingdom, was attached to the Tanganyika Territory in 1922" (119).

Sokoto (and Gobir)

Overview. We use the polygon for Sokoto from Smaldone (1977, Map 3). We use the polygon for Gobir from the A&C map "West Africa c. 1884." The A&C polygon for Sokoto from the map

"Sokoto Caliphate and Borno in the 19th Century" is reasonably accurate. However, our assessment is that the map from Smaldone (1977) better captures specific details of the boundaries.

Details. Regarding the northwestern boundary, in the early nineteenth century, the Sokoto Caliphate spread across what is now Northern Nigeria in a series of military conquests, many of which defeated traditional Hausa states. In three Hausa states, following military defeat, the ruling dynasty fled and formed a new state: Katsina founded Maradi, Gobir formed a new state centered at Sabon Birni, and Kebbi formed a new state centered at Argungu. The Caliphate founded Sokoto within the traditional Gobir state and Gwandu within the traditional Kebbi state. The resistant Hausa states fought continually with Sokoto and maintained their independence. We code Gobir as a distinct precolonial state, and its A&C polygon is located in the area described by historical accounts of these breakaway Hausa states.

Elsewhere in the northwest, the Caliph maintained friendly relations with the Tuareg in Air, but did not control them militarily; and Lord Lugard claimed incorrectly that Sokoto's influence extended as far west as Timbuktu. Anene (1970) stresses the lack of political allegiances by the many long-distance traders in the region. He asserts that "It is probably that it was the Fulani control of the trade centres of the Niger bend that partly contributed to the wrong assumption that the Sokoto-Gwandu empire was extensive in that direction" (264). Extensive slave raiding within the frontier areas between major states further undermined any hard political loyalties in these areas. Anene (1970, 256) concludes: "On the basis of the evidence provided by Dr Barth, it is reasonable to suggest that the frontiers of the Sokoto-Gwandu empire to the north and to the west did not lie far from the Fulani strongholds of Katsina, Wurno, and Gwandu. . . . the situation seen by Barth remained more or less unchanged from 1855 to the end of the century." These are indeed in the southwest corner of our polygon.

In the east, Sokoto military victories gained territory from Borno. Although they were unable to conquer Borno permanently, they did seize two of Borno's western provinces and transform them into emirates at Hadejia and Katagum. These towns are in the northeast corner of our polygon.

Swazi

Overview. We use the polygon for Swazi from the A&C map "Southern Africa 1798–1848." We verified the validity of the polygon using the map from Kuper (1952).

Details. The polygon extends farther west than the modern-day country of eSwatini. This is consistent with descriptions of the partition of the Swazi: "only approximately three-fifths of all Swazi live in the High Commission Territory of Swaziland and approximately two-fifths live [west of that] in the adjoining Union of South Africa" (Kuper 1952, 7). Various European border commissions, discussed in Appendices C.6.2 and C.6.10, scrutinized the historical limits of the state. For example, commissioners decided that "the 'raids' of 1860 did not amount to a conquest and that Swazi settlement was too recent for them to have a meaningful claim" (Bonner 1983, 188). At one rule, they surveyed village headmen living at the frontiers of Swazi and Zulu territory to ascertain to which one they paid tribute.

Tunis

Overview. We use the polygon for Tunis from the A&C map "North Africa 1848–1870 A.D." The polygon is the same in the two A&C maps covering earlier periods, and Tunisia was colonized by France during the time period of the next map (1870–90). We verified the validity of this polygon using the map from https://commons.wikimedia.org/wiki/File:Tunisie_-_Carte_allemande_1844.jpg.

Wolof states

Overview. We use polygons for the following states from the A&C map "West Africa c.1850": Cayor, Jolof, Salum, Sine, Walo. We verified the validity of the polygons using the map from Gamble (1967, 18).

Details. Gamble (1967, 11-21) describes the territorial extent of the Wolof people and the history of the different states in the region. His map clarifies that an unlabeled polygon in the A&C map is Baol and that this should be combined into the polygon for Sine. Each of the states has largely the same shape as in A&C's 1884 map for West Africa, but early French colonization in the area obscures the limits of some of the polygons. See also the coding appendix for Senegal's precolonial kingdoms in Wilfahrt (2018).

Yoruba states

Overview. The Yoruba states in our data set are Egba, Ibadan, Ijebu, and Oyo. There are several sources of inaccuracies in the A&C maps, and we instead primarily use the maps in Smith (1988) to create polygons for each. All these states changed their location and size during the nineteenth century, and Ibadan continued to experience changes up through when it signed treaties with Britain in 1893 to end decades of warfare. We measure Ibadan at its greatest territorial extent in the 1870s because a colonizer plausibly could have argued that gaining a treaty with Ibadan conferred all this territory (given its close proximity to the onset of colonization). We also note that creating a larger polygon biases in favor of the state being partitioned by colonial borders. Oyo was stable in its territory from the mid-1860s onward, and Egba and Ijebu from several decades earlier.

Details. Yorubaland experienced major changes in its state system throughout the nineteenth century, for which we provide some historical background. At the turn of the century, the major state was the Oyo empire. This state was centered at Oyo Ile and ruled by its traditional leader, the Alafin. At its height in the eighteenth century, Oyo controlled all the traditional kingdoms in northern and western Yorubaland. Moving from west to east, its territory included the Yoruba kingdoms of Dassa, Sabe, Ketu, Egbado, and Egba. Other traditional Yoruba kingdoms lay either to the south (Lagos, Ijebu) or east (Ife, Ijesa, Ondo, Igbomina, Ekiti, Owo) of these frontiers and were not contained within the empire, although its hegemony was nonetheless influential. Oyo "established relationships with most other Yoruba kingdoms, and its influence considerably curtailed the frequency and severity of the conflicts among them" (Akintoye 1971, xvi). The Oyo empire also stretched beyond contemporary Yorubaland to include Abomey (the capital of the Dahomey kingdom) in the west and Ilorin in the north (which was later incorporated into the Sokoto Caliphate);

in fact, the capital of Oyo Ile was north of Ilorin and lay just south of the intersection of the Niger and Moshi rivers, which constituted the northern frontier of the Oyo empire. See Atanda (1973, 1–14) for a detailed description of these boundaries as well as a map and Smith (1988, Chs. 2–6) for a description of each of the aforementioned traditional Yoruba kingdoms and for concurrent maps (Maps 1 and 2 in the Preface).

The set of major Yoruba states and their boundaries fluctuated throughout the nineteenth century as a result of persistent warfare. These wars occurred in three main phases: (1) The collapse of the Oyo empire (c. 1820 to c. 1837), (2) Struggles among successor states (c. 1837 to 1878), and (3) Anti-Ibadan wars (1878 to 1893). See Ajayi and Smith (1964, 11–12) for this periodization and Smith (1988, Chs. 10–12) for more details on the wars; these are the sources for the following unless otherwise noted.

(1) The Oyo empire suffered major setbacks starting in the 1780s and collapsed completely in the 1820s (the absence of direct observants and written sources makes it difficult to precisely date each of the following events). Key events during these decades included Oyo losing wars with neighboring states Borgu and Nupe; Egba and Ilorin declaring independence; and civil wars involving Ife, Owo, and Ijebu. During the 1820s, Fulani armies from Sokoto conquered Ilorin and later the Oyo capital of Oyo Ile. The Fulani threat caused a mass Yoruba migration to reach relative safety in the forested area south of the savanna where Fulani cavalry were their strongest. Some important consequences of this migration were the founding of Ibadan (c. 1829), Abeokuta (c. 1830), and New Oyo (c. 1837); and the enlargement of the older town of Ijaye. New Oyo, located 80 miles south of Oyo Ile, was the capital of the refounded Oyo kingdom still under control of the Alafin. The new Oyo kingdom was formally divided into two provinces, apart from the capital. Ijaye constituted the western flank and Ibadan the eastern flank, which positioned it close to Ilorin; see Map 3 in Smith (1988). Ibadan defeated Ilorin in c. 1838 in a battle over Ogbomoso, located in their borderlands, which permanently checked the southward expansion of the Sokoto Caliphate. Abeokuta was the new capital of the Egba and was located southwest of their former settlements.

(2) After the fall of the Oyo empire, the main successor states in Yorubaland engaged in nearly constant warfare until colonial intervention in the 1890s. The two main sets of conflicts until the 1870s were wars involving Ibadan and wars between Egba and Dahomey. In the 1850s, Ibadan expanded eastward to incorporate several historical kingdoms that the old Oyo empire never governed: Ife, Ijesa, Igbomina, and Ekiti. However, because Ibadan's northern and western frontiers were less expansive than those of the old Oyo empire, the new Ibadan empire did not contain any other traditional Yoruba kingdoms. The pivotal event to establish the supremacy of Ibadan in Yorubaland was its victory in the Ijaye war of 1860–65, when it defeated a coalition among Ijaye, Egba, and Ijebu. Ibadan conquered the town of Ijaye and absorbed much of the southern territory of its rival province (located west of Ibadan) into its own domain. For our Ibadan polygon, we use the Ibadan 1874 map in Akintoye (1971, 67); note that Map 4 in Smith (1988) is similar but less detailed. Oyo gained the remainder of the former Ijaye province following the Ijaye war: "Oyo [was] strengthened by the addition of former Ijaye territory in the upper Ogun (except for Ibarapa, which Ibadan had kept)" (Smith 1988, 132). None of our sources contain a map depicting Oyo after this war, which provided its shape upon British colonization, so we constructed one as follows. Smith's (1988) Map 3 is "The New States, c. 1836–62" and depicts the limits of the New Oyo

capital as well as the Ijaye and Ibadan provinces. Our polygon for Oyo contains all the area of this figure that does not intersect with our Ibadan polygon.

The Egba fought two major sets of wars following its founding of Abeokuta in the 1830s. One was against Ibadan, which primarily were fought (successfully) to defend its territory. The other was the long series of wars that Egba fought with Dahomey. These two former vassals of the Oyo empire fought to control the Egbado territory between them. These wars were consequential for our purposes because they determined the western frontier of Egba. Anene (1970, 154) proclaims that "[t]here is abundant evidence to show that the effective western frontier of the Egba state was the Ogun River," upon which Abeokuta is situated. Anene describes the annual raids by Dahomey that reached as far east as the Ogun River and that "neither Ketu [a Yoruba state] nor any of the Yoruba towns west of the Ogun were effectively protected from Dahomey" (155). The most intense assaults by Dahomey on Abeokuta occurred between 1851 and 1864 (Anene 1970, 166; Mills 1970, Fig. 11 on pg. 33). Although several maps, such as that in Ajayi and Crowder and Fig. 12 in Mills (1970, 35), extend the Egba territory farther west to encompass Egbado towns such as Ilaro and Ijanna that Egba raided periodically (see Fig. 11 in Mills 1970 and Anene 1970, 153), Anene's detailed analysis demonstrates Egba did not permanently control these areas. To construct an accurate polygon for Egba, we use the Ogun river as the western and northwestern boundary plus its boundaries with Ijaye (northeast), Ibadan (east), and Ijebu (south) depicted in Smith's (1988) Map 3.

(3) After reaching its height of its territorial expansion in the 1870s, Ibadan faced revolts from within and attacks from neighboring states. Thus, about a decade after the Ijaye war "confirmed the position of Ibadan as the leading power in Yorubaland," the tides turned and "Ibadan's predominance . . . was rejected and its short-lived empire broken up" (Smith 1988, 132, 141). In the Sixteen Years' War (1877–93; alternatively, the Kiriji War or the Ekiti–Parapo War), a coalition of other Yoruba states (primarily Egba and Ijebu) allied with Ilorin fought against Ibadan. During the war, several vassal states revolted against Ibadan rule. This included the major Ekiti towns, sixteen of whom formed the Ekiti Parapo coalition, and Ife. In a treaty signed in 1886, Ibadan recognized the independence of the members of the Ekiti Parapo while also formalizing Ibadan's separation from Oyo. Fighting continued in the north over the frontier with Ilorin, in particular over the town of Offa. These wars meant that by the end of the 1880s, "Ibadan's attempt to assume the mantle of Oyo had now decisively failed" (Smith 1988, 146). The war ended in 1893 amid intervention by the British, and thus this constituted the state of affairs on the eve of the colonization of Yorubaland. The events during the Sixteen Years' War suggest that an alternative reasonable way to construct the Ibadan polygon would be to exclude the areas of Ekiti Parapo and Ife, and it should also be noted that Ibadan's northern frontier with Ilorin was contested.

This narrative makes clear that Oyo, Ibadan, and Egba were the major states in Yorubaland in the nineteenth century. Smith (1988, 128) refers to the latter two and Ijaye as the "triumverate of new states" that emerged after the old Oyo empire collapsed, although Ijaye was then destroyed by Ibadan in 1862. These three, plus Ijebu, are the four states identified on the Ajayi and Crowder maps that meet our standards for further consideration: at least one of the three verification data sets includes them. Regarding Ijebu, Smith (1988) notes that "the last quarter-century of independent Yorubaland witnessed profound changes of many kinds . . . [t]here was resurgence of vitality in some of the ancient kingdoms, especially Ijebu" (141). Earlier he describes the traditional gov-

ernance institutions of Ijebu (pp. 61–67), also noting that "[t]he Ijebu kingdom was a large one, probably next in size to [the old Oyo empire]." With regard to boundaries, "At its greatest extent [Ijebu] stretched south-westward to the confines of Lagos and eastward across the River Shasha to the Oni; on the west it bordered the country of the Egba, on the north the Oyo, on the north-east the Ife, and on the east the Ondo" (63). We use the same procedure as for Egba to construct a polygon for Ijebu: we use the Oni river as the eastern boundary plus its boundaries with Ibadan (north), Egba (northwest), and the Lagos and Lekki lagoons (south and southwest) depicted in Smith's (1988) Map 3.

The Ajayi and Crowder polygons are problematic in several ways, which is why we use the alternatives described above. Their analog to the Ibadan polygon we use is their map of Ibadan contained in "West Africa c. 1884." This map shows the uncertain frontiers with the territory claimed by Ekiti Parapo. Furthermore, their map for Oyo in 1884 is partially incorrect; it depicts in the east a frontier north of Ibadan and south of Ilorin. However, as described above, Ibadan lay directly adjacent to Ilorin (which is also captured in Ajayi and Crowder's inset for the Ibadan empire, which itself is too imprecise to digitize). Their Egba and Ijebu polygons have generally high face validity but are somewhat imprecise, which is why we prefer the polygons described above.

Zulu

Overview. We use the polygon for Zulu from the A&C map "Southern Africa 1798–1848." We verified the validity of the polygon using the map in Thompson (1996, 82).

Details. "By the mid-1820s, Shaka's Zulu had established control over most territory from the Pongola River in the north to beyond the Tugela River in the south and from the mountain escarpment to the sea" (Thompson 1996, 83). One confusing aspect of the A&C map is that they label the rivers incorrectly. What they label as the Tugela River is in fact the Pongola River. Correcting this mistake clarifies that their Zulu polygon is correctly located.

C Case Studies for Bilateral Borders

C.1 North Africa

C.1.1 Algeria–Morocco

Overview. Originally formed in 1845 as an interimperial border between French Algeria and PCS Morocco; in 1912, Morocco became a French colony. Major revisions occurred in 1901 and 1912 (new segments). A historical political frontier (PCS: Morocco) directly affected the border. The primary feature is towns/villages. Secondary features are minor rivers and topography (hills, mountains, valleys, plateaus, passes).

Details. France established a colonial presence in Algeria in 1830 when they militarily occupied Algiers.[1] Over time, major white settlements became established across the entire longitudinal expanse of modern-day Algeria, concentrated mostly within 100km of the coast.[2] France also expanded southward into the Sahara throughout the nineteenth and twentieth centuries.[3] France formally annexed the Saharan area of Algeria in 1902, and subsequently administered the area as the Territoires du Sud Algerién, or Southern Territories.[4]

Historically, the Moroccan state was divided into two regions, Bled el-Makhzen and Bled el-Siba. The former was the area of core territorial control, whereas the Sultan's authority in the latter (located farther inland and partially in the Sahara Desert) was purely nominal and religious.[5] Consequently, Morocco's boundary with the Ottoman vilayet (province) of Algiers was "conceptual and approximate rather than linear and exact. When they existed at all, jurisdiction and political power was, in the desert region, over persons and tribes and not over territory conceived of as

[1] Wesseling 1996, 12–13.
[2] See the map in Ajayi and Crowder 1985, "64 The European population in the colonial period."
[3] See the map in Ajayi and Crowder 1985, "44 North Africa in the nineteenth century" and here.
[4] Brownlie 1979, 89.
[5] Ajayi and Crowder 1985, "44 North Africa in the nineteenth century."

such."[6]

The northernmost segment of the border (from the coast to Teniet-el-Sassi, a pass) was initially formed in 1845 in a treaty between between France and Morocco. "The line is based upon the principle that the borders between Morocco and Turkey should remain as the frontier between Algeria and Morocco,"[7] which highlights the importance of historical political frontiers. The articles of the Treaty trace a path along various bodies of water, mountains/hills, passes, towns/villages, and "tribes" (which we consider as part of towns/villages) as outlined in the protocol's preamble. A protocol in 1901 confirmed the earlier treaty and extended the border southward to Figuig, hence completing the northmost part of the border that runs roughly vertically.

Morocco became a French protectorate in 1912. In the previous year, Germany challenged French supremacy in Morocco in the Agadir crisis, which was resolved by Germany recognizing French influence in Morocco and France compensating Germany with territory from French Equatorial Africa.[8] A series of proposals by a French administrator in 1912 yielded the roughly diagonal segment and the meridian line in the southernmost part (8°40'E longitude). The border also follows physical landmarks such as minor rivers (including a sizable segment using the Draa), valleys, and plateaus.[9] These borders contracted Moroccan territory relative to precolonial precedents, but exclusively in the desert areas where historical territorial control was ill-defined.[10] The Draa River in particular was understood by French officials to be "the limit of the domain of the Saharan Nomad—a limit to Morocco's territorial extent in reverse."[11]

The primary feature of the border is less clear than in most cases. We choose towns/villages given their importance in the northernmost part of the border, which was formed first and is the most densely populated part of the border. All the other features mentioned are secondary (plus non-astronomical straight lines that comprise various short segments).

C.1.2 Algeria–Tunisia

Overview. Originally formed in 1883 as a French intraimperial border between Algeria and recently conquered Tunisia. Major border revisions occurred in 1902, 1911, and 1923 (new segments). A historical political frontier (PCS: Tunis) directly affected the border. The primary feature is other water bodies (wells). Secondary features are topography (mountains, passes), and straight lines (non-astronomical).

Details. France occupied Algiers in 1830 and, by the beginning of the twentieth century, had expanded across all the territory that encompasses the border with Tunisia.[12] Until France occupied Tunis in 1881, Tunis was an eyalet (province) of the Ottoman Empire, although in practice it was an autonomous beylik (kingdom).

[6] Brownlie 1979, 55; see also Trout 1969, 17.
[7] Brownlie 1979, 58.
[8] See Cameroon–Gabon.
[9] These features were described in precise detail in a post-independence agreement between Algeria and Morocco in 1972, as the border had previously lacked precision (Brownlie 1979, 57–59).
[10] Trout 1969, 15.
[11] Trout 1969, 165.
[12] See Algeria–Morocco.

French Algeria lacked a concrete boundary with the Beylik of Tunis prior to French's colonization of Tunisia. An 1871 Firman (decree) from the Ottoman Sultan to the Bey of Tunis confirmed that Tunis "will retain its boundaries, such as they exist *ab antiquo* . . . "[13] However, the document did not describe the borders. Shortly after occupying Tunis in 1881, a Circular issued from the French government to its diplomatic agents stated, "As there are no natural borders between Tunisia and Algeria, the delimitation has remained undecided and has never been done regularly."[14]

The originally formed part of the border stretches from the coast to as far south as Bir Romane (a drinking well), which constitutes roughly two-thirds of the contemporary border. Between 1883 and 1902, French delimitation, mapping, and administrative practice established this boundary.[15] We code the first year as the initial foundation and the last year as a major revision to indicate its evolution in the interim. The features are wells, passes, and mountains; with wells as the primary feature and the others as secondary features. This border also assigned four "tribes" (Oulad Sidi Abid el Hamadi, Gherib, Nememcha, Troud) to either side of the border while preserving traditional usage rights, mostly of wells (hence we code these groups as part of the wells feature of the border).[16]

South of Bir Romane, the boundary consists entirely of desert territory. The establishment of the Libya–Tunisia border created a tripoint with Algeria, north of which France established a series of straight-line sectors (non-astronomical) to connect up to Bir Romane. Hence we code straight lines (non-astronomical) as a secondary feature. These were created by French administrative decisions in 1911 and 1923,[17] each of which we code as a major revision.

C.1.3 Algeria–Mali

Overview. Originally formed in 1905 as a French intraimperial border between Algeria and French West Africa. A major revision occurred in 1909 (changed features: clarify local features). Historical political frontiers directly (decentralized group: Tuareg) and indirectly (PCS: Morocco) affected the border. The primary feature is a straight line (non-astronomical). Secondary features are minor rivers (oueds), topography (mountains), other water bodies (wells), and infrastructure (routes).

Details. France occupied Algiers in 1830. It expanded southward over the following decades and annexed the Southern Territoires in the Sahara in 1902.[18] French westward expansion from Senegal began in the 1860s, which resulted in the creation of the French West Africa federation (of which French Sudan, or Mali, was a constituent unit) in 1895.[19] France formed a border between the Southern Territories and French West Africa in the 1905 Convention between Algeria and French West Africa.[20] The western section of the border (roughly two-thirds of the total border) is a straight line (non-astronomical). We code this as the primary feature. In the east,

[13] Hertslet 1909, 1184.
[14] Hertslet 1909, 1184 and translated from French to English by the authors.
[15] Brownlie 1979, 92.
[16] Brownlie 1979, 93.
[17] Brownlie 1979, 91.
[18] See Algeria–Morocco.
[19] See Mali–Senegal.
[20] Boilley 2019, 6.

the Niamey Convention of 1909 describes various physical characteristics such as minor rivers (oueds), mountains, and wells.[21] We code these as secondary features.

A nomadic group, the Tuareg, directly affected the southern third of the border. This part of the border is carefully traced because it separates two Tuareg groups, the Kel Ahaggar and the Kel Adagh.[22] The 1905 Convention details the border using rivers/oueds and existing routes and explicitly states that the limits "can incur further modifications as the countryside becomes better known."[23] The border was revised in the Niamey Convention of 1909, which clarified that Algeria would keep the nomadic zones of the groups Kel Ajjer and Kel Ahaggar and French West Africa would keep the nomadic zones of Kel Adagh. Further modifications after 1909 served to better distribute water wells between groups. Consequently, "the historical logic of existing separations between Kel Ahaggar and Kel Adagh was respected and clarified by a detailed field study of the nomadic routes and the territorial claims of each group."[24]

The straight-line sector of the border, despite not concerning any local features, nonetheless is not randomly located. Instead, it reflects two strategic military considerations by French officials: administration and the Kingdom of Morocco.[25] First, in the early 20th century, the French deemed that Sahara and West Africa was too large to be governed as one region, especially because they lacked any presence on the ground in the deserted regions of the Sahara. This administrative consideration explains why *some* line had to be drawn between France's Sahelian and North African domains. Second, France sought to "gain Moroccan acquiescence to French control over all of the Sahara,"[26] and eventually to submit the Kingdom of Morocco to French rule. Some French colonialists, such as Minister of the Interior Eugène Etienne, sought to draw a border that would maximize French territorial claims. Consequently, the present border—were it to be extended northward to the Atlantic—would end exactly at Cap Draa, the endpoint of the Oued Draa (river) that delimits part of the Algeria–Morocco border. Etienne wanted to move the A.O.F. border north to maximize French encroachment into the south of Morocco.[27] Hence we code PCS Morocco as indirectly affecting the present border.

[21] Brownlie 1979, 47.

[22] Tuareg peoples in the Sahara were not united on the eve of colonialism, but instead competed and sometimes fought each other (Boilley 2019, 4). Each Tuareg people (e.g., Kel Adagh, Kel Ahaggar) thought of itself as independent and had its own leader.

[23] Boilley 2019, 6.

[24] Boilley 2019, 7. For additional detail on the role of wells and different Tuareg groups in determining the border, see Lefèbvre 2015, 249–51.

[25] Trout 1969, 181–93.

[26] Trout 1969, 189.

[27] In 1903, Etienne wrote: "The political unity of the French Sahara could obviously only be obtained if the fact that it was French territory were to be recognized by the European powers and by Morocco [...] The logical connotation of that creation [military conquest] was naturally to be the acceptance of this situation by the Cherifien [Moroccan] Government, and its acquiescence was obvious in the course of the accords recently concluded between the French Republic and Morocco, since our agents have been rather fortunate to obtain from the Sultan a permanent recognition to our rights to the Sahara, henceforth French territory" (quoted in Trout 1969, 189).

C.1.4 Algeria–Mauritania

Overview. Originally formed in 1905 as a French intraimperial border between Algeria and French West Africa. The primary feature is a straight line (non-astronomical).

Details. See Algeria–Mali for the rationale behind the location of the straight-line border that extends from the Algeria–Mauritania–Morocco tripoint to the Algeria–Mali border. Like Mali, Mauritania became part of French West Africa.[28] The Mauritania component of the border (located entirely in the Sahara Desert) consists of the same straight line that forms the western-most part of the Algeria–Mali border. Unlike the Algeria-Mali border, no geographic or other local features explain the location of this straight-line border, but we discuss the broader geopolitical and military conquest considerations in Algeria–Mali.

C.1.5 Algeria–Niger

Overview. Originally formed in 1905 as a French intraimperial border between Algeria and French West Africa. A historical political frontier (decentralized group: Tuareg) directly affected the border. The primary feature is a straight line (non-astronomical). A secondary feature is other water bodies (wells).

Details. This was originally a border between Algeria and French West Africa; see Algeria–Mali for the background. This Niger component of the border (located entirely in the Sahara Desert) consists entirely of three distinct straight-line (non-astronomical) segments delimited in the same 1905 and 1909 conventions as the Algeria–Mali border. The nomadic Tuareg group directly affected the border, which ensured that the territory of the Amenokal [paramount Tuareg chief] of the Kel Ahaggar would remain north of the border, in Algeria, while the territory of the Sultan of Agadez would remain south of the border, in Niger. This was in keeping with a taxation system for merchants that had existed for centuries between these territories and that had been reported by travelers for centuries dating back to Ibn Battuta in the 14th century all the way to pilgrim El Hadj Ahmed el Fellati, who spoke of "frontier" and "customs" in what would become the colonial border in 1882.[29] Additionally, the border changes angles at the location of wells near Guezzam and Assamakka, presumably with the idea of sharing water resources on both sides of the border. Hence we code wells as a secondary feature.

C.1.6 Libya–Tunisia

Overview. Originally formed in 1910 as an interimperial border between Ottoman Tripolitania and French Tunisia; in 1912, Libya became an Italian colony. Historical political frontiers (PCS: Tunisia; other state: Ottoman Tripolitania) directly affected the border. The primary feature is topography (hills, valleys). Secondary features are other water bodies (wells) and minor rivers.

Details. The entire area encompassed by this border was controlled by the Ottoman Empire until 1881, when France conquered Tunis. Ottoman Tunis was a well-established territorial entity but

[28] Mauritania was originally distinguished as a separate colony in 1904 and formally joined the French West Africa federation in 1920; see Mauritania–Senegal.

[29] Boilley 2019, 8. For additional detail on the role of wells and different Tuareg groups in determining the border, see Lefèbvre 2015, 249–51.

lacked definitive borders. An 1871 Firman (decree) from the Ottoman Sultan to the Bey of Tunis confirmed that Tunis "will retain its boundaries, such as they exist *ab antiquo* . . . ",[30] but did not describe the borders. The Ottoman Empire retained control over Tripolitania, to the east, until 1911. In 1910, France and the Ottoman Empire concluded a convention regarding the border, which remained the border after Italy gained control of present-day Libya in 1911.[31] We code the historical frontiers of both (formerly Ottoman) Tunis and Ottoman Tripolitania as directly affecting the border. The Convention of 1910 lists numerous hills (e.g., Touil Ali Ben Amar) and valleys that formed parts of the border,[32] and hence we code topography as the primary feature. It also lists various wells (e.g., Bir Zar and Mechiguig) and minor rivers, which we code as secondary features.

C.1.7 Algeria–Libya

Overview. Originally formed in 1910 as an interimperial border between Ottoman Tripolitania and French Tunisia; in 1912, Libya became an Italian colony. Major revisions occurred in 1919 and 1955 (new segments). The primary feature is straight lines (non-astronomical). Secondary features are towns/villages, minor rivers, other water bodies (oases), and topography (rock formations).

Details. France occupied Algiers in 1830 and expanded southward over the following decades, including the formal annexation of the Southern Territories in the Sahara in 1902.[33] The Ottoman Empire controlled Tripolitania until 1911, when it became an Italian colony. The entire border is located in the Sahara Desert, and consists primarily of short straight-line segments.[34]

In 1910, France and the Ottoman Empire concluded a convention that primarily affected the Libya–Tunisia border.[35] This also formed the short (approximately 20 mile) northern-most segment of the present border, which remained unchanged following Italy's conquest of Tripolitania in 1911. This segment starts at Fort Saint in the north (the southernmost city in Tunisia, currently named Borj El Khadra) to southwest Ghadāmis (a Libyan oasis village). The middle segment between Ghadāmis and Ghat (a Libyan oasis village) is based on agreements between France and Libya in the Treaty of Friendship of 1955 and the 1956 Exchange of Letters. In the latter agreement, this segment is outlined using sixteen defined points from A to P that reference villages, infrastructure such as a landing strip and tracks, thalwegs, and rock formations such as escarpments and an outcrop. The southernmost segment lies between Ghat and the Niger tripoint and was established in very general terms in the 1919 Exchange of Notes between France and Italy. Although the concession was minor, France extended the western border of Libya to honor its treaty obligation for Italy to gain "equitable" compensation for new territorial gains, a condition of their entering World War I on the part of the Allies.[36] The Notes discuss the rivers, mountains and villages through which

[30] Hertslet 1909, 1184.

[31] Brownlie 1979, 141. See Martel 1965 for extensive evidence on the negotiations between France and the Ottomans over the border.

[32] See also the map in Brownlie 1979, 142.

[33] See Algeria–Morocco.

[34] See Google Maps.

[35] Brownlie 1979, 26–41.

[36] McKeon Jr 1991, 151.

the border runs. Its alignment is based on the Ghat and Tumno passes and multiple other oases and villages, given that the area was historically important for trans-Saharan trade. On this basis, we code each of the following as secondary features: towns/villages, minor rivers, oases, and topography (rock formations).

C.1.8 Chad–Libya

Overview. Originally formed in 1898–99 as a unilateral northern boundary of the French sphere of influence; Libya became an Italian colony in 1912. Major revisions occurred in 1919 (new segment) and 1934 (large territorial transfer: Sarra Triangle from Sudan to Libya). A historical political frontier (other state: Ottoman Tripolitania) directly affected the border. The primary feature is straight lines (non-astronomical).

Details. The present border consists of two straight-line segments that meet at the point formed by Tropic of Cancer and 16°E longitude. The eastern line was formed first. In a convention in 1898 and a supplementary declaration in 1899, Britain and France agreed to borders between their empires across West Africa and the Central Sudan.[37] This agreement created a unilateral northeastern boundary for the French sphere of influence that consisted of a straight line starting at the point formed by Tropic of Cancer and 16°E longitude, and moving southeast until intersecting Sudan.[38] This line reflected a previously stated desire, in an 1890 exchange of notes, that a border agreement reached at that time "does not affect any rights which His Imperial Majesty the Sultan may have in the regions which lie on the southern frontier of his Tripolitanian dominions."[39] The Ottomans publicly denounced both the 1890 and 1898–99 Anglo-French agreements, of which they were not a signatory, by claiming that they transgressed on their territory (albeit that they did not directly occupy or govern it). Between 1906 and 1911, the Ottomans reacted to the treaties by establishing military occupation over modern-day northern Chad. However, Italy's military defeat of the Ottomans in Tripoli in 1911 rendered these territorial claims moot.[40] In a 1919 exchange of notes with France, Italy implicitly accepted the border established in 1898–99.[41]

The western border line was "the conventional, i.e. the actual administrative or political, boundary forming the southern limit of the Turkish vilayets of Tripoli and Barca."[42] The exact date at which the final line was adopted is unclear. The first date that Brownlie mentions is 1919, when he states that the alignment received "implicit recognition" in a Franco-Italian exchange of notes. We code this as the year of formation for this portion of the border. For the aforementioned reasons, both segments of the border reflected (at least approximately) the historical political frontiers of the Ottoman empire, which we code as directly affecting the present border.

In 1934, Britain transferred the Sarra Triangle to Italy.[43] Adding this territory to southern Libya resulted in a large segment of what had been the Chad–Sudan border instead becoming the Chad–

[37] See Chad–Sudan for the precipitating events.

[38] See Hertslet 1909, 796–97 for the text and Shaw 1935, 50–51 for ambiguities in the exact location of this line.

[39] Hertslet 1909, 740.

[40] McKeon Jr 1991, 194–51.

[41] Brownlie 1979, 121.

[42] Brownlie 1979, 121.

[43] See Libya–Sudan.

Libya border. This new segment greatly lengthened the eastern-most of the two lines that already comprised the border.

In 1935, France and Italy agreed to transfer a portion of Chad (now known as the Aouzou Strip) to Libya. However, shortly after agreeing to the 1935 Treaty of Rome, Italy renounced the deal and the transfer never took place.[44] In 1970s and 1980s, Chad and Libya fought a war over the Aouzou Strip.

C.1.9 Libya–Niger

Overview. Originally formed in 1919 as an interimperial border between Italian Libya and French West Africa. A historical political frontier (other state: Ottoman Tripolitania) directly affected the border. The primary feature is straight lines (non-astronomical). Secondary features are topography (mountains, valleys) and minor rivers.

Details. The process of forming this border was very similar to that for Chad–Libya, except that the 1898–99 Anglo-Franco agreements did not affect any portions of the present border.[45] As with the western portion of the Chad–Libya border, "[t]he boundary derives from the original southern limits of the vilayet of Tripoli," which was formalized in the 1919 Franco-Italian Exchange of Notes.[46] The border consists entirely of straight-line segments. A non-ratified 1938 Agreement between France and Italy mentions mountains, valleys, and minor rivers, among other physical features; all of which we code as secondary features.

C.1.10 Libya–Sudan

Overview. Originally formed in 1925 as an interimperial border between Italian Libya and British Sudan. A major revision occurred in 1934 (large territorial transfer: Sarra Triangle from Sudan to Libya). The primary feature is straight lines (parallels/meridians).

Details. Britain gained effective occupation of Sudan in 1898,[47] and Italy conquered Tripolitania in 1911.[48] Britain and Italy originally set a border between their possessions in 1925,[49] hence forming the present border. Britain and Italy disputed who should control the Sarra Triangle.[50] This was an unoccupied desert piece of land north of Chad and south of the 22°N latitude.[51] Britain ceded this territory to Italy in a 1934 Agreement, which resulted in the border consisting entirely of parallels/meridians: 24°E longitude, 25°E longitude, and 22°N latitude.

[44] McKeon Jr 1991, 152–53.

[45] Brownlie 1979, 127 explicitly critiques the claim found elsewhere that the 1898–99 Anglo-Franco agreements influenced the present border.

[46] Brownlie 1979, 127.

[47] See Chad–Sudan.

[48] See Libya–Tunisia.

[49] See Egypt–Libya.

[50] Ali Taha 1977; Brownlie 1979, 133–35. For background on why Britain and France ceded territory to Italy after World War II, see Algeria–Libya and Kenya–Somalia.

[51] East of Libya, this parallel forms the Egypt–Sudan border.

C.1.11 Egypt–Libya

Overview. Originally formed in 1925 as an interimperial border between British Egypt and Italian Libya. A historical political frontier (PCS: Egypt) directly affected the border. The primary feature is a straight line (parallels/meridians). A secondary feature is topography (mountains).

Details. Egypt and Libya (Tripoli) were each provinces of the Ottoman empire prior to colonization by Britain and Italy, respectively. A Firman (royal decree) from 1841 addressed by the Ottoman Sultan to the Pasha (governor) of Egypt articulated the border with Tripoli. The accompanying map showed the western boundary of Egypt as "extending southeastward and in an irregular line from Khalīj al Kanā'is on the Mediterranean to a point immediately east of the 29th meridian and slightly north of the latitude of Aswan."[52] The current Egypt–Libya border was established by the Agreement of 1925 between Egypt (Britain) and Italy, which differed somewhat by assigning more territory to Egypt in this desert area. The vast majority of the border is the 25°E meridian, until reaching the northernmost part, which is determined by various mountains.

C.1.12 Mauritania–Western Sahara

Overview. Originally formed in 1900 as an interimperial border between French West Africa and Spanish Sahara. A historical political frontier (PCS: Morocco) indirectly affected the border. A major revision occurred in 1904 (new segment). The primary feature is straight lines (parallels/meridians). Secondary features are topography (mountains) and straight lines (non-astronomical).

Details. Starting in the 1860s, France expanded westward and northward from its coastal settlements in Senegal, which yielded a presence in modern-day Mauritania by the end of the nineteenth century.[53] In 1885, Spain declared a protectorate between Cape Blanco (Ras Nouadhibou) and Cape Bojador farther north;[54] the former was the northern limit of a French sphere of influence recognized at the 1815 Congress of Vienna.[55] This later formed the coastal frontiers of the crown colony of Rio de Oro, which itself later became part of Spanish Sahara. In 1900, France and Spain determined the southern and eastern limits of Rio de Oro,[56] which yielded most of the contemporary Mauritania–Western Sahara border. A convention in 1904 placed a strip north of Rio de Oro (between 26°N and 27°40'N) within the Spanish sphere.[57] Known as Sequiet el Hamra, this territory became the northern part of Spanish Sahara. Although the present border did not change subsequently,[58] it was preliminary because France and Spain had yet to conquer and partition Morocco, to the north. In 1912, France confirmed Spain's control over Sequiet el Hamra based on the decision that it lay beyond Morocco's territory,[59] and thus we code an indirect effect of PCS Morocco on the present border.

[52] Brownlie 1979, 104.
[53] See Mauritania–Senegal.
[54] Hertslet 1909, 1163–64.
[55] Warner 1990, 12.
[56] Hertslet 1909, 1165–67.
[57] Brownlie 1979, 437.
[58] See the map in Deasy 1942, 305.
[59] See Morocco–Western Sahara.

The present border lies entirely within the Sahara Desert and consists mostly of parallel/meridian lines. The location of these lines is not entirely arbitrary; the border shifts from a parallel to a meridian at a point on the same latitude as Cape Bojador,[60] although the border is far from the coast. A smaller segment in the south consists of non-astronomical straight lines that link successive summits of various mountains, including Galb Azefal, El Gaicha, Lazib, and Galb Musa.[61]

C.1.13 Algeria–Western Sahara

Overview. Originally formed in 1904 as an interimperial border between French Algeria and Spanish Sahara. The primary feature is a straight line (parallels/meridians).

Details. The present border is the same as the northernmost part of the Mauritania–Western Sahara border, the 8°40'W longitude meridian. It lies entirely within the Sahara Desert.

C.1.14 Morocco–Western Sahara

Overview. Originally formed in 1904 via a French-Spanish agreement to determine a northern limit for Spanish Sahara; in 1912, France and Spain partitioned Morocco. A historical political frontier (PCS: Morocco) directly affected the border. Major revisions occurred in 1912 (large territorial transfer: Cape Juby to Spain), 1958 (large territorial transfer: Cape Juby to Morocco), and 1969 (enclave transfer: Ifni to Morocco). The primary feature is a straight line (parallels/meridians).

Details. Morocco was a historical state that came under French control in 1912.[62] Spain established the foundation for Spanish Sahara in 1885 and concluded agreements with France in 1900 and 1904 to determine borders.[63] The border established in 1904 is the same as the contemporary Morocco–Western Sahara border. This border lies entirely within the Sahara Desert and consists solely of the 27°40'N latitude.

However, the 1904 agreement was not the final division between French and Spanish possessions.[64] When Morocco came under European control in 1912, France gained control over most of the areas corresponding with the historical state but ceded some territories to Spain. Reflecting the importance of the historical reach of the Moroccan state, "Only then [in 1912] was there a fully binding acceptance by both government [French and Spanish] that the Sequiet el Hamra was Spanish territory and outside the limits of the Moroccan Empire."[65] Spain already controlled several enclaves in Morocco, which were acknowledged in prior treaties with the Sultan of Morocco in the nineteenth century.[66] In the Franco-Spanish Convention of 1912, France ceded pieces of territory that

[60] Trout 1969, chapter V: D.
[61] Brownlie 1979, 441.
[62] See Algeria–Morocco.
[63] See Mauritania–Western Sahara.
[64] For maps of the following territories, see here and here.
[65] Trout 1969, 202. See also Mauritania–Western Sahara.
[66] During the fifteenth and sixteenth centuries, Spain gained the Canary Islands and the Mediterranean towns of Melilla and Ceuta. In 1860, Spain gained control of the enclave of Ifni, located farther south (Hertslet 1909, 1162; Marks 1976, 3–4).

constituted the Spanish Morocco Protectorate.[67] These included: (1) a territorial strip along the Mediterranean coast that included Melilla and Ceuta (but excluded Tangier, which became an international zone), (2) an enclave for Ifni, and (3) a strip known as Cape Juby between the 27°40'N latitude the northern boundary of Spanish Sahara) and the Draa River.[68] Adding Cape Juby to the Spanish sphere constituted a large territorial transfer and shifted the French–Spanish boundary northward from the latitude parallel to the Draa River.

For decades, Spain's Morocco Protectorate was a legally distinct entity from the crown colony of Spanish Sahara to the south, but in 1946 Spain combined Spanish Sahara, Cape Juby, and Ifni into a single administrative unit, Spanish West Africa. Following the Ifni War of 1957–58, Spain ceded Cape Juby to Morocco, which recreated the 27°40'N latitude parallel as the boundary between Spanish possessions and the now-independent Morocco. In 1969, under UN pressure, Spain ceded Ifni to Morocco.[69] Ceuta and Melilla remain autonomous cities of Spain to the present day. In addition to disputes over the aforementioned territories, Morocco continues to lay claim over all of Spanish Sahara (now Western Sahara) on the basis that it had historically controlled these territories and that Spain illegally occupied them.[70]

[67] In 1904, France and Spain had signed a secret treaty that partitioned Moroccan territory.
[68] Official Documents 1913.
[69] Marks 1976, 6–8.
[70] Brownlie 1979, 156–58.

C.2 West Africa

C.2.1 Mali–Senegal

Overview. Originally formed in 1880 as an intraimperial border when France split Upper Senegal (Mali) from Senegal. A major revision occurred in 1895 (changed features: clarify local features). The primary feature is minor rivers. A secondary feature is minor watersheds.

Details. The French presence in Senegal dates back to the seventeenth century, with a primary base at Saint-Louis at the mouth of the Senegal River. Eastward expansion along the Senegal River began with the appointment of Louis Faidherbe as governor in 1854. "Under pressure from Saint Louis merchants, Faidherbe went further and established military posts in the middle and upper Senegal River at crucial choke-points: that is, at Podor and Matam in Futa Toro and Bakel and Medina in the upper reaches of the river . . . The explicit intention was to ensure the dominance of French merchants in the Senegal River valley . . . rather than to acquire colonial territory."[1] By

[1] Nugent 2019, 115.

1880, the French military had expanded roughly as far east as Kayes, located along the Senegal River slightly to the east of the modern-day Mali–Senegal border.[2] In 1880, France issued a decree that separated the territory east of where the Falémé River intersects the Senegal River as the new colony of Upper Senegal (present-day Mali), with Kayes as the initial capital.[3] The border initially consisted entirely of the Falémé. An arrêté in 1895 constituted a major revision by changing a part of the border to other minor rivers and drainage divides.[4]

C.2.2 Guinea–Sierra Leone

Overview. Originally formed in 1882 as an interimperial border between French Rivières du Sud (Guinea) and British Sierra Leone. Major revisions occurred in 1889 (new segment), 1896 (changed features: lines to local features), and 1912 (small territorial transfer). A historical political frontier (PCS: Futa Jalon) directly affected the border. The primary feature is minor rivers. Secondary features are minor watersheds, towns/villages, infrastructure, and straight lines (parallels/meridians and non-astronomical).

Details. British interests in Sierra Leone date back to 1787, when a corporation settled Freetown; and Sierra Leone became a Crown Colony in 1808. Expansion into the interior occurred in the 1880s, culminating in the declaration of a Protectorate in 1896.[5] French traders established outposts along the coast of modern-day Guinea starting in the 1820s, although Guinea was not constituted as its own colony until 1891.[6]

The present border was initially established in 1882 in a convention that addressed "the Settlement of Territorial Limits to the North of Sierra Leone." This agreement mentions the Mellicourie and Scarcies rivers,[7] the latter of which comprises part of the contemporary border. A major revision occurred in 1889, when an Anglo-French agreement concerning territories throughout West Africa set the 10°N latitude parallel as the northern limit of Sierra Leone east of the point where the aforementioned rivers were used for the border.[8] An 1895 agreement concerned "the Boundary between the British and French Possessions to the North and East of Sierra Leone."[9] The maps accompanying this agreement and a 1896 proces-verbal that provided a more detailed description demonstrate close correspondence with the contemporary border.[10]

The final major revision occurred in 1912. "The borders between Guinea and Sierra Leone were demarcated in two sections, the first from the Basse-Côte to the source of the Niger (Faranah), between 1895-1896, and the second from Faranah to the border with Liberia, between 1911-1912."[11]

[2] See the map in Ajayi and Crowder 1985, "57 - West Africa: European Conquest 1880–1906."

[3] Office of the Geographer 1975*b*, 2.

[4] Office of the Geographer 1975*b*, 2–3. Between 1902 and 1904, Mali was again merged with Senegal as the colony of Senegambia and Niger. We do not code these years as major revisions because the bilateral border was unchanged during this brief merger period.

[5] Hertslet 1909, 23–58; Wight 1946*a*, 41–43.

[6] See Guinea–Mali.

[7] Hertslet 1909, 723.

[8] Hertslet 1909, 730.

[9] Hertslet 1909, 757.

[10] See Hertslet 1909, 764, 778; Sandouno 2015, 79-90.

[11] Sandouno 2015, 81.

In 1911, just prior to delimiting the eastern segment of the border, the French gained the present-day Gueckédou Prefecture, which moved the border over more than fifty kilometers south. The territorial transfer took place in the presence of British agents, French agents, and local African rulers.[12]

We code minor rivers, which comprise a sizable portion of the contemporary border, as the primary feature. The original border was based exclusively on two rivers that reach the coast (the area of greater strategic interest) and the 1895/96 documents mention additional rivers and watersheds (in particular south of the Digipali village). These agreements also reference many villages to align the border (specifically in which sphere each village lies) as well as sixty roads and paths (infrastructure) that the border intersects. Finally, the 10°N latitude parallel comprises a segment of the northern border, and short non-astronomical straight-line segments are used as well. For justification for coding the PCS Futa Jalon as directly affecting the border, see Guinea–Guinea-Bissau.

C.2.3 Liberia–Sierra Leone

Overview. Originally formed in 1885 as an interimperial border between Liberia and British Sierra Leone. Major revisions occurred in 1903 (new segment), 1908 (small territorial transfer), and 1911 (changed features: lines to local features). A historical political frontier (Liberia) directly affected the border. The primary feature is minor rivers. Secondary features are topography (mountains), towns/villages, infrastructure (roads), and straight lines (parallels/meridians).

Details. British interests in Sierra Leone date back to 1787, when a corporation settled Freetown; and Sierra Leone became a Crown Colony in 1808. Expansion into the interior occurred in the 1880s, culminating in the declaration of a Protectorate in 1896.[13] Liberia was initially established in 1822 as a resettlement colony for formerly enslaved Africans in the United States.[14] Liberia proclaimed itself as an independent state in 1847, which gained recognition from the United States, Britain, and other European powers. A map produced in 1839 by the American Colonization Society depicted a strip along the coast that largely aligns with the contemporary coastal reach of Liberia.[15] This included the separate Republic of Maryland, which was integrated into Liberia in 1857. However, poor relations with indigenous Africans living inland restricted the penetration of Americo-Liberians beyond the coast.

The majority of the present border was formed in 1885, consisting of minor rivers (Mannah/Mano, Maia, Magowi) that extend from the Atlantic to the 10°36'18"W longitude meridian. An agreement in 1903 made this meridian line part of the border, most of which was replaced by rivers in a subsequent agreement in 1911. In 1908, Britain annexed an area of roughly 50 sq. km. west of Mano River in exchange for a similarly sized piece of land east of the river (on its left bank), which went to Liberia.[16] The treaties also mentioned mountains, villages, and roads.

We code a historical political frontier (Liberia) as directly affecting the border because the original

[12] Sandouno 2015, 86–90.
[13] Hertslet 1909, 23–58; Wight 1946*a*, 41–43.
[14] Hertslet 1909, 1130–33.
[15] See here.
[16] Sandouno 2015, 93.

coastal reach of Liberia determined where it would intersect with Sierra Leone.

C.2.4 Ghana–Togo

Overview. Originally formed in 1886 as an interimperial border between British Gold Coast and German Togo; in 1919, Britain and France partitioned Togo and the western part became a British colony. Major revisions occurred in 1899 and 1904 (new segments) and 1919 (large territorial transfer: British Togoland to Ghana). A historical political frontier (PCS: Dagomba) directly affected the border. The primary feature is minor rivers. Secondary features are topography (mountains, hills) and straight lines (parallels/meridians).

Details. British influence along the Gold Coast dates back to the slave trade in the seventeenth century, and direct crown rule began in 1821. In July 1884, Germany declared protectorates over the coastal areas of present-day Togo.[17]

In 1886, Britain and Germany concluded their first bilateral border treaty. Recommendations by boundary commissioners in 1887 indicate that the border was very vague at this point. It assigned certain non-PCS ethnic groups to the German sphere (Towe, Kowe, Agotime) and others to the British sphere (Aquamoo, Crepee/Peki), and specified the Volta and Daka rivers as parts of the border.[18] The 1890 agreement that determined Anglo–German spheres across the continent provided concrete details for the features of the present border, but the border was still confined largely to coastal areas.[19] It did not extend north of 6°20'N, which is less than 20mi from the coast. This portion of the border, which survived the extensive revisions in 1919 (see below), consists of short stretches of meridian lines and the Aka river. The border was extended farther north in 1899, when it specified that the Daka river would be used as the border up to 9°N latitude, and an agreement in 1901 provided additional details.[20] An exchange of notes in 1904 extended the border as far north as its contemporary extent,[21] hence finalizing the Anglo-German version of the border.

Britain and France occupied German colonies during World War I. In 1919, as part of the war settlement, Britain and France partitioned Togo, with British Togoland comprising the western part neighboring Ghana. At independence, British Togoland voted to join Ghana, and therefore the border between British Togoland and French Togoland (modern-day Togo) became the Ghana–Togo border. Almost the entire border was shifted to the east, with the exception of the originally formed part located south of 6°20'N.[22] According to the 1919 agreement, the new boundary consists primarily of minor rivers, with watersheds and hills comprising secondary features. In fact, the boundary surveyors were explicitly instructed, where the treaty was ambiguous, to "lay down the frontier in accordance with natural features (rivers, hills, or watersheds)."[23]

The border revision in 1919 restored the PCS Dagomba within a single colonial administration. "In the northern part of [German] Togoland there were several native states that were split by

[17] See Cameroon–Nigeria.
[18] Hertslet 1909, 890–91.
[19] Hertslet 1909, 903–4.
[20] Hertslet 1909, 920, 927–930.
[21] Hertslet 1909, 935–37.
[22] Brownlie 1979, 252, and see the map on p. 250.
[23] Brownlie 1979, 254–56.

the Anglo-German boundary. Among these the Dagomba kingdom was the largest. Its ruler or 'Na' had his capital at Yendi, in German territory. After the British invasion, he signed a treaty acknowledging their sovereignty, and asking that his former state be reunited. Mamprussi and a small part of Gonja had likewise been separated by the former frontier. With this situation in view, it was decided at the Paris Peace Conference that Togoland should be divided in such a way as to reunite these tribes . . . for the same reason, the British were allowed, by Section 9 of the mandate, to administer the area as an integral part of the Gold Coast Dependency."[24] Consequently, we code a direct effect of PCS Dagomba on the border. By contrast, the revised border continued to divide ethnic Ewe in the south. "Some sympathy was expressed for the plight of the Ewe peoples to the south, but since they had never constituted a single political unit it was felt that their case was less pressing."[25]

C.2.5 Guinea-Bissau–Senegal

Overview. Originally formed in 1886 as an interimperial border between Portuguese Guinea and French Senegal. The co-primary features are minor rivers and straight lines (parallels/meridians). A secondary feature is straight lines (non-astronomical).

Details. French interests along the Senegal River date back to the seventeenth century, and during the nineteenth century French traders expanded their influence farther south into the Casamance River.[26] Portuguese presence in the region dated back to the fifteenth century. However, their influence had become limited by the 1840s as the predominant economic activity switched from slave trading to exporting peanuts.[27] French traders were dominant even in the areas farther south that had long been nominally controlled by Portugal.[28]

France and Portugal delimited their frontiers in a treaty in 1886.[29] Portugal's cession of Casamance to France confirmed the status quo in the region.[30] In return, France took a permissive stance on Portugal's territorial ambitions in Central Africa.[31] The border consists of two main parts. In the west, from the Atlantic to roughly the point where the Casamance ceases to be a notable river,[32] the treaty specifies that the border is to be equidistant between the Casamance River (in the French sphere) and the Cacheu River (in the Portuguese sphere). The border itself consists of short straight-line (non-astronomical) segments that trace the midpoint between the two rivers. Farther east, the border is a latitude parallel (12°40'N latitude). We code minor rivers and parallels/meridians as co-primary features because they are roughly equal in length. Non-astronomical straight lines are a secondary feature.

[24] Bourret 1949, 96–97.
[25] Nugent 1996, 43.
[26] See Gambia–Senegal.
[27] Brooks 1975.
[28] Bowman 1987, 98–99.
[29] Hertslet 1909, 674.
[30] Woocher 2000, 344.
[31] Clarence-Smith 1985, 83; and see Article IV of the treaty in Hertslet 1909, 675. Britain formally protested Article IV of the 1886 Franco–Portuguese treaty and eventually colonized most of the disputed area in Central Africa; see Malawi–Mozambique.
[32] See Google Maps. This is referred to as a specific longitudinal line in the treaty.

C.2.6 Guinea–Guinea-Bissau

Overview. Originally formed in 1886 as an interimperial border between French Guinea and Portuguese Guinea. A historical political frontier (PCS: Futa Jalon) directly affected the border. The primary feature is minor rivers. A secondary feature is straight lines (non-astronomical).

Details. France and Portugal delimited their frontiers in the Guinea region in a treaty in 1886.[33] At the time, Senegal and Guinea were not distinct territorial entities.[34] The notable distinctive aspect of the Guinea portion of the French-Portuguese border was the role of a precolonial state. Futa Jalon was incorporated into Guinea (French) and was located close to the borders with Guinea-Bissau (Portuguese) and Sierra Leone (British). Britain relinquished its earlier claims over Futa Jalon to France, and the boundaries of Futa Jalon are explicitly mentioned as forming part of the border between Guinea and Guinea-Bissau.

British agents (from Freetown) and French agents (from Rivières du Sud, or the coastal sections of modern-day Guinea) vied for control over Futa Jalon by signing various treaties with the ruler, the Almamy. Ultimately, Britain relinquished its claims to France: "British action stimulated the French to action and Dr. Bayol, Governor of the Rivières du Sud, obtained treaties which he insisted now excluded any claims Britain might have had, since he had obtained the signature of Ibrahima Suri, as well as that of the alternate Almamy.[35] Whatever the rights and wrongs of Bayol's claims, the treaties were accepted in Paris and the Futa Jallon became acknowledged as being under French influence."[36]

"The Bayol treaty, even though it did not accurately describe the relationship between Futa Jallon and France, nevertheless became a foundation for French claims vis-a-vis the Portuguese when the two European powers negotiated their African claims in the Portuguese-French convention of May 12, 1886."[37] Article II of the treaty exclusively concerns Futa Jalon: "Art. II.—His Majesty the King of Portugal and Algarves recognizes the French Protectorate over the territories of Fouta-Djallon, such as it was established by the Treaties concluded in 1881 between the Government of the French Republic and the Almamys of Fouta-Djallon."[38] Britain also explicitly recognized France's control over Futa Jalon in treaties in 1889 and 1895.[39]

The border chosen by France and Portugal indeed corresponded with the outer region of Futa Jalon:

> "Indeed, the 13°39'46.05"W demarcation outlined as the eastern border of Portuguese territory coincided precisely with the limits suggested by Bayol and Noirot during the mission. Though Bayol's initial reports do not cite a specific astronomical demarcation, he does suggest as territorial limits areas that correspond to the astronomical limits given in the treaty. Noirot, in an 1885 description of Futa Jallon wrote that although the almamys claimed their rule extended to the coast, those peripheral com-

[33] See Guinea-Bissau–Senegal.
[34] See Guinea–Senegal.
[35] The position of Almamy rotated between two families every two years.
[36] Crowder 1968, 94.
[37] Carpenter 2012, 117.
[38] Hertslet 1909, 674.
[39] Hertslet 1909, 733, 762–63.

> munities paid tribute to Futa Jallon only as a means of securing peace. He gave as a western limit of Futa Jallon the longitude of 13°39'46.05"W, the limit given the following year in the Portuguese–French convention. *Here, the eastern boundaries of Portuguese Guinea, while seemingly arbitrary in their specificity, were informed by the perceived limits of Futa sovereignty in the 1880s*" (our emphasis).[40]

The 1886 treaty relies primarily on rivers such as Senta, Binasse, Oualé Oualé, Corubal, and Niamanka to align the border. As with the Senegal section of the border, it often specifies that the border should lie equidistant between rivers in the French and Portuguese spheres, and consequently straight lines (non-astronomical) to trace these midpoints are secondary features of the border.

C.2.7 Benin–Togo

Overview. Originally formed in 1887 as an interimperial border between French Dahomey and German Togo. A major revision occurred in 1897 (new segment). The primary feature is straight lines (parallels/meridians). Secondary features are minor rivers, towns/villages, topography (mountains, hills), and straight lines (non-astronomical).

Details. French interests in Benin date back to the slave trade in the seventeenth century, with Ouidah, Porto-Novo, and Cotonou serving as major trading posts.[41] These posts languished in importance following prohibitions on the slave trade, although France reopened its post at Ouidah in 1843,[42] and gained a protectorate over Porto Novo in 1863.[43] In July 1884, Germany unexpectedly declared a protectorate spanning certain coastal towns in Togo.[44] In 1885, these two powers signed a protocol that respected the control of each over certain port towns, but stated that a border was to be drawn in the future.

The border was initially formed in a procès-verbal in 1887, which decreed that the border would be a straight line stemming from the coast until hitting 9°N latitude, roughly 60% of the distance between the coast and the northern limits of the contemporary border. A Franco-German Convention in 1897 created a border that closely resembles the contemporary one.[45] A Franco-German declaration in 1912, from which we code the features, yielded the contemporary alignment,[46] although we do not code this as a major revision. The straight-line border originally decreed in 1887 is still largely in place, albeit replaced by the Mono River for roughly the first 50mi from the coast. Thus we code straight lines (parallels/meridians) as the primary feature and minor rivers as a secondary feature. Other parts of the border follow other minor rivers, towns/villages, and mountains/hills; and some parts are non-astronomical straight lines. We code these as secondary features.

[40] Carpenter 2012, 118–19.
[41] Ricart-Huguet 2022, Appendix F.
[42] Crowder 1968, 31.
[43] Anene 1970, 168.
[44] Hertslet 1909, 693.
[45] See Hertslet 1909, 661–62 and the accompanying map.
[46] Brownlie 1979, 191.

C.2.8 Benin–Nigeria

Overview. Originally formed in 1889 as an interimperial border between French Dahomey and British Nigeria. Major revisions occurred in 1896 (changed features: lines to local features), 1898 (new segment), and 1906 (changed features: lines to local features). Historical political frontiers (PCS: Borgu, Dahomey, Egba, Porto Novo) directly affected the border. The primary feature is infrastructure (roads). Secondary features are towns/villages, minor rivers, straight lines (meridian and non-astronomical), and a major river (Niger).

Early British control of the Niger. French interests in Benin date back to the slave trade in the seventeenth century, with Ouidah, Porto-Novo, and Cotonou serving as major trading posts.[47] These posts languished in importance following prohibitions on the slave trade, although France reopened its post at Ouidah in 1843,[48] and gained a protectorate over Porto Novo in 1863.[49] British interests in Nigeria originated at Lagos, which was annexed in 1861 as a crown colony; and in the Niger Delta, where the Royal Niger Company established trading interests.

Competition over the Niger River directly affected the general location of the border—specifically, why the Niger is located entirely within Nigeria and not Benin. France sought to contest Britain's control over the Niger at the Berlin Conference. France began to push eastward from Senegal in the 1860s,[50] and by the 1880s had begun new military campaigns that sought to reach the Niger.[51] Meanwhile, George Goldie of the Royal Niger Company sought to establish a monopoly of trade on the Niger by buying out French firms, which he had achieved by the end of 1884. Meanwhile, the British government moved to establish a protectorate from the northernmost part of the Niger delta down to Calabar, which became the Oil Rivers Protectorate. The British consul for the Bights of Benin and Biafra secured treaties with local rulers along the Niger and Benue rivers, which brought "all the lower portion of the Niger up to its confluence with the Benue, as well as a large western reach of the Benue itself, under British protection."[52] Consequently, at the Berlin Conference, Britain had a credible claim (albeit established very recently) to possess the entire lower course of the Niger, and hence to exclude this area from discussion at the Conference.[53]

The result of this early contestation was that the Niger is contained entirely within Nigeria for the entire length of its border with Benin. Competition over Yorubaland in the south and over Borgu polities in the north ultimately determined the location of the border. The former episode occurred in the 1880s and yielded the initial formation of a border in 1889. The latter episode occurred in the mid-1890s and yielded a new agreement in 1898 that determined the border farther north. These two main parts of the border were revised in 1895–96 and 1906, respectively, to replace the preliminary straight lines with local features.

Settling the southern part of the border. Britain established treaty relations in different parts of Yorubaland dating back to the 1860s, and amid the scramble in the 1880s sought to secure control

[47] Ricart-Huguet 2022, Appendix F.
[48] Crowder 1968, 31.
[49] Anene 1970, 168.
[50] See Mali–Senegal.
[51] Crowe 1942, 122–24.
[52] Crowe 1942, 125.
[53] Crowe 1942, 126; Wesseling 1996, 115.

against French encroachment.[54] Britain originally argued for expansive limits to Yorubaland. They based their arguments on claims by the Alafin of Oyo that he was the "Head of Yorubaland, the four corners of which are and have been from time immemorial known as Egba, Ketu, Jebu, and Oyo, embracing within its area that inhabited by all Yoruba speaking peoples."[55] However, French officials proclaimed (correctly) that these claims were inconsistent with reality. Earlier in the nineteenth century, Oyo was indeed the pre-eminent state in Yorubaland, but its collapse enabled other Yoruba states, such as PCS Egba, to gain independence, as we discuss in depth when justifying the polygons we use for the Yoruba states.[56]

By contrast, Britain did not contest France's control over PCS Dahomey, located west of Yorubaland. British officials characterized Dahomey as a barbaric slave-raiding state, and did not interfere with France's ambitions there despite having established earlier treaty relations with the *Ahosu* (ruler) of Dahomey. Thus, "[t]he desideratum, from the British point of view, was to separate Dahomey from Yorubaland. The French were agreeable."[57] Instead, France's main competition came from other European powers. Portugal signed a treaty with Glele, the *Ahosu* of Dahomey, in the 1880s. However, "the treaty was abandoned, after an unsuccessful Portuguese mission to Glele in 1887 to confirm it. ... As de Beekmann, French representative in Porto Novo, wrote to the Governor of Senegal in March 18[8]9, 'if France does not make a treaty with the king of Dahomey, the Germans will be installed there in very little time.'"[58]

Britain and France clarified their claims in an arrangement in 1889. This arrangement formed an initial border as far north as 9°N (which, on the contemporary map, corresponds with where the southern border just sharply eastward). The primary basis of the alignment was to separate Porto Novo for the French sphere and Lagos for the British.[59] The treaty specifically mentioned that PCS Egba laid within the British sphere of influence: "French traders shall be guaranteed full liberty of trade with such districts as shall not be included in the French sphere of influence, and especially as regards the *Egbas*" [our emphasis]. Therefore, although Britain ultimately ceded control over some ethnic Yoruba to France, they succeeded in gaining control of Egba, which was "the most effective Yoruba state in the boundary zone ... The international boundary therefore in no way affected the western frontier of Egbaland."[60] Moreover, Egba was the western-most of the major Yoruba states, which also included Oyo, Ijebu, and Ibadan. Thus, the 1889 agreement also ensured that these states (as well as the PCS Benin, located even farther to the east) were located entirely within Nigeria.

Rather than partition any major states, the Benin–Nigeria border instead coincided with the buffer zone between the states of Dahomey and Egba. Frequent warfare between these rival states had depopulated the region, in particular territory occupied by Egbado groups. Among the tribal areas partitioned by the border, only the Ketu kingdom was a distinct political entity. However, by the time of the partition, warfare between Dahomey and Egba had already essentially destroyed

[54] Crowder 1968, 99; Anene 1970, 176–89; Asiwaju 1976, 39–45.
[55] Anene 1970, 186.
[56] See Appendix B.2.
[57] Anene 1970, 184.
[58] Crowder 1968, 100.
[59] Hertslet 1909, 732.
[60] Anene 1970, 186.

the kingdom,[61] which we do not code as a state in our dataset. Overall, the individuals residing within the Yoruba language group were partitioned across colonial borders, but no major states in the region were partitioned. "By placing a line of demarcation through this area the colonial powers were to a large extent replacing a frontier zone with a specific boundary line . . . the colonial boundary-makers cannot be accused of disregarding existing political conditions."[62]

A major revision to the southern part of the border occurred in 1895–96 when British and French agents delimited the border. They departed from the meridian line to instead align the border based on the location of existing roads, villages, and minor rivers. On the basis of this agreement and the one in 1906 that finalized the northern part of the border (see below), it appears that roads were ultimately the primary feature of the border, and we code villages and minor rivers as secondary features. The general method of the surveyors was to "cross the boundary meridian or approach it as often as possible by the use of any paths adjoining it; to visit all inhabited villages and to fix their position in relation to the boundary meridian, and determine thereby to which of the two Colonies they belong . . . These maps clearly show the 'route' travelled over. The Commission was fortunate enough to follow up roads so closely adjoining the frontier meridian as to be able to substitute them, in many instances and for a considerable distance, in its stead for the settlement of the boundary." The report also mentioned the use of the Okpara River where it did not deviate too far from the original meridian. Throughout, the report mentions a large number of specific villages, road, and rivers.[63] However, the original longitude meridian remains the border for short segments, which we code as a secondary feature.

Settling the northern part of the border. The location of the northern part of the border reflected competition over PCS Borgu, which straddled the Niger River. Britain established a broad presence in this area before France. Britain sought to obtain all of Borgu for itself, mainly to secure its control over the navigable part of the Niger River. It initially proceeded under the assumption that Borgu was a unified political unit under paramountcy of the ruler of Bussa. They based this claim on (self-admitted) uncertain intelligence from Royal Niger Company agents, who signed a vague treaty with the ruler of Bussa in 1885.[64]

In 1894, France challenged this claim on two grounds, although without providing its own evidence. First, Borgu might not have been a unified state. Second, if any Borgu ruler was paramount, it was the ruler of Nikki (another Borgu ruler) rather than of Bussa. The dispute between Britain and France over the territorial status of Borgu induced a "race for Nikki" to secure new treaties. Ironically, the immediate result of this race was not to settle the border, but instead to gain new information about Bussa that prolonged the negotiations. British and French officials each gained compelling evidence that the rulers of Bussa, Nikki, and other Borgu states were de facto independent of each other, and none paid tribute to the others. Because this reality was inconvenient for British claims to all of Borgu, its officials continued through 1896 to speak of the unity of Borgu. This case also prompted an explicit defense of the principle of suzerainty, which we quote in the article: "We could not abandon the principle of suzerainty. This principle was recognized in all international negotiations and we held that, in treating with a suzerain, the rights conferred

[61] Crowder 1968, 100; Mills 1970; Asiwaju 1976, 29.
[62] Mills 1970, 35, 43.
[63] Hertslet 1909, 780–84.
[64] Hertslet 1909, 128.

. . . extended to the whole of the territory under his dominion."[65]

However, because Borgu was not in fact a unified polity, as negotiations continued, "[t]he compromises progressively ignored the earlier British contention that Borgu was one nation. The need to soothe ruffled national feelings and reconcile imperial interests became, in the view of the Powers, more important than the territorial integrity of Borgu."[66] By 1897, the powers had agreed on a new interpretation of the political structure of Borgu in which there were separate Bussa and Nikki states, which would be assigned to Britain and France, respectively. Notes exchanged between British and French officials related to the Anglo-French Convention of 1898 confirmed that the treaty was to "leav[e] Nikki and the surrounding district within the French sphere" and to "leav[e] within the British sphere all territory belonging to the Province of Boussa and the district of Gomba."[67] This is a case in which our spatial dataset shows a PCS being partitioned, but the best evidence suggests Borgu consisted of various independent political entities that were not in fact partitioned.[68]

The Convention of 1898 specified the entire border north of the original northern limit, the 9°N parallel. Broadly, this formed the final border.[69] However, the border was still preliminary in the sense of consisting largely of straight line segments.[70] These were replaced with local features in a subsequent agreement in 1906 that created the final alignment.[71] As with the earlier agreement to align the southern part of the border (see above), it extensively referenced villages, roads, and minor rivers. The northern portion of the border also contains various straight-line (non-astronomical) segments,[72] another secondary feature. The Niger River forms the tripoint with Niger because France later decided to use the Niger to separate its colonies,[73] which we also code as a secondary feature of the present border.

C.2.9 Ghana–Ivory Coast

Overview. Originally formed in 1889 as an interimperial border between British Gold Coast and French Cote d'Ivoire. Major border revisions occurred in 1893 (changed features: lines to local features) and 1898 (new segment). A historical political frontier (PCS: Asante) directly affected the border. The primary feature is minor rivers. Secondary features are infrastructure (roads) and towns/villages.

Details. British influence along the Gold Coast dates back to the slave trade in the seventeenth century. Direct crown rule began in 1821 in response to the inability of the privately owned African Company to guard the Gold Coast Forts from PCS Asante, located to the north.[74] Britain fought three wars with the Asante prior to the Scramble for Africa (in the 1820s, 1860s, and 1870s). Al-

[65] Quoted in Anene 1970, 220.
[66] Anene 1970, 221.
[67] Quoted in Anene 1970, 226. See Hertslet 1909, 786–87 for the full text.
[68] Crowder 1973.
[69] Brownlie 1979, 165.
[70] See the map in Hertslet 1909, 790.
[71] See Hertslet 1909, 849–61 for the text and p. 860 for the map.
[72] See Google Maps.
[73] See Benin–Niger.
[74] Wight 1946*b*, 15–17; Crowder 1968, 29–30.

though weakened by the 1870s, the Asante state remained intact and militarily strong (relative to its African neighbors) throughout the period. In inter-European negotiations, other powers recognized the Asante territory as lying within the British sphere of influence. An 1867 Convention with the Netherlands yielded an exchange of territory in the Gold Coast, which decreed: "a line drawn true north from the centre of the mouth of the Sweet River as far as the boundary of the present Ashantee kingdom . . ."[75] Following British occupation in 1896 and a failed uprising in 1900, Britain annexed Asante in 1901 as a crown colony.

France initiated a presence along the Ivory Coast in 1843, when it established trading posts in Assini and Grand Bassam. French interest in the area increased after the Berlin Conference, which yielded a "remarkable journey of treaty-making to secure the hinterland of the Ivory Coast for France."[76] Cote d'Ivoire was distinguished as its own colony in 1893.

The present border was initially formed in an 1889 agreement that determined Anglo–French borders across West Africa. The agreement mentioned the border spanning as far north as 9°N, although it lacked detail. Other than lagoons and rivers in the southern-most part of the border, the treaty stated: "the frontier line shall be fixed in accordance with the various Treaties which have respectively been concluded by the two Governments with the natives." The treaty did, though, specifically mention Asante as within Britain's sphere of influence: "The French Government shall undertake to allow England full liberty of political action to the east of the frontier line, particularly as regards the Kingdom of the Ashantees . . ."[77]

In 1891 and 1893, British and French surveyors set out to actually choose the features of the border.[78] We code the latter date as a major revision to change the border features, given the lack of specificity in the original agreement. The 1893 agreement primarily mentions various rivers, although numerous roads and villages are listed as well. The northernmost part of the border is the Volta River, an important river but not among the top 10 longest rivers (and hence not classified as a major river in our coding scheme). In 1898, Britain and France extended the border further north, continuing to use the Volta River; part of this later became the Burkina Faso–Ghana border. This was the final major revision of the border, although the precise alignment depends on a 1903 Agreement and a 1905 Memorandum between France and the United Kingdom. In addition to delimiting the border, the 1905 Memorandum allowed "natives who may not be satisfied with the assignment of their village" to one or the other side of the border to "emigrate to the other side of the frontier."[79]

C.2.10 Gambia–Senegal

Overview. Originally formed in 1889 as an interimperial border between British Gambia and French Senegal. The primary feature is a minor river (Gambia). Secondary features are straight lines (parallels/meridians) and towns/villages.

Details. This case underscores Europeans' strategic interests in controlling important rivers. British

[75] Hertslet 1909, 978.
[76] Crowder 1968, 31, 95–96.
[77] Hertslet 1909, 730.
[78] Hertslet 1909, 743–44, 754–56.
[79] Brownlie 1979, 246; see also Cogneau et al. WBER 2015.

slaving interests at the mouth of the Gambia River date back to the seventeenth century;[80] the Gambia is an important river but not among the top 10 longest rivers (and hence not classified as a major river in our coding scheme). French interests in Senegal also date back to the seventeenth century, with a base at Saint-Louis at the mouth of the Senegal River. After some territorial shuffling amid broader wars, in the 1783 Treaty of Versailles, the two powers agreed to France's sphere of influence over the Senegal River and Britain's sphere of influence over the Gambia River.[81] In 1816, Britain gained a concession from a local ruler on St. Mary's Island that formed the basis for the Colony area of the Gambia. Throughout the nineteenth century, Britain secured protectorate treaties with other minor rivers located farther down the Gambia River.[82] Between the 1840s and 1880s, French traders expanded their commercial presence farther south into Casamance, whereas Britain lost other territorial footholds in the Guinea area, in particular Bolama Island.[83] Thus, the British Gambia became encircled by French territorial claims. In the 1860s and 1870s, Britain and France discussed the possibility of trading the Gambian enclave for territory elsewhere, but this never materialized because of opposition by British Parliament and trading companies.[84]

An Anglo-French agreement in 1889 created the contemporary border.[85] Although the border is not itself the Gambia River, we code this as the primary feature because the entire border traces the Gambia River; the border is, by design, no farther than roughly 15 miles from the river at any point. Documents used to delineate the border reference parallel/meridian lines and towns, which we code as secondary features.

C.2.11 Niger–Nigeria

Overview. Originally formed in 1890 as an interimperial border between French Sudan and British Nigeria; Niger was split from Haut-Sénégal et Niger (the successor to French Sudan) in 1912 and became its own colony in 1922. Major revisions occurred in 1898 (changed features: switched line) and 1904 (changed features: lines to local features). Historical political frontiers (PCS: Sokoto Caliphate, Damagaram, Gobir, Borno) directly affected the border.[86] The primary feature is towns/villages. Secondary features are minor rivers, infrastructure, straight lines (non-astronomical), a major river (Niger), and a major lake (Chad).

Details. British interests in Nigeria emanated from the coast, in particular Lagos and the Niger Delta region.[87] Britain gained influence farther north because of expansion by George Goldie's Royal Niger Company. The Company established treaty relations with numerous rulers, including with emirs in the vast Sokoto Caliphate. During the years in which the present border was formed and revised, France had no military or administrative presence in what later became the colony of Niger.[88] The northern frontiers of the Sokoto Caliphate were the main determinant of the present

[80] Wight 1946*b*, 15.
[81] Hertslet 1909, 713.
[82] Richmond 1993, 176–77.
[83] Bowman 1987.
[84] Hertslet 1909, 751; Catala 1948; Nugent 2019, 109–10.
[85] See Hertslet 1909, 729 for the relevant text and the map on pp. 730–31.
[86] For justification for Borno, see Cameroon–Nigeria.
[87] See Benin–Nigeria.
[88] See Mali–Niger.

border. European treaties distinguished Sokoto as the northern limits of Britain's sphere of influence. However, Britain and France contested the boundaries of Sokoto, and revised the colonial border several times such that Britain gained all the towns that had been controlled by Sokoto, and France gained all the towns north of these (including Zinder, capital of Damagaram).

Prior to European takeover, various African polities contested the northern frontier of the Sokoto Caliphate.[89] The Sokoto Caliphate was itself a product of a Fulani jihad that spawned numerous Muslim-controlled emirates, mainly but not entirely in areas occupied by ethnic Hausa. Many areas accepted the new order of Fulani rule by acknowledging the suzerainty of Sokoto and paying an annual tribute of goods and slaves. All the core emirates within the Sokoto Caliphate became part of Nigeria, including Sokoto, Kano, Daura, Zaria, Bauchi, Gwandu, Nupe, Yauri, and Ilorin. However, the empire lacked control over remnants of certain older Hausa states (Gobir, Maradi, Kebbi, Konni), with whom it frequently warred.[90] This caused the frontiers of the empire to fluctuate. Nor did the Sokoto Caliphate control the Tuareg in Adar, or the Borno empire or its associated vassal states, including Damagaram (Zinder). We discuss these considerations in more depth when justifying our Sokoto polygon.[91]

Britain signed a treaty with the Sultan of Sokoto in 1885 that formed the basis of its sphere of influence.[92] Although France accepted Britain's claim over Sokoto, they contested the northern reach of the Caliphate. The subsequent negotiations, after several border revisions, yielded control for France over many of the aforementioned frontier states that had successfully resisted conquest by the Sokoto Caliphate. In 1890, Britain and France concluded their first treaty pertaining to the border, which explicitly mentioned Sokoto: "The Government of Her Britannic Majesty recognizes the sphere of influence of France to the south of her Mediterranean Possessions, up to a line from Saye on the Niger, to Barruwa on Lake Tchad, drawn in such manner as to comprise in the sphere of action of the [Royal] Niger Company all that fairly belongs to the Kingdom of Sokoto; the line to be determined by the Commissioners to be appointed."[93]

Britain and France revised the Saye-Barruwa line in 1898 to create an arc around Sokoto.[94] France's goal was to gain "a water route to connect its eastern and western African holdings and in particular a viable corridor from Niamey to Zinder."[95] However, the revised border in 1898 failed to solve the problem that "almost all the populated areas of Hausaland came under British sovereignty, including Maradi, Birnin Konni, Tibiri, and Magaria." Following the failure of the new border to satisfy its desires, "France proposed that the boundary be redefined to coincide with local political conditions. Observing that the Sokoto Arc cut through greater Damagaram, Adar, and Gobir, France asked for changes that would leave these indigenous polities intact," to which Britain agreed.[96] Zinder/Damagaram and the smaller neighboring polity of Maradi were mentioned in Article VI of the 1904 British-French Convention regarding West and Central Africa: "In order to avoid the inconvenience to either party which might result from the adoption of a line deviating from recognized

[89] Anene 1970, 233–67.
[90] Gobir is a PCS in our data set.
[91] See Appendix B.2.
[92] Hertslet 1909, 122–23.
[93] Hertslet 1909, 739. We present the evolution of Nigeria's borders in Panel A of Figure 7.
[94] Hertslet 1909, 787–88, 790.
[95] Miles 1994, 67.
[96] Miles 1994, 68.

and well-established frontiers, it is agreed that in those portions of the projected line where the frontier is not determined by the trade routes, regard shall be had to the present political divisions of territories so that the tribes belonging to the territories of Tessaoua-Maradi and Zinder shall, as far as possible, be left to France."[97] Furthermore, when delimiting the border, the Franco-British mission sometimes modified the original instructions to prevent partitioning important features. For example, "in 1907, when the Franco-British delimitation mission Tilho-Oshea passed through the village of Kaoura, the chief asked that the border be moved so that the village well would remain on the French side. The British and the French accept this modification of a few kilometers of the initial route."[98]

The primary feature of the present border is towns. Reflecting the aforementioned negotiations, the Convention of 1904 sketches the border based on the location of Sokoto (the town), Dosso, Matankari, Konni (Birni-N'Kouni), and Maradi; as well as the routes between them. The eastern-most part of the border is the Komadugu Waubé river, which we code as a secondary feature. Short straight-line segments are also used to connect towns, which we code as a secondary feature. The tripoint with Benin is the Niger River and the tripoint with Cameroon is Lake Chad. We code both of these major water bodies as secondary features, and discuss the strategic objectives concerning them in Benin–Nigeria and Cameroon–Nigeria, respectively.

C.2.12 Ivory Coast–Liberia

Overview. Originally formed in 1892 as an interimperial border between French Cote d'Ivoire and Liberia. A major revision occurred in 1903 (changed features: lines to local features). A historical political frontier (other state: Liberia) directly affected the border. The primary feature is minor rivers. Secondary features are topography (mountains) and towns/villages.

Details. The resettlement colony of Liberia was largely confined to the coast in its early decades.[99] Its penetration into the hinterland was "indecisive" and until the 1880s it faced no competition for territory from European powers. This changed with French expansion into the interior parts of modern-day Ivory Coast and Guinea.[100] A treaty in 1892 between France and Liberia yielded a rough outline of the contemporary border with both Ivory Coast and Guinea, which were not yet separated within the French empire. This border consisted of the Cavally River and various

[97] Hertslet 1909, 819.

[98] Lefèbvre 2015, 16. For more details on the complicated border negotiations, see Anene 1970; Prescott 1971; Thom 1975. Despite careful negotiations over the limits of the Sokoto Caliphate and the neighboring states to the north, the eastern-most region of Sokoto is partitioned across the Cameroon–Nigeria border (see Figure 4). This area corresponds with the Adamawa Emirate, the eastern-most emirate within the Caliphate. Given its distance from the town of Sokoto (located in the northwest of the empire), Adamawa enjoyed a high degree of autonomy in the precolonial period. Britain and Germany realized that their original border severed the capital of the emirate, centered at Yola (located within the British sphere), from the hinterland (located within the German sphere). The powers engaged in diplomatic communications and contemplated transferring all of Adamawa to one side or the other. However, the ambiguous limits of Adamawa ultimately impeded using its frontiers as focal points for drawing borders; there was no "coherent political entity known as Adamawa" (Anene 1970, 128–29). The scope of control from Yola was ambiguous, and many pagan tribes in the hills maintained their independence.

[99] See Liberia–Sierra Leone; Sandouno 2015, 94 .

[100] Brownlie 1979, 359; and see Guinea–Ivory Coast.

straight-line segments.[101] A procès-verbal in 1903 written to delineate the border instead relies largely on rivers throughout the entire border,[102] which we code as a major revision. "The purpose of these treaties was to delimit the French possessions in Côte d'Ivoire and the Liberian territories, to secure for Liberia the Grand Seisters basin, and for France the Férédougou-Ba basin. France recognized the Republic of Liberia's rights to the coastline east of Cavally, and the Republic of Liberia recognized France's rights to certain parts of Côte d'Ivoire to the east of the Cavally river."[103] Brownlie (1979, 360) concludes that "[a]lmost the entire boundary consists of the Liberian bank of various rivers," although mountains and towns/villages are occasionally referenced as well. For the Guinea part of the border, there are several short straight-line (non-astronomical) segments.

We code a historical political frontier (Liberia) as directly affecting the border with the Ivory Coast because the original coastal reach of Liberia determined where it would intersect with Ivory Coast. We code only an indirect effect for the border with Guinea. Although Americo-Liberian agents negotiated the border with France, the Guinea portion of the border is entirely inland, where Liberia lacked any semblance of historical frontiers.

C.2.13 Guinea–Liberia

Overview. Originally formed in 1892 as an interimperial border between French Guinea and Liberia. A major border revision occurred in 1903 (changed features: lines to local features). A historical political frontier (other state: Liberia) indirectly affected the border. The primary feature is minor rivers. Secondary features are topography (mountains), towns/villages, and straight lines (non-astronomical).

Details. See Ivory Coast–Liberia.

C.2.14 Guinea–Mali

Overview. Originally established in 1895 as a French intraimperial border between Guinea and French Sudan (Mali). A major revision occurred in 1899 (changed features: clarify local features). Historical political frontiers directly (PCS: Futa Jalon; other state: Samori's empire) and indirectly (decentralized groups) affected the border. The primary feature is minor rivers. Secondary features are topography (mountains) and towns/villages.

Details. France separated Upper Senegal (eventually Mali) from Senegal in 1880.[104] Until the 1890s, the French only controlled coastal Guinea (Rivières du Sud colony, 1882–1891), and in 1891 split Guinea from Senegal. Although France had secured a treaty with the PCS Futa Jalon in 1881,[105] the state resisted French conquest. France militarily subjugated Futa Jalon at the Battle of Porédaka in 1896, which ended with a new protectorate treaty. This occurred several years after French officials had embarked on a more decisive policy of imperial expansion.[106] The French defeated the Toucouleur Empire in 1893. These two military victories enabled the French to continue

[101] Hertslet 1909, 1133–36; Sandouno 2015, 95.
[102] Hertslet 1909, 1136–40.
[103] Sandouno 2015, 93, 96.
[104] See Mali–Senegal.
[105] See Guinea–Guinea-Bissau.
[106] Kanya-Forstner 1969, 151–53; Beringue 2019, 96.

their military campaign northward from coastal Guinea and eastward from Senegal and French Sudan (Mali).[107]

The present border "is based first of all on a logic of conquest using a west-east axis of progression and creating a front line, advancing regularly towards the upper Niger. This axis constituted the first definition of the Sudanese territory and its southern limit, giving it its general orientation."[108] The eastern half of the border was a frontier for Samori's state (Wassoulou Empire):[109] "At the end of the military campaign of 1887–1888, the various treaties signed with Ahmadou and Samori, the creation of military posts as far as Siguiri on the Niger, in Guinea today, and then of districts (*cercles*), produced an outline of the contemporary frontier which was then a front with the Samori states. The line of posts [and forts] created up to that point constitutes the backbone" of the present boundary.[110]

The boundary between Guinea and French Soudan was defined pragmatically between 1895 and 1899, first on the basis of the territories of the districts [*cercles]*, then by adopting delimitation decrees, linked to the conflicts of authority that were multiplying at different levels, following Guinea's effective takeover of Fouta-Djalon in 1896. [...] The decree of January 12 1899 established the 'definitive' [quotes in the original] delimitation of French Guinea from French Senegal and Sudan."[111]

Farther west, Futa Jalon directly affected the border. In 1897, one year after military conquest, French general Joseph Gallieni sent a subordinate to confirm the new treaties with Futa Jalon. The goal was to "place as much [territory] as possible in our sphere the States situated between the Bouré [east] and our possessions of the Southern Rivers [west]." Futa Jalon lies in between those two regions, and thus this process resulted in the PCS lying entirely within French Guinea: "The constitution of [Guinea's] northern frontier is carried out by the control on the Fouta-Djalon . . . [French] officers consider that Fouta-Djalon is the 'missing link' in the colony under construction [Guinea] and has all the assets to become its center."[112]

Regarding alignment, the border combines rivers and streams with overland segments. The border follows the Balinko, Bafing, and Sankarani rivers, among others.[113] There are no international agreements that reference the delineation of this border, but the border is referenced (although not described) in a 1911 Decree. Various decentralized groups and towns/villages also influenced the border formation process.[114]

[107] Kanya-Forstner 1969, Chs. 3–6; Suret-Canale 1971, 87–88.
[108] Beringue 2019, 95.
[109] This is not a PCS in our data set because it formed after 1850.
[110] Beringue 2019, 132.
[111] Beringue 2019, 173.
[112] Beringue 2019, 155–56.
[113] Beringue 2019, 173.
[114] Beringue 2019, Ch. 3.

C.2.15 Burkina Faso–Togo

Overview. Originally formed in 1897 as an interimperial border between French Sudan and German Togo.[115] A major border revision occurred in 1912 (changed features: switched lines). A historical political frontier (PCS: Mossi) directly affected the border. The primary feature is straight lines (non-astronomical). Secondary features are straight lines (parallels/meridians), minor rivers, and towns/villages.

Details. The present border reflected the intersection of French military expansion into Burkina Faso,[116] and the northward expansion from the coast of Germany's Togoland protectorate.[117] The original Franco–German boundary agreement in 1887 determined only the southern portions of their respective spheres of influence,[118] and did not reach as far north as contemporary Burkina Faso. A subsequent agreement in 1897 yielded an initial border that consisted entirely of the 11°N latitude parallel.[119] This was replaced with the contemporary border in 1912,[120] which we code as a major revision. Most of the border is non-astronomical straight lines, which we code as the primary feature. A smaller segment in the east is the original parallel line, which we code as a secondary feature. An even smaller segment follows the Sansargou river, which we also code as a secondary feature. The Declaration of 1912 also references various towns along the border, which we code as another secondary feature.[121] See Burkina Faso–Ghana for the importance of the Mossi for borders with colonies of neighboring empires.

C.2.16 Burkina Faso–Ghana

Overview. Originally formed in 1898 as an interimperial border between French Sudan and British Gold Coast.[122] A historical political frontier (PCS: Mossi) directly affected the border. The co-primary features are a minor river and straight lines (parallels/meridians). Secondary features are minor rivers, towns/villages, and infrastructure.

Details. British interests in Ghana originated in the coastal areas and expanded northward in the 1890s.[123] French interests in Burkina Faso reflected their northward expansion from the coast

[115] In 1919, Upper Volta (Burkina Faso) was split from Haut-Sénégal et Niger to become a distinct colony; and Togo was partitioned between Britain and France. In 1932, Upper Volta was divided among neighboring French colonies in 1932 (Cote d'Ivoire, French Sudan/Mali, and Niger), at which point Togo bordered Niger. In 1947, Upper Volta was reconstituted as a separate colony. However, none of these changes affected the division between French West Africa and Togo.

[116] See Burkina Faso–Ghana.

[117] See Ghana–Togo.

[118] See Benin–Togo.

[119] See Hertslet 1909, 661–62 and the accompanying map.

[120] Brownlie 1979, 479.

[121] Brownlie 1979, 193–99.

[122] In 1919, Upper Volta (Burkina Faso) was split from Haut-Sénégal et Niger to become a distinct colony; and Togo was partitioned between Britain and France. In 1932, Upper Volta was divided among neighboring French colonies in 1932 (Cote d'Ivoire, French Sudan/Mali, and Niger), at which point the Gold Coast bordered Cote d'Ivoire. In 1947, Upper Volta was reconstituted as a separate colony. However, none of these changes affected the division between French West Africa and Togo.

[123] See Ghana–Ivory Coast.

in the Ivory Coast and their desire to link their colonies farther west and in Dahomey.[124] A key element in this expansion was gaining control over the PCS Mossi states. Britain, Germany, and France each tried to establish relations with the Moro Naba of Ouagadougou. Although a British agent gained a treaty in 1894, France forcibly occupied Mossi territory in 1896 to gain what they considered to be the "biggest prize" in the region.[125]

In 1898, Britain and France concluded a border agreement that extended the border between Ghana and Ivory Coast north of the original northern boundary, the 9°N parallel. This created the contemporary Burkina Faso–Ghana border.[126] The new border agreement reflected the recent French conquest of the Mossi states by setting the border just south of their territory,[127] and hence we code historical political frontiers as directly affecting the border. The vertical part of the border extends the Volta river segment formed originally in 1893 (which affected the Ghana–Ivory Coast border). The horizontal part of the border follows the 11°N latitude parallel, villages, roads, and minor rivers. Subsequent exchanges of notes and agreements in 1904, 1905, and 1906 outlined a more detailed border,[128] but we do not code major revisions in these years because none qualitatively changed the location nor features of the border. We code major rivers and parallels/meridians as co-primary features because these are, respectively, the main elements of the vertical and horizontal border segments. The other aforementioned features are secondary.

C.2.17 Guinea–Senegal

Overview. Originally formed in 1898 as a French intraimperial border between Guinea and Senegal. Major revisions occurred in 1915 and 1933 (changed features: clarify local features). A historical political frontier (PCS: Futa Jalon) directly affected the border. The primary feature is minors rivers. Secondary features are topography (mountains), towns/villages, and straight lines (parallels/meridians).

Details. French military expansion from Saint-Louis in Senegal began in the 1850s. In 1881, France secured the Bayol treaty with Futa Jalon, which established their claims over the PCS vis-à-vis Britain and Portugal.[129] Military operations penetrated the interior areas of Guinea in the 1880s and 1890s, which was separated from Senegal in 1891.[130] France militarily defeated Futa Jalon in 1896 and created preliminary boundaries throughout French West Africa shortly after. In 1898, "in anticipation of the need to finally and clearly define the federal borders, the lieutenant governor of Guinea tasked Ernest Noirot, then administrator of Futa Jallon, to study the question of the federal boundaries and submit a proposed solution. In his report, Noirot suggested that Guinea should adopt as its frontier with Senegal and Soudan the frontiers of Futa Jallon as they existed in 1881."[131] Later that year, a French ministerial dispatch created the present border. However, this "outline was theoretical because it had to be completed by reconnaissance operations on the

[124] Crowder 1968, 95–98.
[125] Crowder 1968, 96–97.
[126] Until 1919, Burkina Faso was governed as part of the Ivory Coast; see Burkina Faso–Ivory Coast.
[127] See Figure 4.
[128] Hertslet 1909, 822–27, 832–42, 847–48.
[129] See Guinea–Guinea-Bissau.
[130] See Mali–Senegal and Guinea–Mali.
[131] Carpenter 2012, 126–27. See also Sandouno 2015, 131–32.

ground."[132] After a further ratification in 1904, major revisions were effected by decrees in 1915 and 1933.

Starting at the tripoint with Guinea-Bissau, the short, westernmost part of the border follows a parallel line. This part of the border perpetuates the line that France had previously established with Portugal to separate their spheres of influence. Farther east, for the majority of the border, various rivers and mountains were used to delineate the border segment by segment. Villages were explicitly allocated to either side of the border, following the reports of the relevant district heads (*commandants de cercles*) of Haute-Gambie in Senegal and of Koumbia in Guinea.[133] The French government also had some knowledge of ethnic groups and regions. For example, the Minister of Colonies informed the Governor in 1898 that the proposed border would place four *pays* (regions or areas that share cultural similarities) within Guinea: Badiari, N'Dama, Labé, and Coniagui.[134] The French espoused a desire to avoid separating ethnic groups, although the 1915 Decree nonetheless partitioned several groups (referred to as the "Bassaris, Peulhs et Jalonkés").[135] The 1915 Decree was also imprecise and contained several factual errors, such as naming a mountain range that is in fact only a hill ("Mount Galendi"). A later study rectified parts of the border, yielding a decree in 1933 that used "unquestionable natural limits" in lieu of "a line of demarcation that was previously purely theoretical."[136]

C.2.18 Guinea–Ivory Coast

Overview. Originally formed in 1899 as a French intraimperial border between Guinea and Cote d'Ivoire. The primary feature is minor rivers. A historical political frontier (other state: Samori's Wassoulou Empire) indirectly affected the border. Secondary features are minor watersheds and topography (mountains).

Details. The French West Africa federation was created in 1895 to encompass Senegal, Côte d'Ivoire, French Guinea, French Sudan, and Dahomey. A decree in 1899 was foundational for determining initial borders among these colonies, although some had already formed provisional borders.[137] This decree of 1899, however, did not describe limits, nor did a later arrêté in 1911. Instead, "the alignment depends on French administrative practice" and on French colonial maps.[138] However, because we lack a concrete date at which this border was finalized, we do not code any subsequent major revisions to be conservative in our coding.

France had a long-standing presence in the coastal areas of modern-day Guinea and Ivory Coast, but until the 1890s, did not penetrate the interior of these territories nor distinguish them as their own colonies.[139] This is at least in part because of the Samori's Wassoulou Empire, which comprised parts of today's borderlands between Guinea and Cote d'Ivoire: "The French were not even

[132] Sandouno 2015, 131–32.
[133] Brownlie 1979, 318; Sandouno 2015, 134–35.
[134] Brownlie 1979, 316.
[135] Sandouno 2015, 137–39.
[136] Sandouno 2015, 142.
[137] "These limits [...] were modified several times, notably by the decrees of October 1, 1902, October 18, 1904, and March 1, 1919, to take into account the progress of the conquest;" see here.
[138] Brownlie 1979, 301–2.
[139] See Guinea–Mali and Ghana–Ivory Coast.

close to the Cavally region [Cote d'Ivoire]. It wasn't until 1893 that a post was created at Tabu, while the lower Cavally was only covered by [...] in 1897. The lack of knowledge of this region up to that time may be linked to the fact that it was under the control of Samori Touré. It was only after his capture in 1898 that the French settled there.[140]

Large segments of the present border follow various minor rivers (including the Gbanhala and the Feredougouba) and watersheds and rivers; the southernmost segment passes through the Nimba mountain range. This border region, which is just north of Liberia, was attributed to Liberia at the Berlin Conference. However, the French conquered it by moving northwest (present-day Guinea and Mali) to southeast (present-day Ivory Coast) as they defeated the domains of Almami Samori Toure, who controlled some of the region before the French army conquered it in the 1890s.[141] Thus, we code an indirect effect of Samori's empire.

C.2.19 Ivory Coast–Mali

Overview. Originally formed in 1899 as a French intraimperial border between Cote d'Ivoire and French Sudan. Major revisions occurred in 1902, 1911, and 1919 (changed features: clarify local features) and in 1932 and 1947 (large territorial transfer: part of Upper Volta to Cote d'Ivoire and French Sudan, and then returned). The primary feature is minor rivers.

Details. See Guinea–Ivory Coast for the 1899 decree that founded initial borders throughout French West Africa, of which Cote d'Ivoire and French Sudan (Mali) were initial members. The border was revised in 1902 to reallocate towns on one side or other of the border and decrees between 1911 and 1919 further modify the initial sketch to clarify features.[142] Colonial maps demonstrate that the border was aligned with various rivers, including the Gbolonzo, Digou, Sorobaga, Kankélaba, Dougo, and Bogoé. These comprise about three-fourths of the total length of the border.[143]

Major revisions also occurred in 1932 and 1947, during which time Upper Volta was disbanded and its territory was distributed among neighboring AOF colonies, including its southern districts to Cote d'Ivoire and its northern districts to French Sudan.[144] During this period, the present border was greatly lengthened.

C.2.20 Benin–Burkina Faso

Overview. Originally formed in 1899 as a French intraimperial border between Dahomey (Benin) and French Sudan (Mali); Upper Volta (Burkina Faso) existed as a separate colony from 1919–32 and then from 1947 onward. A major revision occurred in 1911 (small territorial transfer). A historical political frontier (decentralized groups: Bariba, Gurma) directly affected the border. The primary feature is minor rivers. Secondary features are topography (mountains), a minor watershed, and towns/villages.

[140] Sandouno 2015, 99.
[141] Cogneau et al. WBER 2015, 47; Person 1972, 25; Kanya-Forstner 1969, 251–55 inter alia.
[142] Brownlie 1979, 373; Nassa 2006, 4–5.
[143] Office of the Geographer 1979, 3-4.
[144] See Burkina Faso–Ivory Coast.

Details. The colony of Dahomey was established by a 1893 decree and its boundaries with neighboring territories by 1899 decree; Dahomey became a constituent unit of French West Africa with internal district boundaries extending north to the cercle of Moyen Niger. Although the original French possessions were confined to the coast, the French "moved progressively northwards towards the Niger loop to link up with their other colonies in West and Central Africa."[145] Dahomey's original border with Haut-Sénégal et Niger was located farther north than the final Benin–Burkina Faso border. In 1911, the *cercles* of Fada N'Gourma and Say were transferred from Dahomey to Haut-Sénégal et Niger; we count these as a major revision of the present border because both of these *cercles* belonged to Upper Volta when it was originally constituted as a colony in 1919.[146] Ethnic groups were a factor considered by the French Minister of the Colonies, Jean-Baptiste Morel, when redrawing of this border, in particular to remedy the partitioning of the Bariba. In the *rapport* to the President of France in 1913, the Minister notes the advantages of creating intraimperial borders that correspond to the local ethnic geography. The Minister noted that a 1909 decree incorporated Baribas into Dahomey that had "no ethnic link with the populations of Fada-N'Gourma [Gurma people in Upper Volta]." Modifying the border "would ensure, over the populations of the same race, the unity of action that is necessary and, also, would provide a natural limit in this region to both interested colonies."[147] No subsequent major revisions occurred despite Upper Volta's fluctuating territorial status: created in 1919, disbanded in 1932, and reconstituted in 1947.[148] However, the temporary disbanding of Upper Volta did alter the Benin–Niger border.

Regarding alignment, the border primarily follows the Pendjari River from the west, then a drainage divide running alongside the Atacora Mountains (Chaîne de l'Atacora), and then the Mékrou River where the border meets the tripoint with Niger. In addition to these features, decrees outlining the border also mention towns.

C.2.21 Burkina Faso–Ivory Coast

Overview. Originally formed in 1899 as a French intraimperial border between Haut-Sénégal et Niger and Cote d'Ivoire; Upper Volta was split from Haut-Sénégal et Niger in 1919. Major revisions occurred in 1932 and 1947 (major territorial transfers: part of Upper Volta to Ivory Coast and then returned). A historical political frontier (PCS: Mossi) directly affected the border. The primary feature is minor rivers.

Details. In 1919, Upper Volta (Burkina Faso) was split from Haut-Sénégal et Niger to become distinct colony.[149] At this point, part of what had been a border between Cote d'Ivoire and Haut-

[145] International Court of Justice 2005.

[146] Say was transferred from Upper Volta to Niger in 1926; see Burkina Faso–Niger.

[147] Brownlie 1979, 206. The Minister of the Colonies stated: "My attention has been drawn a number of times to the disadvantages of the incorporation into our Colony of Dahomey of the cercles of Fada N'Gourma and Say. Ethnic considerations of genuine importance, as well as administrative requirements, make it necessary, on the contrary, that these cercles be incorporated in our Colony of Haut-Sénégal et Niger, which had moreover already possessed them in part prior to the Decree of 17 October 1899."

[148] See Burkina Faso–Mali and Burkina Faso–Ivory Coast.

[149] See Burkina Faso–Mali.

Sénégal et Niger instead became a border between Cote d'Ivoire and Upper Volta.[150] Major revisions occurred in 1932 and 1947, during which time Upper Volta was disbanded and its territory was distributed among neighboring AOF colonies, including its southern districts to Cote d'Ivoire. During this period, Cote d'Ivoire's border with French Sudan was greatly lengthened, and it also gained a temporary border with Niger. The reason for dissolving Upper Volta, which occurred during the Great Depression, was economic. French perceived Upper Volta as a useful labor reserve for cocoa production in the Ivory Coast: "The attachment of the Mossi districts (*cercles*) to the Ivory Coast would allow the government of this colony to take, without any other intermediary and in the best interest of the general public [that is, France] all suitable measures to attract towards the south of this colony the Mossi workforce."[151]

Upper Volta was reconstituted as a separate colony shortly after World War II, in part because of pressure by the traditional ruler of Ouagadougou, the Moro Naba. After World War II, France instituted elections across all its colonies and the most prominent inter-territorial political party was the Rassemblement Démocratique Africain (RDA). "When asked by Houphouet-Boigny [of the RDA], who later became the Ivory Coast's long-time president, to collaborate in the naming of an Ivory Coast candidate for election to the Constituent Assembly in 1945, the Moro Naba [Mossi king] chose a loyal servitor who proceeded to campaign exclusively on the issue of reconstituting a separate Mossi state. The large vote that he rolled up—only slightly smaller than Houphouet's—was clear evidence of the Mossi people's wish to be separated administratively from the Ivory Coast . . . the Moro Naba had a one-track mind, and when French President Auriol visited French West Africa in 1947 he took advantage of this occasion to press successfully the Mossi claim for separate territorial status. There is little doubt but that it was the desire to curtail R.D.A. expansion that moved France to accede, and on September 4, 1947, the Upper Volta once again became a territory in its own right."[152]

About two-thirds of the border follows rivers: Leraba, Komoe/Comoe, and Keleworo. The border depends entirely on French administrative practice, and no international agreement defines the contemporary border.[153]

C.2.22 Benin–Niger

Overview. Originally formed in 1899 as a French intraimperial border between Dahomey and French Sudan (Mali); Niger did not become a distinct territorial entity until 1912. Major revisions

[150] See Ivory Coast–Mali for the original 1899 decree that determined initial borders among the colonies of French West Africa.

[151] ICJ 16371, 28; Cogneau et al. WBER 2015, 50.

[152] Thompson and Adloff 1958, 174–75; see also ICJ 16371: 28. Crowder and O'Brien 1974, 676 elaborates upon how the Mossi leader's desire for a separate Upper Volta state aligned with French colonial interests: "The French had already made inroads into the R.D.A.'s power based in the Ivory Coast by detaching the enormous and populous hinterland of Upper Volta which was once again made into a separate colony. Though ostensibly this move was said to reflect the wishes of the Mossi people, it in fact suited the French Government's purpose of weakening the R.D.A. as well as their plan to extend the Abidjan railway from non-Mossi Bobo Dioulasso to Mossi Ouagadougou. The Mogho Naba promised electoral support and labour to France in return for the re-creation of Upper Volta."

[153] Brownlie 1979, 375.

occurred in 1932 (large territorial transfer: part of Upper Volta to Niger), 1934 and 1938 (changed features: clarify local features), and 1947 (large territorial transfer: Niger territory back to Upper Volta). The primary feature is a major river (Niger). A secondary feature is a minor river.

Details. See Guinea–Ivory Coast for the 1899 decree that founded initial borders throughout French West Africa, of which Dahomey and French Sudan were initial members. The alignment of what became the final border was completed through French decrees from December 1934 and October 1938 and is solely based on the Mékrou for the western half and Niger river for the eastern half. In general, rivers served as natural stopping points during France's conquest of West Africa.[154] For example, "[i]n accordance with French methods of progressive conquest, troops from the Sudan [Mali] settled on the [left] banks of the [Niger] river to pacify the right bank." However, in this case, the precise division of the rivers and islands remain undetermined as "the relevant French instruments [legal documents] are not sufficiently precise."[155]

Major revisions also occurred in 1932 and 1947, during which time Upper Volta was disbanded and its territory was distributed among neighboring AOF colonies, including its eastern districts to Niger.[156] This temporarily stretched the present border farther west.

C.2.23 Mali–Niger

Overview. Originally formed in 1909 as an inter-district border within the French colony of Haut-Sénégal et Niger. Major revisions occurred in 1927 (changed features: clarify local features), 1932 (large territorial transfer: parts of Upper Volta transferred to French Sudan and Niger), 1939 (changed features: clarify local features), and 1947 (large territorial transfer: territory returned to Upper Volta). Historical political frontiers (decentralized groups) directly affected the border. The co-primary features are straight lines (parallels/meridians) and topography (mountains, hills, valleys). Secondary features are minor rivers (oueds), towns/villages, and straight lines (non-astronomical).

Details. Niger was among the last areas of the French empire to be conquered and administered. Until 1912, Niger was part of the Haut-Sénégal et Niger colony (of which modern-day Mali was the governing component); but even after the split, Niger did not become a distinct colony until 1922. The initial border, however, was formed prior to splitting off Niger as a distinct territory. "Although apparently not ratified, a convention signed at Niamey by the Commanders of Gao and Niamey on August 26, 1909, delimited a line between their respective districts, which later served as the basis for the French Sudan–Niger boundary."[157] The subsequent relevant conventions for

[154] Kanya-Forstner 1969.

[155] Brownlie 1979, 161. This imprecision was a source of contention after independence, so much so that Benin and Niger went to the International Court of Justice (ICJ) to determine (i) to which country the various islands along the Niger belong to and (ii) whether the thalweg or the median lines should be used to trace the border along the two rivers. Neither country was able to submit colonial-era proof, itself evidence that intraimperial borders were much less negotiated over than interimperial ones: "neither of the Parties has succeeded in providing evidence of title on the basis of [those] acts during the colonial period" (International Court of Justice 2005).

[156] See Burkina Faso–Ivory Coast.

[157] Office of the Geographer 1975*a*, 2.

border changes are the Labbézenga Convention of 1927 and the Niamey Convention (Niamey-Gao agreement) of 1939, which clarified local features by improving delimitation.[158]

Major revisions also occurred in 1932 and 1947, during which time Upper Volta was disbanded and its territory was distributed among neighboring AOF colonies, including its northern districts to French Sudan and its eastern districts to Niger.[159] During this period, the present border extended farther south than in its final form.

The northern segment of the border, emanating from the tripoint with Algeria, is a meridian line that traverses largely uninhabited areas in the Sahara Desert. However, the southern half of the border curves southwest and then west in order to separate the two main Iwlliminden (or Awlliminden) groups: Kel Ataram ("people of the west") in Mali, and Kel Denneg ("people of the east) in Niger.[160] The cercles of Gao and Madaoua were delimited specifically to preserve each nomadic group within a single colony.[161] Hence we code these historical political frontiers as directly affecting the border. Topographical features (mountains, hills) are the dominant feature used to delimit the border in the south, which justifies our coding as a co-primary feature; and villages and ponds are referenced as well.[162]

C.2.24 Burkina Faso–Niger

Overview. Originally formed in 1912 as an intraimperial border when France split Niger from Haut-Sénégal et Niger; Upper Volta was itself split from Haut-Sénégal et Niger in 1919. Major revisions occurred in 1926 (small territorial transfer) and 1932 and 1947 (large territorial transfer: part of Upper Volta to Niger and then returned). The primary feature is towns/villages. Secondary features are minor rivers, topography (mountains), and infrastructure (routes).

Details. France split Niger from Haut-Sénégal et Niger (of which Mali was the main component) in 1912.[163] The initial border from 1912 to 1919 between Niger and the southern part of Haut-Sénégal et Niger was the Niger River, a boundary that was unchanged upon France splitting Upper Volta from Haut-Sénégal et Niger in 1919.[164] A major revision took place in 1926 when a decree "transfer[ed] parts of the *cercles* of Dori and Say from Upper Volta to Niger", which shifted the border west.[165] Arrêtés written in 1926 and 1927 reveal detailed knowledge of the territory and mention existing villages (Afassi, Kouro), rivers (Sirba, Mékrou) and hills (Darouskoy, Baléganguia). Major revisions also occurred in 1932 and 1947, during which time Upper Volta was

[158] After independence, Mali and Niger delimited their border more precisely in 1962. Nonetheless, the exact alignment of the border remains uncertain because of differences in markings on French maps versus postcolonial maps.

[159] See Burkina Faso–Ivory Coast.

[160] Boilley 2019.

[161] Lefèbvre 2015, 247.

[162] For example, the 1939 Niamey-Gao Agreement describes a border segment as "An ideal line leading northwest to the rocky peak situated at the southwest tip of the Andéramboukane pond, then leading south to the rocky peak of Mihan" (Brownlie 1979, 419).

[163] See Mali–Niger.

[164] See Burkina Faso–Mali; Brownlie 1979, 471.

[165] The territorial transfer took place in 1927; the canton of Gourmantché-Botou remained in Upper Volta (Office of the Geographer 1974*a*, 2). The 1926 decree provides no explanation for this transfer.

disbanded and its territory was distributed among neighboring AOF colonies, including its eastern districts to Niger.[166] During this period, Niger's border with French Sudan (Mali) was longer than its final form, and Niger gained a temporary border with Cote d'Ivoire. This border was never carefully delimited despite changing numerous times, presumably because of the uncertain territorial status of Upper Volta.[167]

C.2.25 Mauritania–Senegal

Overview. Originally formed in 1904 as an intraimperial border when France split Mauritania from Senegal. A major revision occurred in 1933 (changed features: switched local features). Historical political frontiers directly (PCS: Walo; other states: Trarza, Brakna, Tagant) directly affected the border. The primary feature is a major river (Senegal). A secondary feature is minor rivers.

Details. France had a presence in Senegal at Saint-Louis (at the mouth of the Senegal River) dating back to the seventeenth century. After territorial possessions fluctuated amid wars with Britain, "the Congress of Vienna in 1815 recognized French sovereignty over the coast of West Africa from Cap Blanc south to Senegal."[168] France began inward expansion in the 1850s in direct reaction to encroachment by Moor emirates located north of the Senegal River. To secure trade in gum arabic, France first conquered PCS Walo located south of the river, and then launched a military expedition to defeat the emirates of Trarza and Brakna located farther north. "To consolidate their 'sovereignty' over the river the French had to defeat the Trarza . . . The French-Trarza war ended Trarza power in Waalo and *established the Senegal River as the colonial border between desert and savanna societies*. The Trarza defeat led to the annexation of Waalo in 1855 . . . "[169] Furthermore, "[t]he treaties ending the war extended a French protectorate over Trarza and Brakna . . . and recognized French sovereignty over the northern bank of the Senegal River."[170] Following decades of inaction, in 1901, the French government adopted a plan of "peaceful penetration" to establish authority north of the river, although the administration in Senegal resisted this move because the river formed the frontier for the nomadic peoples living farther north. They saw "no value in the wastelands north of the Senegal River . . . Nevertheless, by 1904 Coppolani had peacefully subdued Trarza, Brakna, and Tagant and had established French military posts across the central region of southern Mauritania."[171] In that year, France formally proclaimed a protectorate over the Trarza

[166] See Burkina Faso–Ivory Coast.

[167] During the colonial period, poor delimitation led to "incessant palavers concerning [border] limits between farmers of Yagha [in Burkina Faso] and of Diagourou [mostly in Niger]" and to restrictions in the usual routes of nomadic populations. "In light of the findings on trade flows, . . . the administrative divisions of the former Colony should be distributed among the neighbouring Colonies of Niger, French Sudan and Côte d'Ivoire." After independence, Burkina Faso and Niger resolved an amicable dispute over sections of the border at the International Court of Justice in 2013.

[168] Warner 1990, 12. Cap Blanc (Ras Nouadhibou) forms the northern boundary of Mauritania with Western Sahara; see Mauritania–Western Sahara.

[169] Searing 2003, 191; our emphasis. Several years later, France defeated other states located south of the Senegal as well, such as PCS Cayor (Kanya-Forstner 1969, 33).

[170] Warner 1990, 13.

[171] Warner 1990, 14–15.

and Brakna people,[172] which tentatively formed the present border and indicated that these semi-nomadic groups (and their inextricable connection with the Senegal River) were indeed considered the natural frontier for Senegal. Hence we code a direct effect based on the intersection of historical political frontiers between the semi-nomadic groups (not PCS in our data set) north of the Senegal and the PCS Walo south of the Senegal.

The border was delimited by the French Presidential Decree of 1933; only then did colonial authorities specify that the right bank of the Senegal river was to be the boundary and that the tripoint with Mali is at the confluence of the Senegal and the Falémé rivers and not the confluence of the Senegal and the Karakoro stream, as was decreed originally in 1905.[173] As the border approaches Saint Louis, it follows the streams ("marigots" in the 1933 Decree) of Kassack and Karakoro.

C.2.26 Mali–Mauritania

Overview. Originally formed in 1913 as a French intraimperial border between Haut-Sénégal et Niger and Mauritania. A major revision occurred in 1944 (small territorial transfer). The primary feature is straight lines (parallels/meridians). Secondary features are other water bodies (wells), a major river (Senegal), and towns/villages.

Details. France distinguished Upper Senegal (Mali) and Mauritania as distinct colonies from Senegal in 1880 and 1904, respectively.[174] By 1912, France had defeated armed resistance in Adrar and southern Mauritania, which assured "the ascendancy of the French-supported marabouts over the warrior clans within Maure society."[175] A decree the next year set the original Mauritania/Haut-Sénégal et Niger border. A major revision occurred in 1944 when the north-south straight line separating the two colonies was realigned and the northern part of the cercle of Nioro was transferred to Mauritania.[176] In the inhabited areas farther south, the border follows the Karakoro River and wells and villages (e.g., Nioro, Boulouli, Aguerakten). In the desert region farther north, the border is demarcated by straight lines.

C.2.27 Burkina Faso–Mali

Overview. Originally formed in 1919 as a intraimperial border when France split Upper Volta from Haut-Sénégal et Niger. Major revisions occurred in 1932 and 1947 (large territorial transfers: part of Upper Volta to French Sudan and then returned). A historical political frontier (PCS: Mossi) directly affected the border. The primary feature is minor rivers. Secondary features are topography (mountains) and a minor watershed.

Details. Between 1904 and 1921, present-day Mali was the governing component of the colony Haut-Sénégal et Niger, which also contained Niger until 1912,[177] and Upper Volta (Burkina Faso) until 1919. The foundation for a distinct state of Upper Volta lay in France's initial treaties with

[172] Office of the Geographer 1967, 3.
[173] Office of the Geographer 1967, 5.
[174] See Mali–Senegal and Mauritania–Senegal.
[175] Warner 1990, 14.
[176] Slight modifications occurred after independence in the Treaty of Kayes in 1963.
[177] See Mali–Niger.

Mossi rulers in 1895 and 1896.[178] Unlike most other precolonial states that were incorporated into the French empire, France gained control over the Mossi territory without facing armed resistance.[179] France preserved the indigenous Mossi political structure to facilitate indirect rule, including leaving intact their supreme ruler, the *Moro Naba*.[180] A revolt in Niger in 1916 led France to rethink its administrative structure and prompted "greater reliance on traditional institutions,"[181] at least within areas that cooperated with French rule. The Minister of the Colonies, Henri Simon, explicitly considered the importance of creating a separate colony at the center of the colonized Mossi Kingdom in his 1919 report to the French President: "The presence of a governor at the center of Mossi will ensure [. . .] the regularity of a control which, because of the distance, has not always been exercised satisfactorily."[182]

Major revisions also occurred in 1932 and 1947, during which time Upper Volta was disbanded and its territory was distributed among neighboring AOF colonies, including its northern districts to French Sudan.[183] During this period, French Sudan's borders with each of Cote d'Ivoire and Niger were longer than their final form. The border alignment, in principle, depends on French administrative practice and no international agreement describes the boundary. Although there are no clear determinants for some parts of the border, the west of the tripoint with Niger roughly follows the Beli river and other "parts of the frontier consist on watercourses." These include semidry watercourses and the Groumbo river, the Sourou river, and the Ngorolaka or Banifing river. These watercourses undergo large seasonal variations, making the precise alignment of the border unclear. Finally, the border contours Mount Tenakourou, the highest point in Burkina Faso.[184]

[178] See Burkina Faso–Ghana.
[179] Thompson and Adloff 1958, 173.
[180] Skinner 1958, 125.
[181] Touval 1966, 12.
[182] ICJ 16371: 27.
[183] See Burkina Faso–Ivory Coast.
[184] Brownlie 1979, 427–30.

C.3 Equatorial Africa and Congo

C.3.1 Congo (Fr.)–Congo (Bel.)

Overview. Originally formed in 1885 as an interimperial border between the French Congo and the Congo Free State. A major revision occurred in 1887 (changed features: lines to local features). Historical political frontiers (decentralized groups) indirectly affected the border. The primary feature is major rivers (Congo, Obangi). Secondary features are minor rivers and topography (mountains).

Details. The area within the Congo River basin (the Congo) became of intense interest in Europe in the 1870s when sensationalized accounts from European explorers amplified prospects for trade and colonization.[1] The immediate prelude to forming the Congo Free State involved a frenzy of treaty-signings with African rulers. "Between 1875 and 1882, Pierre Savorgnan de Brazza, a French naval officer, in a series of expeditions from Gabon explored much of present-day Congo (Brazzaville) and made treaties with local chiefs. A French law of November 30, 1882, ratified the treaties and provided for a government in the French Congo."[2] One key treaty was secured in 1880 with the ruler of the Téké and chief of the Makoko tribe of Mbé. By this treaty, the Makoko allowed the French to establish Brazzaville, which facilitated their claim to the right bank of the Congo River at the Berlin Conference in 1884–85; hence we code an indirect effect of decentralized groups on the border. Henry Morton Stanley, hired as an agent by King Leopold, also gained treaties with rulers along the Congo River. This enabled him to establish Leopoldville, situated across from Brazzaville on the left bank of the Congo.[3]

[1] Wesseling 1996, Ch. 2.

[2] Office of the Geographer 1971*b*, 2.

[3] These claims conflicted with Portugal's long-standing claims to the entire mouth of the Congo River, discussed in Angola–Congo (Bel.).

The initial frontiers between the Congo Free State and French territory were determined by a bilateral treaty between the two in February 1885 (during the Berlin Conference) and the unilateral Circular of August 1885 that formally established the Congo Free State, which contained statements of boundaries that reflected prior bilateral agreements.[4] Moving eastward from the Atlantic, the original border consisted of various minor rivers until they intersect the Congo River. At this point, the Congo became the border until roughly where it intersected the 17°E longitude meridian, at which point the meridian became the border.

A major revision occurred in 1887 when a protocol introduced the Obangi/Ubangi River as a feature of the border, starting from the point where it intersects the Congo River. This replaced all of the original meridian line.[5]

We code the Congo River as the primary feature, which reflects its foundational role in the initial border as well as its length (500 miles of 1,010 miles total). The Obangi (290 miles) reinforces the coding of major rivers as the primary feature. We code minor rivers as secondary features because of the western-most part of the border. We also code mountains as a secondary feature because these were also used to delimit western-most part of the border, which was vague in the 1885 agreements.[6]

C.3.2 Central African Republic–Congo (Bel.)

Overview. Originally formed in 1885 as an interimperial border between the French Congo and the Congo Free State; Ubangi-Shari (CAR) became a distinct colony in 1903. Major revisions occurred in 1887 and 1894 (changed features: lines to local features). The primary feature is a major river (Obangi). Secondary features are a minor river and a major watershed (Nile-Congo).

Details. The initial frontiers between the Congo Free State and French territory were determined by a bilateral treaty between the two in February 1885 (during the Berlin Conference) and the unilateral Circular of August 1885 that formally established the Congo Free State, which contained statements of boundaries that reflected prior bilateral agreements.[7] These initial agreements more thoroughly fleshed out the Congo (Fr.)–Congo (Bel.) border than the present one, for which the only relevant component was two parallel/meridian lines (17°E longitude and 4°N latitude).

A protocol in 1887 introduced the Obangi River as a feature of the border, starting from the point where it intersects the Congo River. At roughly the 4°N latitude parallel (near the site of the modern-day capital Bangui), the Obangi shifts from primarily vertical in its orientation to primarily horizontal. The treaty specified that the Obangi would constitute the border at any point in which the river lay north of the 4°N latitude parallel, as "[i]n no case shall the northern Boundary of the Congo State descend below the 4th parallel of north latitude, which is the limit already assigned to it by Article V of the Convention of 5th February, 1885."[8] The Obangi lies north of the meridian between roughly modern-day Bangui and the point at which it intersects the Mbomou River farther

[4] Hertslet 1909, 552–53, 564–65; see also the maps on pp. 604–5, Wesseling 1996, 116, and Sanderson 1985*a*, 140 (1887 map).

[5] Hertslet 1909, 568.

[6] Brownlie 1979, 659–61.

[7] See Congo (Fr.)–Congo (Bel.) for background.

[8] Hertslet 1909, 568–69.

east. In 1894, a new boundary agreement specified the Mbomou as the boundary to the east of that intersection.[9] The consequence of these two major revisions was to replace the original straight-line segments with rivers.

The Obangi and Mbomou rivers are the only two features of the border. We code the major river (Obangi) as the primary feature even though it is shorter in length, which reflects its earlier incorporation as a key feature of the border. We also code the Nile-Congo watershed as a secondary feature because this formed the tripoint with Sudan (now South Sudan), which is explicitly mentioned in the 1894 agreement.

C.3.3 Angola–Congo (Bel.)

Overview. Originally formed in 1885 as an interimperial border between Portuguese Angola and the Congo Free State. A major revision occurred in 1891 (changed features: lines to local features). Historical political frontiers (PCS: Lunda) directly affected the border. The primary feature is major rivers (Congo, Kasai). Secondary features are a major watershed (Congo), minor rivers, and straight lines (parallels/meridians and non-astronomical).

Details. Portuguese colonial presence in modern-day Angola dates back to the sixteenth century. Early claims yielded ambiguous jurisdiction over the mouth of the Congo River, which led to disputes in the 1880s. Earlier, an Anglo–Portuguese Treaty of 1817 formally recognized a Portuguese sphere of influence upon the Atlantic coast that stretched from 18°S latitude to 8°S latitude,[10] which lies south of the mouth of the Congo River. However, Section 2 of the 1817 treaty explicitly denoted Portugal's sphere of influence over two specific towns north of the Congo mouth, Cabinda and Molembo, both located in the modern-day Cabinda enclave. Despite these early territorial claims, as of the 1880s, Portugal's presence in Africa was "extremely limited. There were even calls for a complete withdrawal from the interior, where attempts to extend Portuguese power had come to little. . . . In Angola Portuguese activities were confined to just a few towns, Ambriz and Luanda in the north . . . " The boundaries were "vague" and the situation was even "less clear" in the north than in the south.[11] Ambriz and Luanda are each located south of the Congo mouth; nonetheless, Portugal claimed the entire Congo mouth. Portugal signed a bilateral treaty with Britain in 1884 that recognized its claims over an area that spanned the entire Congo mouth. However, the other European powers rejected this agreement, and King Leopold and the emergent International Association of the Congo in particular contested these claims.

Preliminary frontiers between the Congo Free State and Portuguese territory were determined by a bilateral treaty in February 1885 (during the Berlin Conference) and the unilateral Circular of August 1885 that formally established the Congo Free State, which contained statements of boundaries that reflected prior bilateral agreements.[12] Facing an ultimatum from Germany, France, and Britain, Portugal consented to relinquishing the northern bank of the Congo mouth to the Congo Free State. In return, Portugal retained control over the southern bank and over the small en-

[9] Hertslet 1909, 569–70.
[10] Hertslet 1909, 985.
[11] Wesseling 1996, 100.
[12] Hertslet 1909, 552–53, 591–92; see also the maps on pp. 604–5, Wesseling 1996, 116, and Sanderson 1985*a*, 140.

clave of Cabinda located north of the northern bank.[13] Cabinda was of "little value in itself," but Portugal "attached importance, for traditional reasons, as it figured in the Portuguese constitution as an appanage of the Crown."[14] The border for the Cabinda enclave consists of straight lines (non-astronomical) and minor rivers; these features were qualitatively unchanged in future revisions.

The 1885 documents created an initial southern limit of the Congo Free State. To the east, the border consisted of the watershed of the Kasai River; and to the north, it consisted of the 6°S latitude parallel until (moving westward) reaching the town of Noqui (referred to as "Nokki" in the treaty). Between the Atlantic Ocean and Noqui, the Congo River is navigable; but east of that point, rapids prevent navigating the Congo River until reaching Kinshasa. Thus, given the interest in major rivers for their economic value, it makes sense that there was less contestation over the Congo River between Noqui and Kinshasa and that this segment of the river was assigned entirely to the Congo Free State (east of Kinshasa, the Congo River forms the border between the Belgian and French Congo).

Yet Portugal's sphere of influence was still in flux. In 1886–87, Portugal signed treaties with each of Germany and France that assigned it vast territory between its coastal possessions of Angola and Mozambique (the contra-costa goal), but Britain formally protested these treaties.[15] However, even the maps that accompanied these treaties—with expansive Portuguese territory—left unassigned a large segment of territory south of the Congo Free State and east of the Kwango River. This was the location of the PCS Lunda.[16] Portuguese agents secured several treaties with rulers of the Lunda empire later in the 1880s. Meanwhile, the Congo Free State was exploring territory along the right bank of the Kwango River and, in 1890, "unilaterally created the District of Kwango Oriental covering all the territory east of the upper Kwango and thus, virtually, the whole Lunda empire."[17]

In 1891, Portugal and the Congo Free State signed a bilateral treaty that explicitly sought to delimit possessions "in the region of Lunda."[18] This revision exchanged a large amount of territory and changed the features of the border. The treaty "consecrated the dismemberment of Lunda into two major sections. Portugal secured most of the lands west of the Kasai, including Shinje (Maxinje), Cassassa, Cahungula, and Mataba, but the Free State retained all the area between the Kwango and Kwilu [rivers] as far south as the eighth parallel—including most of the lands of the 'Mwene Putu' Kasongo. The Free State also gained control of all the land east of the Kasai, that is, of the Lunda heartland."[19] In this case, the dissolution of the Lunda empire by the end of the 1880s disabled any European power from making convincing, broad territorial claims on the basis of treaties with the ruler.[20] However, we code Lunda as directly affecting the border because of its centrality in the

[13]Crowe 1942, 172–74; Wesseling 1996, 123.

[14]Crowe 1942, 168–69. As noted above, the Anglo–Portuguese Treaty of 1817 explicitly mentioned Cabinda as within Portugal's sphere.

[15]Hertslet 1909, 703–6.

[16]See Bustin 1975, 34–37 and the map on Hertslet 1909, 706–7.

[17]Bustin 1975, 38–39; see also pp. 31–40 for more background.

[18]Hertslet 1909, 592–93.

[19]Bustin 1975, 40.

[20]Lunda had been subjected to repeated invasions by the Cokwe/Chokwe people since mid century. In 1888, the Cokwe sacked and occupied the capital. "In these years—from 1888 to 1898—only a small

1891 treaty and to European interests in the area.[21]

Following the 1891 treaty, the Kwango River and Kasai River each became long segments of the border, along with various latitude lines and minor rivers in between them and the Congo watershed in the far east (until reaching the tripoint with Zambia). Notably, the 8°S parallel, which was originally mentioned in the 1817 Anglo–Portuguese treaty as constituting the northern limits of Portugal's sphere of influence, is the southern-most part of Angola's northern border.

We code major rivers as the primary feature because of the long segments following the Congo and Kasai rivers. We code a major watershed (Congo), minor rivers (in particular the Kwango), and straight lines (parallels/meridians and non-astronomical) as secondary features. In the final border, parallels/meridians themselves constitute only short segments. However, long portions of the border closely approximate either the 6°S, 7°S, or 8°S latitude parallels.

C.3.4 Angola–Congo (Fr.)

Overview. Originally formed in 1886 as an interimperial border between the Cabinda enclave of Portuguese Angola and French Congo. The primary feature is minor rivers. Secondary features are minor watersheds and straight lines (parallel/meridian and non-astronomical).

Details. Negotiations between Portugal and the Congo Free State created the Cabinda enclave of Angola in 1885,[22] and French interests in Equatorial Africa were intertwined with these claims.[23] The French–Portuguese Convention of 1886 determined the border between French territory and the Cabinda enclave.[24] The treaty discusses various minor rivers (Louisa Loango, Lubinda, Luali,

fraction of Lunda land, the country of the Ine Cibingu, was not occupied" (Vansina 1966, 225). Regarding European claims, "Much was made in the correspondence between Leopold and his aides of the fact that the 1891 agreement gave the Musuumb to the Free State but, at the time, the capital which earlier reports had described was no more and Mushidi, the new Mwaant Yaav, was living as a virtual refugee on the edges of the Lunda homeland, paying tribute to the Cokwe" (Bustin 1975, 40). Indicative of the fluctuating borders, the Portuguese agent Carvalho signed a protectorate treaty with the Mwaant Yaav Mukaza in 1887, but "[i]f Carvalho had entertained any illusions regarding the extent of Mukaza's authority in the land, they must have been dispelled when, shortly thereafter, Cokwe bands supporting the candidacy of yet another claimant, Mushidi, laid siege to the capital and forced him to flee ingloriously" (Bustin 1975, 35).

[21] Another PCS, Kasanje, was located near the border but did not affect it (see Vansina 1966, 187–89, 201–3 for the following). Kasanje is located entirely within Angola. Given the importance of Kasanje to trade in the interior, Portugal had long-standing contacts with this state. Kasanje signed a treaty with Portugal in 1857. However, Portugal's attempt in 1862 to militarily subjugate Kasanje failed, which enabled the state to regain its independence. Between the 1870s and 1920, Angola "turned into a colony along the general pattern that was emerging around her in Africa . . . And from 1885 on the real occupation of the areas that theoretically had been claimed began . . . In Kasanje and Mahungo, military operations led to occupation by 1910 and 1911." Although located along the western bank of the Kwango River (which was used for part of the border farther north), Kasanje was south of the 8°S latitude parallel, and therefore lay within Portuguese Angola's traditional sphere of influence. It does not appear that King Leopold or any other power contested this claim, which made it irrelevant for border formation.

[22] See Angola–Congo (Bel.).

[23] See Congo (Fr.)–Congo (Bel.) and Congo (Fr.)–Gabon.

[24] Brownlie 1979, 485.

Chiloango); either the river itself, the midpoint between two rivers, or their watershed.[25] Thus we code minor rivers as the primary feature and minor watersheds as a secondary feature. The border also consists of short straight-line (parallel/meridian and non-astronomical) segments.

C.3.5 Congo (Bel.)–Zambia

Overview. Originally formed in 1885 as a unilateral frontier for the Congo Free State; Northern Rhodesia (Zambia) became a British colony in 1890. A major revision occurred in 1894 (changed features: switched local features). Historical political frontiers (PCS: Kazembe; other state: Msiri Yeke) directly affected the border. The primary feature is a major watershed (Congo). Secondary features are minor rivers, major lakes (Mweru, Tanganyika), and straight lines (parallels/meridians).

Details. During 1884–85, King Leopold's International Association of the Congo signed a series of bilateral agreements with each of the major powers to establish the existence of and preliminary frontiers for the Congo Free State.[26] In August 1885, a Decree created the Congo Free State and specified these borders. The relevant parts for the present border are:[27]

- A straight line drawn from Lake Tanganyika to Lake Moero [Mweru] by 8°30' south latitude
- The median line of Lake Moero
- The watercourse which unites Lake Moero with Lake Bangweolo [Bangweulu]
- The western shore of Lake Bangweolo
- A line drawn from the southern extremity of Lake Bangweolo until it meets the 24th degree of longitude east of Greenwich, and following the watershed between the Congo and the Zambesi [NB: the tripoint with Angola is located almost exactly at this longitude meridian]

Many of these features were unchanged in the subsequent border revision in 1894, when Britain signed its first bilateral treaty with the Congo Free State to determine borders.[28]

The main element that changed was shifting the segment between Lake Mweru and the Congo watershed westward from Lake Bangweulu to the Luapula River.[29] This change reflected competition over the Katanga region. Unlike the other powers, Britain's initial treaty in 1884 with the Congo Free State did not specify borders. Later, Britain "duly noted" the borders specified in the August 1885 declaration that established the Congo Free State, but did not sign a separate treaty.[31] Civil servants at the British Foreign Office mistakenly agreed to a map that placed Katanga within the

[25] Hertslet 1909, 675.

[26] See Congo (Fr.)–Congo (Bel.) and Angola–Congo (Bel.).

[27] Hertslet 1909, 553.

[28] See Hertslet 1909, 578 for the text.

[29] It was not in fact the original intention to remove Lake Bangweulu entirely as a feature of the border. The 1894 treaty stipulated that south of Lake Mweru, the border was to follow "the right bank of the River Luapula, where this river issues from Lake Moero. The line shall then be drawn directly to the entrance of the river into the lake, being, however, deflected towards the south of the lake so as to give the Island of Kilwa to Great Britain. It shall then follow the 'thalweg' of the Luapula up to its issue from Lake Bangweolo."[30] The problem was that the Luapula does not flow into Lake Bangweulu (Brownlie 1979, 707–8), and it was thus removed as a feature of the border.

[31] See Hertslet 1909, 573–77.

Congo, which reflected a change in maps between when the Congo Free State signed a treaty with Germany (November 1884) and France (December 1884).[32]

By the end of the decade, Katanga had became an area of intense strategic interest. Competition brought British and Congo State agents into contact with two major African states, Msiri (who had become paramount among the Yeke) and Kazembe, whose common frontier as of the late 1880s was the Luapula River.[33] The Kazembe had lengthy historical roots and "was probably the greatest in size and the strongest kingdom of all the Luba and Lunda states. From 1750 to 1850 it was paramount in southern Katanga." Later, Msiri became "a political power of the first rank. Between 1865 and 1871 he had incorporated all the possessions of Kazembe west of the Luapula in his state . . . From 1884 to 1887 Msiri was at the height of his power. His interventions in Kazembe's country had almost made him master of the entire kingdom on the Luapula." However, by the beginning of the 1890s when contact with European agents began, Msiri's state was in decline because of successful revolts.[34]

Europeans sought to establish a relationship with Msiri because of copper deposits located within his territory.[35] As Cecil Rhodes' British South Africa Company expanded Britain's sphere of influence northward into Central Africa,[36] his interests conflicted with the aims of the Congo Free State to "effectively occupy" the territory outlined for it in 1885. Rhodes' agents reached Msiri's capital in 1890, but failed to secure a treaty. In 1891, Leopold's agents reached the capital. After also failing to gain a treaty, they shot and killed him. This exacerbated the general state of revolt against the Yeke and left the Congo Free State in control of the area—hence aligning de facto conditions with their de jure sphere of influence over Katanga. Amid their northward drive that included the failed attempt to gain a treaty with Msiri, Rhodes' agents secured an agreement with Kazembe. This was the only "important chief" with which the Company had managed to secure a treaty (within the vicinity of the northern frontier of modern-day Zambia),[37] and this PCS was indeed incorporated into Zambia.[38]

We code the Congo watershed as the primary feature of the border and the other aforementioned features as secondary. The watershed segment is the longest and reflected the extensive usage of this feature to determine the original sphere of influence for the Congo Free State. We code Kazembe (PCS) and Msiri (other state) as directly affecting the border because the key change between 1885 and 1894 was to incorporate the Luapula River, their common frontier.[39] Thus, the

[32] Wesseling 1996, 122–24.

[33] Only Kazebme is a PCS in our data set because Msiri formed his state after 1850.

[34] Vansina 1966, 174, 230–34.

[35] Roberts 1976, 157–62.

[36] See South Africa–Zimbabwe and Malawi–Zambia.

[37] Roberts 1976, 162.

[38] Another PCS, Luba, was located near the border but did not affect it. The Luba state was located to the northwest of Msiri and Kazembe, which placed it unambiguously within the original sphere of influence drawn for the Congo Free State at Berlin. Consequently, it does not appear that any other powers contested this claim or attempted to secure treaties. Like the Lunda, the Luba had weakened over time and became tributaries to Msiri by the 1890s. Luba came into contact with Congo Free State agents in the mid-1890s and rebelled until 1905, when they were defeated (Vansina 1966, 242–43).

[39] In addition to the mentions above of the Luapula, see also Map D between pp. 167–68 in Vansina 1966.

new border gave Britain all the territory associated with Kazembe.[40]

C.3.6 Cameroon–Nigeria

Overview. Originally formed in 1885 as an interimperial border between German Kamerun and British Nigeria. Major revisions occurred in 1893 (new segment), 1919 (large territorial transfer: British Cameroon to Nigeria), and 1961 (large territorial transfer: Southern Cameroons to Cameroon). A historical political frontier (PCS: Borno) directly affected the border. The primary feature is minor rivers. Secondary features are topography (mountains), towns/villages, infrastructure (roads), straight lines (non-astronomical), and a major lake (Chad).

Forming and revising the border. Britain established its first colonial presence in modern-day Nigeria at Lagos in 1849, but the Foreign Office was highly skeptical of financial commitments in West Africa. Starting in 1883–84, Britain began to pursue a more active policy in the Niger Delta. Germany impeded this effort when, on the basis of a treaty secured with a ruler along the Cameroon estuary, it unexpectedly declared a protectorate over Cameroon in July 1884, albeit with vague territorial claims.[41] To avoid conflict, Britain acceded to Germany's new claims, and in return Germany supported British claims over the Niger River at the Berlin Conference that began later that year.[42] Britain and Germany began to separate their spheres of influence in a series of exchanges between April 29 and June 16, 1885.[43] Amid these exchanges, on June 5, Britain formally declared a protectorate over the Niger Districts.[44] These initial agreements concerned only the areas closest to the coast.[45] Britain and Germany engaged in numerous subsequent exchanges to determine the border,[46] with the final agreement to finalize the Anglo–German border occurring in 1913.[47] The northern extent of the border was initially determined in 1893,[48] which we code as a major revision. To be conservative in our coding, we do not code another major revision during the German period, although the sheer volume of formal correspondences would suggest that the border continued to evolve in non-trivial ways.

Major revisions occurred after Germany lost control of Cameroon during World War I.[49] In 1919, Britain and France partitioned the German territory into spheres for themselves. France gained the larger territory in the east, which bordered French Equatorial Africa; and Britain gained small territorial segments in the west, Southern and Northern Cameroons, each of which bordered Nigeria.

[40] Despite incorporating various local features, one product of the border revision was the oddly shaped Congo Pedicle. According to Wikipedia, "The Congo Pedicle is an example of the arbitrary boundaries imposed by European powers on Africa in the wake of the Scramble for Africa, which were set by European interests and usually did not consider pre-existing political or tribal boundaries." In this case, exactly the opposite is true. The border was shifted specifically to incorporate existing state frontiers. Combined with the watershed segment, this created a geographic oddity that did not exist with the original straight lines.

[41] Hertslet 1909, 693.

[42] Crowe 1942, 124–26; Wesseling 1996, 190–91.

[43] Hertslet 1909, 868–74.

[44] Hertslet 1909, 117, 123.

[45] See the 1887 map in Sanderson 1985*a*.

[46] Hertslet 1909, 880–81, 903, 910–11, 913–15, 930–934, 937–42.

[47] Brownlie 1979, 553.

[48] See the map in Hertslet 1909, 914–15.

[49] Brownlie 1979, 553–55.

We code a large territorial transfer because both British Cameroons shifted to Nigeria. In 1961, Northern Cameroons voted to join Nigeria and Southern Cameroons voted to join Cameroon. We code a large territorial transfer because Southern Cameroons shifted back to Cameroon. Thus, the contemporary Cameroon–Nigeria border follows the original alignment as far north as the northern extent of Southern Cameroons, and follows the 1919 alignment north of that.

The documents describing the borders are extremely detailed. For example, the southern sectors between the Gamana and Cross rivers and between the Cross River and the Bight of Biafra rely primarily on the Agreements of March 11 and April 12, 1913. These sectors are outlined in painstaking detail in thirty parts in the former agreement and twenty-one parts in the latter, using references to specific natural landmarks such as thalwegs and ridges while noting the exact distances between these markers. Various segments are also delimited in relationship to specific roads while villages are partitioned between Britain and Germany.[50] The northern part of the border that was revised as a result of the World War I partition, between the Lake Chad tripoint (major lake) and Mount Kombon, is first outlined in forty-one parts in the 1919 Milner-Simon declaration; and then meticulously outlined and expanded upon in 138 parts in the 1928 Exchange of Notes using various natural landmarks such as rivers, marshes, and waterholes in addition to multiple villages and roads as reference points. Although coding a primary feature is less straightforward than in most cases, based on these documents we code minor rivers as the primary feature. The other features are secondary, in addition to straight lines (non-astronomical), which occur in small segments shown in Google Maps.

PCS Borno. This historical political frontier directly affected the border. The original Anglo-German border partitioned the Borno Emirate between these empires during a period in which this historical state had been conquered and was governed by a foreign (African) warlord, Rabih. Following World War I, all the German-controlled portion of Borno was incorporated into British Northern Cameroons, which in part reflected Britain's reaction to agency by the ruler of Borno. Britain governed Northern Cameroons as an extension of various provinces of northern Nigeria, including the German province of Borno as the Dikwa Emirate within Nigeria's Borno province. British and German Borno were formally reunited within the same country in 1961 when residents of Northern Cameroons voted in a plebiscite to gain independence and join Nigeria rather than Cameroon.

Control over Borno reflected extensive negotiations. Britain and France each sought to sign a treaty with the Shehu of Borno in the 1890s, but the traditional ruling dynasty was overthrown by the foreign warlord Rabih before either reached Borno.[51] Amid the complicated tripartite negotiations among Britain, France, and Germany over the area near Lake Chad, Borno was partitioned between British Nigeria and German Kamerun in a treaty signed between the two powers in 1893.[52] Yet the powers were aware of the historical limits of Borno. Britain and France signed their own border treaty in this area in 1904, which ensured that all Borno territory west of the border with Cameroon would be British. They "readjust[ed] the boundary to the Komadugu Yobe . . . [so] that the whole of Borno would be British . . . this new border was chosen by the British and French because it

[50] Brownlie 1979, 558.
[51] Hiribarren 2017, 46–47.
[52] Hiribarren 2017, 62.

already was the boundary of Borno."[53] The British subsequently repurposed the parts of the Borno state it controlled to create an eponymous province. "The kingdom of Borno became a 'province' and metropolitan Borno an 'emirate.' Its former vassals were turned into 'divisions' whereas its former fiefs were called 'districts.'[54] Between 1902 and 1914, Britain engaged in four different revisions of the provincial borders to incorporate pieces of territory that previously paid tribute to the historical state of Borno.[55]

During World War I, Britain and France negotiated over how to divide German Kamerun among themselves. "It was agreed that the British should obtain the German province of Borno, 'Deutsch Bornu.' On 24 February 1916 the British Foreign Secretary, Sir Edward Grey, sent a telegram to Francis Bertie, the British ambassador in Paris: 'We would, therefore, accept M. Picot's proposals, asking only that the territory of the Emir of Bornu should not be divided, and should go to us for administrative reasons."[56] Britain succeeded in this aim. "The former region of 'Deutsch Bornu' became part of the British Northern Cameroons which ... was directly administered by the Northern Region of Nigeria and the province of Borno."[57]

The Shehu of Borno provided assistance to Britain during World War I, which influenced Britain's push to unify the state. The Shehu proclaimed in a letter sent to Lugard, Governor-General of Nigeria: "I have assisted the Resident with all that has been required, horses, donkeys, bullocks, carriers and corn, and everything that he asked for ..."[58] Britain partially joined the Borno Division (Nigeria) and the Dikwa Division (Northern Cameroons) by unifying the Shehu title in 1937,[59] although these divisions could not be formally combined because Northern Cameroons was a British Mandate Territory. "The plebiscites of 1959 and 1961 finally restored to Nigeria the effective frontiers of the former kingdom of Bornu."[60]

C.3.7 Cameroon–Gabon

Overview. Originally formed in 1885 as an interimperial border between German Kamerun and French Gabon. Major revisions occurred in 1894 (new segment), 1908 (changed features: lines to local features), 1911 (large territorial transfer: Neukamerun to Germany), and 1919 (large territorial transfer: Neukamerun to France). The primary feature is minor rivers.

Details. Germany declared a protectorate over Cameroon in 1884 and settled some initial frontiers with Britain between April and June of 1885.[61] The French first established themselves along the coast of Gabon in the 1840s after signing a treaty with the mpongwè king (*oga)* Denis Rapontchombo in 1839. They signed treaties with other local rulers along the coast in the 1840s. Libreville, founded in 1848 by several French and freed African slaves (similar to Free-

[53] Hiribarren 2017, 78. This also justifies our coding of Borno as directly affecting the Niger–Nigeria border.
[54] Hiribarren 2017, 99.
[55] Hiribarren 2017, 100–1.
[56] Hiribarren 2017, 134.
[57] Hiribarren 2017, 137.
[58] Hiribarren 2017, 137.
[59] Hiribarren 2017, 144–46.
[60] Anene 1970, 284.
[61] See Cameroon–Nigeria.

town in Sierra Leone) became a modest trading post from which French colonial expansion in Equatorial Africa began. By 1862, French authority extended along most of the littoral of Gabon, and the Berlin Conference recognized French claims inland.[62]

The two European powers agreed to a division between France's Congo territories and German Cameroon in December 1885. France's Congo territories, which in 1910 became French Equatorial Africa, included Gabon, Congo, Central African Republic, and Chad; and we jointly discuss their border with Cameroon because these colonies were not distinguished during the earlier Franco–German agreements. The initial frontier between the spheres of influence began at the mouth of the Campo River on the Atlantic and, after a short river segment, followed a latitude parallel as far east as the 15°E longitude meridian.[63] In terms of contemporary countries, this initial division affected the present border as well as Cameroon–Congo (Fr.) and Cameroon–Equatorial Guinea.

Both France and Germany perceived this initial division as provisional, as they continued to compete for influence in the borderlands. Gabonese historian and later ambassador Mangongo-Nzambi (1969) recounts the efforts of French missions to define the borders of Gabon, and in particular to extend the French area of influence vis-à-vis Germany, by signing treaties with local chiefs. For the (French) Crampel Mission of 1888–89, Mangongo-Nzambi states, "From a political point of view, it seems that Crampel was tasked with detecting signs of German influence in northern Gabon; indeed, he writes in his report that of the fourteen treaties signed with the forty-four principal chiefs seen during this trip, '6 treaties are particularly important, as they assert France's rights to the borders of German possessions.'"[64] In 1894, France organized a new mission the Committee of French Africa organized a new mission led by François Joseph Clozel (a colonial administrator much less well-known than Brazza). The Committee tasked Clozel "to draw as far west and north as possible . . . a new itinerary opposed to German claims."[65] Later that year, a Franco-German Protocol determined a rough outline of Cameroon that stretched as far north as Lake Chad (following an Anglo-German agreement in 1893 with the same northern limit), with the initial border mostly following straight lines. This yielded major revisions for both the present border and for Cameroon–Congo (Fr.), and an initial border for both Cameroon–Central African Republic and Cameroon–Chad.

The Franco–German Convention of 1908 in Berlin replaced many of the straight lines with natural features such as rivers,[66] which we code as another major revision. Captain Cottes (France) and Major Foerster (Germany) led a joint mission in 1905–6 to delimit the French Congo-German Cameroon border.[67] The Convention relies on the detailed work of the Cottes-Foerster mission to delineate the border. The mission visited every town along the rivers that were used as borders.

In the Treaty of Fez in 1911, France ceded parts of French Equatorial Africa to Germany, which increased Kamerun's territory from 465,000 to 760,000 km^2.[68] This was part of the resolution to

[62] Deschamps 1963, 381; Mangongo-Nzambi 1969; Curtin et al. 1995; Office of the Geographer 1968, 2.
[63] See Hertslet 1909, 653–55 and the accompanying map.
[64] Mangongo-Nzambi 1969, 18.
[65] Boulvert 1983, 11–12.
[66] Brownlie 1979, 532–30.
[67] Cottes 1911.
[68] DeLancey, DeLancey and Mbuh 2019, 371.

France's and Germany's contestation over Morocco.[69] The Neukamerun (New Cameroon) territories that France ceded yielded a German outlet to the Atlantic south of Spanish Guinea as well as new territory in the east between the Logone and Chari rivers. However, France conquered this territory during World War I and reintegrated into French Equatorial Africa in 1919.

Regarding features, the present border consists entirely of the minor rivers Kye/Kje, Campo/Ntem, Kom, and Aina/Ayina.[70] These rivers replaced the parallel that originally comprised the Gabon portion of the Franco-German division. This is the same parallel that comprises most of the Cameroon–Equatorial Guinea border and part of the Cameroon–Congo (Fr.) border.

C.3.8 Cameroon–Congo (Fr.)

Overview. Originally formed in 1885 as an interimperial border between German Kamerun and French Congo. Major revisions occurred in 1894 (new segment), 1908 (changed features: lines to local features), 1911 (large territorial transfer: Neukamerun to Germany), and 1919 (large territorial transfer: Neukamerun to France). The primary feature is minor rivers. Secondary features are a straight line (parallels/meridians) and a minor watershed.

Details. Cameroon–Gabon provides background and major dates. The present border follows, going west to east, a parallel (2°10'20"N) for 85 miles, a drainage divide for approximately 21 miles, and minor rivers (Ngoko, Kadei) for 219 miles until the border reaches its tripoint with the Central African Republic.[71]

C.3.9 Cameroon–Central African Republic

Overview. Originally formed in 1894 as an interimperial border between German Kamerun and French Congo; Ubangi-Shari (CAR) became a distinct colony in 1903. Major revisions occurred in 1908 (changed features: lines to local features), 1911 (large territorial transfer: Neukamerun to Germany), and 1919 (large territorial transfer: Neukamerun to France). The primary feature is minor rivers. Secondary features are topography (valleys), towns/villages, infrastructure (roads), and straight lines (non-astronomical).

Details. Cameroon–Gabon provides background and major dates. The border primarily follows rivers (including the Kadei and Buri/Danje) and streams, in addition to parallels, valleys, roads, and villages.[72] The border also contains various straight-line (non-astronomical) segments.

C.3.10 Cameroon–Chad

Overview. Originally formed in 1894 as an interimperial border between German Kamerun and French Congo; Chad became a distinct colony in 1903. Major revisions occurred in 1908 (changed features: lines to local features), 1911 (large territorial transfer: Neukamerun to Germany), and 1919 (large territorial transfer: Neukamerun to France). Historical political frontiers (PCS: Borno;

[69] See Algeria–Morocco.
[70] Office of the Geographer 1971*a*, 2, 4. See Loungou 1999 for further detail.
[71] Office of the Geographer (1971*b*, 2) provides further detail on the alignment.
[72] Brownlie 1979, 525, Office of the Geographer 1970*a*, 4.

other state: Bagirmi) directly affected the border. The primary feature is minor rivers. Secondary features are a major lake (Chad), towns/villages, and straight lines (non-astronomical).

Details. Cameroon–Gabon provides background and major dates. Most of the border consists of rivers; in descending order of length, the Logone, Shari, and Mayo Vaimba. Because the Logone is the longest feature, we code minor rivers as the primary feature and major rivers as a secondary feature. The northern reach of the border is Lake Chad, which was an object of intense competition among Britain, France, and Germany (see Chad–Nigeria). The towns of Koundé (Central African Republic) and Lamé (Chad) delineate parts of the border.[73] The border also consists of various straight-line (non-astronomical) segments.

Historical political frontiers affected the present border. France gained a treaty with the fledgling state of Bagirmi in 1897 in which it acknowledged the Shari River as its western boundary, which it affirmed in an agreement with Borno in 1900. "In both treaties, the emphasis was put on the Shari River as the boundary between both polities. Thus at two levels, the Shari was a boundary. In 1894, at a European level, the Shari River was supposedly the common boundary between the French and the German possessions; in 1900, at a local level, Borno and Bagirmi recognised the river as their common boundary. . . . The French intentions became clearer as this agreement could be for them a guarantee that, if they did not obtain Borno, they would at least obtain Bagirmi whose authority was here clearly recognised and defined."[74]

C.3.11 Cameroon–Equatorial Guinea

Overview. Originally formed in 1885 as an interimperial border between Germany and France; in 1900, France ceded to Spain a piece of continental territory that corresponds with present-day Equatorial Guinea, which yielded a bilateral border with German Kamerun. The primary feature is a straight line (parallels/meridians). A secondary feature is a minor river.

Details. The Franco–German Protocol of 1885 determined borders between their spheres of influence.[75] Included within the French sphere were areas of Spanish interest on the coast,[76] dating back to their occupation of Fernando Po and other islands.[77] The protocol decreed a border that would follow the Campo River from the coast until reaching the 10°E longitude, at which point it was to follow the corresponding parallel line until hitting 15°E, which lies west of Equatorial Guinea.

In 1900, France ceded to Spain a piece of continental territory that corresponds with present-day Equatorial Guinea.[78] This cession yielded a bilateral border with German Kamerun that followed the borders established in 1885 (hence we do not code a major revision in 1900). The latitude-parallel segment is longer than the river segment, and hence we code the former as the primary feature and the latter as a secondary feature.

[73] Brownlie 1979, 535–36; for a detailed alignment, see Office of the Geographer 1970*b*, 2–6.
[74] Hiribarren 2017, 66–67.
[75] See Cameroon–Gabon.
[76] Brownlie 1979, 545.
[77] See Equatorial Guinea–Gabon.
[78] See Hertslet 1909, 1166 for the text.

C.3.12 Equatorial Guinea–Gabon

Overview. Originally formed in 1900 as an interimperial border between Spanish Guinea and French Gabon. The primary feature is straight lines (parallels/meridians). A secondary feature is a minor river.

Details. Spanish colonialism in the Gulf of Guinea began in 1778 with a Portuguese cession of the islands of Fernando Po and Annabon.[79] Spain also had expansive claims to continental territory in Equatorial Africa.[80] However, it never occupied this area—into which France expanded in the late nineteenth century.[81] The Franco–Spanish Convention of 1900 determined the border,[82] which consists primarily of meridian lines (1°N latitude parallel and 11°20'E longitude meridian) and a shorter segment that follows the Rio Muni (a minor river).

C.3.13 Congo (Fr.)–Gabon

Overview. Originally formed in 1903 as an intraimperial border when France distinguished the constituent territories of French Equatorial Africa. Major revisions occurred 1912, 1918, 1936, and 1946 (small territorial transfers). The primary feature is minor rivers. Secondary features are minor watersheds and straight lines (parallels/meridians).

Details. France had claims to the coast of Gabon dating back to the 1840s and established claims in Congo-Brazzaville (French Congo) in the early 1880s.[83] Brazza became the governor of French territories in the Congo from 1885 to 1897. These territories comprised today's Republic of the Congo (Congo Fr. or Congo-Brazzaville then) and Gabon, but Brazza also organized expeditions between 1889 and 1894 that traveled farther north and established a new post along the Ubangi River at Bangui, the capital of Ubangi-Shari (and the capital of the contemporary Central African Republic). The French also established the military territory of Chad in 1900 after defeating the Sultanate and army of Rabih az-Zubayrin. Thus, by turn of the century, there were three areas of conquest: the French Congo (French Congo and Gabon existed separately for a few years in the 1880s but were combined between 1888 and 1903),[84] the upper regions along the Ubangi, and the incipient military territory of Chad.

A 1903 Decree formally divided French territories in Equatorial Africa into Gabon, Moyen-Congo (French Congo or Congo-Brazzaville), Ubangi-Shari (Central African Republic), and Chad; and delimited their borders, even if roughly. These territories spanned hundreds of kilometers, in particular from north to south, which prompted the French to create the federation of French Equatorial Africa (AEF). Administratively similar to French West Africa, AEF enabled centralized transfers of resources among colonies while simultaneously allowing local administrators to attend to colony-specific matters.

Colonial border revisions in 1912, 1918, 1936, and 1946 concerned intra-imperial territorial transfers in the southern half of the border area, which comprises the provinces of Haut-Ogooué (even-

[79] Hertslet 1909, 1162.
[80] Hertslet 1909, 1163; Clarence-Smith 1986, 537.
[81] See Congo (Fr.)–Gabon.
[82] See Hertslet 1909, 1166.
[83] See Cameroon–Gabon and Congo (Fr.)–Congo (Bel.).
[84] Office of the Geographer 1968, 2.

tually became part of Gabon), Niaria (Congo), and Nyanga (Gabon).[85] "The interterritorial boundary changed a great deal during the colonial period but the final change occurred in 1946," when Gabon regained the province of Haut-Ogooué.[86]

With regard to alignment, the border relies on rivers and streams and the Ogooué-Congo watershed for the majority of its length. A 20km parallel and a few other shorter straight lines connect these features. For example, moving north to south, the first fourth of the border is defined by the Lvindio and Djoua rivers; the watershed between the Ogooué and the Congo river defines the second fourth; and the southern half is comprised in part by a tributary of the Ogooué (Letili) and the Nyanga river.

C.3.14 Central African Republic–Congo (Fr.)

Overview. Originally formed in 1903 as an intraimperial border when France distinguished the constituent territories of French Equatorial Africa. Major revisions occurred in 1926, 1936, 1937, and 1942 (small territorial transfers). The primary feature is a minor watershed. A secondary feature is straight lines (non-astronomical).

Details. The colonies that came to comprise French Equatorial Africa were originally divided in 1903, although with very rough borders.[87] The border underwent multiple major revisions after 1903 because districts were shuffled between the two colonies in 1926, 1936, 1937, and 1942. As a result of these changes, the border until 1926 ran northwest to southeast whereas the final border runs southeast to northeast.[88] Approximately three-fourths of the border follows the drainage divide between the Lobaye and Ibenga Rivers.[89] The remainder is a straight line running from the tripoint with Cameroon to the intersection of the watershed and the Makalé River.

C.3.15 Chad–Nigeria

Overview. Originally formed in 1906 as an interimperial border between French Chad and British Nigeria. The primary feature is a major lake (Chad).

Details. After Britain and Germany used Lake Chad to partition their spheres of influence in 1893, France sought access to Lake Chad to join its Equatorial, West, and North African empires; which ended with the killing of the warlord Rabih in 1900.[90] They agreed to use the lake as a frontier for their neighboring colonies in a series of agreements concluded between 1906 and 1908. The original border lay entirely within Lake Chad as a straight line that connected the Chad–Niger–Nigeria tripoint (1910) and Cameroon–Chad–Nigeria tripoint (1931), each of which also lay within Lake Chad. The dates in parentheses denote the year in which each of these tripoints was finalized,

[85] Brownlie 1979, 642–47; for example, the 1918 arrêté states that territories between Gabon's southern border and Cabinda (Portuguese Angola) are part of French Congo (*Moyen Congo*. While the territory was very well mapped by the 1920s (Meunier 1929), the border nonetheless differed greatly from the one at independence because of subsequent changes.

[86] Brownlie 1979, 641.

[87] See Congo (Fr.)–Gabon.

[88] Old Maps Onlien.

[89] Brownlie 1979, 593; Office of the Geographer 1974*b*, 2–3.

[90] Crowder 1968, 105–7; Anene 1970, 123–24; Wesseling 1996, 212–18.

although we do not code these as key dates because they constituted minor alterations of the border already agreed upon. However, Lake Chad has contracted by roughly 90% since the 1960s.[91] Therefore, what was originally a lake border is instead a straight-line border on a contemporary map.

C.3.16 Central African Republic–Chad

Overview. Originally formed in 1909 as an intraimperial border within French Equatorial Africa. Major revisions occurred in 1920, 1935, and 1936 (small territorial transfers), and 1941 (changed features: clarify local features). The primary feature is minor rivers. Secondary features are towns/villages, infrastructure (roads), and straight lines (non-astronomical).

Details. Between 1900 and 1906, the colony of Ubangi-Shari (modern-day CAR) and the military territory of Chad were two separate territories of the French Congo[92] with unclear borders, and were merged in 1906. An arrêté in 1909 established the first border separating the two territories, which "changed substantially from time to time." Chad was again detached from Ubangi-Shari in 1914 but became a colony of French Equatorial Africa only in 1920,[93] when another major border revision occurred. In 1925, the district (*département*) of Moyen-Shari was transferred to Ubangi-Shari. In 1936, Moyen-Shari was restored to Chad and the district of Logone was transferred as well. The border was settled in a general way in a 1941 AEF Decree.[94] Although we lack information about exactly what changed in this decree, we code it as a major revision to clarify local features because of the general imprecision of the border throughout this period. Nonetheless, further administrative work was still needed to actually delineate the border, which suggests that coding this as the final year of major revisions may in fact be conservative.[95]

Regarding alignment, the majority of this border follows rivers, mainly the Lobaye and Ibenga rivers, although there is no documented definition of detailed segments along river sectors. The border also incorporates roads, villages, and short straight-line segments.[96]

C.3.17 Chad–Niger

Overview. Originally formed in 1900 as an intraimperial border to divide French West Africa (Niger) and French Equatorial Africa (Chad). Major revisions occurred in 1913 (new segment), 1931 (large territorial transfer: Tibesti mountains to Chad) and 1939 (changed features: clarify local features). The primary feature is straight lines (non-astronomical). Secondary features are a major lake (Chad), other water bodies (wells), and topography (mountains, dunes).

Details. The border area between Chad and Niger, located mostly in the Sahara Desert, was one of the last regions of Africa to be explored: "Three expeditions were organized with the aim of joining France's possessions in central, west, and north Africa. An expedition marched southward from

[91] https://www.esa.int/ESA_Multimedia/Images/2019/03/Lake_Chad_s_shrinking_waters.

[92] The federation of French Equatorial Africa was not established until 1910.

[93] Office of the Geographer 1968, 2–3. This process was analogous to Niger joining the French West African federation.

[94] Brownlie 1979, 589–90

[95] Office of the Geographer 1968, 3–4.

[96] Brownlie 1979, 590.

Algeria, a second moved eastward from the Niger area, and a third traveled northward from the French Congo all meeting on April 21, 1900 at Kousseri (Fort Foureau) [adjancent to N'Djamena] south of Lake Chad. The campaign was successful in linking together France's African possessions and in expanding the French Congo territories northward of Lake Chad."[97]

The first maps showing the boundary date from around 1900,[98] but addressed only the southern half. The northern half of the border was originally formed 1913,[99] which constitutes a major revision. A memorandum in 1931 transferred the Tibesti mountains from Niger to Chad and delimited the boundary with some detail, apparently for the first time. The last changes appear to have taken place around 1939, when "a French boundary delimitation commission (often referred to as a demarcation commission) is known to have worked in the area north of Lake Chad."[100] This is presumably why maps up to that point "show[ed] a single straightline sector from Molo due south to the tripont [inside Lake Chad],"[101] whereas later maps showed a rugged border. It is unclear what prompted French administrators to make these changes. Overall, this was an unimportant intraimperial border in which "colonial authorities never had the ability or the will to restrict all movement and circulation."[102]

At the micro-level, the northern half of the border uses straight lines that separate the Tibesti mountains (Chadian since 1931) from the Grand Erg de Bilma (dune sea), a largely uninhabited region. Population density increases in the bottom third of the border. The southern half of the border runs Siltou (a well), Firkachi (a well), and ends in Lake Chad.

[97] Office of the Geographer 1966, 3. Lefèbvre 2015 provides further historical background on the Niger-Chad region.
[98] Office of the Geographer 1966, 3.
[99] Lefèbvre 2015, 278.
[100] Office of the Geographer 1966, 4.
[101] Brownlie 1979, 610.
[102] Lefèbvre 2015, 325.

C.4 East Africa

C.4.1 Congo (Bel.)–Tanzania

Overview. Originally formed in 1885 as a unilateral frontier of the Congo Free State; German East Africa was formed later that decade. The primary feature is a major lake (Tanganyika).

Details. During 1884–85, King Leopold's International Association of the Congo signed a series of bilateral agreements with each of the major powers to establish the existence of and preliminary frontiers for the Congo Free State.[1] The Circular of August 1, 1885 officially created the Congo Free State and established its preliminary boundaries, of which one component was "The median line of Lake Tanganyka."[2] Because of the early foundation of the present border and the lack of subsequent disputes, "[t]he alignment is not the exact object of any particular international agreement." Agreements such as the Belgian–German Convention of 1910 (see Congo (Bel.)–Rwanda) refer to the median line of Lake Tanganyika as the border.[3]

C.4.2 Kenya–Tanzania

Overview. Originally formed in 1886 as an interimperial border between British East Africa and German East Africa. A major revision occurred in 1890 (enclave transfer). A historical political frontier (other state: Zanzibar) indirectly affected the border. The primary feature of the border is straight lines (non-astronomical). Secondary features are a major lake (Victoria), minor lakes, and topography (mountains).

[1] See Angola–Congo (Bel.).

[2] Hertslet 1909, 553. Every early map recognized the entire length of Lake Tanganyika as constituting an eastern frontier of the Congo Free State; see the map in Hertslet 1909, 604–5. German East Africa, which was created later (see Kenya–Tanzania), contested its frontiers with the Congo Free State starting in the 1890s. However, these disputes concerned only the area north of Lake Tanganyika; see Congo (Bel.)–Rwanda and Burundi–Congo (Bel.).

[3] Brownlie 1979, 687.

Details. Britain's interest in East Africa dated back to the 1860s when it established influence over the Sultan of Zanzibar, who claimed territory in the interior of East Africa. In 1885, Germany made territorial claims in East Africa on the basis of treaties secured by the explorer Carl Peters with local rulers. This spurred a reaction by Britain, who had previously been reluctant to establish administrative responsibilities in East Africa.[4] The Anglo–German Agreement of 1886 determined their spheres of influence in East Africa east of Lake Victoria.[5] The border consists of two separate straight lines stretching from the Pacific Coast to Lake Victoria, and a kink that connects the lines incorporates Mount Kilimanjaro into Tanzania.[6] This kink runs through two minor lakes, which are secondary features.

The main components of the present border were reaffirmed in the Anglo–German Agreement of 1890.[7] However, a major revision occurred because Germany renounced its enclave protectorate over the enclave of Witu, located on the coast of modern-day Kenya. Witu had previously been a key element of German claims in East Africa, which made this a significant territorial concession.[8]

The Arab-governed state of Zanzibar indirectly affected the present border. Anglo-German negotiations in East Africa were intertwined with territorial claims by the Sultan of Zanzibar. Ultimately, though, these claims did not affect the present border because the Sultan's territory eventually was incorporated into the European colonies (hence indirect effect). In 1886, a joint declaration by Britain, France, and Germany established the limits of the Sultan's possessions in continental East Africa,[9] which Britain and Germany reaffirmed in their bilateral treaty later that year. These agreements affirmed for the Sultan a strip of territory ten miles inland from the coast running roughly from the Tana River in Witu southward to the Rovuma River.[10] Thus, much of the coast for the British possession and all of the coast for the German possession bordered the territory agreed upon for the Sultan. Later in the 1880s, the Imperial British East Africa Company and German East Africa Company each secured agreements with the Sultan to lease his territory. Germany received a permanent cession of the territories in 1890 upon gaining direct administrative control over its colony.[11] By contrast, the British government retained the leasing arrangement throughout the colonial period, even though the Sultan's territory was de facto part of the East Africa Protectorate and, later, Kenya.[12] In sum, the European powers engaged in lengthy and sometimes contentious

[4] Wesseling 1996, 135–45.

[5] See Hertslet 1909, 882–87 for the text.

[6] McEwen 1971, 137; Brownlie 1979, 923. Contrary to popular myth, Mount Kilimanjaro was not in fact a birthday present from Queen Victoria to her grandson Kaiser Wilhelm II (Hatchell 1956).

[7] See Tanzania–Uganda.

[8] Wesseling 1996, 145.

[9] Hertslet 1909, 874–76.

[10] See Ajayi and Crowder's 1985 East Africa map.

[11] McEwen 1971, 208, fn. 2.

[12] The British government formally recognized the Sultan's territorial rights upon establishing crown rule in 1895, but the Sultan agreed for his territory to be governed as part of Kenya (see the various treaties presented in Hertslet's section on the East Africa Protectorate, pp. 331–87; and Roberts-Wray 1966, 761–62). In 1920, the East Africa Protectorate became Kenya Colony and the Kenya Protectorate, the latter of which corresponded to the coastal strip leased from the Sultan. Despite nominally affirming his sovereignty over the coast, in practice, the Protectorate was under "the same system of administration as the Colony, and all Colony legislation, in the absence of any provision to the contrary, applies to it" (Hailey 1950*a*, 87;

diplomatic posturing with the Sultan of Zanzibar.[13] In the present case, his sphere of influence ultimately affected internal administrative frontiers only rather than an external border between colonies. However, the Sultan was a strategic actor who influenced European considerations about border formation.

C.4.3 Mozambique–Tanzania

Overview. Originally formed in 1886 as an interimperial border between Portuguese Mozambique and German East Africa. Major revisions occurred in 1894 and 1919 (changed features: switched local features). A historical political frontier (other state: Zanzibar) indirectly affected the border. The primary feature is minor rivers. Secondary features are a major lake (Malawi) and straight lines (parallels/meridians).

Details. Portugal had established colonial outposts on the coast of modern-day Mozambique dating back to the sixteenth century, stretching as far north as Delgado Bay. An Anglo–Portuguese Treaty of 1817 formalized Britain's early recognition of Portugal's sphere of influence in southeastern Africa: "upon the eastern coast of Africa, the territory lying between Cape Delgado and the Bay of Lorenco Marques."[14] Germany made its initial claims in East Africa in 1885, which emanated from farther north (Witu in modern-day Kenya and Zanzibar). The Anglo–German Agreement of 1886, which formed the Kenya–Tanzania border, stated that the southern limit of Germany's territory was the Rovuma River, which lies just north of Delgado Bay. The Rovuma was confirmed as the primary feature of the present border in the German–Portuguese Agreement of 1886 and in the Anglo–Portuguese Treaty of 1891.[15]

The eastern-most part of the border conflicted with alternative territorial arrangements involving the Sultan of Zanzibar and resulted in a major revision in 1894.[16] The exact location of the southern boundary of the Sultan's coastal territory was determined by a joint Anglo-French-German commission in 1886, and was found to "follow the course of the Minengani River from its mouth for a distance of five sea miles, from which point it continued westward along the parallel as far as the right bank of the Ruvuma."[17] This decision created a small strip of land directly south of the Rovuma River.[18] that belonged to both Portugal, by their 1886 agreement with Germany; and to the Sultan of Zanzibar, by the determination of the joint European commission in 1886. Unlike Germany and Britain, Portugal did not reach an agreement with the Sultan to lease his territories in the interior. Instead, in 1887, Portugal broke off diplomatic relations with the Sultan and forcibly occupied this territory, which prompted a response by Germany in 1894 to seize possession.[19] An agreement in 1894 (although not ratified until 1909) divided the disputed territory into two parts,

see also Hailey 1950*b*, 5). In 1963, the Sultan agreed to formally relinquish the coastal territory as Kenya gained independence (Roberts-Wray 1966, 762).

[13] See Mozambique–Tanzania.

[14] Quoted in Hertslet 1909, 985.

[15] See Hertslet 1909, 704, 1017.

[16] Kenya–Tanzania describes the establishment the Sultan's European-recognized coastal territory.

[17] McEwen 1971, 207.

[18] See the map in McEwen 1971, 208.

[19] The Sultan of Zanzibar was no longer a legally relevant actor at this point. In 1890, Germany gained a permanent cession of all the Sultan's territories south of the Kenya–Tanzania border (McEwen 1971, 208, fn. 2).

which we code as a major border revision. Germany gained the northern part, called the Kionga Triangle. This contained the port of Kionga, which "offered better harbour facilities than the main mouth of the Ruvuma, and . . . was also the only really navigable entrance to the river." Portugal gained the southern portion, which included Tungi Bay.[20]

In 1919, following Germany's defeat in World War I, Portugal gained international recognition over the Kionga Triangle.[21] This major revision restored the pre-1894 border. Consequently, the border consists almost entirely of the Rovuma River, except for a short segment with a latitude parallel (the western-most 32 miles of the 470-mile border) that ends at Lake Malawi. Thus, a minor river is the primary feature and a major lake and a straight line (parallels/meridians) are each secondary features. A historical political frontier (PCS: Zanzibar) indirectly affected the border because the revision in 1894 was affected by territory that was deemed (as of 1886) to belong to the Sultan of Zanzibar. We would have coded direct influence of PCS had the border not subsequently changed back in 1919; the restoration of the border to consist only of the Rovuma River in the east meant that the historical limits of Zanzibar were no longer relevant for the border.

C.4.4 Tanzania–Zambia

Overview. Originally formed in 1890 as an interimperial border between German East Africa and what became British Northern Rhodesia. The primary feature is a major watershed (Congo). Secondary features are major lakes (Tanganyika, Malawi) and infrastructure (road).

Details. The British South Africa Company (led by Cecil Rhodes) extended northward Britain's sphere of influence in southern Africa.[22] Germany's original interests in East Africa emanated from farther north in Witu and Zanzibar.[23] Cecil Rhodes' interactions with Germany, which formed the Tanzania–Zambia border, were "relatively straightforward. Rhodes' chief concern in this direction was to gain access to Lake Tanganyika, the great waterway to the north. To this end he arranged for Harry Johnston, the British consul in Mozambique, to collect treaties in 1889 from Mambwe, Lungu and Tabwa chiefs between Lakes Malawi and Tanganyika. This was simple enough: the chiefs were glad to accept Johnston's offers of British 'protection' since they were all more or less harassed by Bemba raiders or East African traders."[24]

The Anglo–German Agreement of 1890 delimited their spheres of influence in Africa, and the same clause of the treaty formed the present border and that for Malawi–Tanzania.[25] The border connected the southern tip of Lake Tanganyika with the northern tip of Lake Malawi, closely but not exactly following Stevenson's Road.[26] This road represented an early attempt by the Livingstonia mission located along Lake Malawi to map the area and to facilitate European trade, while also

[20] McEwen 1971, 210.
[21] McEwen 1971, 212–13.
[22] See Zambia–Zimbabwe.
[23] See Kenya–Tanzania.
[24] Roberts 1976, 157.
[25] See Hertslet 1909, 900 for the text.
[26] The title of the relevant section of the treaty is: "German Sphere. To the South. Rovuma River to Lakes Nyassa and Tanganyika (Stevenson's Road)." A map of Stevenson's Road accompanied the treaty; see Hertslet 1909, 900–1.

indicating their strategic interest in the major lakes.[27] Consequently, we code infrastructure (road) as a secondary feature of the border. The Tanzania–Zambia sector in particular is guided by the Congo watershed in between Lake Tanganyika in the west and the tripoint with Malawi in the east.[28]

A PCS group located close to the border, the Bemba, did not appear to affect the border despite early contact with Europeans. By the 1870s, various European travelers had visited Bemba country and the first nearby missionary station was established in 1878. The Bemba reversed course in the 1880s by eschewing any contact with Europeans. However, "the region had no special appeal for white prospectors, traders or farmers. From a European point of view, it was politically important only because it lay between the rapidly expanding spheres of influence of the Congo Free State, the Germans in East Africa, and the British in southern Africa."[29] The British South Africa Company established rule over the Bemba territory later in the 1890s, after the present border had been formed.[30]

C.4.5 Malawi–Tanzania

Overview. Originally formed in 1890 as an interimperial border between German East Africa and what became British Nyasaland. The primary feature is a major lake (Malawi). Secondary features are minor rivers, a major watershed (Congo), and infrastructure (road).

Details. The process of forming the present border was identical to that for Tanzania–Zambia (for background on the distinction between the two British colonies and on the importance of Lake Malawi, see Malawi–Zambia). The majority of the length of the border consists of Lake Malawi, although there are disputes regarding whether the border is the shoreline of the lake (as established by the Anglo–German Agreement of 1890) or the median line of the lake, which represented the extent of de facto German sovereignty.[31] The remainder of the border consists almost exclusively of two minor rivers, the Songwei and Katendo. The Congo watershed forms the tripoint with Zambia, which we code as a secondary feature. We also code infrastructure (road) as a secondary feature for reasons described in Tanzania–Zambia.

C.4.6 Tanzania–Uganda

Overview. Originally formed in 1890 as an interimperial border between German East Africa and British Uganda. A major revision occurred in 1910 (changed features: lines to local features). A historical political frontier (PCS: Buganda) directly affected the border. The primary feature is a major lake (Victoria). Secondary features are a straight line (parallels/meridians) and a minor river.

[27] See Roberts 1976, 153–54 and here.

[28] The treaty says specifically that the boundary "approaches most nearly the boundary of the geographical Congo Basin defined in the 1st Article of the Act of Berlin," and thus does not exactly follow the watershed. See also McEwen 1971, 218–20 and Brownlie 1979, 1017.

[29] Roberts 1973, 231.

[30] Marks 1985*b*, 451–53.

[31] Brownlie 1979, 958.

Details. Britain and Germany's first agreement concerning East Africa, concluded in 1886, concerned only territory east of Lake Victoria.[32] Consequently, "the position of Uganda under this new arrangement remained uncertain."[33] During the 1870s, British missionaries had established a presence within the PCS Buganda, to which any European mentions of "Uganda" at this time referred.[34] As of 1890, British and German agents were actively competing to secure a treaty with the *kabaka* (ruler) of Buganda.

The Anglo–German Agreement of 1890 specified the 1°S parallel as the Anglo–German border between the eastern bank of Lake Victoria and the frontier of the Congo Free State.[35] This spanned the entire length of the present border and that for Rwanda–Uganda. This particular latitude parallel was chosen specifically to place "Uganda (&c.)" within the British sphere, which achieved a key goal of the lead British negotiator: "[H. Percy] Anderson was, above all, interested in securing Uganda."[36] Conversely, the acceptance by the German negotiator of a boundary at 1°S revealed that, despite their interest in the area, "the Germans had no serious hopes of acquiring Uganda" because of Britain's insistence that Buganda fell within the hinterland of its coastal possessions in East Africa.[37] Thus, the PCS Buganda directly affected the present border.[38]

A major revision to the border occurred in 1910. Between 1890 and 1910, Britain, Germany, and Leopold/Belgium engaged in two interconnected disputes that concerned most bilateral borders in this area: (1) whether Ruanda-Urundi lay entirely within the German sphere or partly within the Belgian sphere, and (2) how Britain's prior claims to Mount Mfumbiro affected the territorial limits of Uganda, German East Africa, and the Congo Free State. We discuss these two disputes in Congo (Bel.)–Rwanda and Rwanda–Uganda, respectively, which were settled by the Kivu-Mfumbiro Conference of 1910. The consequence of this settlement for the present border was that the western-most part deviated southward from the 1°S parallel to add additional territory to Uganda.[39] For this segment, the border is the Kagera River. Overall, the Lake Victoria segment is 62% of the length of the contemporary border, the parallel segment is 29%, and the Kagera River segment is 9%.[40] Thus we code major lake as the primary feature and each of straight lines (parallels/meridians) and minor rivers as secondary features.

A puzzling element of the present border, given our theoretical expectations, is that the *entire* land portion of the border was not shifted to the Kagera River in 1910.[41] Henry Morton Stanley "would have preferred to see the boundary shifted from the parallel to the Kagera which [in *Through the Dark Continent*, published in 1880] he regarded as the natural boundary between Uganda and

[32] See Kenya–Tanzania.

[33] Ingham 1958, 41. Thus, Brownlie's 1979, 941 claim that the earlier 1886 Anglo–German Agreement placed Uganda within the British sphere of influence is incorrect.

[34] McEwen 1971, 228.

[35] See Hertslet 1909, 900–1 for the text.

[36] Louis 1963*a*, 19.

[37] Louis 1963*a*, 18–19.

[38] Subsequent agreements between Britain and the *kabaka* made Buganda the core territorial element of the Uganda Protectorate (see Kenya–Uganda).

[39] See the map in Uganda Department of Lands and Surveys 1962, 75.

[40] Calculations by authors using Google Maps.

[41] The Kagera runs roughly horizontal for the entire length of the land portion of the Tanzania–Uganda border, ending at Lake Victoria.

the kingdoms of Karagwe and Buziba."[42] In various boundary negotiations, British negotiators raised this point but did not forcefully press the issue.[43] The latitude-parallel segment of the border created two anomalous pieces of territory that lie between the Kagera River and the meridian. The Kagera Triangle is a small amount of Ugandan territory located just west of Lake Victoria, where the Kagera lies north of the meridian line. The Kagera Salient is a larger amount of Tanzanian territory (approximately 600 square miles) located farther west, where the Kagera lies south of the meridian line.[44] In 1978, President Idi Amin of Uganda claimed to annex the Kagera Salient to Uganda, although the subsequent war with Tanzania prevented any transfer of territory from occurring.

C.4.7 Rwanda–Uganda

Overview. Originally formed in 1890 as an interimperial border between German East Africa and British Uganda. A major revision occurred in 1910 (changed features: lines to local features). Historical political frontiers (PCS: Buganda, Rwanda) directly affected the border. The primary feature is minor rivers. A secondary feature is topography (mountains).

Details. The Rwanda–Uganda border was formed by the same process as the Tanzania–Uganda border, as Rwanda was not a distinct territorial entity until German East Africa was partitioned following World War I. On the basis of the information provided in the Tanzania–Uganda entry, we code Buganda as directly affecting the present border.

Here we describe the Mount Mfumbiro controversy that shaped the western-most portion of the division between Uganda and German East Africa, and hence the present border. The Anglo–German treaty of 1890 divided their territories west of the eastern shore of Lake Victoria using the 1°S latitude parallel.[45] However, the 1890 treaty also created an element of uncertainty in the Anglo–German border because of an additional stipulation that placed the ill-defined and largely unexplored territory constituting Mount Mfumbiro into the British sphere of influence: "It is however, understood that, on the west side of the lake, the [German] sphere does not comprise Mount Mfumbiro; if that mountain shall prove to lie to the south of [1°S latitude], the line shall be deflected so as to exclude it, but shall, nevertheless, return so as to terminate at the [frontier of the Congo Free State]."[46] "The mountain was mentioned in the 1890 agreement because [Henry Morton] Stanley supposedly had a treaty which ceded it to the [Imperial] British [East Africa] Company and because [Prime Minister] Salisbury thought it would be 'scarcely permissible' to 'transfer' to Germany anything to which Britain had a claim."[47] Yet despite the idiosyncratic way in which this mountain entered the treaty, it had long-lasting ramifications for settling the boundary between British and German possessions.

The original western terminus of the border between Uganda and German East Africa was the

[42] McEwen 1971, 278. See also Brownlie 1979, 1014–15 for a summary of evidence of this "natural" frontier.
[43] McEwen 1971, 278–80; Louis 1963*a*, 48, 85–86; Louis 1963*b*.
[44] See McEwen 1971, 266 for a map.
[45] See Tanzania–Uganda.
[46] Hertslet 1909, 899–900.
[47] Louis 1963*a*, 26.

eastern frontier of the Congo Free State, the 30°E longitude meridian, dating back to 1885.[48] This frontier became problematic for British claims when, in 1902, a mixed Anglo–German commission to mark their bilateral border discovered that the mountain range corresponding to Mount Mfumbiro lay west of the 30°E longitude meridian. Consequently, the territory that Germany ceded to Britain was within the boundaries established for the Congo Free State.[49] This complicated the British effort to secure control over the mysterious Mount Mfumbiro, which was believed to be "a most suitable area for European occupation."[50] However, it appeared that the main factor motivating Britain's interest in Mount Mfumbiro was its strategic interest in Lake Kivu,[51] which supports with our contention that major water bodies were of inherent importance to the European powers.

In 1910, the Kivu-Mfumbiro Conference involving Belgium (who directly governed the Congo as of 1908), Britain, and Germany settled the disputed borders. "Legal argument, however, proved to be inconclusive and the boundary disputes were settled on the basis of compromise, rather than historical title, nor was the legal identity of Mufumbiro ever determined." Mount Sabinio, in the Mfumbiro region, became the tripoint that separated Uganda, Congo, and German East Africa.[52] This was located south of the 1°S latitude parallel (representing a German concession), west of the 30°E longitude line (representing a Belgian concession),[53] and the British concession was that they did not gain the entire "region to which the term 'Mufumbiro' was assumed to apply."[54] Britain also failed to gain territory connected to Lake Kivu, but accepted the settlement because "British subjects were to have unrestricted access to Lake Kivu."[55]

Amid the negotiations culminating in the 1910 conference, a central goal of German diplomacy was to retain the historical kingdoms of Rwanda and Burundi entirely within the German sphere. Although this dispute primarily concerned the Congo Free State,[56] this German interest was reflected in the agreement they signed with Britain as part of the conclusion of the conference. Article 5 states: "In proposing this line the delegates have been guided by the principle that districts belonging politically to Ruanda shall, if possible, remain part of Ruanda. Therefore it is agreed:—1. Should it appear that the territory marked a, b, c, d, e, or a portion thereof, belongs to Ruanda, then the whole of that territory or the aforesaid portion, as the case may bee, shall revert to Germany. In this even the frontier between Uganda and German East Africa shall be so rectified as to give to Great Britain an area exactly equal to that which shall have reverted to Germany . . . "[57] On this basis, we code the historical state of Rwanda as directly affecting the border. Nonetheless, "[t]he demarcation of 1911 was to leave a segment of traditional Rwanda within the Kigezi District of Uganda."[58]

[48] See Congo (Bel.)–Rwanda.
[49] McEwen 1971, 269–70.
[50] Louis 1963*a*, 52.
[51] Louis 1963*a*, 57, 63–64, 67, 85.
[52] McEwen 1971, 272.
[53] See Congo (Bel.)–Uganda.
[54] Brownlie 1979, 989.
[55] Louis 1963*a*, 91.
[56] See Congo (Bel.)–Rwanda.
[57] Quoted in Brownlie 1979, 992.
[58] Brownlie 1979, 989.

Consequently, in 1910, Germany agreed to shift the border south of the 1°S parallel to accommodate the British claim to Mount Mfumbiro. Moving east from the tripoint at Mount Sabinio, the border follows various minor rivers: Chizinga (Kissinga), Kachwamba-Kakitumba, Muvumba (a derivative of the Kagera River), and it intersects the Kagera at the tripoint with Tanzania.[59] Thus we code minor rivers as the primary feature and mountains as a secondary feature.

C.4.8 Congo (Bel.)–Rwanda

Overview. Originally formed in 1885 as a unilateral frontier of the Congo Free State; German East Africa was created later that decade. A major revision occurred in 1910 (changed features: lines to local features). A historical political frontier (PCS: Rwanda) directly affected the border. The primary feature is a major lake (Kivu). Secondary features are minor rivers and topography (mountains).

Details. A series of international agreements in 1885 established preliminary borders for the Congo Free State; at the time, Europeans lacked clear territorial claims to the area east of the Congo Free State. In the Notification in August 1885 that officially established the Congo Free State, the eastern boundary north of Lake Tanganyika was a (non-astronomical) straight line that connected the northern tip of the lake to the intersection of a latitude parallel (1°S) and a longitude meridian (30°E).[60]

Germany and the Congo Free State engaged in a long-running dispute regarding whether the border placed all of Rwanda and Burundi into the German sphere, or partly (mainly Rwanda) into the Congo. Germany had signed a bilateral treaty in 1885 that officially accepted Leopold's territorial claims to 30°E longitude as the Congo's eastern boundary in the area of present-day Rwanda, but this border in fact differed original map upon which Germany and Leopold had agreed in 1884. In that map, a curved arc ran between the northern tip of Lake Tanganyika and what later became the British sphere.[61] The arc (1884) was located farther west of the straight line (1885), and thus included more territory for what later became German East Africa.[62] Yet when Germany accepted the new map in 1885, "German colonialism in east Africa had hardly begun; only the most rapid imperialists could foresee the possibility that one day German East Africa might border the Congo . . . One arbitrary line was as good as another; in any case the boundaries did not directly affect German claims."[63]

In the 1890s and 1900s, Europeans actively explored the area in between the 1884 arc and 1885 line.[64] They discovered that this territory contained part of the historical kingdom of Rwanda as well as all of Lake Kivu.[65] The revelation that this territory contained objects of strategic interest initiated what became known as the Kivu controversy. Following the "discovery" of Rwanda and of Lake Kivu in 1894 by a German explorer, in 1895 Germany officially notified Congolese

[59] Brownlie 1979, 991.

[60] Later, the latitude parallel comprised the preliminary Rwanda–Uganda border and the longitude meridian comprised the preliminary Congo (Bel.)–Uganda border.

[61] See Figure 1. See also Tanzania–Uganda.

[62] See Kenya–Tanzania.

[63] Louis 1963*a*, 7.

[64] Louis 1963*a*, Ch. 5.

[65] See the map in the front matter of Louis 1963*a*.

authorities that they desired a revision to the boundary accepted in 1885, using the alternative 1884 boundary as leverage. Congolese troops occupied the area in 1896, but a mutiny by Belgian troops enabled Germany to establish territorial control in 1898. During this period, Germany seized territory as far west as the Ruzizi River and Lake Kivu.[66] This territory corresponded with the historical frontiers of Rwanda and Burundi,[67] and ultimately ended up determining the present border at the 1910 Kivu-Mfumbiro Conference,[68] which constituted a major border revision.

Germany continually pressed its claims for Rwanda and Burundi. Their case, on the basis of the 1884 arc, "was far from strong—it would never win in arbitration—but obviously the Germans could not be expected to yield any part of Ruanda-Urundi. The Ruzizi-Kivu boundary was mandatory."[69] Throughout the ensuing negotiations, Germany and Britain each consistently pressed for "natural" borders against Congo's claim to retain the meridian. This underscores our contention that water bodies, in particular when they could be associated with historical political frontiers, served as a focal point in border negotiations. "The arguments presented in 1910 were basically the same as those used when the region was opened up in the 1890s. In the long run the German case proved the most forceful—natural and ethnic frontiers, so far as possible, should not be violated . . . The imperial powers began with arbitrary boundaries, but they finished with natural frontiers and minute on-the-spot delimitation. . . . The Germans and British claimed to uphold natural frontiers, but if they appear as champions on the side of Africans, it is at least in part because it was to their advantage to press the Congo State for natural boundaries. . . . There was agreement between Britain and Germany that Ruanda-Urundi should not be divided; but none of the three powers hesitated to divide the smaller ethnic groups."[70]

Ultimately, Lake Kivu is the primary feature of the border, comprising the middle segment. The Ruzizi River, which extends as far north as Lake Kivu, comprises the southern-most segment of the border, and thus minor rivers are a secondary feature. North of Lake Kivu, the border connects four mountains (Hehu and Sabinio) and volcanoes (Karissimbi and Vissoke), with Mount Sabinio forming the tripoint with Uganda.[71]

C.4.9 Burundi–Congo (Bel.)

Overview. Originally formed in 1885 as a unilateral frontier of the Congo Free State; German East Africa was created later that decade. A major revision occurred in 1910 (changed features: lines to local features). Historical political frontiers (PCS: Rwanda, Burundi) directly affected the border. The co-primary features are a major lake (Tanganyika) and a minor river.

Details. The Burundi–Congo (Bel.) border was initially formed and later adjusted by the same processes that yielded the Congo (Bel.)–Tanzania border (the Lake Tanganyika segment of the present border, which dates back to 1885) and the Congo (Bel.)–Rwanda border (the Ruzizi River segment of the present border, which supplanted the 30°E longitude meridian in 1910). These two

[66] Louis 1963*a*, 44.
[67] Louis 1963*a*, 112.
[68] See Rwanda–Uganda.
[69] Louis 1963*a*, 85.
[70] Louis 1963*a*, 93–94.
[71] Brownlie 1979, 674–75.

segments comprise essentially the entirety of the Burundi–Congo (Bel.) border, and we code these as co-primary features.

We code PCS Burundi as directly affecting the present border, even though the documentary evidence that Louis (1963*a*) presents for European diplomacy during Kivu controversy mentions Germany's aim to secure control of Rwanda but not Burundi. The likely reason is that the territory encompassed by the discrepancy between the 1884 arc and 1885 line (discussed in the Congo (Bel.)–Rwanda entry) was located at the heart of the Rwanda kingdom but was more peripheral to Burundi's traditional territorial limits. Thus, we would expect a lesser footprint in the diplomatic records. Yet there is much supportive evidence that Burundi was central to Germany's negotiating position as well. Historically, "[t]he western frontier of Ruanda-Urundi was marked by Lake Kivu and the Ruzizi river,"[72] which indeed became the border between German East Africa and the Congo Free State in 1910. Germany began to administer Urundi in 1896, following the establishment of a military station in Usumbura, and later established civilian administration. Germany deliberately governed each of Ruanda and Urundi differently than the rest of German East Africa because of their historical states, including the establishment of the Urundi Residency in 1906.[73] Even if Germany primarily staked its PCS-related claims in the Kivu negotiations on the territorial integrity of Rwanda, the Germans had unambiguous interests in Burundi as well and consistently claimed a border that ensured Burundi was not partitioned, either.

C.4.10 Kenya–Uganda

Overview. Originally formed in 1896 as an intraimperial border when Britain distinguished British East Africa from Uganda. Major revisions occurred in 1900 (changed features: clarified local features), 1902 (large territorial transfer: Uganda's original Eastern Province to Kenya), and 1926 (large territorial transfer: Uganda's Rudolf Province to Kenya). Historical political frontiers directly (PCS: Buganda; decentralized group: Turkana) and indirectly (white settlement: British Kenyans) affected the border. The primary feature is a major lake (Victoria). Secondary features are minor rivers, topography (mountains), infrastructure, and straight lines (nonastronomical).

Details. The Anglo–German Agreement of 1890 established Uganda (which, at the time, meant specifically the precolonial state of Buganda) as within Britain's sphere of influence.[74] In 1892, the Imperial British East Africa Company secured a treaty with the Kabaka.[75] After several years of tumultuous corporate rule, in 1893, the Company relinquished its authority and the British government secured a new agreement with the Kabaka. In 1894, the British government formally reversed its earlier reluctance to establish administrative control of the area by declaring a protectorate over Uganda.[76] The protectorate comprised "Uganda proper" and was explicitly based upon the 1893 agreement with "Mwanga, King of Uganda."[77]

We code 1896 as the initial formation of the Kenya–Uganda border. In that year, the Foreign

[72] Louis 1963*a*, 112.
[73] See Burundi–Rwanda.
[74] See Tanzania–Uganda.
[75] Hertslet 1909, 392; see pp. 345–50 for the Company's foundational charter.
[76] Ingham 1958, 43–62.
[77] Quoted in Hertslet 1909, 392–96.

Office issued a Notification that created the East Africa Protectorate (the predecessor to modern-day Kenya), which included "all the territories in East Africa, now under the Protectorate of Her Majesty, except the Islands of Zanzibar and Pemba and the Uganda Protectorate."[78] In 1900, Britain signed an agreement with the Kabaka of Buganda that delineated precise borders for a territory explicitly referred to as the "Kingdom of Uganda."[79] We code this as a major revision because of the vagueness of the 1896 Notification. Although the 1900 agreement incorporated territory for the Uganda Protectorate located far east of Buganda's historical boundaries, we code PCS as directly affecting the border because the agreement was signed with the traditional ruler himself. Britain granted Buganda high levels of internal autonomy and made the Buganda Province a "separate unit" within the Uganda Protectorate.[80]

Another major border revision occurred in 1902. A sizable fraction of Uganda's territory was transferred to Kenya, including its entire Eastern Province and parts of other provinces.[81] Buganda indirectly affected the border in this case by preventing an even larger territorial transfer. British officials sought to place the entire Uganda Railway under a single administration; moving the border for British East Africa westward placed the terminus of the railroad (which began in Mombasa) within British East Africa. The alternative plan proposed was to transfer all of Uganda to British East Africa by federating the two. This was ultimately deemed infeasible because of Buganda. Even the main proponent of federation, Ugandan governor Harry Johnston, "recognized that Uganda was still centred upon the kingdom of Buganda while the affairs of the East Africa Protectorate radiated from the Arab coast."[82] By contrast, British officials had established minimal administrative presence in Uganda's Eastern Province, which lacked any centralized political organization and was deemed expendable. British officials exerted minimal effort to collect hut taxes because there "seemed to be no chiefs ... there was nothing approaching the centralized, quasi-feudal government of the Uganda kingdoms."[83] One result of this transfer was to make Lake Victoria the southern part of the border.

Buganda also proved pivotal for preventing future proposals to amalgamate Uganda and Kenya. These provide additional examples of Buganda indirectly affecting the border. One such proposal in the 1920s was to amalgamate Uganda, Kenya, and Tanganyika into a larger federation. Baganda officials repeatedly stated their opposition to a federation, and British officials were receptive to these complaints. The core fear by Ugandans was that Kenya would be the senior partner in the arrangement, which would subject Uganda to rule by the influential community of European settlers in Kenya. Amid a commission in 1924 to gather opinions, "The Kabaka and Lukiiko [council] of Buganda addressed a memorandum opposing closer political union lest the special position guaranteed to their kingdom by the 1900 Agreement should be jeopardized." They similarly protested to British officials in 1927 and 1929. The final serious discussion over federation occurred in 1931, during which a Joint Select Committee sat to debate the proposal. "The Committee was particularly impressed by the authority and skill with which the African witnesses, led by Mr Serwano Kulubya, Omuwanika [Treasurer] of Buganda, stated their case ... [and] convinced

[78] Quoted in Hertslet 1909, 383.
[79] See Hertslet 1909, 397–98 and the accompanying map.
[80] Ingham 1958, 92.
[81] See Brownlie 1979, 940 and Uganda Department of Lands and Surveys 1962, 75 for maps.
[82] Ingham 1957, 44.
[83] Matson 1958, 47.

their hearers that the British Government in the past had tended to underestimate the abilities of the leaders of African opinion."[84]

The final major revision to the border occurred in 1926 when the remainder of Uganda's Rudolf Province, which had been partially transferred in 1902, was transferred to Kenya. The motivating factor for this transfer was Britain's inability to establish effective control over the Turkana, a nomadic people who occupied "desirable grazing grounds" and regularly conducted violent raids against neighboring peoples.[85] In 1913, officers from the Northern Garrison stated "no attempt is to be made at present to introduce administration, nor should the Government be committed to any promises of protection." Administrators in neither Uganda nor British East Africa desired the responsibility of governing the Turkana. The key factor for British East Africa gaining the administrative responsibility was "probably that the Turkana raids were forcing the Suk, with their large herds of cattle, south into the Trans Nzoia 'white farming' area," a factor explicitly mentioned in correspondences in 1919 by the Governor of Uganda. For this reason, we code white settlements as indirectly affecting the border.[86] We also code other groups as directly affecting the border because documents produced during the territorial transfers in 1902 and 1926 explicitly stated that entire groups should be placed within a single colony: "The principle on which the demarcation proceeded was primarily that of avoiding tribal division, so that, for example, all the Kavirondo should be within East Africa [Kenya] . . . a tribal boundary, intended to leave the Turkana and Suk within British East Africa (Kenya)."[87]

An Order in Council from 1926 determined the final alignment of the border.[88] The four main landmarks it mentions are Lake Victoria, the mouth of the Sio River, Mount Elgon, and Mount Zulia. Besides Lake Victoria, these features are markers in between which various features, such as minor rivers, roads (infrastructure), and non-astronomical straight lines, comprise the actual border. Lake Victoria appears to be the primary feature, although it constitutes only a plurality of the border. All other features are secondary.

C.4.11 Kenya–Sudan

Overview. Originally formed in 1914 as an intraimperial border when Britain transferred territory between Uganda and Sudan; this became a bilateral border between Kenya and Sudan in 1926 when Britain transferred the Rudolf Province of Uganda to Kenya.[89] A major revision occurred in 1938 (changed features: switched lines). A historical political frontier (other group: Turkana) directly affected the border. The primary feature is straight lines (non-astronomical). Secondary features are a major lake (Rudolf/Turkana) and topography (mountains).

Details. Kenya lacked a bilateral border with Sudan until 1926, when Britain transferred the

[84] Ingham 1958, 180–87.

[85] Barber 1965, 38–41.

[86] Prior to the territorial transfers in 1902 and 1926, a major lake (Lake Turkana, formerly called Lake Rudolf) comprised a large segment of the Kenya–Uganda border. However, these two transfers placed the lake entirely within Kenya and therefore removed it as a feature of the border. See also Sudan–Uganda.

[87] Brownlie 1979, 942.

[88] Brownlie 1979, 943–45.

[89] This became the Kenya–South Sudan border in 2011.

Rudolf Province of Uganda to Kenya.[90] What became the Kenya–Sudan border was originally the eastern-most part of the Sudan–Uganda border, and had previously been specified by an Order in Council in 1914. The tripoint with Ethiopia was "the shore of the Sanderson Gulf, Lake Rudolf [Turkana]." For this reason, we code a major lake as a secondary feature of the border, even though the shoreline of Lake Turkana has shrunk over time to the point that Lake Turkana now lies entirely within Kenya. The 1914 border commission admitted the uncertainty about the Lake Turkana feature, stipulating that "if the northern portion of the Lake proves to be navigable, a strip of territory should be reserved to the Soudan affording a port on the Lake."[91] The border originally consisted of two straight-line (non-astronomical) segments, the primary features of the border. The first segment was located farther north and ran due west of Lake Turkana; this segment comprised about 80% of the total length of the border. At Jebel Mogila (a mountain), the border turned southwest, and this straight-line segment terminated at Jebel Harogo (another mountain).[92] Thus, mountains are secondary features of the border.

Future uncertainty arose about the border because of ambiguities in the 1914 Order, which stated that the northern part of the border would either follow a straight line (which is how it is depicted on historical maps) or "such a line as would leave to Uganda the customary grazing grounds of the Turkhana tribe." This ambiguous decree reflected Britain's inability to establish effective control over the nomadic Turkana,[93] and "create[d] a fluid boundary that depended upon the location of the northern limits of grazing-grounds occupied by a nomadic people."[94]

In the 1930s, administrators in Kenya and Sudan agreed upon a delineation of the customary grazing grounds of the Turkana, which yielded a new border in 1938 that lies entirely north of the original straight line. This new border, which we code as a major revision, was called the "Red Line," and the area between the Red Line and the original border is known as the Ilemi Triangle. However, the new border was never enacted in an official document, thus leaving the majority of the Kenya–Sudan legally undefined and the precise features of the border unclear.[95] Neither boundary has definitive status and each is referred to as either a "provisional administrative boundary" or an "international border" in different maps. An alternative line located even further north than the Red Line, known as the Blue Line, was proposed in 1947, but no international agreement was reached. Kenya maintained *de facto* control of the disputed region.

We code the features of the border based on those specified in 1914, and also code a direct effect of the Turkana (other group) given the goal of the Red Line to accommodate their grazing area.

C.4.12 Burundi–Rwanda

Overview. Originally formed in 1906 as an inter-district border within German East Africa. Historical political frontiers (PCS: Rwanda, Burundi) directly affected the border. The primary feature

[90] See Kenya–Uganda.

[91] Quoted in Taha 1978, 5.

[92] See the maps in McEwen 1971, 130; Brownlie 1979, 918; Uganda Department of Lands and Surveys 1962, 75.

[93] See Kenya–Uganda.

[94] McEwen 1971, 132.

[95] McEwen 1971, 132–34; Brownlie 1979, 917–19. On Google Maps, the border segment that was originally the northern straight line is shown as dashed, indicating its uncertainty.

is minor rivers. A secondary feature is minor lakes.

Details. Germany gained a sphere of influence over the area corresponding with Rwanda and Burundi in the 1890 Anglo–German agreement,[96] although Germany's claim over the entire territory controlled by these historical states was not formalized until Belgium accepted a revised border for the Congo Free State in 1910.[97] Germany first established an administrative presence in these historical kingdoms in 1896 with the formation of a military station at Usumbura.[98] From this post, it developed relations with the respective *mwami* (ruler) of each state and established coercive control over each territory. These territories were ruled jointly as part of the Usumbura district until 1906, after which point they were divided into separate residencies, Urundi in 1906 and Ruanda in 1907. This meant that the monarch in each retained governance powers but under the guidance of a German Resident. This contrasted with more direct rule elsewhere in German East Africa, which was divided into districts supervised by a Commissioner.[99] "The basic reason why Ruanda-Urundi was able to be administered in a fundamentally different way from the rest of the colony, however, was constant fear that too much interference with traditional Tutsi authority might incite an uprising that would be disastrous for German rule. The Tutsi could not be bullied and intimidated with the same success the Germany had had with Africans in other parts of the colony. And the German administration was flexible enough to recognize that different circumstances demanded different policies." In 1906, the Acting Governor of German East Africa proclaimed that "[t]he present tightly organized political structure of the sultanates offers a favourable opportunity to administer and develop culturally the natives through their traditional rulers with the least expense concerning paid administrators and least recourse to European force."[100]

We code 1906 as the formation of the border, upon the establishment of residencies, which "appear to have been based upon the territorial limits of the two Kingdoms as the German officials found them."[101] However, this "local customary boundary" was not formally described in legislation until the later period of Belgian rule (Brownlie reports an Ordonnance from 1949). Because there is no evidence that the boundary (or the perception thereof) between the two historical states changed over this period, we believe an earlier date that reflects the initial European administrative distinction between the two is more appropriate. This border reflects a direct effect of PCS.

Although the border did not change subsequently, the two PCS affected which states existed by (1) preventing amalgamation into the Belgian Congo after World War I and (2) separating Rwanda and Burundi into separate states upon independence. First, during World War I, Belgium militarily occupied Ruanda-Urundi and surrounding areas. They sought to use this territory as a bargaining chip, but their proposed territorial transfer fell through.[102] Belgium then sought, but failed, to

[96] See Tanzania–Uganda.
[97] See Congo (Bel.)–Rwanda and Burundi–Congo (Bel.).
[98] Louis 1963*a*, Chs. 12–14.
[99] Hailey 1950*a*, 212.
[100] Louis 1963*a*, 129.
[101] Brownlie 1979, 739.
[102] Louis 1963*a*, 232–56; McEwen 1971, 151–53. The Belgians sought to gain land in Portuguese-governed Angola where the Congo River meets the ocean, which would augment the Belgian Congo's narrow outlet to the ocean. They proposed a three-way trade of territory that also included Britain, who would have gained Ruanda-Urundi, and Portugal, who would have gained territory from Britain farther south in Central Africa. After this fell through, Belgium was left with a Mandate over Ruanda-Urundi, a

amalgamate Ruanda-Urundi into their neighboring colony of the Belgian Congo. "The Belgians thought it regrettable that they would not be allowed simply to absorb Ruanda-Urundi into the Congo. Ruanda-Urundi was to become a mandate of the League of Nations. 'This invention is no doubt unfortunate; . . . the ideas of President Wilson had a great influence.'"[103] The precolonial states prevented amalgamation because because Wilson's ideas about self-determination clearly applied to the well-defined polities in Rwanda and Burundi.

Second, African agency distinguished Rwanda and Burundi as separate territorial entities. Ruanda-Urundi became a League of Nations Mandate territory in 1922 and a United Nations Trust territory in 1946. Although it was legally a single colony, Belgium perpetuated indirect-rule policies that ensured the precolonial monarchies remained powerful and separate from each other. When the first representative institutions were established in 1952, Ruanda and Urundi were distinguished as separate *pays* and each gained their own *conseils superiéurs du pays*. Both Belgium and the United Nations, who oversaw the Trust Territory, aimed to preserve Ruanda-Urundi as a single country when independence became inevitable following the 1959 Leopoldville riots in the Belgian Congo. However, the Hutu-led Rwandan Revolution of 1959 that overthrew the Tutsi monarchy yielded a distinct institutional constellation than in Burundi, which had become a de facto constitutional monarchy.[104] When the UN Trusteeship Commission, whose aim "has always been the political unification of the two territories," met with leaders of Ruanda and Urundi in 1962, it "failed to convince them of the need to agree on unification. It had no other option therefore but to recommend . . . that the Republic of Ruanda and the Kingdom of Urundi should be regarded as two separate countries."[105] Therefore, actions by Africans on the ground and in an international forum were sufficient to preserve Rwanda and Burundi as distinct countries, which were separated by a boundary that itself reflected prior actions by precolonial African rulers.

Regarding alignment, the border mostly follows minor rivers,[106] which we code as the primary feature. The border starts from the Tanzania tripoint at the intersection of the Mwibu and Karega rivers, extends westward along the Karega, Kanyaru, and Luhwa rivers, and ends at the Congo tripoint at the confluence of the Luhwa and Ruzizi rivers. The border also incorporates several other minor rivers as well as two minor lakes (Cyohoha and Rweru), which we code as secondary features.

C.4.13 Rwanda–Tanzania

Overview. Originally formed in 1922 as an interimperial border between Belgian Ruandi-Urundi and British Tanganyika. A major revision occurred in 1924 (large territorial transfer: Gisaka to Rwanda). A historical political frontier (PCS: Rwanda) directly affected the border. The primary feature is a minor river.

Details. Prior to World War I, modern-day Tanzania (minus Zanzibar), Rwanda, and Burundi were collectively governed as German East Africa. Rwanda and Burundi were each distinguished from

territory they "did not want" and gained "almost by accident" (Louis 1963*a*, 255; McEwen 1971, 153).

[103]Louis 1963*a*, 256.

[104]Lemarchand 1970, 63–89.

[105]Latham-Koenig 1962, 294; see also Weinstein 1974.

[106]Brownlie 1979, 738–41.

the rest of German East Africa with their separate residencies. However, Germany did not establish a formal border to distinguish these historical states from the rest of the colony.[107]

The Rwandan state had historically been bounded to the east by the Kagera River, which was informally acknowledged by the German administration.[108] However, the initial border in drawn 1922 incorporated the district of Kissaka (alternatively, Gisaka), traditionally claimed by the *mwami* of Rwanda, into British territory. Britain's specific goal was to use this territory to construct a Cape-to-Cairo railroad. During the 1919 peace settlement, "Milner [British] confirmed the arrangement that Belgium would retain Urundi and Ruanda, with the exception of the eastern part of Ruanda necessary to the Cape to Cairo railway."[109] In response, in 1922, "an alliance between Musinga [the *mwami*], the Belgians and the Catholic Church (especially Cardinal Classe) defended the re-annexation of Gisaka to Rwanda."[110] They "emphasize[d] the social, political, and economic harm caused by the imposition of this arbitrary division and they urge[d] the eastward extension of the boundary to the *'natural frontier' of the Kagera River*" (emphasis added). When the League of Nations' Permanent Mandates Commission reviewed the claims, they highlighted that the agreement separated "one of the *richest and most civilised tracts* of the Kingdom of Ruanda" and decried the "'deplorable moral effect' that the present arrangement had on the local population and their strong protests" (emphasis added). In September 1922, the President of the Council wrote letters to British and Belgian officials, who agreed to alter the boundary to follow the Kagera River.[111] This was officially enacted in 1924, which we code as a major border revision that entailed a large territorial transfer. The Kagera River is the sole feature of the border. PCS exerted a direct effect both by creating the traditional limits of Rwanda and by pressuring for the revision in 1924.

C.4.14 Burundi–Tanzania

Overview. Originally formed in 1922 as an interimperial border between Belgian Ruandi-Urundi and British Tanganyika. A historical political frontier (PCS: Burundi) directly affected the border. The primary feature is minor rivers. Secondary features are topography (mountains) and a major lake (Tanganyika).

Details. In 1922, Ruanda-Urundi officially became a League of Nations Mandate territory under Belgium rule and Tanganyika became a British Mandate.[112] In that year, the British Mandate for East Africa described a boundary with Belgian possessions "in very general terms."[113] A protocol signed in 1924 delineated a more precise border, but this appeared to simply clarify elements from the 1922 alignment and thus did not constitute a major revision. A petition by the *mwami* of Burundi in 1948 prompted a discussion about revising the border. The *mwami* contended that Bufugi, included in Tanganyika, was traditionally part of his territory. However, the Trusteeship Council ruled against the petition because "the evidence showed that any alteration of the *status quo* would

[107] Neither Brownlie 1979, 744–52 nor McEwen 1971, 151–64 mention a border between Tanzania and either Rwanda or Burundi before 1922.
[108] Brownlie 1979, 983.
[109] Louis 1963*a*, 246.
[110] Mathys 2014, 155.
[111] McEwen 1971, 154–55.
[112] For the absence of a border during the period of German rule, see Rwanda–Tanzania.
[113] Brownlie 1979, 745.

be contrary to the express wishes of the overwhelming majority of the peoples of Bufugi."[114]

The primary feature of the border is various minor rivers: Ndyakalika, Muragarazi, Lugusi, Kahumo, Ruvubu, Ruvuvu, and Kagera. Secondary features are various mountain summits; and the westernmost part of the border is Lake Tanganyika, which formed a tripoint with the Belgian Congo.

[114] McEwen 1971, 159.

C.5 Northeast Africa and the Nile

C.5.1 Congo (Bel.)–Sudan

Overview. Originally formed in 1885 as a unilateral frontier of the Congo Free State; Britain claimed control over Sudan in the 1880s but did not occupy it until 1898.[1] Major revisions occurred in 1894 (large territorial transfer: Lado Enclave to CFS), 1910 (large territorial transfer: Lado Enclave to Sudan), and 1914 (large territorial transfer between Sudan and Uganda). The primary feature is a major watershed (Nile-Congo).

Details. The original frontiers of the Congo Free State in East Africa were determined in 1885,[2] which we code as the date of formation for the present border. In the area of what became the British territory of Sudan, the frontiers of the Congo Free State consisted entirely of a parallel (4°N) and a meridian (30°E).[3] The entire length of the border changed twice during the colonial period, consisting of the Nile River from 1894–1910 and the Nile-Congo watershed from 1910 onward.

The 1894 treaty between Britain and the Congo Free State underscored the strategic importance of the Nile River to the European powers.[4] Leopold recognized Britain's claim to the Nile in return for gaining territorial leases along the Nile.[5] The main strategic impetus behind the treaty for

[1] This became the Congo (Bel.)–South Sudan border in 2011.

[2] See Congo (Bel.)–Uganda.

[3] These were formally established in the Declaration of Neutrality in August 1885 that officially created the Congo Free State (Hertslet 1909, 552–53; also see the map between pp. 604–5).

[4] Earlier, the Anglo–German treaty of 1890 recognized British supremacy on the Nile by decreeing that the British sphere of influence reached as far north as "the confines of Egypt" (Hertslet 1909, 901).

[5] These leases are described in Article II of the treaty. See Hertslet 1909, 578–80 and the accompanying map as well as the maps in McEwen 1971, 237 and Uganda Department of Lands and Surveys 1962, 75.

Britain was to protect its sphere of influence over the Upper Nile, which it was unable to directly occupy because of the Mahdist rebellion in Sudan.[6] Britain feared French intervention along the Upper Nile. With the 1894 treaty, Britain sought to create a buffer against French expansion, but without hindering Britain's ability to displace the Belgians when Britain was able to occupy the Nile Valley.[7] In the treaty, the Congo Free State was assigned expansive leases along the Nile running as far north as the 10°N latitude parallel, where the town of Fashoda (the site of the 1898 Anglo–French showdown) is located.[8] However, France protested the treaty because of its own strategic interests in the Nile, which compelled Leopold to retract much of the leased territory. This eliminated the strategic value of the leases, from the British perspective.[9] The net result was that the Congo Free State gained a lease only over what became known the Lado Enclave, shown in Figure 1,[10] which resulted in the Nile comprising the entire length of the present border.[11]

[6]See Egypt–Sudan.

[7]Taylor 1950, 52–59; Wesseling 1996, 225–39.

[8]The details of the leases were quite complicated. The leased territory consisted of the area (a) south of the 10°N latitude parallel (this made Fashoda the far-east terminus), (b) east of both the Nile-Congo watershed and the 25°E longitude meridian, (c) west of the Nile, and (d) north of Lake Albert (from which the Albert Nile originates). This territory, in turn, was legally divided into two, as the part abutting the Nile-Congo watershed was leased permanently to the Congo Free State ("so long as the Congo territories as an Independent State or as a Belgian Colony remain under the sovereignty of His Majesty and His Majesty's successors") whereas the part abutting the Nile River would revert to British control after Leopold ceased to govern the Congo ("[t]his lease shall remain in force during the reign of His Majesty Leopold II, Sovereign of the Independent Congo State"). The dividing line for the permanent and personal-to-Leopold spheres was the 30°E longitude meridian, the original frontier between the Congo Free State and the British sphere (see Congo (Bel.)–Uganda).

[9]Later in 1894, France and the Congo Free State signed a treaty. Article IV stipulated that the Congo Free State was to renounce all territorial claims (a) west of 30°E longitude meridian and (b) north of the 5°30'N latitude parallel (Hertslet 1909, 569–71). The first stipulation meant that the Congo Free State renounced all the territory it had permanently leased from Britain. The second stipulation limited the northern frontier of the British-leased territory that was personal to Leopold. Underscoring France's strategic interest in the Nile, this new agreement "effectively removed the barrier between France and the upper Nile. On the other hand, the French allowed the Free State to take up that part of the lease which did not interfere with French plans (the left bank of the Nile as far north as Lado). They thus deserted their objection of principle that, since the Egyptian title to these territories was still valid, the British had no right to lease them. Their practical aim was, however, achieved: the main purpose of the Anglo-Congolese treaty had been defeated" (Taylor 1950, 68).

[10]This territory was named after the town of Lado, located in Egypt's Equatoria Province; see Egypt–Sudan. Specifically, it comprised the area (a) south of the 5°30'N latitude parallel, (b) east of the both the Nile-Congo watershed and the 30°E longitude meridian, (c) west of the Nile, and (d) north of Lake Albert (from which the Albert Nile originates).

[11]This arrangement remained unchanged by the end of the nineteenth century, despite an Anglo–Franco agreement in which France agreed to withdraw from the upper Nile (see Chad–Sudan) and the official formation of the Anglo–Egyptian Condominium of Sudan (see Egypt–Sudan). Renewed discussions between Britain and the Congo Free State did not result in an accord until 1906, which permanently annulled all the leased territory from the 1894 agreement except the Lado Enclave, which was specified to revert to the Sudanese government at the end of Leopold's reign over the Congo (Hertslet 1909, 584–85; McEwen 1971, 259). However, we do not code 1906 as a major revision because no territory was transferred then.

Following Leopold's death in 1909, the Lado Enclave reverted to British control. Britain initially transferred the entire Lado Enclave to Sudan in 1910. This major revision resulted in the Nile-Congo watershed comprising the entire border. In 1914, Britain transferred a southern portion of the Lado Enclave to Uganda. This major revision resulted in the easternmost part of the present border becoming the Congo (Bel.)–Uganda border. However, even after this territorial transfer, the Nile-Congo watershed continued to comprise the entire length of the present border.[12]

C.5.2 Congo (Bel.)–Uganda

Overview. Originally formed in 1885 as a unilateral frontier of the Congo Free State; Britain declared a protectorate over Uganda in 1894. Major revisions occurred in 1894 (changed features: lines to local features), 1910 (changed features: lines to local features), and 1914 (large territorial transfer: part of Lado Enclave transferred to Uganda). Historical political frontiers (PCS: Buganda, Bunyoro, Nkore) directly affected the border. The primary feature is a major watershed (Congo-Nile). Secondary features are major lakes (Albert, Edward), minor rivers, and topography (mountains).

Details. The present border was shaped entirely by agreements and transfers discussed in other entries, where we provide most of the background. Throughout the following, it is useful to disaggregate the present border into three segments: Lower (south of Lake Albert), Middle (the latitudinal length of Lake Albert), and Upper (north of Lake Albert). The map in Uganda Department of Lands and Surveys (1962, 75) provides a highly useful visual for all the alterations to the border.

The original border between the Congo Free State and Uganda consisted, nominally, entirely of the 30°E longitude meridian established in 1885 as a unilateral frontier of the Congo Free State.[13] The 1894 Anglo–Congo agreement, discussed in Congo (Bel.)–Sudan, altered the Middle portion from the meridian to the Nile-Congo watershed,[14] and the Upper portion from the meridian to the Nile River.[15] The meridian continued to comprise the Lower portion of the border.

The 1894 treaty proposed to alter the present border in one additional way, but this facet of the treaty (Article III) was withdrawn.[16] This non-enacted provision highlights the strategic importance of the Great Lakes to the powers and their desire to use them for transportation and commu-

[12] "Since 1906 no agreement has elaborated the description and no demarcation has occurred" (Brownlie 1909, 683).

[13] Britain established its sphere of influence in the area of modern-day Uganda via a treaty with Germany in 1890. This treaty specified that the western boundary of the British sphere was the Congo Free State, but "[t]he 30th meridian itself was not identified as the Congo State boundary in the 1890 agreement. This, so far as Britain was concerned, was no doubt intentional since proposals had already been put forward for an adjustment of the boundary between the Congo State and the British sphere of influence" (McEwen 1971, 234–35). One month before the Anglo–German agreement, William MacKinnon of the Imperial British East Africa Company (which governed British East Africa until 1893) had concluded a treaty with the Congo Free State, although the British government did not ratify the treaty (see footnote 18 for more discussion of the failed 1890 treaty).

[14] Article I of the treaty.

[15] Article II of the treaty.

[16] Hertslet 1909, 584.

nication infrastructure. Britain's only concrete territorial gain vis-a-vis the Congo Free State in the 1894 treaty was that Britain would gain a five-mile-long strip of territory between Lake Edward and Lake Tanganyika.[17] Because Lake Tanganyika was a free trade zone and was located directly north of Northern Rhodesia, this would have created an "all-red route" connecting British territories in the north and south. Germany strongly protested, which compelled Britain to withdraw this provision.[18]

The Lower, Middle, and Upper portions of the border were all changed in 1910, each for a different reason.

- The Lower portion was shifted from the meridian line to various water bodies located farther west (hence this revision added territory to Uganda). Moving south to north, these are the Ishasha River, Lake Edward (a major lake), and the Semliki River.[19] This reflected Britain's territorial gains related to the controversy over the Mfumbiro mountains, whose origins we discuss in Rwanda–Uganda.[20]
- The Middle portion was shifted east from the Nile-Congo watershed to Lake Albert. This was largely a technical revision that corrected an earlier geographical misconception by Europeans.[21]
- Between 1910 and 1914, the Upper portion was shifted westward from the Nile River to the Nile-Congo watershed. Because of Leopold's death in 1909, the Lado Enclave reverted to British control. This territory was originally transferred entirely to Sudan.[22] Thus, what we refer to as the Upper part of the present border was temporarily eliminated, and instead Lake Albert constituted its northern limit. In 1914, a southern portion of the Lado Enclave

[17] Lake Kivu, which is located in between Lake Edward and Lake Tanganyika, was unknown to Europeans at the time (Louis 1963*a*, 41).

[18] Earlier, in 1890, the Imperial British East Africa Company had concluded a treaty with the Congo Free State (the MacKinnon treaty, after the Company's president William MacKinnon) that included a similar strip of territory for the Company. British Parliament never ratified this treaty, in part because of German opposition (McEwen 1971, 235, 238).

[19] The Semliki River was used as a prominent border feature in the earlier failed treaty of 1890 (McEwen 1971, 235).

[20] "After three months of tedious diplomatic jousting Britain and Germany had obtained most of what they demanded from Belgium . . . Mount Sabinio in the Mufumbiro range was chosen to mark the new boundary tripoint of Uganda, German East Africa, and the Congo State. The 30th meridian, whose precise location had for so many years remained in doubt, was completely abandoned as a boundary and it no longer held legal or political significance" (McEwen 1971, 244).

[21] As McEwen 1971, 245 describes, "[t]he reason for this alteration is of interest since it illustrates a situation where the prior selection of a natural feature proved to be an unsuitable boundary. Before this part of the frontier was mapped by the Uganda-Congo Commission of 1907-8, it had been thought that the watershed lay sufficiently far from Lake Albert to give Britain some sizeable territory on the north-western shore. In the course of its survey, however, the commission discovered that the watershed ran very close to the shore and that the 'much vaunted British territory on the west of Lake Albert was apparently reduced to a strip not a mile wide of rough, rocky ground falling sheer into the lake.' Since this left 'only a cliff face to be administered by the British', it was abandoned to Belgium and the line was drawn through the lake instead."

[22] See Congo (Bel.)–Sudan.

was transferred from Sudan to Uganda.[23] Because the western frontier of the Lado Enclave was the Nile-Congo watershed, this transfer resulted in the watershed becoming the Upper portion of the present border. The alterations to the Upper portion in 1910 and 1914 also meant that the Nile River no longer formed any segment of the present border.

We code features of the border alignment based on the preceding description. The Nile-Congo watershed (the Upper portion) is the longest segment, and thus we code it as the primary feature. Two major lakes (Albert as the entire Middle portion, and Edward as part of the Lower portion) are secondary features. Various minor rivers comprise almost the entire remainder of the border (in the Lower portion), and we also code these as secondary features. Additionally, we code mountains as a secondary feature because of the tripoint at Mount Sabinio, which reflected the outcome of lengthy negotiations over Britain's claims to Mount Mfumbiro.

We code several PCS in Uganda (Buganda, Bunyoro, Nkore) as directly affecting the border. The initial settling of borders with the Congo Free State 1894 (April) occurred nearly simultaneously with the formal announcement of a Protectorate over Buganda (June, although voted upon in Parliament in April).[24] Throughout that same year, Britain expanded its influence among the major states west of Buganda, which were located close to the boundary with the Congo Free State. British actions included military occupation of Buganda and treaties with Nkore and Toro. In 1896, Britain formally added these territories to the protectorate. Their boundaries were formally determined in a series of agreements in 1900–1.[25] Although we lack direct documentary evidence, we consider it inconceivable that British officials would have acquiesced to borders (in either 1894 or 1910) that did not allow them to retain control over the entire territory claimed by these historical states.[26]

C.5.3 Djibouti–Somaliland (British)

Overview. Originally formed in 1888 as an interimperial border between French Djibouti and British Somaliland. The primary feature is a straight line (non-astronomical). Secondary features are infrastructure (caravan routes) and other water bodies (wells).

Details. Britain and France each sought territory in the Horn of Africa as strategic staging posts for Aden/India and Madagascar/Indo-China, respectively.[27] Each European power signed treaties with various local rulers in the 1880s and created formal protectorates. In 1888, they agreed to a border in an Exchange of Notes, which consists entirely of straight lines (non-astronomical), the primary feature. We code the elements that determined the location of lines as secondary features. The Agreement mentions various caravan routes (infrastructure) and wells.

[23] See Sudan–Uganda.

[24] See Tanzania–Uganda and Kenya–Uganda.

[25] Hertslet 1909, 397–403; Ingham 1958, 57–66.

[26] See also Congo (Bel.)–Rwanda, where we discuss Britain's support for Germany's similar contention over Rwanda.

[27] Sanderson 1985*b*, 651, 669–70; Hertslet 1909, 407–11, 628–33, 726–28; Brownlie 1979, 766–67; Clifford 1936, 289–90.

C.5.4 Eritrea–Sudan

Overview. Originally formed in 1891 as an interimperial border between Italian Eritrea and Britain's claimed sphere of influence over Sudan. A historical political frontier (other state: Egyptian Sudan) directly affected the border. The primary feature is topography (mountains). Secondary features are straight lines (non-astronomical) and other water bodies (water holes).

Details. Italy gained recognition over territory on the coast of the Horn of Africa in the late 1880s,[28] and Britain gained a sphere of influence over Egypt and Sudan in the 1880s.[29] A protocol in 1891 determined initial borders between the spheres of influence claimed by Britain and Italy. This initial treaty roughly traced what became the final borders, including from moving westward from Ras Kasar on the Red Sea to the 17°N 37°E meridian, and then south to the town of Sebderat. All these featured mentioned in the 1891 protocol are on or very close to the final border.[30] This boundary closely follows the boundary of Egyptian Sudan prior to the Mahdist conquest in the 1880s,[31] which are precisely the boundaries that Britain sought to claim for Egypt and Sudan.[32] A series of revisions, signed between Italy and the Egyptian government, occurred in 1895, 1897, 1898, 1899, 1901, 1903, and 1904.[33] However, the map in Hertslet (1909, 1116) shows that although these revisions changed the shape of Eritrea somewhat, overall they were relatively minor. Therefore, we do not code any subsequent major revisions.

We code the features of the border based off the detailed description of the border provided in 1903.[34] It references numerous mountains and hills, which we code as the primary feature. It also mentions straight lines (non-astronomical) and infrastructure (water holes), which we code as secondary features.

C.5.5 Kenya–Somalia

Overview. Originally formed in 1891 as an interimperial border between British East Africa and Italian Somaliland. A major revision occurred in 1925 (large territorial transfer: Jubaland to Italy). Historical political frontiers (decentralized group: Somali) directly affected the border. The primary feature is a straight line (parallels/meridians). Secondary features are straight lines (non-astronomical), a minor river, and other water bodies (wells).

Details. Britain gained recognition over the coastal parts of modern-day Kenya in the 1880s.[35] Starting in 1889, Italy gained European recognition of territory south of Ethiopia along the coast of the Horn of Africa, including over Mogadishu. This occurred in a series of agreements with the British East Africa Company and the Sultan of Zanzibar, as well as an earlier treaty with the Sultan of Mijertein (non-PCS).[36] Britain supported Italian claims in North East Africa in part to safeguard

[28] See Kenya–Somalia.
[29] Although France did not recognize this influence; see Chad–Sudan.
[30] Hertslet 1909, 949.
[31] See here.
[32] See Egypt–Sudan.
[33] See Hertslet 1909, 1108–18.
[34] Hertslet 1909, 1117.
[35] See Kenya–Tanzania.
[36] Mariam 1964, 196–97; Hertslet 1909, 1088–1103, 1119.

its control over the Nile.[37]

An Anglo-Italian protocol of 1891 determined the border, which consisted entirely of the Juba River.[38] As Britain established civil administration over the following decades, the area immediately west of the Juba River became Kenya's Jubaland Province. The western boundary was established as the 41°E longitude meridian in 1914. This boundary sought to contain all of the Somalis in British East Africa (Kenya), who were migrating westward, within the Jubaland Province. In 1924, Britain agreed to transfer the Jubaland Province of Kenya to Italy as "equitable compensation" for the massive amounts of territory that Britain had gained from Germany following World War I.[39] This transfer was implemented in 1925. However, prior to the agreement in 1924, Britain redistricted the northwestern corner of Jubaland's border to Kenya's Northern Frontier Province.[40] This redistricting decision resulted in some Somalis remaining in Kenya even after the territorial transfer, which comprised part of Somalia's irredentist claims after independence. Somalis (a decentralized group) directly affected the border despite getting partitioned, given Britain's earlier decision to create the Jubaland province specifically to encompass Kenya's Somali population. In addition to straight lines (the bulk of the border is a meridian, but there are also non-astronomical lines), the 1924 treaty and the consequent exchange of notes in 1925 mention a minor river (Daua) and wells.[41]

C.5.6 Somalia–Somaliland (British)

Overview. Originally formed in 1894 as an interimperial border between Italian Somaliland and British Somaliland. Historical political frontiers (decentralized groups) indirectly affected the border. The primary feature is straight lines (parallels/meridians). Secondary features are straight lines (non-astronomical) and towns/villages.

Details. Italy and Britain each gained recognition over territory on the coast of the Horn of Africa in the late 1880s.[42] These two powers determined the present border in a treaty in 1894. The treaty references various lines (parallels/meridians and non-astronomical), "tribes" (Girrhi, Bertiri, Rer Ali), and infrastructure (villages; Gildessa, Darmi, Gig-giga, Milmil).[43] We code straight lines (parallels/meridians) as the primary feature because the longest segment of the border is the 49°E longitude meridian. The other features are secondary, and decentralized groups are coded as indirectly affecting the border.

C.5.7 Eritrea–Ethiopia

Overview. Originally formed in 1896 as an interimperial border between Italian Eritrea and Ethiopia. Major revisions occurred in 1900 (changed features: clarify local features) and 1908

[37] See Eritrea–Ethiopia.

[38] Hertslet 1909, 948; see McEwen 1971, 115–28 for the following.

[39] This was part of the agreement for Italy to enter the war on the side of the Allied Powers; see McKeon Jr 1991, 151.

[40] See here for a map of the transferred territory.

[41] McEwen 1971, 118–19; Brownlie 1979, 889–91.

[42] See Kenya–Somalia and Djibouti–Somaliland (British).

[43] Hertslet 1909, 951.

(new segment). A historical political frontier (PCS: Ethiopia) directly affected the border. The primary feature is minor rivers. A secondary feature is straight lines (non-astronomical).

Details. Italy gained a foothold in Eritrea in 1869 when a Genovese shipping house purchased the Bay of Assab. The government gained direct control over the territory in 1882, yielding Italy's first colony. In 1885, Italy added Massawa, and in 1890 the colony of Eritrea was created, which joined the two.[44] Italy also sought to incorporate Ethiopia into its empire. It gained a treaty in 1889, the Wuchale (alternatively, Wichale or Uccialli) Treaty. In the Italian-language version, the treaty indicated an Italian protectorate (Ethiopia "consents to" or "must" conduct foreign relations with Italian advice). By contrast, in Amharic translation, it merely established a friendly relationship (Ethiopia "may" conduct foreign relations with Italian advice).[45] European powers accepted the Italian interpretation: the Anglo–German treaty of 1890 mentioned Italian influence in Abyssinia and an Anglo–Italian treaty of 1891 created a preliminary boundary between their spheres of influence.[46] Britain promoted Italian claims over Ethiopia to block France from gaining a foothold on the Nile.[47] British support made Italy "the major European power in the Horn of Africa" as of 1895.[48]

Emperor Menelik II of Ethiopia, however, exercised agency and blocked Italian suzerainty over his territory. This was the sole case in which a precolonial African ruler retained his sovereignty, as a result of defeating Europeans on the battlefield. Upon learning the European interpretation of his treaty with Italy, he immediately wrote a letter of complaint to Rome that rejected the European interpretation. In 1891, he issued a circular letter in 1891 to the European powers that claimed sovereignty over a broad area that included territory Europeans had already allocated to each other (in particular in the Anglo–Italian treaty of 1891). In the circular, Menelik proclaimed, "if Powers at a distance come forward to partition Africa between them I do not intend to be an indifferent spectator." By 1893, Ethiopia had paid back the loan to Italy gained in the Wuchale Treaty, at which point Menelik refused to recognized the treaty as a binding document. Meanwhile, Menelik was engaged in aggressive military expansion within North East Africa. In 1896, Ethiopia's military defeated Italy's at the Battle of Adwa, which enforced Menelik's diplomatic claims and rejected Italian suzerainty over Ethiopia.[49]

After this defeat, Italy renounced the Wuchale Treaty and signed a new treaty that recognized Ethiopia's independence. The treaty stated that the two states were "unable to agree on the question of the frontiers," although the preliminary border was to be "determined by the course of the Rivers Mareb, Belessa, and Mouna."[50] This boundary reflected the expansion of Ethiopia during the 1890s.[51] A new treaty in 1900 stated "[t]he line Tomat-Todluc-Mareb-Belesa-Muna, traced on the map annexed, is recognized by the two Contracting Parties as the boundary between Eritrea and Ethiopia."[52] We code this as a major revision because the original border was explicitly described

[44]Wesseling 1996, 241; for the primary documents, see Hertslet 1909, 446–450.
[45]Marcus 1963*a*, 122; Mariam 1964, 197–98.
[46]Hertslet 1909, 948; and see Ethiopia–Kenya.
[47]See also Chad–Sudan.
[48]Marcus 1963*a*, 121; see also Wesseling 1996, 242.
[49]Marcus 1963*a*, 122; Mariam 1964, 197–98; McEwen 1971, 103–5.
[50]Translated by the authors using the text from Hertslet 1909, 458–59.
[51]See the maps of North East Africa in Ajayi and Crowder 1985.
[52]Hertslet 1909, 460; and the map on p. 1116.

as preliminary. These two treaties made minor rivers the primary feature of the border, as the entire border starting from the Sudan tripoint until Lake Kulul. A Convention in 1908 determined the southeastern part of the border, which consists of straight lines "proceed[ing] in a south-easterly direction, parallel to and at a distance of 60 kilometres from the coast, until it joins the frontier of the French possessions of Somalia."[53] Thus we code straight lines (non-astronomical) as a secondary feature.

C.5.8 Ethiopia–Somalia

Overview. Originally formed in 1897 as an interimperial border between Ethiopia and Italian Somaliland. Major revisions occurred in 1908 (changed features: clarify local features), 1936 (large territorial transfer: Ogaden to Somalia), and 1954 (large territorial transfer: Ogaden to Ethiopia). A historical political frontier (PCS: Ethiopia; decentralized groups) directly affected the border. The primary feature is a straight line (non-astronomical). Secondary features are minor rivers.

Details. Italy gained recognition over the coast of modern-day Somalia in the late 1880s.[54] Italy also sought to incorporate Ethiopia into its empire, but relinquished this claim upon military defeat in 1896.[55] This change in the balance of power within the region led to new border agreements between Ethiopia and each of France, Britain, and Italy. Ethiopia's expansion over the previous decade, including over the Somali-populated territory of Harar,[56] bolstered Menelik's leverage to claim broad areas, some of which conflicted with Europeans' claims.

In 1897, Ethiopia agreed to a border involving Italian Somaliland. However, this agreement was not accompanied by public bilateral documents, which created later problems. "This cartographic agreement of 1897 is at the root of the present frontier problem between Ethiopia and Somalia. The map with Menelik's seal is either lost or the Italians are unwilling to produce it. One is, therefore, left with the difficult task of reconstructing this line on the basis of the official declarations and publications of the Italian Government."[57] Ethiopia and Italy concluded a new agreement in 1908, which failed to resolve the ambiguities. The treaty contains "only one specific and definite point—the confluence of the Dawa and the Ghenale. From here on, the boundary has no definite point at all. The 'sources of the Maidaba' and the 'territorial boundaries' of the Rahanwein tribe are unsatisfactory phrases. The sources of streams and territorial boundaries of nomadic tribes are both variable, and the agreement was not accompanied by a map."[58] Subsequently, the provisions of the treaty "proved impossible to apply since the two parties adopted significantly different views of their interpretation."[59] Nonetheless, we code this as a significant revision to clarify local features because of the lack of prior documentation.

In 1934, conflict related to the ambiguous border provided the pretext for the Italian occupation of

[53] Hertslet 1909, 1225.
[54] See Somalia–Somaliland (British).
[55] See Eritrea–Ethiopia.
[56] See the maps of North East Africa in Ajayi and Crowder 1985.
[57] Mariam 1964, 200.
[58] Mariam 1964, 203–4.
[59] Brownlie 1979, 827.

Ethiopia, which lasted until 1941.[60] The creation of Italian East Africa in 1936 merged Somaliland, Eritrea, and Ethiopia. Italy shifted the internal administrative border for Somaliland farther inland to encompass all of Ogaden, which was previously part of Ethiopia but comprised primarily of ethnic Somali. We code 1936 as a major border revision. From 1944 to 1954, Britain gained administrative responsibilities for a "Greater Somalia" consisting of British Somaliland, the former Italian Somaliland, and the Ethiopian region of Ogaden. British military occupation of Ogaden ended in 1954, at which point the territory was returned to Ethiopia. We code this as another major border revision, which reverted the border back to the ambiguous status quo in 1908. Subsequent negotiations in the late 1950s failed to yield a new border, and hence Somalia gained independence with the border issue unresolved. To the present day, the international border remains provisional and contested (e.g., Ogaden War of 1977–78).

We code that historical political frontiers directly affected the border (PCS: Ethiopia) not only because leaders of the historical state negotiated the treaty with Italy, but also because the treaty reflected Ethiopia's military strength in the areas it claimed. The eastern portion of the border is a straight line (non-astronomical). We code this as the primary feature because it constitutes more than half the border.[61] For the western portion, the 1908 treaty refers to minor rivers (confluence of the Daua and the Ganale; Uebi Scebeli, or Shebelle) and various decentralized groups (Rahanuin, Baddi-Addi, Digodia, Afgab, Djedjedi),[62] which is why we code an indirect effect of decentralized groups. Nonetheless, the recognition of Ethiopia's frontiers led a different (decentralized) ethnic group to be partitioned, the Somali.

C.5.9 Djibouti–Ethiopia

Overview. Originally formed in 1897 as an interimperial border between French Djibouti and Ethiopia. Historical political frontiers (PCS: Ethiopia) directly affected the border. The primary feature is straight lines (non-astronomical). Secondary features are minor lakes, minor rivers, and topography (mountains).

Details. France gained recognition over the coastal parts of modern-day Djibouti in the 1880s.[63] Whereas Britain promoted Italy's position in the Horn of Africa to safeguard its control over the Nile,[64] France sought to undermine Italy's position so it could itself gain influence in Ethiopia and access to the Nile.[65] Although France did not establish official relations with Ethiopia, it supplied a "massive import of arms" that proved decisive in Ethiopia's victory over Italy at Adwa in 1896.[66] After this defeat, France and Britain each sought to solidify their position vis-à-vis Ethiopia, with France moving first.[67] France and Ethiopia signed a convention in 1897 that secured a favorable division of territory for Ethiopia,[68] hence establishing a direct effect of PCS. In the convention,

[60] See Mariam 1964, 206–13 for the following.
[61] Our assessment based on the provisional border shown in Google Maps.
[62] Brownlie 1979, 835–36.
[63] See Djibouti–Somaliland (British).
[64] See Eritrea–Ethiopia.
[65] Marcus 1963*a*, 123.
[66] Sanderson 1985*b*, 656–61.
[67] Marcus 1963*a*, 127–29; Sanderson 1985*b*, 661.
[68] See Hertslet 1909, 421 for the text.

France accepted limited territory for Djibouti in return for a secret agreement to secure collaboration with France's planned Marchand mission to march on the Upper Nile,[69] and to channel Ethiopian trade toward the Gulf of Tajurah in Djibouti. The Convention of 1897 mentions minor lakes, minor rivers, towns, and mountains/hills as landmarks, all of which we code as secondary features. From Google Maps, short straight-line (non-astronomical) segments appear to comprise the majority of the border, and we code this as the primary feature.

C.5.10 Ethiopia–Somaliland (British)

Overview. Originally formed in 1897 as an interimperial border between Ethiopia and British Somaliland. A historical political frontier (PCS: Ethiopia) directly affected the border. The primary feature is straight lines (non-astronomical). Secondary features are other water bodies (wells), infrastructure (caravan road), towns/villages, topography (mountains, hills), and straight lines (parallels/meridians).

Details. Britain gained recognition over territory on the coast of the Horn of Africa in the late 1880s.[70] After Ethiopia's defeat of Italy in 1896, France and Britain each sought to solidify their position vis-à-vis Ethiopia.[71] In 1897, Britain sent an envoy to negotiate with the Ethiopian emperor. Although the two parties were unable to agree upon borders in the south and west,[72] they agreed to an eastern boundary with Britain's Somali Coast Protectorate in 1897.[73] The two powers had conflicting claims even in this area. Menelik's circular of 1891 (unacknowledged by the European powers)[74] proclaimed frontiers for Ethiopia that included a large swath of territory that Britain considered within the provenance of their Somali Coast Protectorate, based on their (now largely irrelevant) 1894 treaty with Italy.[75]

A British agent hired to demarcate the border in the 1930s described the agreed-upon line as "a compromise between the Emperor's claims and that of the Anglo-Italian Protocol of 1894."[76] African agency compelled Britain to cede large amounts of territory, including the strategically important territory known as the Haud (or Harar) located in the southeast part of present-day Ethiopia. Menelik sought recognition of "Ethiopia's historic frontiers,"[77] which he backed up with military force. As the British agent sent to negotiate with Menelik cabled to Prime Minister Salisbury in 1897, "Unfortunately claims are not mere declarations on paper but our researches and investigations have shown us that King Menelik has been for years actively engaged in rendering his occupation effective with 80,000 men and 200,000 modern rifles formidable fact to reckon with."[78]

The 1897 treaty mentions wells, infrastructure (caravan road), towns, mountains/hills, and straight

[69] See Chad–Sudan.
[70] See Djibouti–Somaliland (British).
[71] See Djibouti–Ethiopia.
[72] See Ethiopia–Kenya and Ethiopia–Sudan.
[73] Mariam 1964, 198.
[74] See Eritrea–Ethiopia.
[75] Marcus 1963*a*, 131.
[76] Clifford 1936, 290.
[77] Silberman 1961, 47.
[78] Silberman 1961, 48–49; see also Sanderson 1985*b*, 662.

lines (both meridian and non-astronomical).[79] We code straight line (non-astronomical) as the primary feature because this is the longest feature,[80] whereas all the other features are coded as secondary. Various nomadic groups were partitioned by the border, but was, in the European opinion, "not entirely avoidable with these nomad tribes whose areas overlap in the most confusing manner."[81]

C.5.11 Djibouti–Eritrea

Overview. Originally formed in 1900 as an interimperial border between French Djibouti and Italian Eritrea. The primary feature is a minor river. A secondary feature is straight lines (non-astronomical).

Details. France and Italy each established claims along the coast of the Horn of Africa in the 1880s.[82] They settled the borders between their frontiers in Protocols in 1900 and 1901.[83] These mention the Weima (or Oueima) River, which appears to constitute a majority of the border.[84] The remainder of the border is non-astronomical straight lines.

C.5.12 Ethiopia–Kenya

Overview. Originally formed in 1891 as an interimperial border between Italian claims over Ethiopia and British East Africa; Ethiopia ensured its independence from European powers in 1896. Major revisions occurred in 1907 (large territorial transfer: recognition of Ethiopia's claims) and 1947 (changed features: clarify local features). Historical political frontiers directly (PCS: Ethiopia) and indirectly (decentralized group: Galla) affected the border. The primary feature is topography (mountains). Secondary features are minor rivers, a major lake (Rudolf/Turkana), minor lakes, and straight lines (parallels/meridians).

Details. Britain gained diplomatic recognition over territory corresponding to present-day Kenya in 1886.[85] The border with Ethiopia was originally formed in 1891 in an agreement with Italy, who had been assigned a sphere of influence over Ethiopia. The initial border was the 6°N latitude parallel, which is located considerably farther north of the present-day border.[86]

Ethiopia's defeat of Italy at Adwa in 1896 changed the balance of power in the region.[87] Amid new negotiations with Britain, the Ethiopian emperor referenced a circular letter he had issued in 1891, which was previously ignored in Europe. In this letter, Menelik proclaimed sovereignty over an area whose southern boundary "lay about 200 miles to the south of the line described

[79] Hertslet 1909, 428.
[80] See Google Maps.
[81] Clifford 1936, 290.
[82] See Djibouti–Somaliland (British) and Eritrea–Ethiopia.
[83] Hertslet 1909, 663–64; Brownlie 1979, 753–55.
[84] Our assessment using Google Maps.
[85] See Kenya–Tanzania.
[86] See Hertslet 1909, 948 for the text. Farther east, the preliminary border consisted of the Juba River (from the Red Sea until it intersects the 6°N latitude parallel). This part, however, is located entirely in modern-day Somalia because of Britain's transfer of Jubaland to Italy in 1925 (see Kenya–Somalia).
[87] See Eritrea–Ethiopia.

in the Anglo–Italian protocol."[88] Ultimately, a precolonial state not only participated in settling the border, but took concerted military actions to gain a border that entailed substantially more territory for Ethiopia than in the original European-proposed border. Following Ethiopia's defeat of Italy in 1896,[89] Menelik mobilized his forces to occupy the southern reaches of his claims outlined in the 1891 circular.[90] "Since Britain had only a paper claim to the disputed area, and had never established effective occupation there, it became apparent that the Ethiopian intention was to continue their expansion into territory that had no visible display of sovereignty until they came into contact with the northern British outposts."[91] Between 1899 and 1902, Menelik made various proposals to settle the border, which Britain rejected. In 1902, Britain sent an expedition to survey the disputed region, which was undertaken with Ethiopia's consent. The surveyors were requested to "recommend a line that followed natural features and tribal limits, taking into account Menelik's previous proposals."[92] The two leaders of the expedition subsequent made separate but similar recommendations: "a boundary that followed physical features and separated the Galla from the non-Galla population" and "Ethiopia should receive all the territory of which she was then in occupation." Britain recognized these proposals as "a reasonable compromise between the two competing claims." Because of the mention of Galla, we code this decentralized group as indirectly affecting the border.

Following these concessions, a subsequent Anglo–Ethiopian agreement of 1907 mentioned mountain summits and hills, minor rivers, a major lake (Rudolf/Turkana), minor lakes, meridians, and tribal limits.[93] Based on the map provided by McEwen (1971, 104), we assess that mountains are the primary feature because a series of mountain summits and hills is the longest feature. A proposed Anglo–Ethiopian commission to demarcate the border was delayed, which led to continuing conflicting claims over several strategic wells (to secure water supply in the dry season). An exchange of notes in 1947 between Britain and Ethiopia clarified these issues. We code this as a major revision because it concerned areas of stated strategic interests, although most of the final border followed the limits set out in 1907.

C.5.13 Egypt–Sudan

Overview. Originally formed in 1899 as an intraimperial border between British Egypt and British Sudan. A major revision occurred in 1902 (changed features: switched lines). Historical political frontiers directly (PCS: Egypt; other state: Mahdist) and indirectly (decentralized groups) affected the border. The primary feature is a straight line (parallels/meridians). A secondary feature is a major river (Nile).

Details. Modern-day Egypt and Sudan each have long histories of statehood. These often intertwined in ways that not only shaped the contemporary Egypt–Sudan border, but also entangled Britain in both areas. The Ottoman Empire conquered Egypt in 1517, and its southern fron-

[88] McEwen 1971, 105.
[89] Wesseling 1996, 245.
[90] See the North East Africa 1896–1900 map in Ajayi and Crowder 1985 for Ethiopia's expanding frontiers.
[91] McEwen 1971, 105.
[92] McEwen 1971, 106.
[93] See Hertslet 1909, 445 for the text.

tier roughly corresponded with the second cataract of the Nile,[94] which had been an important landmark throughout Egyptian history.[95] Muhammad Ali, who served nominally as the Ottoman viceroy of Egypt beginning in 1805, engaged in aggressive territorial expansion that pushed farther south.[96] In 1820, his army overthrew the Sennar dynasty in modern-day Sudan, which initiated a six-decade-long period of Egyptian rule over Sudan. The Equatoria Province, which was founded in 1870 and reached into modern-day Uganda, marked the southern limits of this expansion.

The foundation of Equatoria marked the beginning of British influence in modern-day Sudan. The first two governors of Equatoria were an English explorer (Samuel Baker) and a former Army officer (Charles Gordon), who allied with the Khedive of Egypt to expand Egyptian influence farther south and to suppress the slave trade. In 1882, Britain invaded Cairo and established a legally ambiguous sphere of influence over Egypt. In 1885, the growing Mahdist movement defeated and killed Charles Gordon (who had become Governor-General of Sudan) and his army at Khartoum. This defeat temporarily ended Egyptian, and therefore British, influence in Sudan. As of 1885, "[t]he frontier of Egypt was drawn where it had been before Mohammed Ali had started Egypt's adventure in the Sudan, that is, near Wadi Halfa, on the second cataract."[97] Conversely, the Mahdist state's sphere of influence lay just to the south of this point.[98] The Mahdist state governed Sudan until 1898, when the British (who had long vowed to avenge Gordon's death) militarily defeated the Mahdi at Omdurman. After winning the showdown with France at Fashoda later that year,[99] Britain had established unquestioned supremacy over both Egypt and Sudan.[100]

In 1899, the British government secured an agreement with the Government of the Khedive of Egypt (which was itself controlled by Britain) to establish the administrative boundaries of Sudan. The boundary consists almost entirely of a parallel line (22°N) that corresponds almost exactly to the historical limit at the Nile's second cataract. For this reason, we code historical political frontiers (both Egypt and the Mahdist state) as directly affecting the border, and the primary feature as straight lines (non-astronomical). The agreement in fact refers explicitly to historical political frontiers: "Art. I.–The word 'Soudan' in this Agreement means all the territories south of the 22nd parallel, which—(1) Have never been evacuated by Egyptian troops since the year 1882; or (2) Which having before the late rebellion in the Soudan been administered by the Government of His Highness the Khedive, were temporarily lost to Egypt, and have been reconquered by Her Britannic Majesty's Government and the Egyptian Government . . . "[101]

The border deviates in two ways from the 22°N parallel. First, a small part of Sudan is located north of the parallel along the Nile, known as the Wadi Halfa salient. This feature was created several months after the initial formation of the border in 1899. For this reason, we code the Nile as a secondary feature. Second, in 1902, Britain began to administer the farthest-east area (ending at the Red Sea) north of the parallel as part of Sudan (the Halaib Triangle) and a piece of territory just west of this and south of the parallel as part of Egypt (Bir Tawil). We code this as a major border

[94] Wesseling 1996, 65; and see here for a map.
[95] See here.
[96] See Wesseling 1996, 35–65 for general background on the following.
[97] Wesseling 1996, 65.
[98] See the map in Holt and Daly 2014, 183.
[99] See Chad–Sudan.
[100] Wesseling 1996, 252–57.
[101] Quoted in Brownlie 1979, 113.

revision. The goal was to improve administration by placing the grazing grounds of the Beja into Sudan and the lands of the Ababda tribe into Egypt.[102] Therefore, we code decentralized groups as indirectly affecting the border. Both of these deviations from the parallel are currently disputed by Egypt and Sudan because it is unclear whether they were intended to constitute permanent boundaries or temporary administrative frontiers.

C.5.14 Chad–Sudan

Overview. Originally formed in 1899 as an interimperial border between French Congo and British Sudan; Chad became a distinct colony within French Equatorial Africa in 1903. A major revision occurred in 1919 (changed features: clarified local features). Historical political frontiers directly (PCS: Darfur, Wadai) and indirectly (decentralized groups) affected the border. The primary feature is a straight line (parallels/meridians). Secondary features are minor rivers, minor lakes, and topography (mountains).

Details. Britain gained sole European control over Egypt in 1882, despite the earlier formation of an Anglo–French commission in 1876 to oversee Egypt's finances.[103] Over the next sixteen years, France persisted in its claims to a share of both the upper Nile in Egypt and the lower Nile in Sudan. France organized and deployed several missions in the 1890s to establish control over the upper Nile, when the Mahdist state-controlled Sudan. The Anglo–French rivalry over the Nile culminated in a showdown at Fashoda in 1898, which resulted in France relinquishing all claims to the Nile. Earlier in 1898, Britain had defeated the Mahdist state in Sudan, which enabled European occupation of the territory. Finally, France had engaged in a decades-long process of expanding eastward from Senegal across the Central Sudan.[104] These events resulted in the Anglo–French Convention of 1898 and various revisions in 1899 that affected numerous bilateral borders.[105]

The last element of Britain and France's post-Fashoda settlement was to determine the limits of France's farthest-east territory, which yielded the present border and the Central African Republic–Sudan border. The treaty outlines three main segments of the Anglo–French boundary. Starting from the south (at the limits of the Congo Free State), (1) the border follows the Nile-Congo watershed until the 11°N parallel;[106] (2) between 11°N and 15°N, the border would "separate, in principle, the Kingdom of Wadai from what constituted in 1882 the Province of Darfur"; and north of 15°N it was to consist of a meridian line.[107] The treaty also acknowledged the need for a more precise determination of the limits of Darfur and Wadai, which was to be determined by "Commissioners who shall be charged to delimit on the spot a frontier-line in accordance with the indications given in paragraph 2 of this Declaration."[108]

[102] Brownlie 1979, 112.

[103] See Egypt–Sudan and Wesseling 1996, 35–52.

[104] See the entries for the intra-French borders.

[105] See Hertslet 1909, 785–97.

[106] The Nile-Congo watershed affected only the Central African Republic–Sudan border, not the present border; these two French colonies were not distinguished until after this treaty.

[107] Hertslet 1909, 796–97.

[108] The stipulation to follow Darfur's frontier as of 1882 specifically sought to exclude any changes that had occurred since the formation of the Mahdist state. Britain attached similar stipulations to determining Egypt's borders; see Egypt–Sudan.

It took twenty years for Britain and France to agree on a determination of the limits of Darfur and Wadai for two interrelated reasons. First, the historical frontier between these states was contested and had constantly shifted. Between the core territories controlled by each of Darfur and Wadai, who had constantly fought territorial wars against each other, lay various petty sultanates of disputed control: "the debatable border lands of Dars Tama and Gimr in the north, Dar Masalit in the centre, and Dar Sila in the south ... 'the old frontier between Darfur and Wadai' [did not] mean anything ... there was not, and never had been, any stable, clearly defined, and generally recognized frontier between Darfur and Wadai."[109]

Second, Ali Dinar, the Sultan of Darfur, was only nominally under British control. Britain deemed it too expensive to rule Darfur directly, and instead allowed Ali Dinar to govern Darfur as long as he was friendly to British interests. The Sultan retained his army and fought France (as well as Mahdist troops and neighboring groups) to enforce his claimed control over petty sultanates in the frontier region. The European powers settled the border only after Britain deposed the Sultan, and each side gained some of the petty sultanates.

The Sultan of Darfur's disputes with France arose in 1909 when French troops moved eastward to conquer the Wadai empire. Ali Dinar claimed the disputed petty sultanates as Darfur's historical tributary states. Between 1909 and 1912, their control fluctuated between France and Darfur through a series of battles—ultimately resulting in French control in 1912. In diplomatic communications with France, British officials repeatedly stressed that they lacked the direct military presence in the area to prevent Ali Dinar from attacking French positions if he did not gain control over these territories, specifically, Dar Tama and Dar Masalit.[110] This, in turn, prompted Britain to seek to settle the border with France.[111] Each side then sought to persuade the other with evidence regarding which sultanates were controlled by either Wadai or Darfur in 1882, in reference to the 1899 Declaration.

Neither power gave in. Although they had agreed in principle to let a neutral party arbitrate the dispute, when World War I broke out, they agreed to revisit the matter after the war. During the war, Britain militarily deposed Ali Dinar after he allied with the Ottomans. Given the pressure the Sultan had placed on Britain to press territorial claims that did not convince France, his removal cleared the way for settlement. At the Peace Conference in Versailles in 1919, during a Supplementary Convention, the British Governor-General of Sudan stated in a private letter to the British High Commissioner in Egypt: "The main point is that we have let the French keep Tama and they are letting us keep Masalit and Gimr."[112] A Convention signed in 1919 confirmed this division: "From this point [the boundary] shall be drawn in such a manner as to separate in principle the countries of Dar Kouti, Dar Sula (Sila), Wadai, and Dar Tama from the countries of the Taaisha and other tribes subject to Darfur and from those of Dar Masalit and Dar Gimr."[113]

An Anglo–French protocol in 1924 precisely aligned the border, although we do not code this as a major revision because this protocol simply enacted the 1919 Convention. The protocol meticulously outlines the border in 102 segments. It mentions various minor rivers, minor lakes, moun-

[109]Theobald 1965, 64, 69; see Panel B of Figure 7 for the location of these petty sultanates.
[110]Theobald 1965, 98, 109.
[111]Theobald 1965, 94.
[112]Theobald 1965, 220.
[113]Hertslet 1909, 626.

tains, and ethnic groups. We code all of these as secondary features and other ethnic groups as indirectly affecting the border.

C.5.15 Central African Republic–Sudan

Overview. Originally formed in 1899 as an interimperial border between French Congo and British Sudan; Ubangi-Shari (CAR) became a distinct colony within French Equatorial Africa in 1903.[114] A major revision occurred in 1919 (changed features: clarified local features). Historical political frontiers (PCS: Darfur and Wadai) directly affected the border. The primary feature is a major watershed (Nile-Congo).

Details. The present border was formed by the same 1899 Anglo–French treaty as the Chad–Sudan border, where we provide more details on the following. The southern-most part of the boundary in this treaty was the Nile-Congo watershed, which comprised the majority of the CAR–Sudan border in the final colonial map. Therefore, we code this as the primary feature. Other than providing a more precise alignment, this segment was not subsequently changed. Moving north, the next segment described in the 1899 Declaration (and the only other one that affected the present border) was to divide between the PCS of Darfur and Wadai; therefore, PCS directly affected the present border. Determining the limits of these historical states involved a lengthy entanglement with the Sultan of Darfur. This dispute was not finally settled until 1919 (a major revision), with the precise delimitation occurring in 1924 (which we do not code as a major revision). Brownlie (1979, 600) does not identify any discernible features in the part of the border north of the watershed. See in particular his map; the one mountain it includes, Jebel Manda, lies along the watershed. Therefore, we do not code any secondary features.

Along the border with CAR, the separation between Sudan and South Sudan in 2011 occurred roughly at the Nile-Congo watershed. Therefore, the CAR–South Sudan border consists entirely of the watershed and the CAR–Sudan border consists of the southern-most part of the original partition that sought to divide Darfur and Wadai between Britain and France, respectively.

C.5.16 Sudan–Uganda

Overview. Originally formed in 1902 when Britain first defined a division between Sudan and Uganda.[115] Major revisions occurred in 1910 (large territorial transfer: Lado Enclave from DRC to Sudan), 1914 (large territorial transfer: part of Lado Enclave to Uganda, other territory to Sudan), and 1926 (small territorial transfer). Historical political frontiers (decentralized groups) directly affected the border. The primary feature is straight lines (non-astronomical). Secondary features are topography (mountains) and minor rivers.

Details. Britain established a protectorate in 1894 covering the southern areas of present-day Uganda and founded most of its initial borders in the 1890s.[116] Moreover, agreements with Germany in 1890 and the Congo Free State in 1894 established a British sphere of influence over

[114] The majority of this border (except the northern-most part) became the Central African Republic–South Sudan border in 2011.

[115] This became the South Sudan–Uganda border in 2011.

[116] See Tanzania–Uganda, Rwanda–Uganda, Congo (Bel.)–Uganda, and Kenya–Uganda.

the upper Nile and what later became Sudan. Competition with France, who sought to establish a foothold on the Nile, spurred British administrators to expand their presence northward in Uganda;[117] they were unable to directly occupy Sudan because of the establishment of the Mahdist state. In 1898, Major Macdonald concluded numerous treaties with local rulers located to the northeast of the upper Nile, but Britain's ongoing conquest of Sudan at this time left unclear the upper extent of Uganda.[118] Britain gained permanent control over Sudan in 1899 following the reconquest of the Mahdist state and an accord by which France agreed to withdraw from the Nile.[119]

An Order in Council in 1902 was the first articulation of the entire extent of the Uganda Protectorate (earlier documents mentioned only the precolonial states farther south). We code this as the initial formation of the Sudan–Uganda border. The Order specified provinces and districts, but not precise territorial limits.[120] This Order nonetheless suggested preliminary borders because Special Commissioner Harry Johnston supplied the list of provinces and districts. He held the view that "as far as the northern boundary was concerned, (i.e. the 5°N between the Nile and Lake Rudolf) Macdonald's treaties had given him the authority to annex the territory to Uganda."[121] This source further asserts that the 1902 Order in Council "confirmed" Johnston's assumption of power, despite the reluctance of the Foreign Office to formalize "such a bold assertion" of Uganda's northern frontier.[122] Indicating the strategic importance of Lake Rudolf (now Lake Turkana, a major lake), in 1900, Johnston stated his hope that a remote station established in the north "will be the beginning of an advance of the Administration towards Lake Rudolph."[123]

A major revision occurred in 1910 when the Lado Enclave reverted to British control and was attached to Sudan.[124] The Lado Enclave comprised territory west of the Nile, which therefore comprised a lengthy horizontal frontier for the Sudan–Uganda border until the Nile intersected with the 5°N parallel.

Two major, interrelated territorial exchanges occurred in 1914. The southern portion of the Lado Enclave was transferred to Uganda. Simultaneously, all the territory located east of the Nile and north of a newly delineated frontier was transferred to Sudan.[125] The stated goal of the new border

[117]Barber 1965, 27.

[118]Ingham 1958, 74–75, 87; see also the map in Barber 1968, 5.

[119]See Egypt–Sudan and Chad–Sudan.

[120]See the text in Hertslet 1909, 404.

[121]Barber 1965, 28.

[122]See also the map in Uganda Department of Lands and Surveys 1962, 75, which depicts territory as far north as the 5°N parallel as originally belonging to Uganda via the 1902 Order in Council.

[123]Quoted in Barber 1965, 28.

[124]See Congo (Bel.)–Sudan.

[125]In the east, the new frontier was located at roughly the same latitude as the northern tip of Lake Turkana. Almost all the territory transferred to Uganda lies south of all the territory transferred to Sudan, although they overlap somewhat to create a short segment of overlap along the Nile. However, in this short segment, the border itself lies almost immediately east of the Nile and entirely within Sudan. Thus, the territorial transfers in 1914 removed the Nile entirely as a feature of the border, which constitutes an exception to the general pattern of using major rivers to delineate borders. Administrators offered a specific reason that they wanted both banks of the Nile to lie within the same colony at all points: "The Sudan Government thought that it was desirable that the boundary between the two countries should be a tribal one and should extend

was to not partition "tribal" groupings across Sudan and Uganda.[126] For example, all the Bari were explicitly grouped into Sudan and all the Turkana and Lugwari into Uganda. For this reason, we code other groups as directly affecting the border. However, the extent to which the border actually reflected "tribal" groupings is unclear because of relatively limited knowledge about the area (even after a commission surveyed the border), the inherently fuzzy limits of stateless groups and the intermixture among them, and the nomadic nature of groups such as the Turkana. One particularly problematic aspect of the Order in Council of 1914 that enacted the new border was to state that part of the border should follow "the southern boundary of the Kuku tribe," which was not well-defined. Sudan and Uganda exchanged correspondences between 1929 and 1936. Although no formal agreement was reached, they agreed on an interpretation of the phrase and a *de facto* local working agreement. We do not code this as a major revision given the uncertainty about what, if any, territory changed hands.

The final major revision occurred in 1926, although this involved a much smaller transfer of territory than in 1914. Various decentralized groups directly affected the border in this case as well. In 1924, a Conference involving administrative representatives from Kenya, Sudan, and Uganda "found that the interests of the natives of Teretenia and Madial were predominantly on the Sudan side of the boundary and that their chiefs were willing to come under the Sudan's administration, recommended that the boundary on that point was to be modified in such a way as to transfer to the Sudan the territory occupied by the natives of Teretenia and Madial . . . They both agreed that the recommendation was quite sound from the administrative point of view and would greatly facilitate the control of sleeping sickness."[127]

Regarding alignment, the eastern-most portion is located west of the Nile and consists of the territory transferred from Uganda to Sudan in 1914 (plus the border created by the additional territorial transfer in 1926). This portion is a series of straight-line segments that connect various mountains. This comprises the majority of the entire border, which is why we code straight lines (non-astronomical) as the primary feature. West of the Nile, the border consists of the boundary used to transfer part of the Lado Enclave to Uganda. This part of the border consists of various minor rivers, villages, and straight-line segments.

C.5.17 Ethiopia–Sudan

Overview. Originally formed in 1902 as an interimperial border between Ethiopia and British Sudan.[128] Historical political frontiers (PCS: Ethiopia; other state: Egyptian Sudan) directly affected the border. The primary features are minor rivers and straight lines (non-astronomical). A secondary feature is infrastructure (towns, forts).

Details. Shortly after Ethiopia's defeat of Italy at Adwa in 1896, the emperor signed a series of

across the Nile in order that both banks be under the same administration. For otherwise natives resenting any form of administration or wanted by the authorities of either country might escape justice by simply crossing the river" (Taha 1978, 3; see also Collins 1962).

[126]McEwen 1971, 261–62; Taha 1978, 3–6; Brownlie 1979, 1003.

[127]Taha 1978, 8; see also McEwen 1971, 263–64. Also in 1926, the transfer of the Rudolf Province from Uganda to Kenya (see Kenya–Uganda) changed the eastern-most part of the Sudan–Uganda border to a newly formed Kenya–Sudan border, but did not alter any features of the remaining Sudan–Uganda border.

[128]Part of this border became the Ethiopia–South Sudan border in 2011.

bilateral treaties with neighboring European powers to form most of Ethiopia's borders.[129] A border settlement with Sudan occurred last because Britain's Nile policy yielded stronger interests in Egypt and Sudan than elsewhere.[130] Menelik claimed broad frontiers for Ethiopia in a 1891 circular, many of which he enforced through military expansion during the 1890s. Britain delayed a settlement until they had a "moral force behind us in stating our claims," which would better enable them to press their "intention of recovering Egypt's lost provinces."[131] British agents referred repeatedly to historical political frontiers in their negotiations: "we have no intention of encroaching on territory which has always belonged to Abyssinia," and instead sought to gain "the whole of the territory between Abyssinia and the Nile which formerly belonged to Egypt."[132] British and Ethiopian agents disagreed over the precise nature of these frontiers, but British agents pushed back against less concrete claims: "ancient history does not count for much in modern negotiations [and] . . . for that matter it was open to doubt whether his country was the Ethiopia known in ancient history."[133] Ultimately, these negotiations yielded a treaty in 1902.[134] Britain gained for Sudan all areas previously controlled except for Beni Shangul, and British agents concluded that "much of what is ceded to Abyssinia . . . was formerly a bone of contention between Egypt and Abyssinia as the frontiers were never properly defined between these two countries."[135] Consequently, Ethiopia also made gains by expanding its borders in the direction of the Nile Valley.[136]

The border consists of minor rivers, straight lines (non-astronomical), and infrastructure (towns, forts). Based on a map that accompanied the 1902 treaty (Hertslet 1909, 436–37) and Google Maps, we code both minor rivers and straight lines (non-astronomical) as the primary features; both are prominent, but neither is obviously more important than the other. Infrastructure is a secondary feature. Historical political frontiers (PCS: Ethiopia; other state: Egyptian Sudan) directly affected the borders for the reasons discussed above.

[129] See Eritrea–Ethiopia.
[130] See Egypt–Sudan.
[131] Quoted in Marcus 1963*b*, 84, 88.
[132] Quoted in Marcus 1963*b*, 88.
[133] Quoted in Marcus 1963*b*, 89.
[134] Hertslet 1909, 431.
[135] Quoted in Marcus 1963*b*, 89–90; see also Sanderson 1985*b*, 663.
[136] Marcus 1963*b*, 94.

C.6 Southern Africa

Intra-British borders. From the beginning of the nineteenth century, Britain was the dominant power in southern Africa. We move northeast to analyze intra-British (and Boer) expansion over time from the Cape (South Africa) to, eventually, Malawi. The borders addressed here are Lesotho–South Africa, South Africa–Swaziland, Botswana–South Africa, South Africa–Zimbabwe, Botswana–Zimbabwe, Zambia–Zimbabwe, Malawi–Zambia, and Botswana–Zambia.

C.6.1 Lesotho–South Africa

Overview. Originally formed in 1843 as a de facto British intraimperial border between PCS Lesotho and various white-controlled states (Cape, Natal, Orange Free State). Major revisions to the border occurred in 1849 (large territorial transfer: Napier line to Warden line) and 1868 (changed features: clarified local features). Historical political frontiers (PCS: Lesotho; white settlement: Orange Free State) directly affected the border. The co-primary features are minor rivers and minor watersheds. A secondary feature is a major river (Orange).

Background on South Africa.[1] The European colonial presence in southern Africa dates back to the establishment of a Dutch settlement at Cape Town in 1652, originated by the Dutch East India Company. The frontiers of white settlement expanded eastward and northward over the next century-and-a-half, when Britain gained control during the Napoleonic Wars. White frontiers continued to expand throughout the nineteenth century, initially spurred by Boer settlers seeking to move away from British controlled territory and later by Europeans seeking wealth from diamond and gold mining. These migrations resulted in the creation of three additional colonies—Natal, the South African Republic (Transvaal), Orange Free State—that in 1910 federated with Cape to

[1] Shillington 1987 provides general background.

form the Union of South Africa. The borders of each colony changed frequently throughout the nineteenth century to incorporate various short-lived Boer republics and previously independent African groups.[2]

White migrants encounter the Sotho state.[3] During a major migration wave in the 1830s, known as the Great Trek, Voortrekkers sought to gain territory controlled by the Lesotho kingdom. This state had formed in the 1820s and thus lacked long-standing boundaries. This competition spurred British officials to draw preliminary frontiers for the kingdom. The Sotho and the Governor of the Cape Colony first signed a treaty of friendship in 1843, the Napier treaty, which we code as the first year of border formation.

In 1849, the British resident of the future Orange Free State drew a border farther east (the Warden line), which contracted the territory of Lesotho. Brief wars between Sotho and the British in 1851 and 1852, followed by Britain's formal recognition of the Orange Free State in 1854, left the final boundary unsettled between the Sotho and Boers. An attack by the Orange Free State in the 1860s led the Sotho to request protection from the British against the Boers. Britain annexed the Sotho kingdom in 1868, creating the colony of Basutoland. Sanders (1975, 242) identifies six distinct borders between 1849 and 1868 (the other years are 1858, 1861, 1866, and 1867), and notes that the border in 1868 established the boundaries of modern Lesotho. These border changes resulted in the Sotho losing a sizable portion of their pre-Boer western frontier to the Orange Free State.[4] Thus, in this case, a historical state was partitioned even though leaders of the precolonial state were directly involved in setting the border. We code the first year, 1849, as a large territorial transfer because this appeared to be the largest contraction of Lesotho's territory relative to 1843. We code 1868 as another major revision to indicate the changes in the border that happened since.

The border alignment consists of the watershed of the Drakensberg River in the northeastern and southeastern sectors.[5] The western and northern segments for the most part follow the Caledon River. The Orange River also comprises a minor segment of the border in the southwest. Thus, we code minor water bodies (rivers and watersheds) as co-primary features of the border and a major river as a secondary feature.

Preventing amalgamation into South Africa. Lesotho experienced various changes in its legal status after its borders had been finalized in 1868. In 1871, Basutoland was incorporated into the Cape Colony. Following successful Sotho armed resistance in the Gun War of 1880–81, the Cape government handed control back to the British in 1884, which reconstituted Basutoland as a separate colony. Although this episode was the final transfer of sovereignty over Lesotho until its independence in 1966, we code an indirect effect of PCS on the borders after this date because African agency played a role in keeping Basutoland a distinct colony.

Britain originally planned to incorporate Basutoland (along with the other High Commission territories, Swaziland and Bechuanaland) into the Union of South Africa.[6] This plan reached an

[2]See the maps in Marks 1985*b*, 384–85 for a summary of the major changes, which we discuss as relevant for South Africa's international borders in the present and the following bilateral border analyses.

[3]See Shillington 1987, 67–70, 77–78, 103–4 for the following.

[4]Brownlie 1979, 1109.

[5]Brownlie 1979, 1110.

[6]Hailey 1963.

impasse when the Boer republics refused to implement non-racial franchise rules similar to those in the Cape. Amid discussions during the National Convention for South Africa in 1907, the Basuto "sent a deputation to England which asked for an assurance that their country should not be incorporated into the projected Union."[7] As South African policies drifted over time to become less favorable for Africans, the British became increasingly less inclined to transfer the territory despite repeated requests from South African officials. British officials insisted that "the inhabitants of the Territories would be consulted and their wishes taken into account . . . Throughout this period the inhabitants of the Territories made their own opposition to incorporation abundantly clear."[8] In 1953, the Queen Regent of Basutoland sent a petition to the King of England that stated the "Basuto detest[ed]" the idea of incorporation. In Swaziland, the Paramount Chief Sobhuza II and his people "have proved themselves to be very vigilant in protecting their rights, but nowhere in those proceedings was there any indication of a feeling that their position could be improved to their benefit by incorporation into the Union."[9]

C.6.2 South Africa–Swaziland

Overview. Originally formed in 1866 as a de facto British intraimperial border between the Boer-governed South African Republic and PCS Swaziland. A major revision occurred in 1879 (changed features: clarified local features). Historical political frontiers (PCS: Swazi; white settlement: South African Republic) directly affected the border. The primary feature is straight lines (non-astronomical). Secondary features are minor rivers, minor lakes, and topography (mountains).

Background on Swaziland.[10] Following wars with the Zulu in the 1810s, the Ngwane (Swazi) people migrated to the Usutu valley, where the rulers Sobhuza and Mswati founded the state in existence upon European penetration into the area. Over time, the Swazi expanded beyond the Usutu. The Zulu regularly raided the area between the Usutu River and the Pongola River to the south, and the Zulu remained the main threat to Swazi independence until the 1880s. The Pongola was the effective northern frontier of Zulu expansion[11] and the southern frontier of the Swazi state; this became important for the border deliberations discussed below.

White migrants encounter the Swazi state.[12] Eastward migrations by Boers across present-day South Africa occurred throughout the nineteenth century.[13] They reached the western hinterland of Swazi territory in the 1830s and secured deeds of sale from the Swazi in 1846 and 1855, although these did not affect the ultimate border in any discernible way.

The first demarcation of a border occurred in 1866 when representatives from the South African Republic were sent to beacon off a boundary. The Swazi objected to the proposed border, but British authorities accepted the beacons as starting points for a subsequent boundary survey they

[7] Hailey 1963, 31.
[8] Spence 1971, 496, 499.
[9] Hailey 1963, 101.
[10] See Shillington 1987, 38–41, 125–26, especially the map on p. 40; and Bonner 1983, 94.
[11] Thompson 1996, 83.
[12] See Gillis 1999, 30–36 for much of the following background information and quotes.
[13] See Lesotho–South Africa.

commissioned. In 1875, the Swazi and Boers signed an agreement that confirmed the Republic's dominion over the kingdom, although without affecting the border.

In 1879, the Alleyne boundary commission recommended what became the final border.[14] The goals of the commission were "to meet Swazi objections to the beacons placed by the Boers and to define a border along the whole of the northern and western territory separating the two. Its task was, in Wolsley's words, to effect 'a final settlement,' guided by principles of 'justice and expediency.' To achieve these ends, however, it was to adhere, as far as possible, to the beacons already placed by the Republic." Various areas were contended, and in all cases the commission largely sided with the Boers. A particularly egregious decision was to set the southern boundary of Swaziland north of the Pongola River. The Swazi claimed that this had always been their boundary with the Zulu, a view that received substantial corroboration from individuals and officials in Zululand and Natal.[15] The 1881 Convention that settled the First Boer War incorporated the recommendations of the Alleyne Commission. Nonetheless, Bonner (1983, 155–59) infers from internal communications among British officials (which were unknown to the Swazis) that "the Swazi could have obtained a great deal more from the boundary settlement than they ultimately did," but their lack of explicit protests against the arrangement resulting in "the opportunity slipp[ing] away."

The border alignment consists of a series of straight-line segments that connect various features such as minor rivers, minor lakes, and mountains.[16] This includes the Lebombo Mountains, the primary feature of the Mozambique–Swaziland border. Consequently, we code straight lines (non-astronomical) as the primary feature and the others as secondary features.

Preventing amalgamation into South Africa. We code another, indirect, effect of PCS on the border because of the role of African agency in keeping Swaziland separate from the South African Republic (for the most of the period before 1910) and, afterwards, from the Union of South Africa.[17] The Swazi maintained cordial relations with both the Boers and the British, which helped them to avoid the violent fates of neighboring peoples such as the Zulu and Pedi; in fact, the Swazi allied with the whites in their wars against these African groups in the 1870s and 1880s. This defensive strategy sought to guard against the Zulu and did contribute to Swaziland remaining a distinct political entity. However, accommodating Europeans also imposed many costs upon the Swazi. Their borders excluded numerous areas within their historical domain and, within these borders, the Swazi were compelled to alienate a large amount of land for European settlers.

The South African Republic wanted to annex Swaziland in part to provide access to the sea through Kosi Bay (in Tongaland), whereas Britain and Natal wanted to prevent this outcome. During the 1881 Convention to settle the First Boer War, Natal pushed to secure a provision for the independence of Swaziland. Although Britain changed course in 1894 and allowed the South African Republic to incorporate Swaziland, it did so while simultaneously annexing Tongaland to deny access to the sea for the Boers. Swaziland formally became a British High Commission territory in 1903 following the Second Boer War, a status it retained until independence in 1966. As we dis-

[14] See Gillis 1999, 35 for the sketch map drawn by the Alleyne boundary commission.
[15] See also "Background on Swaziland" above.
[16] Brownlie 1979, 1313–16.
[17] For the following, see the aforementioned citations as well as Hailey 1963, 10–14.

cuss in Lesotho–South Africa, African agency influenced the ultimate decision to not incorporate the High Commission territories into South Africa.

C.6.3 Botswana–South Africa

Overview. Originally formed in 1885 as a de facto British intraimperial border between the Bechuanaland Protectorate and two parts of present-day South Africa: the white state of South African Republic and the British Bechuanaland crown colony. A major revision occurred in 1891 (new segment). Historical political frontiers (other state: Tswana; white settlement: South African Republic) directly affected the border. The co-primary features of the border are a major river (Limpopo) and a minor river.

Details. The creation of modern-day Botswana reflected competition between Britain and the independent Boer republics that had broken off from Cape Colony. Britain feared that the Boers (possibly in alliance with Germany) would block British expansion to the north. Consequently, Britain secured treaties with Tswana rulers to the north of Cape Colony, who themselves strategically sought protection from Boers and neighboring African groups.

The Boer settlers of the South African Republic had, historically, claimed the Limpopo River (major river) as their northwestern frontier.[18] But the Boer republic sought to move farther to the southwest, where the Tswana people lived. In 1883, Boers proclaimed the creation of two new republics, Stellaland and Goshen. Each was located west of the South African Republic, and they reached as far north as the Molopo River. A renegotiation of the Republic's western border in 1884 failed to stem Boer penetration deeper into Tswana territory.[19] Britain responded by securing alliances with Tswana rulers located farther north. The most important was Khama III of the Bamangwato, considered to be the most powerful Tswana ruler, but Britain also gained treaties with Gaseitsiwe of the Ngwaketse and Sechele of the Kwena. Britain sought to block northwestern expansion by the Boers, who could potentially have allied with Germany. The Tswana rulers acted strategically themselves, as they sought safeguards from the Boers and from the Ndebele, located to their east.[20] Khama actively sought British protection, having earlier been rebuffed in 1876.[21]

Britain proclaimed two new territories in 1885, a protectorate and a crown colony.[22] The Bechuanaland Protectorate, which corresponds with present-day Botswana, was located farther north. It is separated from the crown colony (British Bechuanaland) by the Molopo River and, farther east, from the South African Republic by the Limpopo River.[23] A major border revision occurred in

[18]This boundary was first formally confirmed in the Pretoria Convention of 1881, signed with Britain, which ended the first Boer War.

[19]Shillington 1987, 108–11.

[20]See Botswana–Zimbabwe.

[21]Roberts 1976, 156; Marks 1985*a*, 404–5, 412; Shillington 1987, 110, 126.

[22]Hertslet 1909, 190; Shillington 1987, 108–11.

[23]Britain distinguished the southern crown colony from the northern protectorate because of the relatively large white settlement south of the Molopo. Thus, the plan from the outset was to make the crown colony attractive for annexation by the Cape, who would then bear the costs of administration. By contrast, the northern Tswana land (which became the protectorate) was believed to be mostly desert and was therefore

1891 when the boundaries of British Bechuanaland were extended farther west to include a segment along the Nossob River (north of the Molopo), which incorporated territory controlled by the Griqua people into British Bechuanaland.[24] The borders were unchanged following the Cape's annexation of British Bechuanaland in 1895 and the federation of Cape and the South African Republic into the Union of South Africa in 1910. Thus, the Molopo River (minor) and Limpopo River (major) became co-primary features of the Botswana–South Africa border. Overall, more than 90% of the length of the border follows rivers.[25]

C.6.4 South Africa–Zimbabwe

Overview. Originally formed in 1890 as a de facto British intraimperial border between the Boer-governed South African Republic and the British South Africa Company. Historical political frontiers directly (white settlement: South African Republic) and indirectly (PCS: Ndebele) affected the border. The primary feature of the border is a major river (Limpopo).

Details. A scramble for the region known broadly as Zambezia occurred in the late 1880s.[26] Britain sought to expand its northern frontier in southern Africa to keep other powers out of the region (in particular Portugal and Germany) and to keep the independent Boer republics subordinate to the Cape and to British rule. Both goals were threatened by new gold discoveries and the possibility of Boers forming interimperial alliances that would provide them with access to the sea. Ndebele (PCS) was central in these plans of expansion, given its location just north of the Limpopo river (the northern boundary of the South African Republic). Its ruler, Lobengula, faced continual pressure by Europeans to gain concessions over trading, land, and mineral rights. In 1888, the British High Commissioner for Cape Colony secured a treaty with Lobengula that declared the area to be a British sphere of influence—a reaction to a treaty the South African Republic had secured with Lobengula in 1887. Later that year, agents representing the diamond magnate Cecil Rhodes secured a dubious treaty with Lobengula that decreed rights over mineral production, known as the Rudd Concession.

In 1889, Cecil Rhodes gained a royal charter for the British South Africa Company (BSAC) to settle north of the Limpopo River. The charter defined the Company's field of operations as "the region of South Africa lying immediately to the north of British Bechuanaland, and to the north and west of the South African Republic [Transvaal], and to the west of the Portuguese Dominions."[27] These instructions made the Limpopo River the bilateral border between the South African Republic and the BSAC domain. A 1894 Order in Council established the Company's administration over Matabeleland, and a 1898 Order in Council established the country's administration over all of Southern Rhodesia.[28] The southern border of Southern Rhodesia was unchanged when the South African Republic joined the Union of South Africa in 1910.[29] Thus, we code a major river as the primary feature of the border, a direct effect of the historical political frontier of the South African

not viable to attract white settlement (Shillington 1987, 110–11).

[24] Hertslet 1909, 191.

[25] Brownlie 1979, 1096.

[26] Marks 1985*b*, 439–42; Roberts 1976, 155–62.

[27] Quoted in Hertslet 1909, 265.

[28] Hertslet 1909, 268.

[29] Brownlie 1979, 1299–1303.

Republic, and an indirect effect of PCS Ndebele because of their centrality to the founding of the colony of Southern Rhodesia.

C.6.5 Botswana–Zimbabwe

Overview. Originally formed in 1890 as a British intraimperial border between the Bechuanaland Protectorate and the British South Africa Company. Major revisions to the border occurred in 1895 (changed features: clarified local features) and 1896 (new segment). Historical political frontiers (PCS: Ndebele; other state: Tswana) directly affected the border. The primary feature is minor rivers. Secondary features are minor watersheds, major rivers (Limpopo, Zambezi), and infrastructure (roads).

Details. The territorial status of the Bechuanaland Protectorate was ambiguous in its first decade of existence. We briefly review the legal details of Bechuanaland's territorial status to facilitate a more precise explanation of the role of African rulers in shaping the borders.

The initial Proclamation to establish the Bechuanaland Protectorate in 1885 staked out a delimited piece of territory under British influence, but did not specify how this territory was to be governed.[30] The royal charter that incorporated the British South Africa Company (BSAC) in 1889 defined its field of operations for securing concessions in the name of the British government as "the region of South Africa lying immediately to the north of British Bechuanaland, and to the north and west of the South African Republic, and to the west of the Portuguese Dominions." This encompassed the territory proclaimed under 1885 decree for the Bechuanaland Protectorate, but again without specifying any details of administration. The first acts concerning the administration of the Bechuanaland Protectorate were Orders in Council in 1890 and 1891. These dictated that the Resident Commissioner for Bechuanaland was to administer the territorial area originally specified for the Bechuanaland Protectorate in 1885,[31] plus "such territories north of the 22nd degree as belong to the Chief Khama of the Bamangwato." The Orders also specified that such territory lay west of Matabeleland, where there was a separate Resident Commissioner, although the northeastern part of the territory encompassed by these orders was administered by BSAC. These Orders in Council therefore confirmed the division of spheres based on earlier treaties with African rulers: various Tswana rulers (in particular Khama of Bamangwato) for Bechuanaland and Lobengula of Ndebele for Southern Rhodesia.[32] "[T]he evolution of the boundary was to depend primarily upon the territorial division between the lands of Chief Khama of the Bamangwato (Khama's Country) and the Kingdom of Lo Bengula (Matabeleland)."[33] This yields our coding that each PCS directly affected the border.

However, as of 1891, the Botswana–Zimbabwe border was not yet finalized for two reasons: (1) Cecil Rhodes sought to incorporate the Bechuanaland Protectorate into Southern Rhodesia, and (2) certain disputed lands between Khama and Lobengula had yet to be allocated. The first episode constitutes an indirect effect of precolonial states on the border because no borders were actually

[30] See Hertslet 1909, 190–92 for this and the following summaries of documentary evidence. Note that the initial proclamation did not create boundaries extending as far north as present-day Zimbabwe.

[31] See Botswana–South Africa and Botswana–Namibia.

[32] See Botswana–South Africa and South Africa–Zimbabwe.

[33] Brownlie 1979, 1082.

changed, whereas the second constitutes a direct effect because major revisions occurred.

First, agency by Tswana chiefs blocked the planned transfer of authority over Bechuanaland from the British crown to BSAC.[34] Pressured by Cecil Rhodes, the British government agreed to a transfer in 1895. The rulers within the Protectorate "vigorously protested," proclaiming that they had consented to the protection of the British Queen specifically, who lacked to right to hand them over to a private company. Leading rulers, including Khama of the Bamangwato, traveled to England to protest directly to the government and staged a series of public protest meetings in several major British cities. Later that year, Secretary of State for the Colonies Joseph Chamberlain canceled the transfer. This resistance followed an earlier failed attempt by Rhodes to secure a treaty with Sekgoma, the ruler of the Batawana, under false premises to gain a foothold of white settlement in Bechuanaland; Sekgoma successfully protested to the British government to have the treaty rescinded. "The actions of Sekgoma in Ngamiland and Khama, Bathoen and Sebele in London were important displays of successful African diplomacy against the might of colonial South Africa and a major capitalist company. Their success was a great victory for the Tswana for it allowed their country to remain a Protectorate."[35] African agency also contributed to the failure of twentieth-century proposals to incorporate Bechuanaland into either South Africa[36] or Southern Rhodesia.[37]

Second, in 1895, a major revision occurred because certain disputed lands (that between the Macloutsie and Shashi rivers in the south) were allocated to Chief Khama's country. Finally, in 1896, the previously uncertain northern segment was determined.[38]

The border alignment was determined by Orders in Council in 1891, 1894, and 1898, which refer extensively to various rivers and their watersheds (Shashi, Tati, Ramaquaban). We code the rivers as the primary feature and their watersheds as a secondary feature. The later revisions to finalize the northern segment incorporated Hunter's Road, alternatively known as Pandamatenka Road, which we code as infrastructure.[39] The northern terminus of the border is the Zambezi River, which comprises a quadripoint that also includes Namibia and Zambia; and the southern terminus is the Limpopo River, which comprises a tripoint that also includes South Africa. Thus we code these major rivers as secondary features.

C.6.6 Zambia–Zimbabwe

Overview. Originally formed in 1891 as a British intraimperial border that split into two states the territory allotted to Cecil Rhodes' British South Africa Company. The primary feature of the border is a major river (Zambezi).

Details. In 1889, Cecil Rhodes gained a charter for the British South Africa Company (BSAC) to colonize territory north of the Limpopo River, the northern border of the South African Republic.

[34] Hailey 1963, 39–40, 53; Truschel 1974; Shillington 1987, 123–25.
[35] Shillington 1987, 125.
[36] See Lesotho–South Africa.
[37] Palley 1966, 214.
[38] Brownlie 1979, 1083.
[39] For historical details on the road, see here.

Originally, the northern bounds of the charter were open-ended.[40] Rhodes came to an agreement with Harry Johnston, the British consul to Mozambique, to act on behalf of BSAC by signing treaties with African rulers north of the Zambezi River.[41] Europeans viewed the Zambezi as a natural frontier: "None questioned the border status of this section of the river . . . it was a 'natural border' simply because it was a feature of the landscape . . . It was thus legitimized through its grounding in the supposed territorial limits of precolonial African states. Finally it was seen as the 'natural' limit' of white settlement, partly for its reputation for unhealthiness, and partly because of the pragmatic need to limit imperial ambitions somewhere."[42]

In 1891, BSAC's field of operations was formally extended north of the Zambezi.[43] We code this as the year the border was formed. An Order of Council in 1894 formalized that the Zambezi separated two distinct colonies. "The Zambezi alignment attained its significance in the period beginning in 1894 when it became apparent that Northern Zambesia, or Northern Rhodesia as it was soon to be called, would take a political and administrative path distinct from that of Southern Rhodesia."[44] However, we do not code this as a major change because it followed from the earlier Rhodes–Johnston agreement and formal northward extension of the BSAC's territory.

The border alignment consists entirely of the Zambezi River except for the sector within Lake Kariba, an artificial lake and reservoir along the Zambezi created in the 1950s; hence we do not code this as a feature of the colonial border. The 1963 Order in Council provided a precise alignment that incorporated the newly created Lake Kariba and various islands located within the Zambezi.[45]

C.6.7 Malawi–Zambia

Overview. Originally formed in 1891 as a British intraimperial border between Nyasaland and the British South Africa Company. A historical political frontier (white settlement: Shire Highlands) directly affected the border. The co-primary features of the border are a major watershed (Congo) and a minor watershed.

Details. The foundational British settlement in Malawi was by missionaries in the 1870s who followed the path of David Livingstone to establish missions in the Shire highlands and along Lake Malawi. Portugal also sought to gain control of this and other areas located between Angola and Mozambique, leading Britain to issue an ultimatum specifically for Portugal to withdraw its military from the Shire Highlands, among other territories.[46] Britain declared a protectorate over the Shire highlands in 1889 and over the entire area west of Lake Malawi to the Luangwa watershed in 1894, after the missionaries refused to be governed by Cecil Rhodes' British South Africa Company.[47] The 1891 Order in Council that extended the Company's field of operations north of the

[40] See South Africa–Zimbabwe.
[41] Roberts 1976, 155–62; Marks 1985*b*, 439–442.
[42] McGregor 2009, 58-59.
[43] Hertslet 1909, 266.
[44] Brownlie 1979, 1307.
[45] Brownlie 1979, 1307.
[46] See Malawi–Mozambique.
[47] Roberts 1976, 162; Marks 1985*b*, 442. The Company, as discussed in the preceding entries, gained territorial control over Northern and Southern Rhodesia.

Zambezi explicitly excluded Nyasaland,[48] the boundaries of which were described in the accompanying declaration.[49] These boundaries were unchanged in subsequent documents.[50] The border alignment consists of two watersheds: the Congo in the northern segment and the Luangwa in the southern segment.[51]

C.6.8 Botswana–Zambia

Overview. Originally formed in 1890 as a British intraimperial border between the Bechualand Proctorate and the British South Africa Company. The primary feature is a major river (Zambezi).

Details. Botswana and Zambia meet at a single point that forms a quadripoint (also including Namibia and Zimbabwe) along the Zambezi River.[52] This border is entirely a product of the unusual geography of Namibia's Caprivi Strip,[53] and is therefore derivative of other bilateral borders. We base the year of formation on the year of the major Anglo–German treaty.

Anglo–Portuguese borders (east coast). Mozambique borders five ex-British colonies: Mozambique–South Africa, Mozambique–Swaziland, Malawi–Mozambique, Mozambique–Zambia, and Mozambique–Zimbabwe.

C.6.9 Mozambique–South Africa

Overview. Originally formed in 1817 as a general delimitation of spheres of influence between Britain and Portugal in southern Africa along the coast of the Indian Ocean. Major revisions occurred in 1869 (new segment), 1875 (changed features: clarified local features), and 1891 (changed features: clarified local features). Historical political frontiers (PCS: Zulu; white settlement: South African Republic) directly affected the border. The primary feature of the border is straight lines (non-astronomical). Secondary features are minor rivers and topography (mountains).

The present border contains two noncontiguous northern (vertically oriented) and southern (horizontally oriented) sections, separated by Swaziland's eastern border. Each segment has a distinct historical background, and PCS Zulu directly affected the southern section.

Southern section. Starting in the sixteenth century, Portugal established various small settlements along the coast of modern-day Mozambique. An Anglo–Portuguese Treaty of 1817 formalized Portugal's sphere of influence in this area: "upon the eastern coast of Africa, the territory lying

[48] See Zambia–Zimbabwe.
[49] Hertslet 1909, 266–67.
[50] Brownlie 1979, 1215.
[51] The border documents refer specifically to the Conventional Free Trade Zone (Conventional Congo Basin) and the Geographical Congo Basin (Congo watershed), the former of which corresponds with the Luangwa. See Hertslet 1909, 286 for the specification of Malawi's frontiers, which reference the General Act of the Berlin Conference; and see Hertslet 1909, 471 for the relevant text from the General Act.
[52] Brownlie 1979, 1098–1107.
[53] See Botswana–Namibia.

between Cape Delgado and the Bay of Lorenco Marques."[54] The southern boundary at modern-day Delagoa Bay (the bay; modern-day Maputo Bay) and Lorenço Marques (the city; modern-day Maputo) is the relevant one for the Mozambique–South Africa border. In the ensuing decades, Britain disputed the exact territory encompassed by the southern boundary. Britain signed treaties with rulers in this area and planted the British flag on nearby islands under the contention that the treaty "did not clearly indicate whether Portuguese territory included all of Delagoa Bay or merely the territory as far as this bay ... Doubt was expressed in South Africa as to whether the bay of Lorenzo Marques meant all of Delagoa Bay as claimed by the Portuguese or was merely confined to the inner bay where the Portuguese establishment was located."[55]

Following numerous specific disputes over Delagoa Bay, Britain and Portugal agreed to allow an arbiter (French President MacMahon) to rule on the question. In 1875, he ruled in favor of Portugal. We code this as a major change in the border because it clarified an area of major interest.[56] Following disputes in Central Africa, discussed in the following entries, Britain and Portugal signed a treaty in 1891 to settle their territorial disputes throughout southern Africa. We code this as another major change because it created a definitive border. The treaty stated that "Great Britain engages not to make any objection to the extension of the sphere of influence of Portugal, south of Delagoa Bay, as far as a line following the parallel of the confluence of the River Pongolo with the River Maputo to the sea-coast."[57] Consequently, the western-most part of the border is the Maputo River and the rest of the border is straight (non-astronomical) lines.

PCS Zulu directly affected the border. Britain had lengthy interaction with and strong strategic interests in Zululand, located just south of the southern segment of the border. Throughout the nineteenth century, the Zulu were the militarily strongest African state in southern Africa. After repeated battles with Boers over border disputes beginning in the 1830s,[58] Britain fought a war against Zulu in 1879 that permanently broke Zulu power. Between 1885 and 1887, Britain and the South African Republic partitioned Zulu territory between themselves. The traditional Zulu homeland was of intense strategic interest to Britain because they were "anxious to separate the Boers from the sea." As with the Tswana located farther west,[59] the British feared an alliance between the Germans and the Boers, which led them to extend their authority over eastern Zululand. Later, in 1895, Britain annexed Tongaland (traditionally part of Zululand) to again block Transvaal's access to the sea.[60] This action extended from the south the formal British sphere (Tongaland was

[54]Quoted in Hertslet 1909, 985. Britain's goal with this treaty was to circumscribe the territory under which the slave trade was permitted, which was confined to the sphere delimited for Portugal.

[55]Bixler 1934, 427, 430.

[56]Britain feared that Portugal would sell the territory to a Boer republic or to Germany, but Britain respected the MacMahon Award because of its agreement with Portugal that the losing party in the dispute would have the first rights of purchase (Bixler 1934, 436–40).

[57]Hertslet 1909, 1018. Later in the decade, new concerns about the possibility of Portugal selling Delagoa Bay arose. This led Britain and Germany to conclude a secret treaty in 1898 that divided up Portugal's African territories if Portugal became financially insolvent, which guaranteed Delagoa Bay for Britain (Warhurst 1962, 144–45). This contingency, however, did not arise.

[58]Shillington 1987, 63–65.

[59]See Botswana–South Africa.

[60]Shillington 1987, 99–101, 112–15, 126. The coastal territory of Tongaland includes the natural harbor of St. Lucia.

transferred to Natal in 1897) as far north as the boundary agreed upon with Portugal in 1891, and an Exchange of Notes later in 1895 between Britain and Portugal confirmed this border.[61] These actions also support that the border drawn in 1891 intentionally distinguished the northern limits of Zululand from Portuguese territory, even though Delagoa Bay was the most salient element of this part of the border.

Northern section. This part of the border originally distinguished the eastern limits of the South African Republic from Portuguese territory, which is why we code the border as directly affected by a historical political frontier. In 1869, Portugal and the Republic signed a treaty of friendship that "established the Transvaal–Mozambique alignment in terms of general principles."[62] Britain contested this treaty on the grounds that some of the territory mentioned in the treaty was within its claimed sphere of influence.[63] However, Britain later acceded to this border in Conventions signed with the South African Republic in 1881 and 1884,[64] after its fears of the Republic gaining control over Delagoa Bay had subsided. The border was then confirmed in the 1891 Anglo–Portuguese treaty, which we do not consider as a major change to this section of the border. For the border alignment, rivers and mountain summits serve as end points to (connected) straight lines.[65]

In both the southern and northern segments, non-astronomical straight lines are the primary feature. All the other features mentioned for each are secondary.

C.6.10 Mozambique–Swaziland

Overview. Originally formed in 1869 as an interimperial border between Portuguese Mozambique and the Boer-governed South African Republic, who claimed the historical state of Swaziland as within its sphere of influence; Swaziland became a distinct colony from 1902 onward. Major revisions occurred in 1888 and 1927 (changed features: clarified local features). Historical political frontiers (PCS: Swazi; white settlement: South African Republic) directly affected the border. The primary feature is topography (mountains). A secondary feature is straight lines (non-astronomical).

Details. Portugal, despite its long-standing presence in Mozambique,[66] had minimal contact with the historical kingdom of Swaziland until the 1880s.[67] The frontier was determined in part by the fact that "by the time of his death in 1865, Mswati had made himself into one of the most feared and powerful figures in this part of south-eastern Africa." This reputation emerged in part because his army repeatedly and successfully invaded Madolo in the 1850s, which Portugal claimed as within its sphere of influence.[68]

The border was initially formed in 1869 via an agreement between Portugal and the South African Republic, without the consultation of the Swazi. This set the border as "a line 'along the sum-

[61] Brownlie 1979, 1243.
[62] Brownlie 1979, 1242.
[63] Bixler 1934, 436; Matsebula 1988, 131.
[64] Brownlie 1979, 1242–43.
[65] Brownlie 1979, 1240.
[66] See Mozambique–South Africa.
[67] See South Africa–Swaziland and Gillis 1999, 38.
[68] Bonner 1983, 94–96.

mit' of the Lebombo Mountains," which was reiterated in Conventions in 1881 and 1884 signed between Britain and the South African Republic.[69] The 1869 agreement with Portugal also contained explicit recognition that Swaziland lay within the sphere of influence of the South African Republic,[70] a claim that Britain disputed.[71] The MacMahon Award of 1875, which gave to Portugal the entire area surrounding Delagoa Bay,[72] confirmed that the inland plains as far west as the Lebombos were Portuguese territory.[73] Although the area between Delagoa Bay and the Lebombos was "humid, fever ridden, and unsuitable for colonization," the Lebombos themselves were of strategic interest, as they were "favored by a mild climate and terrain well suited for cattle grazing or intensive farming." In addition to settlement, the area was also believed to have mineral wealth and there was desire to build a railway.[74]

In 1887, the Portuguese sent an informal mission to the Swazi ruler to formalize concessions in the area of the Lebombos. The king rejected these advances and proclaimed that "the lands on the Lubombo and as far east as the Maputo river were part of the Swazi kingdom."[75] Later that year, the Swazi king requested the British and South African Republic governments to cooperate in a boundary commission. The ensuing commission of 1888 ultimately ruled largely against the Swazi due to its preferences for documentary over oral evidence of claims and because of diplomatic tensions that encouraged Britain to placate Portuguese claims. Illustrating the importance of preceding treaties, one of Portugal's arguments was that the treaty of 1869 had already recognized the boundary at the Lebombos.[76] "[T]he commission's recommendations were a major setback for Swaziland. The boundary line eventually laid down denied the kingdom's claim to any portion of the Mozambique plains, the eastern face of the Lubombos, or even a substantial sector of the upper ranges. Yet the Swazi case was reasonable and well founded. But perhaps the king was overconfident in asking for a commission. Previous decisions on the western and southern boundaries should have given a warning of the risks entailed in seeking judgments outside the law and custom of the Swazi nation."[77] We code 1888 as a major revision that clarified local features. The 1891 Anglo–Portuguese treaty, which settled numerous bilateral borders, referred to "the frontier of Swaziland" as a determined quantity. The border remained unchanged during Swaziland's brief incorporation into the South African Republic.[78]

The northeast section of the border remained contested and undetermined until 1927, when Britain and Portugal reached a compromise.[79] In the interim, the disputes revolved around specific local rulers and into which colony they would be placed.[80] We code 1927 as a major revision that clarified local features.

[69]Brownlie 1979, 1255; and see the map of the South African Republic accompanying the 1884 Convention in Hertslet 1909, 232–33.
[70]Bonner 1983, 118.
[71]See South Africa–Swaziland.
[72]See Mozambique–South Africa.
[73]Gillis 1999, 38.
[74]Gillis 1999, 38.
[75]Gillis 1999, 39; see also Matsebula 1988, 131–140 for a similar description of the following.
[76]Matsebula 1988, 134.
[77]Gillis 1999, 42; and see p. 41 for a map sketched by the commission.
[78]Brownlie 1979, 1255.
[79]Gillis 1999, 42–45; and see the map on p. 44.
[80]Matsebula 1988, 136–40.

The border alignment consists entirely of a series of (non-astronomical) straight-line segments. The guiding principle was to correspond with the summits of mountains within the Lebombo range, as indicated by the diplomatic communications. We code mountains as the primary feature and straight lines as a secondary feature.

C.6.11 Malawi–Mozambique

Overview. Originally formed in 1891 as an interimperial border between British Nyasaland and Portuguese Mozambique. A historical political frontier (white settlement: Shire Highlands) directly affected the border. The primary feature of the border is a major lake (Malawi). Secondary features are major watersheds (Lake Malawi and the Zambezi River), minor rivers, and straight lines (non-astronomical).

Details. The Shire Highlands and Lake Malawi had become an area of intense interest for British imperialists by the 1880s because of settlements by Scottish missionaries.[81] This brought British interests into contention with Portuguese claims, who considered broad swaths of Central Africa within their domain of historical influence despite lacking effective occupation. Portugal signed bilateral treaties with each of Germany and France in 1886 that contained a clause recognizing Portugal's rights "in the territories which separate the Portuguese possessions of Angola and Mozambique."[82] Portugal accompanied these treaties with a map shading the claimed Portuguese territories.[83] In 1887, the British government lodged an official protest to the Portuguese government. The protest stated: "The immense field so coloured in the Maps comprises the entire region lying between Angola and Mozambique, Matabeleland, and the district of Lake Nyassa, up to the latitude of the Rovuma River. In the districts to which Portugal thus appears to lay a preferential claim, and in which, except near the sea-coast and on portions of the Zambesi River, there is not a sign of Portuguese jurisdiction or authority, there are countries in which there are British Settlements, and others in which Great Britain takes an exceptional interest."[84] In January of 1890, Britain issued an ultimatum to Portugal to cease military operations in Matabeleland, Mashonaland, and the Shire highlands.[85] The British and Portuguese governments agreed to a treaty that delimited their borders in August of 1890, but the Portuguese Cortes did not ratify the treaty, and in June of 1891 they ultimately secured a treaty agreement. Both versions of the treaty recognized Britain's control over the Shire highlands.[86] Because Protestant missions spurred Britain's interest in the Shire highlands, we code a direct effect of historical political frontiers for the present border.

The northern part of the eastern section of the border consists of Lake Malawi (a major lake), Lake Chiuta, and Lake Chilwa, with straight-line segments forming the border in between these lakes. Lake Malawi is the longest segment on the border (205mi of the 975mi border), and thus we code this as the primary feature. Farther south, the border follows the Ruo and Shire rivers. A short straight-line segment forms the southern-most part of the border and links to the western part of the

[81] See Malawi–Zambia.
[82] Quoted in Hertslet 1909, 675, 704.
[83] See the map between pp. 706–7 in Hertslet 1909.
[84] Quoted in Hertslet 1909, 705.
[85] Warhurst 1962, 9–10.
[86] The relevant parts of the treaties are provided in Hertslet 1909, 1006–8, 1016–19.

border, which consists of the Shire–Zambezi and Lake Nyasa–Zambezi drainage divides.[87] Thus we code as secondary features watersheds of major water bodies (Lake Malawi and the Zambezi River), minor rivers, and straight lines (non-astronomical).

C.6.12 Mozambique–Zimbabwe

Overview. Originally formed in 1891 as an interimperial border between Portuguese Mozambique and the British South Africa Company-governed Southern Rhodesia. A major revision occurred in 1897 (changed features: clarified local features). Historical political frontiers (white settlement: Matabeleland; PCS: Gaza) directly affected the border. The primary feature is minor rivers. Secondary features are straight lines (non-astronomical) and topography (mountains).

Details. In 1889, Cecil Rhodes and the British South Africa Company (BSAC) began to expand British presence from southern Africa into Central Africa.[88] BSAC contested its eastern frontier with Mozambique because it sought to expand eastward into Mashonaland and to gain access to the sea. Mashonaland was located east of the territory encompassed by BSAC's foundational treaty with Lobengula of the Ndebele,[89] which was targeted by British imperialists as a desirable area for settlement.[90] The first Europeans settled in Mashonaland in mid-1890; the "pioneer column" forcibly occupied land northeast of the Ndebele territory and founded Salisbury, or modern-day Harare.[91] A smaller group led by a Company administrator marched farther east to the territory of Manica, which like Mashonaland proper was believed to be suitable for European settlement. This brought the Company into conflict with Portuguese claims, which were long-standing in Manica.[92] Rhodes also contended Portugal's claims to the coastline and made three main attempts to gain access to the coast: provoking an international incident over Beira (a port in Mozambique located north of Delagoa Bay); securing a treaty with Gungunyana, the ruler of Gaza (PCS); and attempting to purchase Delagoa Bay.[93]

The episode involving Gungunyana demonstrates how PCS Gaza affected the border. BSAC actively sought to secure treaty relations with Gungunyana, who claimed control over most of the coastline between the Zambezi River and Delagoa Bay. Although the state lacked a specific port, the mouth of the Limpopo River could have served that purpose.[94] "The dominance of the Shangane over so much of southern Mozambique was to have a profound influence on how the process of partition would unravel. On the one hand, it provided the Portuguese with a central focus on which to concentrate their efforts, while, on the other, the military prowess of the Shangane posed an obstacle which even most Portuguese respected."[95] BSAC secured a treaty in 1890 with Gungunyana, who actively sought British protection because he suspected that Portugal would try to consolidate its control over the interior.[96] Gungunyana was not duped into signing a treaty he

[87] Brownlie 1979, 1117.
[88] See South Africa–Zimbabwe.
[89] See South Africa–Zimbabwe and Botswana–Zimbabwe.
[90] Warhurst 1962, 7–8.
[91] Marks 1985*b*, 445; Shillington 1987, 122.
[92] Warhurst 1962, 14–15, 18.
[93] These episodes are discussed, respectively, in chapters 2 through 4 of Warhurst 1962.
[94] Axelson 1967, 11.
[95] Smith and Clarence 1985, 500.
[96] See Warhurst 1962, Ch. 3 for the following details.

did not understand. Instead, he wanted (and achieved) the same deal that Lobengula of the Ndebele had gained with BSAC in 1888: a large number of guns and monetary payment. Although the British government generally supported Rhodes' aggressive actions, Prime Minister Salisbury rejected Rhodes' claim to Gazaland despite frantic BSAC activity to secure control there. Lack of support from London proved decisive for leaving Gazaland within the Portuguese sphere. Beyond Salisbury's fears that contesting Portugal's claim over Gazaland would inhibit the ability to secure a treaty with them, in a speech to Parliament in 1891, Salisbury claimed:

> "We had the plain dictates of international Law. By a Treaty signed on behalf of this country in 1817, which was confirmed in fuller terms by a Treaty signed in 1847, the whole of this littoral from the Zambesi to Delagoa Bay which Gungunhana claims, and which some persons would like to claim through him, was recognized by this country as belonging to the King of Portugal. It has seemed to us that that closes the controversy, that we are bound to recognize the Treaties which this country has made, and that no high philanthropic, progressive or humanitarian considerations would justify us in disregarding that plain rule of right."[97]

Although Rhodes failed to gain access to the coast, BSAC's actions secured vast territory for Southern Rhodesia within Mashonaland (and stretching into Manicaland). This justifies our coding of white settlement as directly influencing the border. In fact, between the failed 1890 treaty and the successful 1891 treaty, more territory in Manicaland was added to the British sphere.[98] The exact claims within the Manica plateau remained contested following the 1891 treaty. Britain and Portugal agreed to arbitration by the King of Italy, which occurred in 1897. Because the revisions concerned a contested area, we code this as a major change in the border.

The border alignment for the most part follows rivers whenever possible and connects beacons between river segments with short straight lines, although a long straight line links the Limpopo and Sami rivers in the south; and mountains are also referenced occasionally.[99]

C.6.13 Mozambique–Zambia

Overview. Originally formed in 1891 as an interimperial border between Portuguese Mozambique and the British South Africa Company-governed Northern Rhodesia. Historical political frontiers (white settlement: Portuguese district of Zumbo) directly affected the border. The primary feature is straight lines (non-astronomical). Secondary features are minor rivers and topography (mountains).

Details. The preceding entries for Anglo–Portuguese borders explain the general contention between these two powers in Central Africa. Although Portuguese settlements had historically been confined to the coast, Portuguese agents had established various forts and trading posts in the interior along the Zambezi River.[100] Moving east to west, the main ones were Sena, Tete, and Zumbo. "Portuguese influence extended up the Zambezi as far as Zumbo, where authority had

[97] Quoted in Warhurst 1962, 99.

[98] BSAC had initially established its presence in the area in between the time at which the British government signed off on each treaty; see the map between pp. 280–81 in Axelson 1967.

[99] Brownlie 1979, 1221–22.

[100] Warhurst 1962, 3.

been re-established in 1863; this authority was exercised by a non-white *capitão-mor*, who began to repair the long abandoned fort and barracks, which housed twenty-one troops."[101] In the Anglo–Portuguese negotiations of 1890 and 1891, this was fixed as the western-most point of Mozambique along the Zambezi. Because Zumbo lay in between the main areas of British interest to the south (Mashonaland) and north (Shire highlands), this created the large wedge of Portuguese territory that jutted into Northern Rhodesia.[102] The negotiations in this area centered around two related issues: whether, east of Zumbo, Mozambique would encompass the Zambezi river from both the north or south or the north only (given Cecil Rhodes' desire for as much access to the Zambezi as possible); and the size of the strips of territory around the Zambezi. Around Zumbo specifically, the powers discussed the *prazos* (territory allocated as land grants) of the District of Zumbo.[103] A major difference between the failed treaty of 1890 and the signed treaty of 1891 was the expansion of Portuguese territory north of the Zambezi in this panhandle,[104] which compensated for their loss of territory in Mashonaland.[105]

The border alignment consists of the Luangwa River moving northward from Zumbo followed by a long series of straight-line segments to connect to Malawi. Brownlie's (1979, 1263–64) description of the border extensively references minor rivers and mountain summits. Thus we code straight lines as the primary feature and rivers and mountains as secondary features.

interimperial borders (west coast). The following entries are borders separating British, German, and Portuguese colonies on the Atlantic coast of southern Africa: Namibia–South Africa, Angola–Namibia, Botswana–Namibia, Namibia–Zambia, and Angola–Zambia.

C.6.14 Namibia–South Africa

Overview. Originally formed in 1884 as an interimperial border between German South West Africa and Cape Colony. Major revisions occurred in 1890 (new segment) and 1994 (enclave transfer). Historical political frontiers (white settlement: Cape Colony) directly affected the border. The co-primary features of the border are a major river (Orange) and straight lines (parallels/meridians).

Details. The British and Cape governments established a tenuous presence in modern-day Namibia in the 1870s and 1880s, although the British resident was removed from the area in 1880. The only lasting legacy of this early influence was the declaration of a sphere of influence over Walvis Bay in 1878 and its annexation by the Cape Colony in 1884.[106] In 1884, Germany declared the creation of a protectorate along the coast in the southern area of modern-day Angola. The claimed territory extended "from the north bank of the Orange River to the 26° south latitude, 20 geographical miles inland."[107] An official note exchanged with Britain shortly afterwards clarified that

[101] Axelson 1967, 4.
[102] Warhurst 1962, 71.
[103] Axelson 1967, 241–5; see also the map between pp. 261–2.
[104] Warhurst 1962, 71; see also the map between pp. 280–81 in Axelson 1967.
[105] See Mozambique–Zimbabwe.
[106] Marks 1985*a*, 405–8.
[107] Quoted in Hertslet 1909, 691.

the claim excluded Walvis Bay. Shortly after, Germany signed treaties of protection with leaders in areas referred to as Namaqualand and Damaraland. In Lesotho–South Africa, we discuss the northward migration of Europeans up from Cape Town between the seventeenth and nineteenth centuries. By the 1870s, these settlements reached as far north as the Orange River.[108] We code 1884 as the initial year of the Namibia–South Africa border because Germany's declaration of its protectorate referred to two territories controlled by the Cape: the Orange River and Walvis Bay. Thus, this border was directly affected by a historical political frontier of white settlement from the Cape.

The British–German Agreement of 1890 delimited their spheres of influence in Africa. This constituted a major revision by creating an eastern frontier for the German sphere of influence: the 20°E meridian, which is the same meridian (in desert territory) that forms Namibia's eastern border with Botswana. The Orange River segment of the border was extended to comprise the entire southern frontier of Germany's sphere. Thus we code a major river and straight lines (parallels/meridians) as co-primary features.

Walvis Bay remained an enclave territory of the Cape (and then South Africa) for the entire period of European rule. South Africa returned Walvis Bay to Namibia in 1994 upon the end of de facto colonial rule in South Africa (under apartheid).

C.6.15 Angola–Namibia

Overview. Originally formed in 1886 as an interimperial border between Portuguese Angola and German South West Africa. A major revision occurred in 1905 (large territorial transfer: extend Lozi territory in Northern Rhodesia). A historical political frontier (PCS: Lozi) indirectly affected the border. The co-primary features are a straight line (parallels/meridians) and minor rivers. A secondary feature is straight lines (non-astronomical).

Details. Starting in the sixteenth century, Portugal established various small settlements along the coast of modern-day Angola. As of the nineteenth century, the boundaries of Portugal's claims were "vague."[109] On the Atlantic coast, "[i]n the south the eighteenth parallel was generally taken to be the limit. Not that it mattered greatly, for the land there was desert and the next settlement was the distant Walvis Bay." An Anglo–Portuguese Treaty of 1817 formalized Portugal's sphere of influence in this area: "upon the western coast, all that which is situated from the 8th to the 18th degree of south latitude."[110] This precedent influenced the border agreed upon with Germany in 1886, which throughout lies very close to the 18°S latitude.[111]

The distinctive features of the Angola–Namibia border are, moving eastward from the Atlantic: the Kunene River, a parallel line, the Cubango River, and a non-astronomical straight line.[112] Minor rivers and the parallel line each comprise large portions of the border, and therefore we code them

[108] Brownlie 1979, 1273; see also the maps in Shillington 1987, 79, 84.

[109] Wesseling 1996, 100.

[110] Quoted in Hertslet 1909, 985.

[111] The 1886 German–Portuguese treaty also acknowledged broad Portuguese rights to territories in Central Africa north of the German sphere, although Britain later negated these claims; see Malawi–Mozambique.

[112] Hertslet 1909, 703–4; Brownlie 1979, 1025–27.

as co-primary features. The original border ended in a tripoint at the Zambezi River, although a westward shift in the Angola–Zambia border in 1905 removed this feature from the Angola–Namibia border. We code 1905 as a major revision, which also implies an indirect effect for the PCS group Lozi.[113]

C.6.16 Botswana–Namibia

Overview. Originally formed in 1885 as an interimperial border between the British Protectorate of Bechuanaland and German South West Africa. A major revision occurred in 1890 (new segment). The co-primary features of the border are straight lines (parallels/meridians) and a major river (Zambezi). Secondary features are minor rivers and straight lines (non-astronomical).

Details. The original declaration of German South West Africa in 1884 was confined to coastal areas.[114] The original declaration of the Bechuanaland Protectorate in 1885 was bounded to the west by 20°E longitude and to the north by 22°S latitude.[115] The latitude line that constituted the original northern border of Bechuanaland is at roughly the same latitude as the section of the Limpopo River that constituted the northern frontier of the South African Republic, and thus this parallel line nearly intersects the Limpopo at the eastern limit of Bechuanaland. Yet the original parallel border line cut off the northern claims of Khama's Bamangwato state and omitted other Tswana states.[116]

The British–German Agreement of 1890, which finalized the present border, extended the frontiers of Bechuanaland northward to the Zambezi River. Specifically, Botswana's northern border is formed by the Caprivi Strip. The 1890 Agreement describes this part of the limit of German territory as follows:

> [F]ollows [the 21st degree of east longitude] northward to the point of its intersection by the 18th parallel of south latitude; it runs eastward along that parallel till it reaches the River Chobe; and descends the centre of the main channel of that river to its junction with the Zambesi, where it terminates.
>
> *German Access to the Zambesi*
>
> It is understood that under this arrangement Germany shall have free access from her Protectorate to the Zambesi by a strip of territory which shall at no point be less than 20 English miles in width.[117]

The Caprivi Strip panhandle reflected a strategic concession by Britain to allow Germany access to the Zambezi River; incidentally, this concession turned out to be worthless for Germany because the Victoria Falls, located east of the Caprivi Strip, make the river unnavigable. Because the Zambezi determined the northern limits of Bechuanaland, we code this as a primary feature of the border (despite Botswana actually touching the Zambezi only at the quadripoint that also includes Zimbabwe and Zambia), with minor rivers and non-astronomical straight lines as secondary

[113] See Angola–Zambia.
[114] See Namibia–South Africa.
[115] See Botswana–South Africa and Hertslet 1909, 190.
[116] Shillington 1987, 123; and see the map on p. 124.
[117] Quoted in Hertslet 1909, 902.

features.

The western border of Bechuanaland incorporated the 20°E longitude stated in the original declaration of the Bechuanaland Protectorate. Thus, we code 1885 as the formation of the Botswana–Namibia border and 1890 as a major revision. The original 22°S latitude constitutes a small segment of this section of the border before intersecting the 21°E longitude, which was the new segment added to the western border in 1890. It does not appear that Europeans perceived any areas in this Kalahari desert region as important. Because this section of the border consists entirely of straight parallel/meridian lines, we code this as another primary feature of the border.

C.6.17 Namibia–Zambia

Overview. Originally formed in 1890 as an interimperial border between German South West Africa and the British South Africa Company-governed territory of Northern Rhodesia. A major revision occurred in 1905 (large territorial transfer: extend Lozi territory in Northern Rhodesia). A historical political frontier (PCS: Lozi) indirectly affected the border. The co-primary features of the border are a major river (Zambezi) and a straight line (non-astronomical).

Details. This border was broadly formed by the same process that yielded the Botswana–Namibia border, as the entire Namibia–Zambia border consists of the northern terminus of the Caprivi Strip. Both in terms of historical background and features, there are two distinct segments. The original segment is in the east, which until 1905 constituted the entire length of the border. This segment consists entirely of the Zambezi River and was determined by the Anglo–German Agreement of 1890.[118] Although the Agreement does not explicitly state that the Zambezi River was the northern frontier of German South West Africa, this is implied by the description of Germany's strip of territory south of the Zambezi and the stipulation that Germany would have free access to the Zambezi from that strip (hence implying it would *not* have such access from north of the Zambezi).

The western segment is a straight line stretching from the tripoint with Angola to the Katima Mulilo rapids, where it intersects the Zambezi. This segment was originally formed by an 1886 German–Portuguese Declaration.[119] This territory was transferred from Portugal to Britain in 1905 when the King of Italy arbitrated a dispute over the historical limits of Barotseland and awarded to Britain the territory between the Zambezi and the Kwando rivers. Because the PCS group Lozi directly affected the border shift for Angola–Zambia, we code an indirect effect of the Lozi on the Namibia–Zambia border.

For border alignment, because a major river constituted one segment of the border and a straight line the other, we code them as co-primary features of the border.

C.6.18 Angola–Zambia

Overview. Originally formed in 1891 as an interimperial border between Portuguese Angola and the British South Africa Company-governed territory of Northern Rhodesia. A major revision occurred in 1905 (large territorial transfer: extend Lozi territory in Northern Rhodesia). A historical

[118] See Botswana–Namibia.
[119] See Angola–Namibia.

political frontier (PCS: Lozi) directly affected the border. The co-primary features of the border are minor rivers and straight lines (meridians/parallels).

Details. The key element of contention was control over the Lozi state (alternatively, Barotseland). Agency by the Lozi ruler led to a treaty with Britain rather than Portugal, but the two powers continued to debate the limits of the Lozi state even after initially forming the border.

Portugal had long-standing presence on the coast in modern-day Angola.[120] but lacked any settlements farther into the interior. Following decades of intermittent campaigns into Central Africa, in the 1880s, Portuguese agents secured treaties with numerous local rulers and also visited the Lozi state. Broadly, Portugal sought to establish a cross-continental connection (*contra-costa*) between its colonies in Angola and Mozambique. This goal was ultimately dashed, however, when British agents secured control over the Lozi state. Lewanika (the Lozi ruler) actively sought an alliance with the British. Similar to his ally Khama, the Bamangwato ruler,[121] Lewanika sought to protect his people against Lobengula, the Ndebele ruler.[122] Lewanika also sought military confrontation with Europeans: "There is no doubt that the responsibility for taking the original initiative belong entirely to the King himself, who understood before any other Lozi that white power must one day be confronted . . . Lewanika therefore decided that an accommodation with, rather than resistance to, white power could best preserve the integrity of the nation."[123] In 1890, an agent of Cecil Rhodes, Frank Lochner, secured a treaty with Lewanika.[124]

Portugal rejected Britain's initial boundary proposal in 1890, but a year later consented to a treaty that allocated it even less territory because of a government shuffle in Portugal.[125] The division of Lozi territory was a contentious issue in the negotiations over the two treaties. "In the original version Barotseland was divided between Angola and Northern Rhodesia. During the interim, Rhodes protested that the Lochner concession entitled the British South Africa Company to control all of Barotseland. Thus, instead of being divided along the upper Zambezi, all of Barotseland fell into the British sphere."[126]

The 1891 agreement founded the Angola–Zambia border, but the two powers continued to debate the exact limits of the Lozi kingdom. The relevant part of the 1891 treaty for the present border is:

Central Africa

> **Art. IV.** It is agreed that the western line of division separating the British from the Portuguese sphere of influence in Central Africa shall follow the centre of the channel

[120] See Angola–Namibia.
[121] See Botswana–South Africa.
[122] See Botswana–Zimbabwe.
[123] Caplan 1970, 55–56.
[124] Roberts 1976, 158–61.
[125] See Malawi–Mozambique. British control over Lozi territory, along with Cecil Rhodes' claims to Gazaland (see Mozambique–Zimbabwe) and British missionaries' claims to the Shire highlands (see Malawi–Mozambique), ended the *contra-costa* goal. However, the original version of the Anglo–Portuguese treaty created a twenty-mile zone north of the Zambezi that would have established transit and telegraph rights between Angola and Mozambique (Marks 1985*b*, 502–6).
[126] Marks 1985*b*, 502–6.

> of the Upper Zambezi, starting from the Katima Rapids up to the point where it reaches the territory of the Barotse Kingdom.
>
> *Barotse Kingdom within British Sphere*
>
> That territory shall remain within the British sphere; its limits to the westward, which will constitute the boundary between the British and Portuguese spheres of influence, being decided by a Joint Anglo-Portuguese Commission, which shall have power, in case of difference of opinion, to appoint an Umpire.[127]

Disagreements between Britain and Portugal about the limits of the Lozi state triggered the last provision, as summarized in an Anglo–Portuguese Declaration of 1903 that sent the case to arbitration:

> **Art. I.** The Arbitrator shall be asked to give a decision, which shall be accepted as final by both Parties, on the question: What are, within the meaning of the above-quoted Article of the Treaty of 1891, the limits of the territory of the Barotse Kingdom?[128]

The King of Italy served as arbiter and decreed that the effective authority of the Barotse ruler extended west of the original border, the Zambezi River. As hallmarks of sovereignty, he collected information about which minor rulers paid tribute to the Lozi king and whether the Lozi king adjudicated their legal disputes. In his ruling, the Italian king concluded, "such powers had beyond doubt already been exercised by the King of Barotse in the Province of Nalolo, to the west of the Zambesi and they had also been exercised over the tribes of the Mabuenyi and the Mamboe, so that their territory formed an integral part of the Barotse Kingdom."[129] These observations influenced his decision to move the southern part of the border westward from the Zambezi River to the Kwando River.[130]

The final border alignment consists of four sectors. Moving southward from the tripoint with the DRC, the border consists of various minor rivers, a parallel, a meridian (which had been moved westward in 1905), and the Kwando River.[131] The latter part now consists of a series of straight lines that follow the Kwando River, a change made in 1964 because of the unreliability of the river's extensive and variable flood zone.[132] We code minor rivers and straight lines as co-primary features. The straight-line sectors are somewhat longer, but the arbitration in 1905 explicitly used rivers to assess the Barotse frontiers. A major river (Zambezi) was used in the 1891 border but not the 1905 border, and thus we do not code it as a feature.

[127] Quoted in Hertslet 1909, 1019.
[128] Quoted in Hertslet 1909, 1072.
[129] Quoted in Hertslet 1909, 1075.
[130] Brownlie 1979, 1043.
[131] Brownlie 1979, 1071.
[132] Brownlie 1979, 1071.

REFERENCES

Abraham, Garth. 2007. ""Lines upon Maps": Africa and the Sanctity of African Boundaries." *African Journal of International and Comparative Law* 15:61–84.

Ajayi, J. F. Ade and Robert S. Smith. 1964. *Yoruba Warfare in the 19th Century*. Cambridge University Press.

Ajayi, JF Ade and Michael Crowder. 1985. *Historical Atlas of Africa*. Longman.

Akintoye, S.A. 1971. *Revolution and Power Politics in Yorubaland 1840–1893*. Humanities Press.

Alesina, Alberto, William Easterly and Janina Matuszeski. 2011. "Artificial States." *Journal of the European Economic Association* 9(2):246–277.

Alexandrowicz, C.H. 1973. The Partition of Africa by Treaty. In *Foreign Relations of African States*, ed. Kenneth Ingham.

Ali Taha, Faisal Abdel Rahman. 1977. "The Sudan-Libya boundary." *Sudan Notes and Records* 58:65–72.

Alsan, Marcella. 2015. "The Effect of the Tsetse Fly on African Development." *American Economic Review* 105(1):382–410.

Anene, Joseph. 1970. *The International Boundaries of Nigeria, 1885-1960*. Humanities Press.

Appiah, Anthony and Henry Louis Gates. 2010. *Encyclopedia of Africa*. Vol. 1 Oxford University Press on Demand.

Armstrong, Robert G. 1955. *Ethnographic Survey of Africa: Western Africa Part X. Peoples of the Niger-Benue Confluence. The Igala*. International African Institute.

Asiwaju, A.I. 1976. *Western Yorubaland under European Rule, 1889–1945: A Comparative Analysis of French and British Colonialism*. Longman.

Atanda, J.A. 1973. *The New Oyo Empire*. Humanities.

Axelson, Eric. 1967. *Portugal and the Scramble for Africa: 1875–1891*. Witwatersrand University Press.

Barber, James. 1968. *Imperial Frontier: A Study of Relations Between the British and the Pastoral Tribes of North East Uganda*. East African Publishing House.

Barber, J.P. 1965. "The Moving Frontier of British Imperialism in Northern Uganda 1898–1919." *Uganda Journal* 29(1):27–43.

Barbour, Kenneth M. 1961. A Geographical Analysis of Boundaries in Inter-tropical Africa. In *Essays on African Population*, ed. K.M. Barbour and R.M. Prothero.

Beattie, John. 1971. *The Nyoro State*. Clarendon.

Beringue, Yves. 2019. *La frontière entre Soudan français (Mali) et Guinée: d'une limite intra-impériale vers une frontière interétatique (1878-1956)*. Université Paris 1 Panthéon-Sorbonne. **URL:** *https://theses.hal.science/tel-02440629/*

Bixler, Raymond W. 1934. "Anglo-Portuguese Rivalry for Delagoa Bay." *Journal of Modern History* 6(4):425–440.

Boilley, Pierre. 2019. "Nord-Mali: les frontières coloniales de l'Azawad." *Canadian Journal of African Studies* 53(3):469–484.
URL: *https://doi.org/10.1080/00083968.2019.1667840*

Bonner, Philip. 1983. *Kings, commoners and concessionaires: the evolution and dissolution of the nineteenth-century Swazi state*. Cambridge University Press.

Boulvert, Yves. 1983. Découverte géographique et scientifique de l'Ouest de la Centrafrique. Technical report Institut de Recherche pour le Développment.
URL: *https://www.documentation.ird.fr/hor/fdi:16946*

Bourret, F.M. 1949. *The Gold Coast: A Survey of the Gold Coast and British Togoland, 1919–1946*. Stanford University Press.

Bowman, Joye L. 1987. "'Legitimate Commerce' and Peanut Production in Portuguese Guinea, 1840s–1880s." *Journal of African History* 28(1):87–106.

Bradbury, R.E. 1957. *Ethnographic Survey of Africa: Western Africa Part XIII: The Benin Kingdom and the Edo-Speaking Peoples of Southern-Western Nigeria*. International African Institute.

Bradbury, R.E. 1967. The Kingdom of Benin. In *West African Kingdoms in the Nineteenth Century*, ed. Daryll Forde and P.M. Kaberry. Oxford University Press p. 1–35.

Brooks, George E. 1975. "Peanuts and Colonialism : Consequences of the Commercialization of Peanuts in West Africa." *The Journal of African History* 16(1):29–54.

Brownlie, Ian. 1909. *A treatise on international law*. Oxford: Oxford university Press.

Brownlie, Ian. 1979. *African Boundaries: A Legal and Diplomatic Encyclopaedia*. C. Hurst & Co.

Bustin, Edouard. 1975. Lunda under Belgian Rule: The Politics of Ethnicity. In *Lunda Under Belgian Rule*. Harvard University Press.

Butcher, Charles R and Ryan D Griffiths. 2020. "States and their International Relations since 1816: Introducing Version 2 of the International System(s) Dataset (ISD)." *International Interactions* 46(2):291–308.

Cahoon, Ben M. n.d. "Traditional States of Nigeria." https://www.worldstatesmen.org/Nigeria_native.html.

Caplan, Gerald L. 1970. *The Elites of Barotseland 1878-1969*. Berkeley: University of California Press.

Carpenter, Nathan Riley. 2012. Sovereignty along a West African Frontier: The Creation of the Guinea–Senegal Border, 1850–1920 PhD thesis.

Catala, René. 1948. "La Question de l'échange de la Gambie Britannique contre les comptoirs Français du Golfe de Guinée de 1866 à 1876." *Outre-Mers. Revue d'histoire* 35(122):114–137.

Christensen, Darin and David D Laitin. 2019. *African States since Independence*. Yale.

Clarence-Smith, William Gervase. 1985. *The Third Portuguese Empire, 1825–1975: A Study in Economic Imperialism*. Manchester University Press.

Clarence-Smith, William Gervase. 1986. Spanish Equatorial Guinea. In *The Cambridge History of Africa Vol. 7: from 1905 to 1940*, ed. J. D. Fage, A. D. Roberts and Roland Anthony Oliver. New York, NY: Cambridge University Press pp. 537–543.

Clifford, EHM. 1936. "The British Somaliland–Ethiopia Boundary." *The Geographical Journal* 87(4):289–302.

Collier, David. 2011. "Understanding Process Tracing." *PS: Political Science & Politics* 44(4):823–830.

Collins, R.O. 1962. "Sudan-Uganda Boundary rectification and the Sudanese occupation of Madial, 1914." *Uganda Journal* 26(2):140–153.

Cottes, A. 1911. *La Mission Cottes au Sud-Cameroun*. Parits: Ernest Leroux.

Craven, Matthew. 2015. "Between law and history: the Berlin Conference of 1884-1885 and the logic of free trade." *London Review of International Law* 3(1):31–59.

Crowder, Michael. 1966. *A Short History of Nigeria*. FA Praeger.

Crowder, Michael. 1968. *West Africa under Colonial Rule*. Northwestern University Press.

Crowder, Michael. 1973. *Revolt in Bussa: A Study of British "Native Administration" in Nigerian Borgu, 1902–1935*. Faber and Faber Limited.

Crowder, Michael and Donal Cruise O'Brien. 1974. French West Africa, 1945–1960. In *History of West Africa Vol. II*, ed. J.F. Ade Ajayi and Michael Crowder. Cambridge University Press pp. 664–699.

Crowder, Michael, ed. 1971. *West African Resistance: The Military Response to Colonial Occupation*. Holmes Meier Pub.

Crowe, S.E. 1942. *The Berlin West African Conference 1884–1885*. Negro Universities Press.

Curtin, Philip, Steven Feierman, Leonard Thompson and Jan Vansina. 1995. *African History: From Earliest Times to Independence*. Pearson.

Darch, Colin. 2018. *Historical Dictionary of Mozambique*. Rowman & Littlefield.

Deasy, George F. 1942. "Spanish Territorial Boundary Changes in Northwest Africa." *Geographical Review* 32(2):303–306.

Decalo, Samuel. 1997. *Historical Dictionary of Niger*. Scarecrow Press.

DeLancey, Mark Dike, Mark W. DeLancey and Rebecca Neh Mbuh. 2019. *Historical dictionary of the Republic of Cameroon*. Rowman & Littlefield.

Deschamps, Hubert. 1963. "Quinze ans de Gabon (Les débuts de l'établissement français, 1839-1853)." *Revue française d'histoire d'outre-mer* 50(180-181):283–345.
URL: *https://www.persee.fr/doc/outre_0300-9513_1963_num_50_180_1380*

d'Hertefelt, M., A. A. Trouwborst and J. H. Scherer. 1962. *Ethnographic Survey of Africa: Les Anciens Royaumes de la Zone Interlacustre Meriodionale (Rwanda, Burundi, Buha): East Central Africa Part XIV*. International African Institute.

Englebert, Pierre. 2002. *State Legitimacy and Development in Africa*. Lynne Rienner.

Fallers, Margaret Chave. 1960. *Ethnographic Survey of Africa: East Central Africa Part XI – The Eastern Lacustrine Bantu (Ganda, Sogo)*. International African Institute.

Fenske, James. 2014. "Ecology, Trade, and States in Pre-Colonial Africa." *Journal of the European Economic Association* 12(3):612–640.

Food and Agricultural Organization of the United Nations. 2022. "Hydrological Basins in Africa." Available at https://data.apps.fao.org/catalog/iso/e54e2014-d23b-402b-8e73-c827628d17f4.

Forde, Daryll. 1951. *Ethnographic Survey of Africa: Western Africa Part IV. The Yoruba-Speaking Peoples of South-western Nigeria*. International African Institute.

Gamble, David P. 1967. *Ethnographic Survey of Africa: Western Africa Part XIV: The Wolof of Senegambia*. International African Institute.

Ganiage, Jean. 1985. North Africa. In *The Cambridge History of Africa Vol. 6: from 1870 to 1905*, ed. Roland Oliver and G. N. Sanderson. New York, NY: Cambridge University Press pp. 159–207.

Gillis, D Hugh. 1999. *The Kingdom of Swaziland: Studies in political history*. Number 37 Greenwood Publishing Group.

Hailey, Lord. 1950*a*. *Native Administration in the British African Territories. Part. I. East Africa: Uganda, Kenya, Tanganyika*. His Majesty's Stationery Office, London.

Hailey, Lord. 1950*b*. *Native Administration in the British African Territories. Part. II. Central Africa: Zanzibar, Nyasaland, Northern Rhodesia*. His Majesty's Stationery Office, London.

Hailey, Lord. 1963. *The Republic of South Africa and the High Commission Territories*. Oxford University Press.

Hatchell, G.W. 1956. "The Boundary Between Tanganyika and Kenya." *Tanganyika Notes and Records* 43:41.

Herbst, Jeffrey. 1989. "The Creation and Maintenance of National Boundaries in Africa." *International Organization* 43(4):673–692.

Herbst, Jeffrey. 2000. *States and Power in Africa*. Princeton.

Hertslet, E. 1909. *The Map of Africa by Treaty*. H.M. Stationery.

Hiribarren, Vincent. 2017. *A History of Borno*. Hurst.

Hogben, S.J. and A.M.H. Kirk-Greene. 1966. *The Emirates of Northern Nigeria: A Preliminary Survey of their Historical Traditions*. Oxford University Press.

Holt, P.M. and M.W. Daly. 2014. *A History of the Sudan: From the Coming of Islam to the Present Day*. 6 ed. Routledge.

Hughes, A.J.B. and J. van Velsen. 1955. *Ethnographic Survey of Africa: Southern Africa Part IV. The Shona and Ndebele of Southern Rhodesia*. International African Institute.

Imoagene, Oshomha. 1990. *Peoples of the Niger-Benue Confluence and Plateau Areas*. New-Era Publishers.

Ingham, K. 1957. "Uganda's Old Eastern Province: The Transfer to East Africa Protectorate in 1902." *Uganda Journal* 21(1):41–46.

Ingham, Kenneth. 1958. *Making of Modern Uganda*. Allen & Unwin.

International Court of Justice. 2005. "Frontier Dispute (Benin/Niger).".
URL: *https://www.icj-cij.org/case/125*

Julien, C. 1977. *Les Africains, Vol 3*.

Kanya-Forstner, A. S. 1969. *The Conquest of the Western Sudan*. Cambridge University Press.

Karugire, Samwiri Rubaraza. 1971. *A History of the Kingdom of Nkore in Western Uganda to 1896*. Clarendon Press.

Kuper, Hilda. 1952. *Ethnographic Survey of Africa: Southern Africa Part 1. The Swazi*. International African Institute.

Kuper, Hilda. 1963. *The Swazi: A South African Kingdom*. Holt, Rinehart, and Winston.

Latham-Koenig, A.L. 1962. "Ruanda-Urundi on the Threshold of Independence." *The World Today* 18(7):288–295.

Lefèbvre, Camille. 2015. *Frontières de sable, frontières de papier*. Éditions de la Sorbonne.

Lemarchand, Ren'e. 1970. *Rwanda and Burundi*. Praeger.

Lombard, J. 1967. The Kingdom of Dahomey. In *West African Kingdoms in the Nineteenth Century*, ed. Daryll Forde and P.M. Kaberry. Oxford University Press pp. 70–92.

Louis, William Roger. 1963*a*. *Ruanda-Urundi, 1884-1919*. Clarendon Press.

Louis, W.M. Roger. 1963*b*. "The Anglo–German Hinterland Settlement of 1890 and Uganda." *Uganda Journal* 27(1):71–83.

Loungou, Serge. 1999. "La frontière nord du Gabon : une brève étude de géographie politique." *Espace, populations, sociétés* 17(3):439–449.

Lovejoy, Paul E. 2016. *Jihad in West Africa during the Age of Revolutions*. Ohio University Press.

Mangongo-Nzambi, André. 1969. "La délimitation des frontières du Gabon (1885-1911)." *Cahiers d'Études Africaines* 9(33):5–53.
URL: *https://www.jstor.org/stable/4391031*

Manoukian, Madeline. 1952. *Ethnographic Survey of Africa: Western Africa Part V – Tribes of the Northern Territories of the Gold Coast*. International African Institute.

Marcus, Harold G. 1963*a*. "A Background to Direct British Diplomatic Involvement in Ethiopia, 1894-1896." *Journal of Ethiopian Studies* 1(2):121–132.

Marcus, Harold G. 1963*b*. "Ethio-British negotiations concerning the western border with Sudan, 1896–1902." *The Journal of African History* 4(1):81–94.

Mariam, Mesfin Wolde. 1964. "The background of the Ethio-Somalian boundary dispute." *The Journal of Modern African Studies* 2(2):189–219.

Marks, Shula. 1985*a*. Southern Africa, 1867–1886. In *The Cambridge History of Africa Vol. 6: from 1870 to 1905*, ed. Roland Oliver and G. N. Sanderson. New York, NY: Cambridge University Press pp. 359–421.

Marks, Shula. 1985*b*. Southern and Central Africa, 1886–1910. In *The Cambridge History of Africa Vol. 6: from 1870 to 1905*, ed. Roland Oliver and G. N. Sanderson. New York, NY: Cambridge University Press pp. 422–492.

Marks, Thomas A. 1976. "Spanish Sahara–Background to Conflict." *African Affairs* 75(298):3–13.

Martel, André. 1965. *Les confins Saharo-tripolitains de la Tunisie (1881-1911)*. Paris: Presses Universitaires de France.

Mathys, Gillian. 2014. "People on the Move: Frontiers, Borders, Mobility and History in the Lake Kivu Region, 19th–20th Century." Ph.D. dissertation, Universiteit Gent.

Matsebula, JSM. 1988. *A History of Swaziland*. Longman.

Matson, A.T. 1958. "Uganda's Old Eastern Province and East Africa's Federal Capital." *Uganda Journal* 22(1):43–53.

McEwen, Alexander C. 1971. *International Boundaries of East Africa*. Clarendon.

McGregor, JoAnn. 2009. *Crossing the Zambezi: The Politics of Landscape on a Central African Frontier*. James Currey.

McKeon Jr, Robert W. 1991. "The Aouzou Strip: Adjudication of competing territorial claims in Africa by the International Court of Justice." *Case Western Reserve Journal of International Law* 23:147.

Meunier, Alexandre. 1929. "Afrique Equatoriale Française, Colonie du Gabon. Ministère des colonies.".
URL: *https://1886.u-bordeaux-montaigne.fr/s/1886/item/168658#?c=&m=&s=&cv=&xywh=-2933%2C-471%2C16164%2C11973*

Michalopoulos, Stelios and Elias Papaioannou. 2016. "The Long-Run Effects of the Scramble for Africa." *American Economic Review* 106(7):1802–1848.

Miles, William FS. 1994. *Hausaland divided: Colonialism and Independence in Nigeria and Niger*. Cornell University Press.

Mills, LR. 1970. An Analysis of the Geographical Effects of the Dahomey-Nigeria Boundary PhD thesis Durham University.

Milner, Alfred. 1894. "England in Egypt." Public domain.

Murdock, George Peter. 1959. *Africa: Its Peoples and their Culture History*. McGraw-Hill.

Murdock, George Peter. 1967. *Ethnographic Atlas*. Pittsburgh.

Nassa, Dabié Désiré Axel. 2006. "Les frontières nord de la Côte-d'Ivoire dans un contexte de crise." *Revue de géographie de Bordeaux* .
URL: *https://shs.hal.science/halshs-00087106*

Natural Earth. 2023. "Rivers + lake centerlines." Available at https://www.naturalearthdata.com/downloads/10m-physical-vectors/10m-rivers-lake-centerlines.

Nugent, Paul. 1996. Arbitrary Lines and the People's Minds: A Dissenting View on Colonial Boundaries in West Africa. In *African Boundaries: Barriers, Conduits, and Opportunities*, ed. Paul Nugent and A.I. Asiwaju. Pinter pp. 35–67.

Nugent, Paul. 2019. *Boundaries, Communities and State-making in West Africa*. Cambridge.

Nunn, Nathan. 2008. "The Long-Term Effects of Africa's Slave Trades." *Quarterly Journal of Economics* 123(1):139–176.

Office of the Geographer. 1966. International Boundary Study: Chad – Niger Boundary. Technical Report 73 Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/numericalibs.html*

Office of the Geographer. 1967. International Boundary Study. Mauritania – Senegal Boundary. Technical Report 78 Department of State.

Office of the Geographer. 1968. International Boundary Study: Central African Republic - Chad. Technical Report 83 Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/numericalibs.html*

Office of the Geographer. 1970*a*. International Boundary Study: Cameroon – Central African Republic Boundary. Technical Report 107 Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/numericalibs.html*

Office of the Geographer. 1970*b*. International Boundary Study: Cameroon – Chad Boundary. Technical Report 102 Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/numericalibs.html*

Office of the Geographer. 1971*a*. International Boundary Study: Cameroon-Gabon. Technical report Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/numericalibs.html*

Office of the Geographer. 1971*b*. International Boundary Study. Cameroon – Republic of the Congo Boundary. Technical Report 110 Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/numericalibs.html*

Office of the Geographer. 1974*a*. International Boundary Study: Burkina Faso – Niger Boundary. Technical Report 146 Department of State.

Office of the Geographer. 1974*b*. International Boundary Study: Central African Republic - Republic of the Congo Boundary. Technical Report 145 Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/numericalibs.html*

Office of the Geographer. 1975*a*. International Boundary Study: Mali – Niger. Technical report Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/pdf/ibs150.pdf*

Office of the Geographer. 1975*b*. International Boundary Study: Mali – Senegal. Technical report Department of State.
URL: *http://library.law.fsu.edu/Digital-Collections/LimitsinSeas/pdf/ibs151.pdf*

Office of the Geographer. 1979. International Boundary Study: Cote D'Ivoire (Ivory Coast) – Mali Boundary. Technical report Department of State.
URL: *https://library.law.fsu.edu/Digital-Collections/LimitsinSeas/pdf/ibs171.pdf*

Official Documents. 1913. "Treaty Between France and Spain Regarding Morocco." *American Journal of International Law* 7(2):81–99.

Oliver, Roland and Anthony Atmore. 2005. *Africa Since 1800*. Cambridge: Cambridge University Press.

Oster, Emily. 2019. "Unobservable Selection and Coefficient Stability: Theory and Evidence." *Journal of Business & Economic Statistics* 37(2):187–204.

Owusu-Ansah, David. 2014. *Historical Dictionary of Ghana*. Rowman & Littlefield.

Paine, Jack. 2019. "Ethnic Violence in Africa: Destructive Legacies of Pre-Colonial States." *International Organization* 73(3):645–683.

Palley, Claire. 1966. *The Constitutional History and Law of Southern Rhodesia 1888–1965*. Oxford University Press.

Person, Yves. 1974. The Atlantic Coast and the Southern Savannahs, 1800–1880. In *History of West Africa Vol. II*, ed. J.F. Ade Ajayi and Michael Crowder. Cambridge University Press pp. 262–307.

Prescott, J.R.V. 1971. *The Evolution of Nigeria's International and Regional Boundaries: 1861–1971*. Tantalus Research Limited.

Reid, Richard J. 2012. *Warfare in African History*. Cambridge.

Ricart-Huguet, Joan. 2022. "The Origins of Colonial Investments in Former British and French Africa." *British Journal of Political Science* 52(2):736–757.

Richmond, Edmun B. 1993. "Senegambia and the Confederation: history, expectations, and disillusions." *Journal of Third World Studies* 10(2):172–194.

Roberts, Andrew D. 1973. *A History of the Bemba: Political Growth and Change in North-Eastern Zambia before 1900*. University of Wisconsin Press.

Roberts, Andrew D. 1976. *A History of Zambia*. Africana Publishing Company.

Roberts-Wray, Kenneth. 1966. *Commonwealth and Colonial Law*. Stevens & Sons.

Roodman, David, Morten Ørregaard Nielsen, James G MacKinnon and Matthew D Webb. 2019. "Fast and wild: Bootstrap inference in Stata using boottest." *The Stata Journal* 19(1):4–60.

Sanders, Peter. 1975. *Moshoeshoe: Chief of the Sotho*. Heinemann.

Sanderson, G.N. 1985*a*. The European Partition of Africa: Origins and Dynamics. In *The Cambridge History of Africa Vol. 6: from 1870 to 1905*, ed. Roland Oliver and G. N. Sanderson. New York, NY: Cambridge University Press pp. 96–158.

Sanderson, G.N. 1985*b*. The Nile Basin and the Eastern Horn, 1870–1908. In *The Cambridge History of Africa Vol. 6: from 1870 to 1905*, ed. Roland Oliver and G. N. Sanderson. New York, NY: Cambridge University Press pp. 592–679.

Sandouno, Moïse. 2015. Une histoire des frontières guinéennes (années 1880-2010): héritage colonial, négociation et conflictualité PhD thesis Université Toulouse le Mirail.
URL: *https://theses.hal.science/tel-01140352*

Searing, James F. 2003. *West African Slavery and Atlantic Commerce: The Senegal River Valley, 1700-1860*. Cambridge University Press.

Shaw, William Boyd Kennedy. 1935. "International boundaries of Libya." *The Geographical Journal* 85(1):50–53.

Sheddick, V.G.J. 1953. *Ethnographic Survey of Africa: Southern Africa Part II. The Southern Sotho*. International African Institute.

Shillington, Kevin. 1987. *History of Southern Africa*. Longman.

Silberman, Leo. 1961. "Why the Haud was ceded." *Cahiers d'études africaines* 2(5):37–83.

Skinner, Elliott Percival. 1958. "The Mossi and Traditional Sudanese History." *Journal of Negro History* 43(2):121–131.

Smaldone, Joseph P. 1977. *Warfare in the Sokoto Caliphate: Historical and Sociological Perspectives*. Cambridge University Press.

Smith, Alan K. and Gervase Clarence. 1985. Portuguese colonies and Madagascar. A. Angola and Mozambique, 1870–1905. In *The Cambridge History of Africa Vol. 6: from 1870 to 1905*, ed. Roland Oliver and G. N. Sanderson. New York, NY: Cambridge University Press pp. 493–520.

Smith, Robert S. 1988. *Kingdoms of the Yoruba*. University of Wisconsin Press.

Spence, Jack. 1971. South Africa and the Modern World. In *The Oxford History of South Africa II: South Africa 1870–1966*, ed. Monica Wilson and Leonard Thompson. New York, NY: Oxford University Press pp. 477–528.

Stewart, John. 2006. *African States and Rulers*. McFarland.

Suret-Canale, J. and Boubacar Barry. 1971. The Western Atlantic Coast to 1800. In *History of West Africa Vol. I*, ed. J.F. Ade Ajayi and Michael Crowder. Cambridge University Press pp. 456–511.

Suret-Canale, Jean. 1971. *French Colonialism in Tropical Africa, 1901-1945*. London: Hurst Publishers.

Taha, Faisal Abdel Rahman Ali. 1978. "The Sudan–Uganda Boundary." *Sudan Notes and Records* 59:1–23.

Taylor, Andrew JP. 1950. "Prelude to Fashoda: The Question of the Upper Nile, 1894-5." *The English Historical Review* 65(254):52–80.

Taylor, Brian K. 1962. *Ethnographic Survey of Africa: East Central Africa Part XIII. The Western Lacustrine Bantu (Nyoro, Toro, Nyankore, Kiga, Haya, and Zinza, with Sections on the Amba and Konjo)*. International African Institute.

Theobald, A.B. 1965. *Ali Dinar: Last Sultan of Dafur 1898-1916*. Longmans.

Thom, Derrick J. 1975. "The Niger-Nigeria Boundary 18900-1906: A Study of Ethnic Frontiers and a Colonial Boundary.".

Thompson, Leonard. 1996. *A History of South Africa: Revised Edition*. Yale University Press.

Thompson, Virginia and Richard Adloff. 1958. *French West Africa*. Stanford University Press.

Touval, Saadia. 1966. "Treaties, Borders, and the Partition of Africa." *Journal of African History* 7(2):279–293.

Trout, Frank E. 1969. *Morocco's Saharan Frontiers*. Geneva: Droz Publishers.

Truschel, Louis W. 1974. "The Tawana and the Ngamiland Trek." *Botswana Notes & Records* 6(1):47–55.

Turner, V.W. 1952. *Ethnographic Survey of Africa: West Central Africa Part III: The Lozi Peoples of North-Western Rhodesia*. International African Institute.

Uganda Department of Lands and Surveys. 1962. *Atlas of Uganda*.

Utrecht University. 2022. "History Database of the Global Environment 3.2." Available at https://public.yoda.uu.nl/geo/UU01/MO2FF3.html.

Vansina, Jan. 1966. *Kingdoms of the Savannah*. University of Wisconsin Press.

Vivid Maps. 2001. "The Major River Basins of Africa." Available at https://vividmaps.com/the-major-river-basins-of-africa.

Warhurst, Philip R. 1962. *Anglo–Portuguese Relations in South-central Africa 1890–1900*. Longmans.

Warner, Rachel. 1990. Historical Background. In *Mauritania: A Country Study*, ed. Robert Earl Handloff. Washington, D.C.: Federal Research Division, Library of Congress pp. 1–38.

Weinstein, Warren. 1974. Ruanda–Urundi (Rwanda–Burundi). In *Divided Nations in a Divided World*, ed. Gregory Henderson, Richard Ned Lebow and John G. Stoessinger. David McKay Company pp. 341–378.

Wesseling, H.L. 1996. *Divide and Rule: The Partition of Africa, 1880–1914*. Praeger.

White, Frank. 1983. *The Vegetation of Africa*. Paris, France: UNESCO.

Whiteley, Wilfred. 1951. *Ethnographic Survey of Africa: East Central Africa Part II. Bemba and Related Peoples of Northern Rhodesia*. International African Institute.

Wight, Martin. 1946*a*. *The Development of the Legislative Council, 1606–1945*. Faber & Faber Limited.

Wight, Martin. 1946*b*. *The Gold Coast Legislative Council*. Faber & Faber Limited.

Wilfahrt, Martha. 2018. "Precolonial Legacies and Institutional Congruence in Public Goods Delivery: Evidence from Decentralized West Africa." *World Politics* 70(2):239–274.

Wilks, Ivor. 1975. *Asante in the Nineteenth Century*. Cambridge.

Woocher, Lawrence S. 2000. "The Casamance Question: An Examination of the Legitimacy of Self-Determination in Southern Senegal." *International Journal on Minority and Group Rights* 7:341.

Yakemtchouk, Romain. 1971. *L'Afrique en Droit International*. Librairie generale de droit et de jurisprudence.

Zahan, Dominique. 1967. The Mossi Kingdoms. In *West African Kingdoms in the Nineteenth Century*, ed. Daryll Forde and P.M. Kaberry. Oxford University Press p. 152–178.

Zewde, Bahru. 2001. *A History of Modern Ethiopia*. Ohio University Press.