

## 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). To determine which candidates to code as PCS, we began by consulting three continent-wide lists of precolonial African states: Stewart (2006), Paine (2019), and Butcher and Griffiths (2020).

- We counted as PCS any polity listed as a state in all three sources: Asante, Benin, Borno, Buganda, Bunyoro, Burundi, Cayor, Dahomey, Darfur, Ethiopia, Futa Jalon, Jolof, Kazembe, Lesotho, Luba, Lunda, Nkore, Rwanda, Sokoto, Wadai, Walo, and Zulu.
- We did not count as PCS any polity that none of the three sources identify as a state.
- 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 to count as PCS. Paine (2019) provides a detailed case-by-case appendix that helps to adjudicate some disputed cases. Based on his notes, we code the following as PCS: Bemba, Bundu, Kasanje, Lozi, Ndebele, Porto Novo, Salum, and Sine.
- Paine’s (2019) notes demonstrate that the following groups had decentralized polities, and thus we do not count them as PCS: Ovimbundu, Tio, and Zande.
- We count Egypt, Morocco, and Tunis as PCS. These were unambiguously states, and they are omitted in one source, Paine (2019), because he includes only Sub-Saharan Africa.
- We do not count as PCS any state that originated after 1850. Some later states emerged as reactions to early European colonization and their “precolonial” boundaries were affected by military engagements with Europeans, e.g., Mahdist state, Samori, and Tukolor (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).

For the remaining cases, we provide brief notes to justify our coding choice (all of which we code as PCS 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, 428–46; 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 uncertain (Crowder 1973, 19–43). In the 1890s, the British and French each sent expeditions in an attempt to claim as much territory as possible (see Appendix C.3.8). 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. For background on precolonial polities in the Niger Delta, see Dike (1956); Jones (1963); Anene (1966).

- Dagomba: The ruling dynasty dated back to the fourteenth century, although the state became tributary to the Asante between the 1740s and 1874. We code this as a PCS because the ruling dynasty survived through 1874 and afterwards (Stewart 2006, 68). Manoukian (1952) and Owusu-Ansah (2014, 88) provide 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). Lefèbvre (2015, 96) discusses the entry fees that caravanners paid in return for freedom of movement. See also Hiribarren (2017).
- 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 France’s military conquest in the 1860s. Suret-Canale and Barry (1971) provide details on pre-jihad political institutions; and the appendix for Wilfahrt (2018) provides additional sources.
- 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. Located in the Niger-Benue confluence, the *Ata* (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 below in the Ethiopia entry, 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. Kuper (1963) provides details on their political institutions.
- Unyanyembe: Not coded as PCS. 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). Oliver and Atmore (2005, 90–96) and Stewart (2006, 160) provide details.
- Yoruba states (Egba, Ibadan, Ijebu, Oyo): See the description in the Yoruba entry below. All four are coded as PCS.

## B.2 CODING NOTES ON PCS POLYGONS

We digitized numerous historical maps, which enabled us to georeference a set of African precolonial states in ArcGIS. Most polygons are based on the maps from 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 overlapping territory equally 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 a spell as an Asante tributary state dating back to 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, there is overlap between the A&C polygons that we chose for each. We altered the Asante polygon to exclude the territory corresponding with independent Dagomba (post-1874).

Wilks (1975) provides extensive details on the structure of the Asante 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 extant 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 chiefdoms (who each controlled various villages) within the kingdom. Manoukian (1952) indicates no ambiguity about which chiefdoms 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 nineteenth 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 possibly 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 (p. 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 (p. 23). The myth of Bussa supremacy arose because it was the first of these states and held the most important relics (p. 29). Overall, “[t]his 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” (p. 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” (p. 34). The distinct Borgu states labeled in the A&C map are identical to those in the Crowder (1973) map. The maps with disaggregated Borgu polities provide an extra validity check because we jointly encompass all the Borgu states as a single polygon. Crowder’s (1973) map is accompanied by detailed notes about boundaries and the relationships among the states, which he attributes to Mallam Musa Baba Idris.

### **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 nineteenth 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 nineteenth century: “Bornu never recovered Hadeija and Katagum from the Fulani<sup>1</sup> . . . Bornu virtually lost Wadai. In

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<sup>1</sup>See the Sokoto entry for details.

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 [the capital of] 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 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 clarifies 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) describes, “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” (p. 409). Additionally, “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” (pp. 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 Bunyoro 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 the differences between A&C’s 1800 and 1885 maps indicate. “Bunyoro 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 extensive details on all these cases, which confirms 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 labels 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.** Lombard (1967, 70) details the boundaries of the Dahomey kingdom: “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.” 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).<sup>2</sup> 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 uncertain and fluctuating western frontier of Darfur that abutted Wadai. Historically, that frontier “extend[ed] 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. Their polygon does not distinguish between Egypt proper and Egyptian Sudan, which yields a polygon that stretches far south of the traditional Ottoman province. To fix this, we incorporated the map from Milner (1894). He depicts the northern frontier of the Mahdist state in Sudan, which we use

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<sup>2</sup>Available online through The University of Texas at Austin 2023.

as the southern border for Egypt. We verified the validity of our polygon using the maps in Holt and Daly (2014) and [here](#).

**Details.** Muhammed Ali, nominally a governor within the Ottoman Empire, created the modern Egyptian state. His territorial conquests spread far into the Sudan region. 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. Our various maps of both the pre-Mahdist and Mahdist periods depict similar southern frontiers for Egypt, with Wadi Halfa lying just north of Egyptian Sudan or the Mahdist state in all. 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 pre-colonial 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. We additionally verified the validity of our polygon using the map in Person (1974, 264–65).

**Details.** Carpenter (2012, 67–68, 73) describes the boundaries of Futa Jalon: "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.”

## **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). In the discussion of the [Mozambique–Zimbabwe](#) border in Appendix C, we provide more discussion of Gaza’s territorial reach.

## **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, 20–21, 39–41). The A&C polygon for Igala in 1850 is nearly identical in shape to the polygon in the 1884 map, although 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, were 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 in the article), 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), indicating that this territorial arrangement was stable.

## 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 Zahan (1967, 153). Both list the four major kingdoms: Ouagadougou, Tenkodogo, Fada-n-Gourma, and 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 (Matabele) 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 an 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, 1299) 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.** Karugire (1971, 33) describes the boundaries: “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.” 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.

## 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’Hertefeldt and Scherer (1962).

**Details.** The borders of the modern-day countries of Rwanda and Burundi closely resemble their precolonial frontiers. Although territorial expansion occurred during the nineteenth century (the polygons in the A&C maps for 1885 are larger than in 1800), these gains were concentrated earlier in the nineteenth century. Historians of Central Africa carefully document the limits of the borders of these two precolonial states in the late nineteenth century (except the eastern border of Burundi), and demonstrate that their frontiers had largely stabilized by the late nineteenth century.

In Rwanda, “the centralization of power was greatly intensified over the last third of the nineteenth century, and especially from c. 1876, during the personal reign of Kigeri Rwabugiri [1853–1895]. Rwabugiri is renowned in Rwanda as the great warrior-king of the late nineteenth century” (Newbury 2001, 306). According to Vansina (2000, 78), by the time of his death, “the kingdom had extended its sphere of action to the right bank of Lake Kivu, to Nkore, and to Bushuubi.” How-

ever, Newbury (2001, 309) concluded,<sup>3</sup> “though this military power intensified court administrative structures in such regions as Kinyaga, Bugoyi, and Gisaka, these constant campaigns were notably unsuccessful in annexing new territory; the lasting legacy of these incessant campaigns was more in tightening court control within Rwanda than in expansion per se.” The last precolonial king attempted to extend Rwanda’s border north of Lake Bunyoni into what is now Uganda. However, rebellions pushed the northern border southward to a point “close to its present position shortly before European contact . . . Rwanda’s modern borders are broadly representative of the precolonial kingdom at the end of the 19th century” (Giblin 2021, 257).

The Kingdom of Burundi expanded between 1800 and 1850, at which point it resembled its boundaries on the eve of colonization. King Ntare Rugamba (c. 1796-1850) “set the geographical contours to modern Burundi by extending royal power in many directions. He conquered parts of Bugesera to the north and Bugufi in the northeast; he incorporated Buyogoma in the east, and occupied the Rusizi Valley to the northwest” (Newbury 2001, 284). Other areas such as Kinyaga (southwestern Rwanda) were only conquered briefly. Indeed, Burundi’s northern border was often the site of conflict with Rwanda since at least the 1700s. According to Vansina (2000, 72), “Rwanda carried out border raids in [Burundi], and the latter does the same in Rwanda. The two countries had roughly the same military strength, and the skirmishes didn’t last more than a day or two. This has been the situation in Rwanda and Burundi since around 1750.” The Akanyaru River, which currently separates much of Rwanda and Burundi, has acted as a de facto border since at least the 1700s during the reigns of Rujugira of Rwanda and Mutaaga of Burundi: “After the death of Mutaaga, the border was fixed on the Akanyaru river, where it has always remained” (Vansina 2000, 19, 73). Lake Tanganyika comprised Burundi’s natural western border, but its eastern frontier was less well defined (Newbury 2001, 280, 283).

### **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, the northernmost 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 British administrator Frederick Lugard claimed incorrectly that Sokoto’s influence extended as far west as Timbuktu. Anene (1970) stresses the lack of political

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<sup>3</sup>Newbury was Vansina’s doctoral advisee.

allegiances by the many long-distance traders in the region. He asserts, “[i]t 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” (p. 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.<sup>4</sup>

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 northeastern corner of our polygon. Hiribarren (2017) provides more details on this boundary.

## 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.7.3 and C.7.11, 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).

## 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 Meyer’s Handatlas (2022).

## 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

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<sup>4</sup>Adeleye (1971) and Smaldone (1977) provide more details on this boundary.



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 the close temporal proximity between its territorial peak and 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 Oyo influenced these states as well. 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 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 (a) wars involving Ibadan, and (b) 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). 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). However, Anene's detailed analysis demonstrates that 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 the 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 pre-dominance . . . 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 and 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 subsequently conquered by Ibadan in 1862. Oyo, Ibadan, and Egba (plus Ijebu) are the four states identified on the Ajayi and Crowder maps that are also listed as a state in at least one of the three verification data sets we consulted to code PCS. 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 governance 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 is too imprecise to digitize). The A&C 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.

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