Gods, Kings, and Missionaries: Legacies of Ancient States and Christian Missionaries on Religion in Africa

Constantine Manda *

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Abstract

African Christians who hold indigenous religious beliefs are more tolerant of other religions. I argue that syncretic Africans are more likely to descend from ethnicities that were more politically centralized, relative to acephalous ethnicities, in the ancient period. Exposure to Christian missionaries interacted with ancient political institutions to produce relatively greater syncretism among the former. Ruling elites helped translate the new and foreign Christian ideas and helped map them onto existing and indigenous religious ideas. They had incentives to convert to Christianity to secure their ability to retain power and protect and expand their territories. Christianity replaced indigenous deities that previously legitimized elites' political authority. Missionaries exploited greater economies of scale among centralized than acephalous groups to more easily convert the former than the latter. Using OLS regressions on data from various sources, I show that centralization *and* missionary exposure positively associates with syncretism. Later, centralized Africans created African Initiated Churches (AICs) which continued to indigenize Christianity, allowing syncretic legacies of ancient political and religious institutions to persist. This paper shows that ancient indigenous institutions in Africa have important legacies on religion.

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1. INTRODUCTION

Africans are the most religious people worldwide (Figure 1). They are adherents of both indigenous and foreign religions (Figure 2). Although almost all are either Christian or Muslims, some, in addition, believe in more ancient and long-running indigenous religions. These include the belief in evil spirits, the evil eye, and witchcraft. What explains this syncretism among Africans? In line with previous literature on the legacies of ancient[1] political centralization (Wilfahrt 2022; Bauer 2022; Michalopoulos and Papaioannou 2013; Osafo-Kwaako and Robinson 2013; Gennaioli and Rainer 2007) and Christian missionaries (Zu Selhausen 2019; Nunn 2010; Viera 2007; Woodberry 2004; Ekechi 1993), I document important legacies of both on contemporary religious beliefs among Africans. In particular, through OLS regressions on data collected from different sources, I find that the interaction between ancient political centralization and Christian missionary exposure increases syncretism today (Table 7). For each additional kilometer (km) increase in proximity to the nearest Christian mission, centralized Africans report more syncretism, relative to acephalous Africans. The effect is equivalent to about 44% of syncretism's standard deviation (SD). I propose mechanisms to explain the emergence of syncretism that include preferences and constraints of (1) the ruler, other elites, (2) their subjects of these ethnicities, and (3) Christian missionaries across time.[2]

Ruling Elites. First, more so in centralized than in acephalous ethnicities, ancient rulers and other elites had incentives to develop and sustain religious institutions that venerated themselves and especially the ruler as having a divine right to rule. Such a religious institution includes the invocation of a moralizing, interventionist,

[1]Like some African scholars, I object to using the term, "pre-colonial," as it centers scholarly analysis on foreign colonial institutions rather than indigenous African institutions. See this example from the Nigerian political philosopher Prof. Olúfémi Táíwò. In this paper, I thus adopt the term "ancient" rather than "pre-colonial" to describe the long historic period before colonialism in Africa. This period ends around the period of European conquest and colonization in the 19th century but is as old as the Bronze Age (3200 BCE) when Egypt's founding monarch sometimes known as Menes or Narmer ruled the unified Egyptian Kingdom. For a recent attempt at dating this founding ancient Egyptian King see Dee et al. (2013).

[2]The time under consideration in the theorizing is from the pre-historic period through the period after the Bronze Age at the inception of recorded history to the contemporary era.

and punitive high god who people worship and whose endorsement of the ruler legitimizes the latter's political authority. This helped limit costly intra-elite "palace coups" but also fostered society-wide cooperation (Norenzayan 2013; Norenzayan and Gervais 2012; Henrich 2011; Henrich et al. 2010; Henrich and Henrich 2007) reducing the probability of popular uprisings.

Acephalous groups, on the other hand, rarely have moralizing, interventionist, *and* punitive high gods. Whenever they exist, they are less punitive than those in centralized groups and people can often deviate from religious norms with very little religious or social consequence (Apicella 2018). These societies are also smaller and straddle fewer people than more centralized polities. Cooperative benefits of a belief in a high god are thus more limited. Smaller populations also promote religious behavior that emphasizes the "lesser spirits/gods," who inhabit the "microcosm" or physical world relative to larger and more complex societies which emphasize a supreme and/or singular high god, who governs the metaphysical realm or the "macrocosm (Horton 1975; Peoples et al. 2016; Rossano 2006)." Therefore, these societies' religious development would not be intertwined with its political institutions to the same extent.

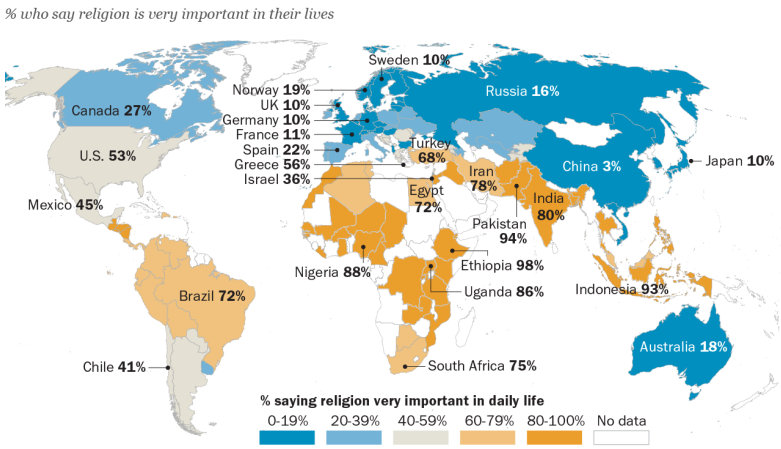


Figure 1: Source: The Pew Research Center's Pew-Templeton Global Religious Futures project that, in addition to other activities, surveyed nationally representative-samples of adults around the world on their religious beliefs and practices. It visualizes the percentage of survey respondents who report that religion is very important in their lives. Africans, are on average, the most religious of any continent or region in the world. This comes from https://www.pewresearch.org/religion/2022/12/21/key-findings-from-the-global-religious-futures-project/.

Indeed, I find that the belief in a high god across ethnic groups, both globally (Table A1) and in Africa (Table 4), positively associates with political centralization. Further, within Africa, the survival of political lines of succession is also positively correlated with political centralization (Table 6). This suggests that religious and political institutions reinforced each other as they evolved. I also find that centralized Africans are today more likely than acephalous Africans to report that religion is very important in their lives (Table 8 and Figure 5b). They are also more likely to be theists (Table 9 and Figure 5c) and monotheists (Table 10 and Figure 5d). These results suggest that religion was indeed more salient among centralized ethnicities and that religious institutions included a belief in a high god that legitimized ruling elites' political power.

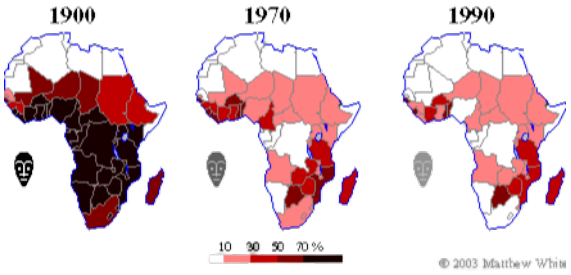
Subjects. Second, the subjects of centralized societies needed to believe in their ruler's divine right to rule. Ancient rulers corroborated this by ensuring greater prosperity among their subjects including most importantly, military success in both defending but also expanding their territory. This is true not just in Africa but in other ancient centralized societies. Ancient Mayan kings, for instance, mutilated their genitalia or tongues as costly signals of their divine legitimacy to rule (Schele and Freidel 1990). Moreover, subjects of centralized societies may have been more likely to convert to Christianity following their ruler's and other elites' conversion. Ruling elites' incentives to convert included greater access to trading goods including most importantly guns and ammunitions that often followed interactions with missionaries and colonists. However, converted rulers needed to credibly signal genuine conversion while at the same time avoiding denigrating earlier existing deities and indigenous religious beliefs.[3]

All of this made it more likely that subjects of centralized ethnicities in Africa would be syncretic. They would have been more likely to be exposed to strong religious institutions such as that of believing in high gods. They also would have

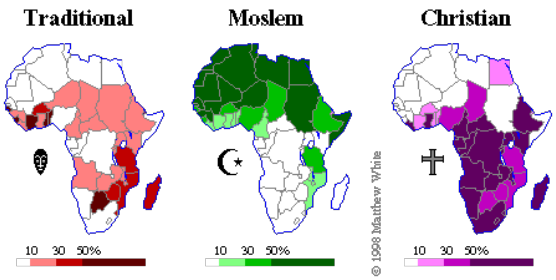
[3]Once again, this is not unique to Africa as Strathern (2007) recounts the story of the 16th century Sri Lankan King, Jayavīra Banḍāra (reign: 1511-1552 CE), who feared of public knowledge of his conversion, "lest his people should kill him." His conversion did lead to rioting by his subjects so much so that he had to explain that his conversion was a ploy to deceive the Portuguese.

been more exposed to connections between Christianity and their indigenous beliefs, given the ruling elites' delicate balance between adopting new Christian religious beliefs with the older indigenous deities and beliefs. For instance, the first African ruler to convert to Christianity, King Ezana— the 4th-century ruler of Aksum in present-day Ethiopia— may have used ambiguous terminology in inscriptions soon after his conversion to avoid necessarily angering his predominantly non-Christian subjects at the time. Kaplan (1982, page 104) writes specifically:

> As the king of a predominantly non-Christian people, Ezana could not afford to startle or offend the majority of his subjects, who remained faithful to their traditional religions. As a ruler who claimed divine descent, he could not undertake a religious revolution without undermining his traditional basis of legitimacy. Accordingly, Ezana sought to present his new beliefs in terms in keeping with the traditional views of his subjects. The ambiguous term "the Lord of Heaven" would certainly have been understood by the bulk of the population as a reference to a pagan deity.



(a) Benin, Botswana, Liberia, and Sierra Leone had at least half of their populations adhering to indigenous beliefs in 1990. Burkina Faso, Ivory Coast, Tanzania, Madagascar, Mozambique, and Zimbabwe had between 30-50% of its populations holding on to their indigenous beliefs.



(b) The north is dominated by Islam while the central and southern regions by Christianity. Tanzania is almost evenly split between Christians and Muslims while Botswana remains significantly indigenous.

Figure 2: Evolution of indigenous beliefs in Africa in 1900, 1970, and 1990 on the left panel and Percentage of indigenous, Christian, Muslim believes across Africa in 1990. These images are from: http://users.erols.com/mwhite28/afrorelg.htm.

This tension between signaling genuine conversion and transitioning from using older indigenous deities to the Christian God for legitimizing political author-

ity, often created reversions as subjects of centralized groups abandoning their converted Christianity to retain their indigenous religious beliefs. This made Christianity among centralized ethinc groups less likely to remain in its pure foreign form as it incentivized an incorporation of indigenous religious ideas before it could calcify in these communities. Botswana's Batawana King Moremi II (reign: 1874 - 1890 CE), for instance, who first converted to Christianity and later abandoned this conversion later advised missionaries within his realm to accept the coexistence of both Christian and indigenous beliefs (Tlou 1973, page 118). King Moremi II was "willing to accept certain aspects of the new ideology within the context of his culture" and lamented that although he may be willing to accept Christianity, politically it is difficult for him to force his people to do the same, if they refuse, which they sometimes did.

On the other hand, because acephalous Africans had weak or absent ruling elites, their conversion to Christianity would have been much more direct and personal, without elites negotiating and articiulating the transition from the older indigenous to the newer Christian beliefs. This made it much harder, on the one hand, for missionaries to convert them, however more likely for their conversion to be sticky and more absolute, which would make them less syncretic. Access to education and other public goods, which were often used to convert Africans (Alesina et al. 2023; Bauer 2022; Nunn 2010) were likely as effective among acephalous as centralized Africans. However, what is most critical is that the lack of strong elites or rulers to intercede with missionaries made one's conversion more absolute accompanied by a stronger rejection of the earlier indigenous beliefs.

Christian Missionaries. Third, Christian missionaries often needed sustainable funding, and getting as many converts as possible was one important source of galvanizing resources both from donations in Europe and longrun financial sustainability of the missions locally. It was difficult to guarantee mass conversions let alone genuine ones. However, missionaries often expected mass conversions following the conversion of the ruler and other elites. Tlou (1973, page 116) explains how missionaries in Botswana, after the Batawana King Moremi II (reign: 1874 - 1890 CE) con-

verted, expected "mass conversions would follow the King's conversion." Growth in conversions among such a centralized group was often higher the rates of conversion among acephalous groups. In the same period in the Batawana Kingdom, conversions grew from 15 in 1877 to 40 in 1881 and 100 in 1883, a final growth rate of 567%.[4] By exploiting larger economies of scale among centralized than acephalous groups, missionaries were more likely to succeed in converting the former than the latter.

Meanwhile, penetration of Christianity in many acephalous ethnicities to this day in Africa remains low. For instance, only about 35-45% of the Maasai of Tanzania and Kenya— an acephalous ethnicity—- are Christian today. On the other hand, 95% of the more centralized Hehe of Tanzania, are Christians, according to the Joshua Project.[5] Moreover, Africans were more likely to convert if the evangelism came from one of their own. Former enslaved Africans in Sierra Leone, for instance, facilitated conversion as they were relatively more acquainted with Christianity and had converted earlier than others (Owen 1865, page cxcvi). Using locals to convert others is cheaper to do in a centralized than in an acephalous group. Further, the probability of reverting back to indigenous beliefs would be less likely in more acephalous groups so that people in these latter groups would be less syncretic, conditional on conversion, relative to people in centralized groups who, even after converting, may still retain some aspects of indigenous beliefs. Owen (1865, page cxciii), for instance, discusses how Catholic missionaries baptized 100,000 subjects of the highly centralized Kongo Kingdom in one day in 1490 CE "yet dwindling gradually away, the natives reverted to the paganism[6] they had abandoned only in name."

Persistence. African Initiated Churches (AICs), which grew out of converted Africans in missionary churches and schools, facilitated the persistence of these religious and political institutions that led to greater religiosity among centralized Africans relative to acephalous Africans and after exposure to Christian missionaries greater syncretism. These churches, over 10,000 today in South Africa alone, are syn-

[4]The growth rate in 1881 from 1877 is 167% and similarly from 1881 to 1883 the rate is 150%.
[5]For more details: https://joshuaproject.net/countries/TZ.
[6]Paganism here refers to the Kongolese's indigenous beliefs. Footnote not in the original.

cretic as they straddle both foreign Christian ideas with indigenous African religious beliefs and practices. They emerged predominantly in the 19th and 20th centuries. There are two main categories of these churches— the Ethiopian and Zionist, with the former ceding "from the White mission churches chiefly on racial grounds...[while] the Zionist type [ceded in order to] stress healing, speaking in tongues, and spontaneity and emotionalism in religious practices (Da Silva 1993, page 393). These churches emerged either as a political movement of black liberation; economic rights to land ownership; but also cultural and religious reasons including ideas of a black messiah and in response to what their founders saw as an erosion of African culture in favor of western culture. Earliest founders of these churches such as the Kongolese Kimpa Vita and Simon Kimbangu; the Nigerian Josiah Olunowo Ositelu; Namibia's !Nanseb IGâbemab;[7] and South Africa's Joseph Mutunye Kanyane Napo, Engenas Lekganyane and Isaiah Shembe were often members of their centralized ethnicities' ruling elites or descend from centralized ethnicities (Monyai 2007). Moreover, AICs in South Africa,[8] for instance, are today located closer to centralized than acephalous ethnic groups (Figure 7). This suggests that indeed legacies of ancient political centralization and Christian missionary exposure persists through AICs.

This paper is related to several literatures. First, it is related to scholarship on the persistent effects of ancient political centralization (Wilfahrt 2022; Bauer 2022; Michalopoulos and Papaioannou 2013; Osafo-Kwaako and Robinson 2013; Gennaioli and Rainer 2007) and Christian missionaries (Zu Selhausen 2019; Nunn 2010; Viera 2007; Woodberry 2004; Ekechi 1993). Second, the paper is also part of a rich tradition in the social sciences of understanding why people are religious (Iannaccone 1998). However, although my result on syncretism is in line with literature that argues that greater religious competition induces greater religiosity (Iannaccone 1998), it disagrees with the political economy literature that shows that centralized groups in Africa are wealthier *and* secularization theory that wealthier individuals and groups

[7] Also known as Hendrik Witbooi.

[8] South Africa hosts over 10,000 AICs while at the same time has considerable variation across ethnicities on ancient political centralization. It is thus an important case study to test this mechanism.

will tend to be less religious (Iyer 2016; Norris and Inglehart 2011).

Third, although McClendon and Riedl (2019); McClendon and Beatty Riedl (2021); McClendon (2019); McClendon and Riedl (2016, 2015); Ellis and Haar (1998) show how religion relates to politics in Africa and Alfonsi et al. (2024); Auriol et al. (2020); Weber and Kalberg (2013); Klaubert (2010) do the same for economic variables, this paper shows how inter-related the development of both religious and political institutions in the ancient past and how these can persist to the present. Religion is important for politics today in Africa. As a matter of fact, this paper finds that Africans who have high religiosity are 8-10% points more likely to prefer democracy as well as religious politicians (Table A14).

The paper next introduces the background and theory (Section 2) before describing the data including how outcomes and the independent variables are measured (Section 3). It then specifies the empirical strategy (Section 4), presents results (Section 5), and concludes (Section 6).

2. BACKGROUND AND THEORY

2.1 Background

Africa straddles over 517 million Christians (62.9% of the population); and over 248 million Muslims (30.2%). Christians are projected to more than double and Muslims to almost triple by 2050. As religious people, Africans put a lot of their trust on religious leaders. According to the 2019-2021 (round 8) Afrobarometer survey, for instance, Africans trust and contact religious leaders more than any other leaders or institutions. In fact, 71% of Africans trust religious leaders and this is more than they trust their traditional leaders, the President, the police, the local government authority, and the opposition parties, for instance (Figure 3). Religion and its intersection in politics has had many consequences for Africans. It was important in the genesis and experience of the Rwandan genocide in 1994, for instance (Carney 2014). It remains important for the politics of homosexuality in Africa today and likely in the future

(Kaoma 2016; Van Klinken and Chitando 2016).

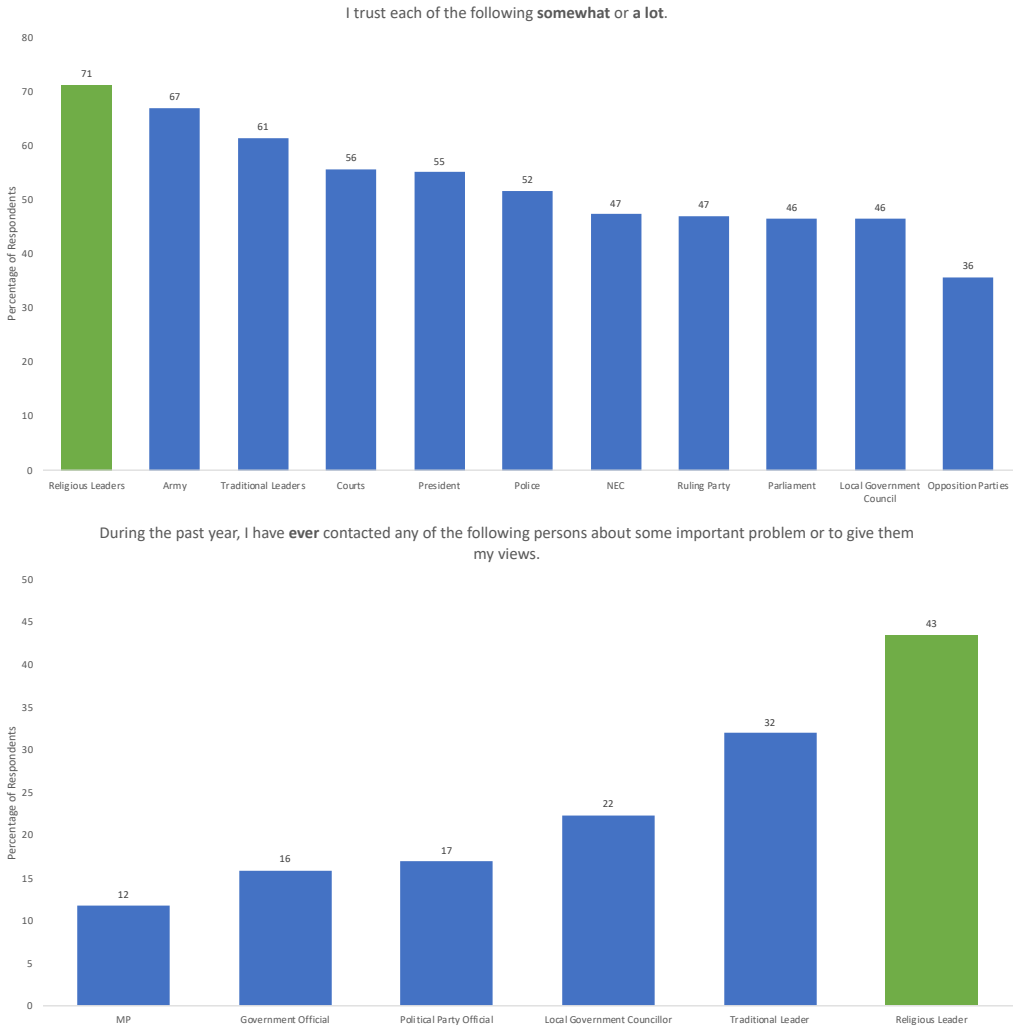


Figure 3: Africans trust and contact religious leaders more than all other leaders and institutions according to Afrobarometer's Round 8 (July 2019 - July 2021).

When and how did Christianity and Islam get introduced in Africa? Christianity came to Africa through Egypt and then later Carthage (present-day Tunisia) in 50 CE. The first ever region to convert to Christianity, not just in Africa but globally, was the regions straddling Ethiopia and Eritrea after Ethiopia's 4th century King Ezana converted into Christianity. It later intensified through increasing missionary activity as increasingly more Europeans arrived in the continent and later with the onset of European colonial rule across the continent through railways and other public good investments (Jedwab et al. 2022; Shillington 2019; Kaplan 1982). Meanwhile, Islam came through Africa in 614 CE when Prophet Muhammad urged his early disciples

to seek refuge in Ethiopia's Aksum Kingdom across the Red Sea. There, the Aksumite King Armah who converted to Islam, which later rulers of Ethiopia would reverse and retain Christianity as the dominant religion in Ethiopia. In 628 CE, some of these early Muslims fleeing the Arabaian peninsula for Aksum— four years before the Prophet's death— settled in nearby Somalia and setup some of the first longlasting Muslim communities that predominate there to this day. In the Islamic tradition, this first migration from the Arab world into Africa is known as the first *hijrah*. Conversion to Christianity and Islam in Africa, through conquest or the provision of public goods and services took many centuries. Indigenous beliefs were difficult to expel entirely, even in places that today are fervently Islamic or Christian. At the turn of the 20th century in 1900 and even in 1990, many African countries had sizeable individuals who remained adherents of indigenous beliefs (Figure 2).

2.2 Theory

Like others around the world, Africans' religious thought and practices likely began with impersonal polytheistic supernatural agents worshipped as gods (Harari 2017; DuBois 2014; Rossano 2006; Greene 1996; Grottanelli 1969).[9] The evolution of religious beliefs in ancient Africa, like elsewhere, included ancestor worship (Harari 2017; Rossano 2006). Although ancestor worship, specifically worship of elite ancestors, is ubiquitous across almost all human societies, the elevation and veneration of certain individuals in a community—an elite, is more pronounced among relatively larger and more politically complex societies rather than small hunter-gathering societies (Peoples et al. 2016; Rossano 2006). Moreover, elite ancestors are invoked by their descendants to "induce others [in society] to pay attention to what they say (Lindstrom 1990, page 324)." In order to increase the chances that elite ancestors will intercede on behalf of their descendants, local elites have often argued that rituals to bring forth ancestral interventions must be exclusively performed by themselves, the

[9]Exceptions to this view exist with other scholars of Africa's religions arguing that many of the latter are in fact more mono- than poly-theistic emphasizing a Supreme Being that is situated above the lesser divinities and spirits observed by believers of Africa's traditional religions (Mbiti 2015; Horton 1975).

elites (Rossano 2006, page 357). This confers the elites, including most importantly, the ruler with prestige in their society.

Ancient African rulers, as principal elites, increase their prestige by arguing for their "divine right to rule (Shermer 2004; Diamond 2002; Wilson 1998; Ellis and Haar 1998)." This argument may have "functioned as an effective countermeasure against aggressive egalitarianism (Rossano 2006, page 357)" but also against possible challenges to a ruler's legitimacy from among other elites such as members of the ruler's family as well as the wider population of subjects. The ruler's prestige thus increases with their ability to convince the polity's elite and non-elite members that they indeed have a "divine right to rule." This prestige, in turn, increases society-wide cooperation and increases the ruler's longevity on the throne. The larger the society the more prestige the ruler has to amass in the minds of elite and non-elite members of her domain to foster large-scale society-wide cooperation (Henrich et al. 2015) and thus the stronger the need to convince the masses of the ruler's "divine right to rule."

Ancient Africans who resided in increasingly larger communities needed political organization that would facilitate large-scale cooperation and that was done through establishing and sustaining a belief in a supernatural high god who can observe all human behavior and can and does intervene in human affairs (Norenzayan 2013; Norenzayan and Gervais 2012; Henrich 2011; Henrich et al. 2010; Henrich and Henrich 2007). However, such large-scale cooperation requires the ruler to have relatively high prestige (Henrich et al. 2015) and such prestige may be established and maintained by invoking a "divine right to rule" (DRR). This prestige may be sustained through costly signaling by the ruling elite, especially the King. Costly signaling may include leading successful military campaigns; and/or ensuring and facilitating improved welfare of the general population; and/or more direct costly behavior including mutilating oneself in order to convince elites and the masses of the King's DRR (Rossano 2006; Schele and Freidel 1990). The King's ability to avoid or survive challenges to his political power from fellow elites (family members and other local elites) and from the greater population increases with the proportion of his subjects

believing in his DRR. The divinity of the ruler, thus, served "to ensure the survival and viability of these states (Uzoigwe 1977, page 23)."

Acephalous societies in ancient Africa, on the contrary, were more likely to be egalitarian and less likely to worship a moralizing high god. Members of these groups, even where they had religious institutions that included religious rules and norms, could often break these norms with very little consequence suggesting that their high gods (Apicella 2018), wherever they existed, were less punitive than those in ancient centralized groups. Their relatively small group size also promotes religious behavior that emphasizes the "lesser spirits/gods," who inhabit the "microcosm" or physical world relative to larger and more centralized groups which emphasize a central high god, who governs the metaphysical realm or the "macrocosm (Horton 1975; Peoples et al. 2016; Rossano 2006)."

Further, when Christian missionaries were introduced on the continent, first in places like Ethiopia and Congo, they began evangelizing wealthier and more politically-powerful groups. Later, over centuries, with increasing competition among themselves, missionaries needed more converts for the sustainability of their enterprises. They accomplished conversion by (1) exploiting economies of scale by first converting local elites including the ruler and (2) facilitating these elites to translate Christian ideologies into local vernacular but also situate these newer religious ideas with the older indigenous ones. Former enslaved Africans in Sierra Leone, for instance, facilitated conversion as they were relatively more acquainted with Christianity and had converted earlier than others (Owen 1865, page cxcvi). Specifically, out of a total Sierra Leonean population in 1863 of 41,624, 36,533 (87.8%) were Christians.[10] The fact that out 38,375 black Africans, 15,782 or 41.1% were foreign-born liberated former enslaved Africans may have helped with the high rates of conversion (Owen 1865, page cxcvi). Following success in conversions, this one mission in Sierra Leone, in 1854, became exclusively funded locally saving its missionary society £800 per year (equivalent to £111,148 in 2024) and later in 1861 collected contributions above

[10] 3,357 (8.1%) remained faithful to their indigenous beliefs while about half of that (1,734 or 4.2%) were Muslims.

£10,000 (equivalent to £1,389,349 in 2024) (Owen 1865, page cxcvii).

On the other hand, because elites were less prevalent or less powerful among more acephalous groups, conversion there was more costly but also was more devoid of the translating and contextualizing of Christian ideas with existing indigenous beliefs. This would make acephalous individuals more likely, conditional on conversion, to more fully embrace their new faith by rejecting the older indigenous beliefs, relative to more centralized individuals. Indeed, conversion among centralized groups was not always linear. Tlou (1973, page 118) reports how missionaries in the Batawana Kingdom in 1886 "reverted to their "immoral customs openly and boldly," and that Moremi had abandoned Christianity." Tlou (1973, page 118) quotes him as follows:

> I know that your words [Lloyd's] are good words, and that it is a blessing to any town to have the people of God therein, for when Abraham prayed for the cities of the plain, God promised to spare the people if only ten righteous persons were found therein. So I know that it is right to serve God, and to build the town with God's word... But for my part, I Moremi, wish to stand in the teaching, but many of my people refuse to do so.

The differential development of political and religious institutions between centralized and acephalous ethnicities facilitated the emergence and growth of African Initiated Churches (AICs). Thse AICs then in-turn facilitate persistence of syncretism (Da Silva 1993; Monyai 2007). Whether the Ethiopian or Zionist types, early founders of AICs were often members of ruling elites in centralized ethnicities. Wherever they were non-elite members of these ethnicities, they often nevertheless tended to descend from centralized, rather than, acephalous ethnic groups. These include founders such as Kongolese Kimpa Vita and Simon Kimbangu; the Nigerian Josiah Olunowo Ositelu; Namibia's !Nanseb IGâbemab;[11] and South Africa's Joseph Mutunye Kanyane Napo, Engenas Lekganyane and Isaiah Shembe (Monyai 2007). Today, cephalous groups such as the Maasai of Kenya and Tanzania still worship their sacred volcanic mountain, Ol Doinyo Lengai, which literally means "where God re-

[11] Also known as Hendrik Witbooi.

sides" with little syncretism among their Christian adherents, who more absolutely reject these older indigenous religious ideas. On the other hand, centralized groups such as those in Ethiopia and Congo practice Christianity with many more syncretic elements including their church attire and how their crosses are designed (Figure B3).

Given all of the aforementioned, therefore, I specify the following hypotheses, sequentially across time:

Hypothesis 1A. *Political centralization increases belief in a high god.*

Hypothesis 1B. *Political centralization increases religiosity.*

Hypothesis 2. *Political centralization* and *greater exposure to Christian missionaries increases the likelihood of Africans holding on to some elements of their indigenous beliefs despite converting and practicing Christianity.*

Next, the data and empirical strategies are introduced to quantify these long-term legacies of political centralization on Christian syncretism.

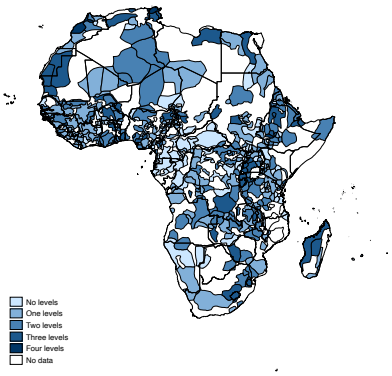
3. DATA AND MEASUREMENT

Data comes from the Pew (2010) survey on religious beliefs across a sample of 19 sub-Saharan African countries from December 11th 2008 to April 10th 2009, which includes various measures of religious beliefs.[12] This is merged with Murdock (1967)'s Ethnographic Atlas that measures various attributes of ethnic groups, globally, that had little contact with foreigners. I also include data from Roome (1925) on the locations of Christian missionary locations across Africa. The merged data includes information on the ancient political centralization of 62 African ethnic groups across 11 African countries mapping 1,321 Christian missionary locations with at least 4,619 respondents

The main independent variables are constructed from the ancient political centralization variable that comes from the Murdock (1967) dataset on ethnic groups across

[12]The survey data can be accessed here.

ancient Africa that includes a variable capturing how politically centralized the ethnic group is in addition to a variable the measures the distance to the nearest Christian missionary with data on missionary locations in Africa at 1925 coming from Roome (1925).



(a) Ancient Political Centralization Across Africa. Data comes from Murdock (1967). The variable equals zero (No levels) if an ethnic group has "no political authority beyond community." A "petty chiefdom" is One level; a "larger chiefdom" is Two levels; a "state" is Three levels; and a "large state" is Four levels.

(b) Christian missionaries across Africa at 1925. Each red dot is a Christian mission location. The Sahara desert, naturally, is devoid of many mission locations. Central and southern Africa and the southern parts of west Africa have some of the highest concentrations of mission locations.

The main independent variable is an interaction between two other variables. The first is *at least larger chiefdoms*, which measures an ethnic group's political centralization before colonialism and is coded as a dummy variable that equals zero if an ethnic group has "no political authority beyond community" or is a "petty chiefdom" (one level) but equal to one if it is a "larger chiefdom" (two levels); or a "state" (three levels); or a "large state" (four levels). The raw variable is just called *centralization* or *hierarchy* across results. The second independent variable is *Distance to Nearest Mission* which are straight-line distances, in kilometers (km), between the center of a respondent's ethnic group's homeland and the nearest Christian mission. The full variation of the ancient political centralization is mapped in Figure 4a. Data on missionaries across Africa comes from Roome (1925) and the missionaries are mapped in Figure 4b.

There are several dependent variables. The main one is *syncretism*, which is an aggregate of three other variables. These are *evil spirits*, *evil eye*, and *witchcraft*. The

Table 1: Descriptive Statistics: Respondents

	Mean	SD	Min	Max	Respondents
Muslims = 1	0.423	0.494	0	1	4691
Christians/Muslims = 1	0.977	0.151	0	1	4691
Female = 1	0.459	0.498	0	1	4691
Education (Categorical)	1.771	0.753	1	3	4691
Age (Categorical)	3.502	2.408	1	9	4691
Household Size	5.873	2.896	1	10	4691
Income (Categorical)	2.304	1.014	1	4	4691
Self-econ = 1	0.477	0.500	0	1	4691
Catholic = 1	0.211	0.408	0	1	4674
Pentecostal = 1	0.056	0.231	0	1	4674
British Colony = 1	0.688	0.463	0	1	4691
French Colony = 1	0.180	0.384	0	1	4691
Not Colonized = 1	0.124	0.330	0	1	4691

latter are dummy variables equal to one if the respondent believes in evil spirits, evil eye, and witchcraft, respectively. When they survey asked respondents for their religion, in addition, indigenous religion was also coded and so the dummy variable *indigenous beliefs* is one if the respondent reported this as their religion and zero otherwise. The dummy variable, *religious*, equals one if the respondent reports that religion is very important in their lives and zero otherwise— somewhat important; not too important; or not at all important.

Table 2: Descriptive Statistics: Ethnicity

	Mean	SD	Min	Max	Respondents
Ancient Political Centralization (1-5)	2.501	0.843	1	4	4691
At Least Larger Chiefdoms = 1	0.537	0.499	0	1	4691
Min Distance (km) to Mission	2.184	1.237	0	5	4691
Ethnicity's Water Area (1000's km)	0.506	0.653	0	3	4691
Ethnicity's Agricultural Soil Suitability	0.458	0.252	0	1	4691
Ethnicity's Malaria Suitability	0.745	0.277	0	1	4691
Ethnicity's Distance to Coast	0.476	0.353	0	1	4691
Ethnicity's Mean Elevation	0.717	0.549	0	2	4691
Ethnicity's Mean Satellite Light Density (2007-08)	0.697	2.654	0	25	4691
Ethnicity: Longitude	140.856	13.909	116	158	4691
Ethnicity: Latitude	-125.896	6.688	-141	-117	4691

The *high god* variable is a categorical variable equal to one if a belief in a high god is absent or not reported; two if present but does not intervene in human affairs; three if active in human affairs, but does not moralize; four if both moralizing and interventionist. Theism and monotheism are measured as dummy variables equal to one if a respondent beliefs in a god and one God, respectively. Knowledge of Christianity, Islam, and Indigenous religions equals one if respondents report having a great deal or some knowledge and zero if they report not knowing very much or not at all.

Political centralization varied across time and thus the static measure as coded by Murdock (1967) captures different treatment onsets and thus intensities. Therefore, some respondents' ethnic groups may be more or less treated with the divine right to rule mechanism. Similarly, missionary locations varied across space and time and so some ethnic groups can be viewed as being more or less treated with Christianity. However, we know that historic missionary locations are strongly correlated with more recent missionary locations (Nunn 2010) and so although some of these missionary locations were established during the colonial rather than ancient period, we can nevertheless view the onset of treatment to be ancient without any loss of this paper's main argument.

Table 3: Descriptive Statistics: Outcomes

	Mean	SD	Min	Max	Respondents
Religious = 1	0.908	0.289	0	1	4691
Believe in God = 1	0.988	0.108	0	1	4665
Believe in one god = 1	0.987	0.115	0	1	4589
Indigenous Religion = 1	0.017	0.129	0	1	4691
Believe in Evil Spirits = 1	0.537	0.499	0	1	4520
Believe in Witchcraft = 1	0.480	0.500	0	1	4515
Believe in Evil Eye = 1	0.437	0.496	0	1	4506
Christian Syncretism (0-3)	1.397	1.250	0	3	2588
Islamic Syncretism (0-3)	1.392	1.283	0	3	1925
Know Christianity = 1	0.688	0.463	0	1	4624
Know Islam = 1	0.578	0.494	0	1	4523
Know Indigenous Religions = 1	0.263	0.440	0	1	4326

Data is summarized across Tables 1-3 which summarize data on idiosyncratic

socio-demographic and economic controls; ethnicity-level controls; and outcome variables, respectively. Almost everyone in the sample is either Christian or Muslim (97.7%) and close to half are women (45.9%). The typical respondent has almost completed secondary school or achieved some secondary schooling.[13] Respondents live, on average, with 5 other members in the same household. On one's personal economic situation, 47.7% of respondents rated their personal economic situation as being either "somewhat" or "very" good while the remaining rated their personal economic situation as being either "somewhat" or "very" bad. More than half (53.7%) of respondents descend from ethnic groups that are coded as being "larger chiefdoms" (two levels) or "states" (three levels) or "large states" (four levels).

The typical respondent's ethnicity is located a little over 2km (2.184km) from the nearest missionary location and close to three-quarters (74.5%) come from ethnic groups whose locations are suitable for malaria while 45.8% come from ethnic groups whose soil is suitable for agriculture. Over two-thirds (68.8%) and almost one-fifth (18%) are from former British and French colonies. Christians believe at least one of the three indigenous beliefs— evil spirits, evil eye, and witchcraft. This is about the same as Muslims' indigenous beliefs. About 9 out of 10 respondents report that religion is very important in their lives. Theists make up virtually everyone in the sample (98.8%) and almost all of them are monotheists (98.7%). Less than 2% are direct adherents of indigenous religions. More people know Christianity (68.8%) than Islam (57.8%) and indigenous religions (26.3%).

4. EMPIRICAL STRATEGY

To analyze legacies of ancient political centralization and Christian missionary exposure, OLS estimators are employed by regressing outcomes on the interaction of "At Least Larger Chiefdoms" and "Distance to Nearest Mission." I cluster standard errors at the ethnicity level to account for treatment being assigned at that level. The

[13]The education categorical variable has three (3) categories. These are 1 if the respondent reports having "completed primary or less"; 2 if the respondent reports having "some secondary/completed secondary"; and finally 3 if the respondent reports "post-secondary and up".

main specifications, detailed in equations (1) and (2), are for the for the ith respondent from the kth ethnicity in the cth country. The full specifications are as follows:

$$\begin{aligned} Syncretism_{ikc} = \alpha \\ &+ \beta AtLeastLargerChiefs_{ikc} \\ &+ \lambda Dist.toMission_{ikc} \\ &+ \delta AtLeastLargerChiefs \times Dist.Mission_{ikc} + \omega_{ikc} \end{aligned} \tag{1}$$

where, according to **Hypothesis 2**, we expect $\delta < 0$ for syncretism because we expect respondents whose ethnicity, in the ancient period, was at least a larger chiefdom to hold both Christian and some indigenous beliefs and thus be more syncretic as the distance to missionaries reduces (closer proximity to missionaries) and;

$$Religious_{ikc} = \alpha + \beta AtLeastLargerChiefs_{ikc} + \epsilon_{ikc} \tag{2}$$

where, according to **Hypothesis 1A-B**, we expect $\beta > 0$ for contemporary religiosity.

For robustness, I also include covariates at the ethnicity-level such as the ethnicity's access to water bodies; agricultural soil suitability; malaria suitability; distance to the coast; and terrain ruggedness. These all control for differential variation across centralized and acephalous groups. I also control for mean satellite light density as well as individual-level covariates such as the respondent's income and idiosyncratic subjective economic welfare to control for both ethnicity- and individual-centric variation in economic development to control for the potential effects of "modernization" on religion. I also control for respondents' sex; age; household size; and whether they reside in a Muslim-majority country or not. I control for sex because women tend to be more religious than men. If centralization correlates with institutions that produce differences in sex such as slavery and polygamy then controling for sex controls

for these factors as well. I control for age and household sizes for similar reasons. Muslim-majority countries control for any potential interactions between centralization and the spread and dominance of Islam, mostly in the Sahel and other parts of West Africa with both a long history of centralized states and empires such as the Mali and Songhay empires *and* Islam.

Before presenting results, I first show that, at the ethnicity level, a belief in a high god is positively correlated with centralization, however measured. This is true in Africa (Table 4) and globally (Table A1). Specifically, centralized ethnic groups in Africa are associated with a half-step increase in the belief in a high god. This effect constitutes about 56% of the SD of the high god variable and is distinguishable from zero at the 99% level of statistical significance. Although the global results are larger, both sets of results statistically significant and politically meaningful.

Table 4: Centralization on High God Belief: Africa

	(1)	(2)
	High God (1-4)	High God (1-4)
Centralization (1-5)	0.257**	
	(0.0489)	
At Least Larger Chiefdoms = 1		0.580**
		(0.102)
Constant	2.023**	2.392**
	(0.119)	(0.0617)
Ethnicities	403	403
Outcome Mean	2.653	2.653
Outcome SD	1.038	1.038
Independent Variable Mean		
Independent Variable SD		
R-Squared	0.0623	0.0775
Adjusted R-Squared	0.0600	0.0752
F-Statistic	27.60	32.58

Huber-White robust standard errors in parentheses.

1 = absent or not reported.

2 = not active in human affairs.

3 = active in human affairs, not supportive of human morality.

4 = supportive of human morality.

280 of 683 missing.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Ethnic groups that are centralized in Africa are more likely to use animal and plough for agricultural cultivation; less likely to be a subsistence economy; larger community sizes; have more stratified classes; experience slavery; and have been coded earlier than acephalous groups (1915 versus 1920). These come from a t-test of equality of means reported in Table 5. The global results, with many more statistically significant differences are presented in Table A2.

Table 5: Balance Test by At Least Larger Chiefs: Africa

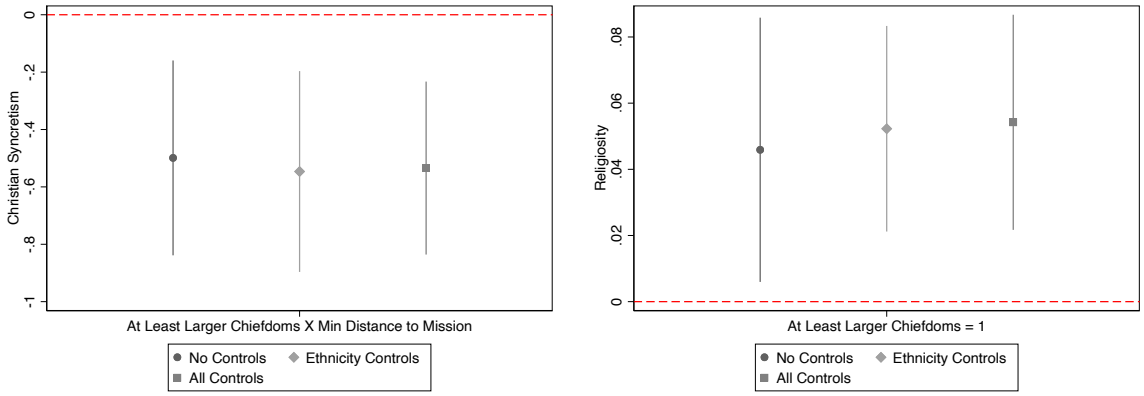
	No	Yes	Yes - No	P-Value
Ethnicity Dependent: Gathering (1-8)	0.430	0.265	-0.165	0.135
Ethnicity Dependent: Hunting (1-9)	1.004	0.863	-0.141	0.115
Ethnicity Dependent: Fishing (1-9)	0.911	0.931	0.02	0.780
Ethnicity Dependent: Animal Husbandry (1-9)	1.815	1.951	0.136	0.619
Ethnicity Dependent: Agriculture (1-9)	5.837	5.980	0.143	0.585
Agricultural Intensity (1-6)	3.359	3.559	0.2	0.101
Cereal Grains = 1	0.700	0.608	-0.092	0.076
Animal and Plough Cultivation (1-3)	1.004	1.049	0.045	0.007
Predominant Animal Husbandry (1-7)	4.888	5.373	0.484	0.152
Subsitence Economy (1-9)	6.000	6.294	0.294	0.000
Primary Climatic Environment	12.458	12.607	0.149	0.066
Settlement Patterns (1-8)	6.044	6.218	0.173	0.563
Mean Community Size (1-8)	3.674	4.628	0.954	0.007
Stratified Classes (1-5)	1.574	3.533	1.959	0.000
Slavery (1-4)	2.340	2.794	0.453	0.001
Democratic Headman = 1	0.086	0.105	0.02	0.676
Hierarchy (1-5)	1.589	3.284	1.695	0.000
Year of Ethnicity Information (-2000BCE - 1965 CE)	1920.041	1914.961	-5.08	0.024
Ethnicities	270	102	372	

5. RESULTS

5.1 Main Results

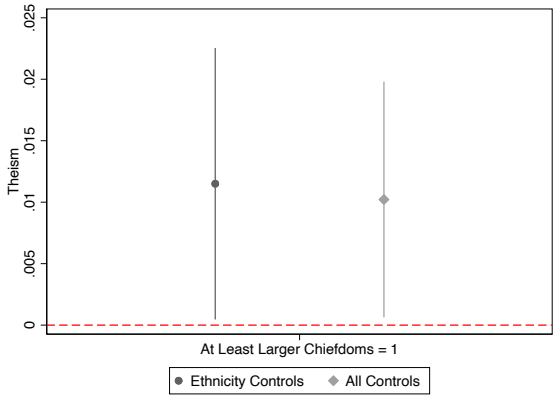
Main results on syncretism are reported in Table 7 and main independent variable plot in Figure 5a. At its largest effect in the second column, for each km increase in proximity to a Christian missionary, Christians who descend from centralized ethnicities are more syncretic than those who descend from acephalous ethnic groups. This effect is statistically significant at the 99% level of statistical significance and is politically meaningful as it constitutes 44% of the SD of syncretism. Centralized Africans are also more likely to be religious (Table 8 and Figure A4). Similarly, centralization is

positively associated with theism and monotheism reported in Tables 8, 9, and 10, respectively. These effects of centralization on religiosity, theism, and monotheism are statistically significant but politically small. This is because there remains very little variation left to be explained as almost everyone is monotheistic with high religiosity. Perhaps the same analysis using similar survey data but during earlier periods such as in 1990 or mid-20th century would have provided for stronger results.

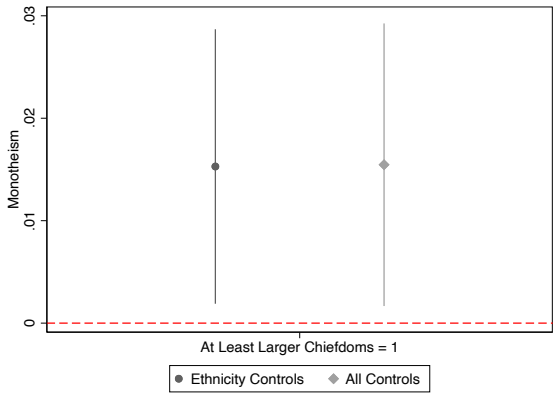


(a) Centralization on Christian Syncretism.

(b) Centralization on Religiosity.



(c) Centralization on Theism.



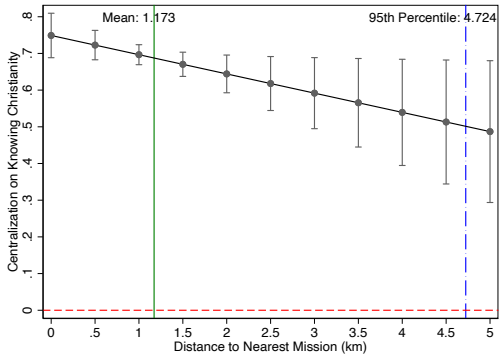
(d) Centralization on Monotheism.

Figure 5: Effect of centralization on syncretism, religiosity, theism, and monotheism.

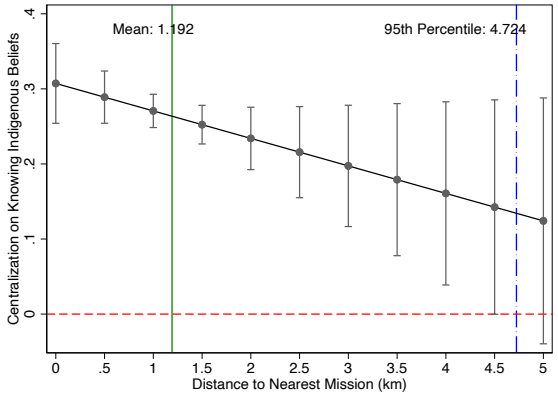
If syncretism is higher for centralized Africans than for acephalous Africans, then knowledge of Christianity should also move in the same direction. Moreover, knowledge of indigenous religions should also mirror knowledge of Christianity while knowledge of Islam should not correlate with distance to nearest mission between centralized and acephalous Africans. Re-running the main syncretism specifications using variables that measure knowledge of Christianity, indigenous religions, and

Islam finds exactly that. Figures 6b-6d and Table A12 visualize and present the results. Specifically, the δ coefficient on knowing Christianity and indigenous religions are both negative, with the latter being slightly statistically insignificant at the 95% level of statistical significance. Moreover, the marginal effect of centralization on distance to nearest mission is generally flat for knowledge on Islam but negative for knowledge of Christianity and indigenous religions.

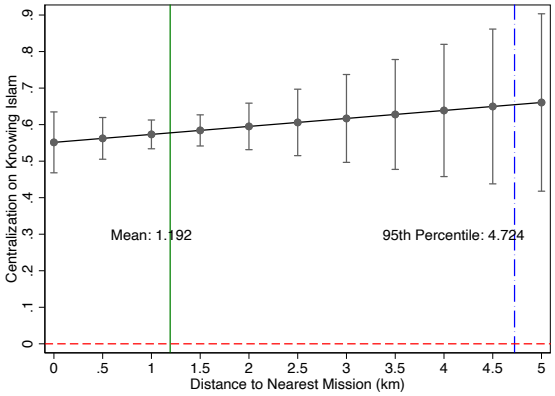
(a) Centralization on Religious Knowledge.



(b) Centralization on Christian Knowledge by Distance to Nearest Mission.



(c) Centralization on Indigenous Beliefs Knowledge by Distance to Nearest Mission.



(d) Centralization on Islamic Knowledge by Distance to Nearest Mission.

Figure 6: Effect of centralization by distance to nearest mission on religious knowledge.

In addition to earlier discussions on African Initiated Churches (AICs) facilitating the persistence of the identified effect of these ancient political and religious institutions and exposure to Christian missionaries, I also test this empirically. Specifically, I locate AICs in South Africa that are members of the Organization of African Instituted Churches (OAIC) and measure straight-line distances from them to the

centroid of ethnicities in Africa that come from the Murdock dataset. If they are important in explaining the persistence of these effects then we should expect a negative coefficient— relative to acephalous ethnicities, centralized groups's distance to AICs should be smaller. Figure 7 displays the coefficient of interest in an OLS regression that regresses straight distances to the nearest AIC on a dummy variable equal to one if the ethnicity is centralized and zero if acephalous. The coefficient is negative, as expected, suggesting that indeed these AICs remain an important mechanism for persistance of the legacies of ancient political and religious institutions and Christian missionary exposure.

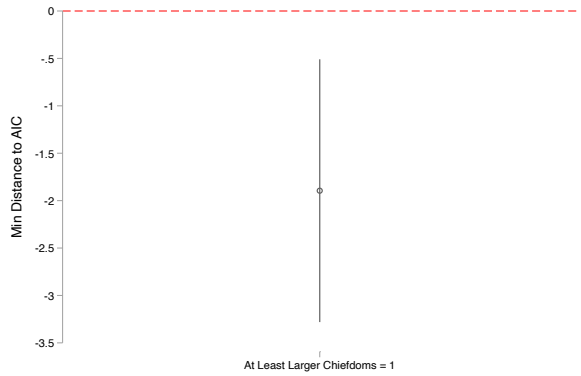


Figure 7: Centralization and Locations of African Initiative Churches in South Africa. Centralized ethnicities are more proximate to AICs in South Africa today suggesting that these churches are indeed an important source of persistence of the effect of these ancient political and religious institutions and exposure to Christian missionaries.

One implication of the divine right to rule mechanism is that ancient African rulers, who were successful at convincing other ruling elites and their wider subjects of their divine right to rule, would be (1) less likely to experience challenges to their power and (2) be more likely to survive such challenges, whenever they emerged. This would imply relatively stable and longer lines of succession across time. Indeed, Uzoigwe (1977, page 23), among others, notes that the divinity of the ruler served "to ensure the survival and viability of these states (Uzoigwe 1977, page 23)" and thus, by extension, their rulers. Using data from Stewart (1989) and Müller-Crepon (2020) and running an OLS regression on the length of reigns of African rulers on ancient political centralization I confirm this relationship. Specifically, Table 6 shows that

African polities that were politically centralized in the ancient period are more likely to experience longer-reigned Kings (16.84 years longer) relative to more acephalous ethnic groups. This effect is statistically distinguishable from zero at the 99% level of statistical significance and politically meaningful when compared to the average of 15.18 years.[14]

Table 6: Centralization on Longevity

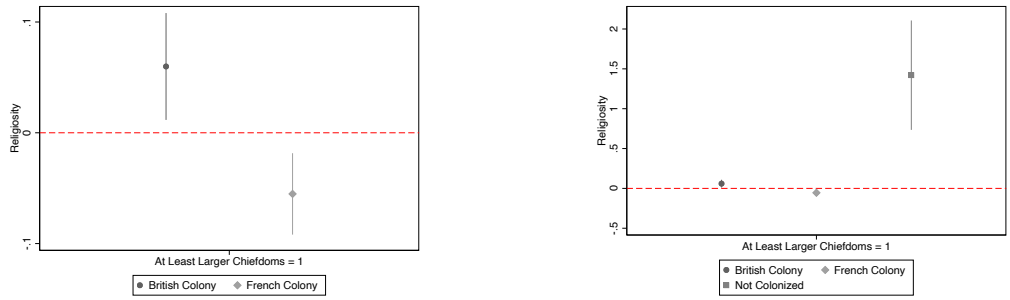
	(1) Longevity	(2) Longevity
Centralization (1-5)	8.845*	
	(3.845)	
At Least Larger Chiefdoms = 1		16.84**
		(2.625)
Constant	-11.46	3.237
	(11.55)	(2.445)
Ethnicity-Ruler Years	26231	26762
Ethnicities	36	36
Outcome Mean	13.91	15.18
R-Squared	0.464	0.381
Adjusted R-Squared	0.464	0.381
F-Statistic	5.290	41.12

Standard errors, clustered at the ethnicity level, in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

5.2 Heterogeneity

Re-running the main specification on syncretism with all controls but separately for Catholics and Pentecostal respondents finds no differences. Specifically, the p-value against the null hypothesis of equality is 0.0799 and thus cannot reject it. The corresponding F-statistic is 3.28. There are heterogeneous effects by indigenous religion and specific indigenous beliefs. These are visualized in coefficient plots in Figures 9a-9d. Generally, the coefficient of interest, δ is negative across all these latter outcome variables. Tables A8–A11 present the full results. Moreover, the marginal effects of centralization by distance to the nearest missionary exhibit a negative gradient with beliefs in evil spirits being the strongest effects.

[14]This political ruler longevity data includes, as many historians of Kings' lists know, years of reigns of certain monarchs that exceed natural human lives and so to avoid the positive bias that such data may cause in testing the DRR mechanism I top censor the data to drop any ethnicity-ruler years that exceeds 70 years.



(a) Centralization on Religiosity by Colonization (Anglo-Franco Analysis).

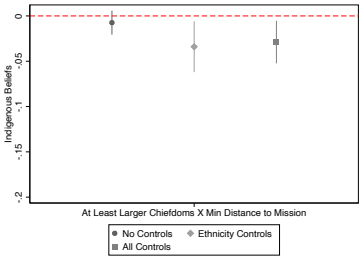
(b) Centralization on Religiosity by Colonization.

Figure 8: Effect of Centralization on Religiosity Influenced by Different Colonial Powers.

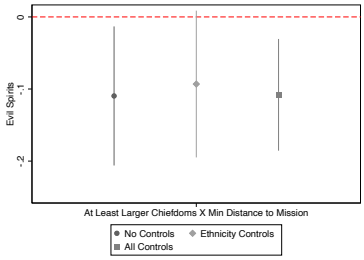
Further, are legacies of centralization on religiosity presented here mitigated by whether one lives in a former French colony? Letsa and Wilfahrt (2020); Müller-Crepon (2020), among others, show that direct rule by the French muted legacies of ancient African states, relative to indirect rule by the British. There are differences in the effects of the relationship between centralization and religiosity. Specifically, the relationship is reversed in former French colonies. However, this heterogeneous effect is dwarfed by a very strong relationship between centralization and religiosity in Ethiopia and Liberia,[15] countries that were never colonized, suggesting that these legacies move in the positive direction in countries where indigenous institutions were not destroyed or diluted. All these coefficients are statistically different from each other with p-values that are 0.0001, 0.0015, and 0.0009 comparing former Anglo versus Franco, Anglo versus uncolonized, and Franco versus uncolonized, respectively. The corresponding F-statistics are 52.12, 20.12, and 23.67. The results on syncretism by colonization find a larger $\delta < 0$ for former British colonies but a small positive coefficient for former French colonies. However, the latter is not statistically significant and several covariates drop out of the regression for collinearity.[16]

[15]The mean satellite nighttime lights variable is dropped because of collinearity.

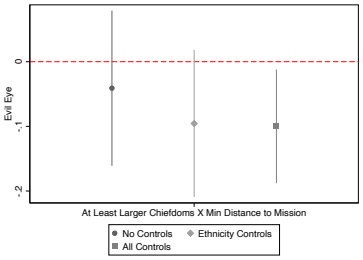
[16]Those dropped include the centralization, distance to nearest mission, malaria suitability, distance to the coast, terrain ruggedness, and whether one resides in a Muslim-majority country.



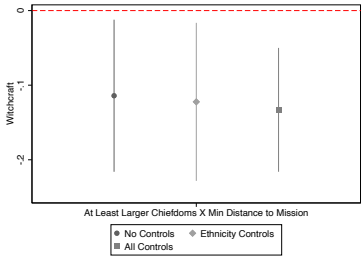
(a) Centralization on Indigenous Religion.



(b) Centralization on Evil Spirits.



(c) Centralization on Evil Eye.



(d) Centralization on Witchcraft.

Figure 9: Centralization's effect on indigenous religion, beliefs in evil spirits, evil eye, and witchcraft.

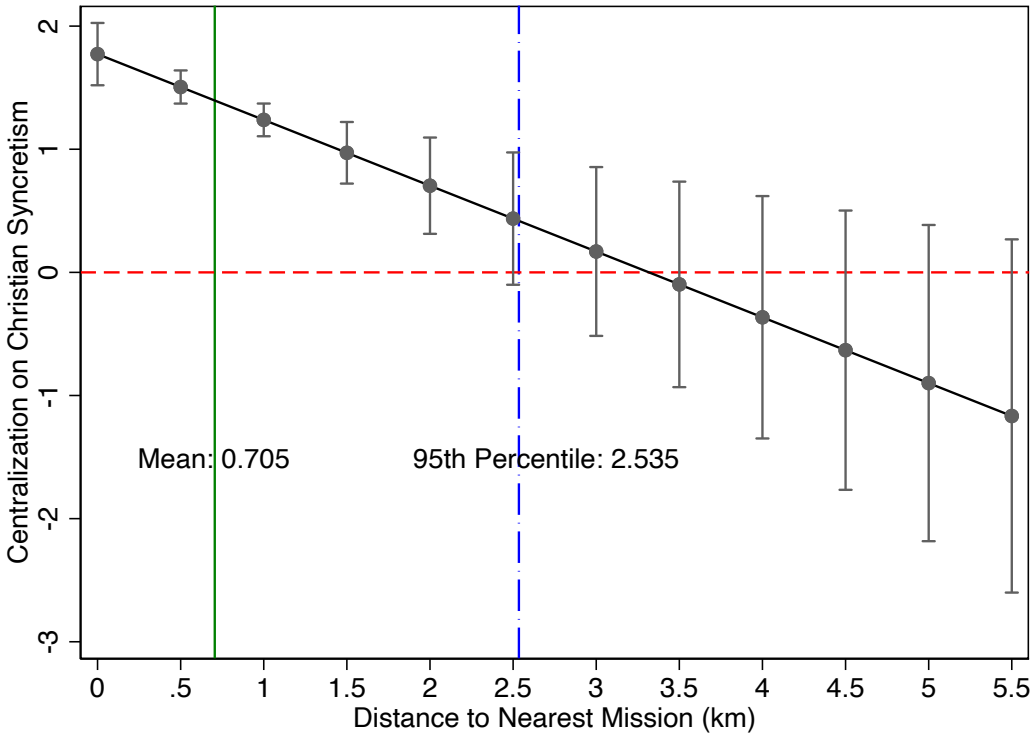
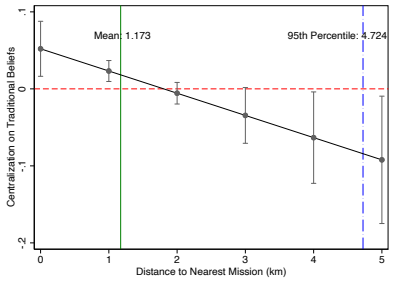
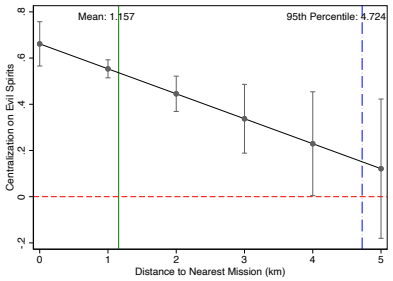


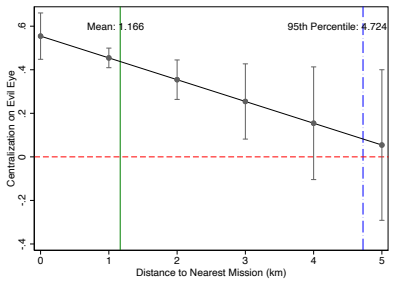
Figure 10: Centralization on Christian Syncretism by Distance to Nearest Mission.



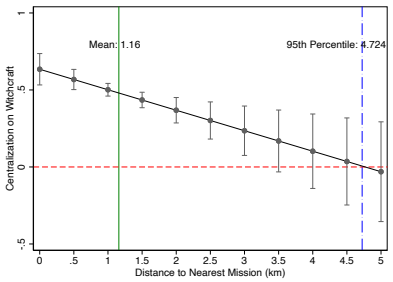
(a) Centralization on Indigenous Religion by Distance to Nearest Mission.



(b) Centralization on Evil Spirits by Distance to Nearest Mission.



(c) Centralization on Evil Eye by Distance to Nearest Mission.



(d) Centralization on Witchcraft by Distance to Nearest Mission.

Figure 11: Centralization on Indigenous Religion, Evil Spirits, Evil Eye, and Witchcraft by Distance to Nearest Mission.

5.3 Robustness

Results on syncretism are robust to controlling for country-fixed effects. As per suggestions by Pepinsky et al. (2024) to account for fixed effects on the relevant spatial unit, I re-run the syncretism results to include country fixed effects. Results are robust to country-fixed effects and visualized in Figure 12 and full results presented in Table A7. The coefficient of interest, δ is less negative but remains statistically distinguishable from zero at the 95% level of statistical significance. Religiosity also correlates positively with centralization when using Afrobarometer's round 4 survey data. This survey is 41% larger than the Pew survey sample.[17] Round 4 is selected because it was fielded from March 2008 to April 2009 around the same time as the Pew (2010) survey thus controlling for any potential temporal bias. Results are visualized in Figure 13 and Table A13 reports the full results.

[17]There are 6,618 respondents in the Afrobarometer estimating sample versus 4,691 respondents in the Pew estimated sample.

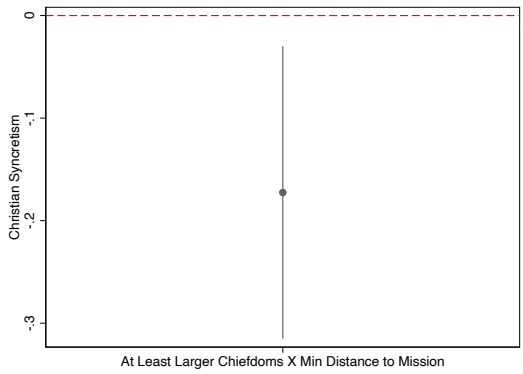


Figure 12: Centralization on Christian Syncretism: Country FE.

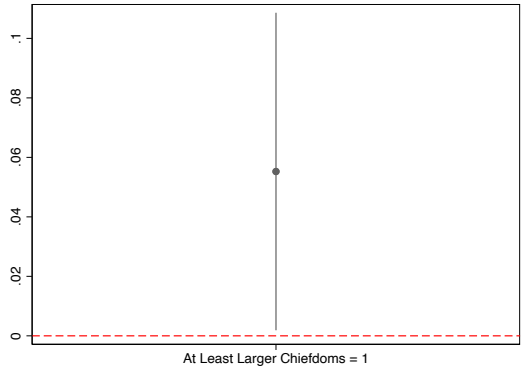
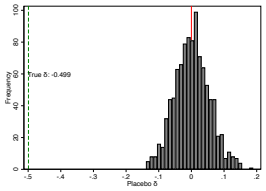
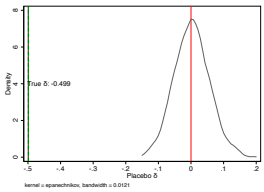


Figure 13: Centralization on Religiosity: Afrobarometer's Round 4.

This replication confirms this paper's result on religiosity. The coefficient of interest, β is 5.52% points, which is almost the same as the coefficient in the main specification of 5.23% points. To ensure no bias, I only include ethnicity-level controls in the Afrobarometer replication because certain respondent-level covariates such as income and education are measured differently between the two surveys. Nevertheless, the similar positive association suggests that, indeed, there are long-term legacies of ancient political centralization on contemporary religiosity. Further, following Fouka and Voth (2023); Homola et al. (2024) and Kelly (2020), I generate placebo centralization and distance to missions from statistical noise and simulate 1,000 regressions on both the syncretism and religiosity outcome variables. Figures 14 and B2 visualize the results from these 1,000 coefficients of interest— β and δ respectively. The true coefficients outperform these placebo coefficients on both the religiosity and syncretism regressions.



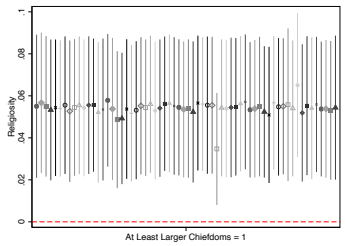
(a) Histogram of coefficients from 1000 OLS regressions of placebo Centralization and placebo Distance to Nearest Christian Mission on actual Christian Syncretism.



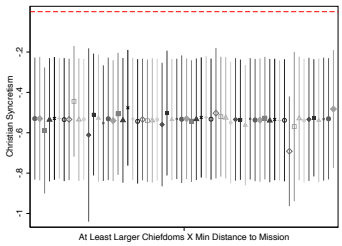
(b) Kernel density of coefficients from 1000 OLS regressions of placebo Centralization and placebo Distance to Nearest Christian Mission on actual Christian Syncretism.

Figure 14: "Fake" Centralization and "Fake" Distance to Nearest Christian Mission on Christian Syncretism. The true coefficient of interest is denoted as the vertical green line. The placebo Centralization variable is generated from a binomial distribution with mean = 0.537. The placebo Distance to Nearest Christian Mission is generated from a normal distribution with mean = 0.705 and SD = 0.945. The latter are the means and SD from the unrestricted regression in the main results. Standard errors were clustered on actual ethnicities.

Given OLS' sensitivity to outliers which may have a considerable leverage in estimations, the main regressions are re-run but dropping an ethnicity and country each time. These results are visualized in Figures 15 and B1. The coefficients of interest, β and δ, are of the expected sign on all ethnicities and countries. Dropping Tanzania, however, attenuates the syncretism result. An empirical reason for this may be because Tanzania has the most observations across all specifications. This is because it has many ethnic groups in general and these were more easily merged with all other data sources. The potentially more substantive reason may be that Tanzania is often regarded as a country that has, through nation-building efforts, made ethnicity politically irrelevant (Miguel 2004), however, the fact that its exclusion attenuates results may highlight that ethnicity remains relevant, at least as it relates to religion. Lastly, to account for the potential of post-treatment bias (Acharya et al. 2016; King 2010) as missionary exposure is realized after political centralization, I follow Nunn (2010) among others, by using the ethnic group's access to water bodies; agricultural soil suitability; malaria suitability; distance to the coast; and terrain ruggedness as instruments for missionary placement. The syncretism result remains robust to this IV approach suggesting that post-treatment bias does not attenuate this paper's findings.



(a) Coefficients and 95% CI leaving out 1 of 64 Ethnicities in the main specification of Centralization on Religiosity.



(b) Coefficients and 95% CI leaving out 1 of 62 Ethnicities in the main specification of Centralization and Distance to the Nearest Christian Mission on Christian Syncretism.

Figure 15: Leave-One-Out Analysis: Ethnicities. The main specification that includes all controls leaving one ethnicity across 62-64 regressions.

6. CONCLUSION

This paper provides quantitative evidence of the legacies of ancient political institutions and Christian missionaries on contemporary religious beliefs in Africa. Most findings are in line with existing literature on how greater religious competition allows for greater religiosity and syncretism. However, some findings contradict existing political economy and religious theories that argue that wealthier individuals are necessarily religious. Using data from various sources and employing various empirical strategies, the paper argues that the results are unlikely to be a function of unobserved heterogeneity or omitted variable bias or an uncontrolled confounding variable. Debates about Africans' religious behaviors often ascribe foreign sources including foreign religions such as Christianity and Islam or colonial institutions. In line with growing work[18] on the legacies of Africa's ancient political institutions, this paper provides yet another reason for scholars of African politics to center analyses on the African. It leaves open certain questions for further inquiry. What is the process by which Africans were converted to Islam? Are there similar interactions between those efforts and political centralization? Future work may provide answers.

[18]See for instance, Paine et al. (2021) who show that ancient political centralization matters in understanding border placement in Africa, in addition to other geographic variables.

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Table 7: Centralization on Christian Syncretism

	(1)	(2)	(3)
	Christian Syncretism (0-3)	Christian Syncretism (0-3)	Christian Syncretism (0-3)
At Least Larger Chiefdoms = 1	1.380**	1.437**	1.389**
	(0.431)	(0.314)	(0.277)
At Least Larger Chiefdoms X Min Distance to Mission	-0.499**	-0.546**	-0.534**
	(0.170)	(0.175)	(0.151)
Min Distance (km) to Mission		-0.0761	-0.00686
		(0.170)	(0.133)
Constant	1.120**	1.352	-1.529
	(0.0891)	(2.146)	(2.088)
Ethnicity-Level Controls	N	Y	Y
Respondent-Level Controls	N	N	Y
Respondents	2605	2605	2605
Outcome Mean	1.396	1.396	1.396
Outcome SD	1.250	1.250	1.250
Treatment Mean	0.705	0.705	0.705
Treatment SD	0.945	0.945	0.945
R-Squared	0.105	0.211	0.252
Adjusted R-Squared	0.105	0.208	0.246
F-Statistic	5.161	14.67	21.05

Standard errors in parentheses.

Standard errors clustered at the ethnicity level.

OLS regression relating the interaction of ancient political centralization and Christian missionary exposure

with contemporary syncretism— being both Christian but also believing in evil spirits, evil eye, and witchcraft.

First the unrestricted bivariate relationship is presented (Column 1).

Column 2 includes ethnicity-centric controls.

These are minimal distance to nearest Christian mission, amount of water,

agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,

economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.

Column 3, in addition, includes individual-level controls.

These include sex, education, age, household size,

income, and idio-syncratic evaluation of one's economic situation, and residence in a Muslim-majority country.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 8: Centralization on Religiosity

	(1)	(2)	(3)
	Religious = 1	Religious = 1	Religious = 1
At Least Larger Chiefdoms = 1	0.0459*	0.0523**	0.0542**
	(0.0200)	(0.0155)	(0.0163)
Constant	0.883**	0.408	0.322
	(0.0180)	(0.269)	(0.282)
Ethnicity-Level Controls	N	Y	Y
Respondent-Level Controls	N	N	Y
Respondents	4691	4691	4691
Outcome Mean	0.908	0.908	0.908
Outcome SD	0.289	0.289	0.289
Treatment Mean	0.537	0.537	0.537
Treatment SD	0.499	0.499	0.499
R-Squared	0.00628	0.0237	0.0272
Adjusted R-Squared	0.00607	0.0216	0.0239
F-Statistic	5.276	10.13	11.63

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating ancient political centralization with contemporary religiosity.
Column 1 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 2, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 9: Centralization on Theism

	(1) Believe in God = 1	(2) Believe in God = 1
At Least Larger Chiefdoms = 1	0.0115*	0.0102*
	(0.00553)	(0.00480)
Constant	0.893**	0.913**
	(0.0760)	(0.0741)
Ethnicity-Level Controls	N	Y
Respondent-Level Controls	N	N
Respondents	4696	4696
Outcome Mean	0.988	0.988
Outcome SD	0.109	0.109
Treatment Mean	0.537	0.537
Treatment SD	0.499	0.499
R-Squared	0.00503	0.00739
Adjusted R-Squared	0.00291	0.00399
F-Statistic	2.346	2.173

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating ancient political centralization with contemporary theism.
Column 1 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 2, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 10: Centralization on Monotheism

	(1) Believe in one god = 1	(2) Believe in one god = 1
At Least Larger Chiefdoms = 1	0.0153*	0.0155*
	(0.00670)	(0.00690)
Constant	0.888**	0.874**
	(0.115)	(0.115)
Ethnicity-Level Controls	N	Y
Respondent-Level Controls	N	N
Respondents	4619	4619
Outcome Mean	0.987	0.987
Outcome SD	0.115	0.115
Treatment Mean	0.538	0.538
Treatment SD	0.499	0.499
R-Squared	0.00929	0.0117
Adjusted R-Squared	0.00714	0.00824
F-Statistic	1.880	3.367

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating ancient political centralization with contemporary monotheism.
Column 1 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 2, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

A. APPENDIX: TABLES

Table A1: Centralization on High God Belief: Global

	(1) High God (1-4)	(2) High God (1-4)
Centralization (1-5)	0.406**	
	(0.0393)	
At Least Larger Chiefdoms = 1		0.897**
		(0.0956)
Constant	1.300**	1.865**
	(0.0785)	(0.0445)
Ethnicities	724	724
Outcome Mean	2.130	2.130
Outcome SD	1.153	1.153
Independent Variable Mean		
Independent Variable SD		
R-Squared	0.160	0.126
Adjusted R-Squared	0.159	0.125
F-Statistic	107.2	88.05

Huber-White robust standard errors in parentheses.
1 = absent or not reported.
2 = not active in human affairs.
3 = active in human affairs, not supportive of human morality.
4 = supportive of human morality.
517 of 1,265 missing.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A2: Balance Test by At Least Larger Chiefs: Global

	No	Yes	Yes - No	P-Value
Ethnicity Dependent: Gathering (1-8)	1.377	0.217	-1.16	0.000
Ethnicity Dependent: Hunting (1-9)	1.813	0.559	-1.254	0.000
Ethnicity Dependent: Fishing (1-9)	1.770	0.930	-0.84	0.000
Ethnicity Dependent: Animal Husbandry (1-9)	1.186	2.607	1.421	0.000
Ethnicity Dependent: Agriculture (1-9)	3.853	5.688	1.835	0.000
Agricultural Intensity (1-6)	2.937	4.357	1.42	0.000
Cereal Grains = 1	0.443	0.713	0.27	0.000
Animal and Plough Cultivation (1-3)	1.095	1.710	0.615	0.000
Predominant Animal Husbandry (1-7)	3.412	5.743	2.33	0.000
Subsitence Economy (1-9)	4.839	6.272	1.433	0.000
Primary Climatic Environment	10.463	10.944	0.481	0.040
Settlement Patterns (1-8)	4.831	5.904	1.073	0.000
Mean Community Size (1-8)	2.783	5.848	3.065	0.000
Stratified Classes (1-5)	1.696	3.722	2.026	0.000
Slavery (1-4)	1.874	2.606	0.733	0.000
Democratic Headman = 1	0.228	0.258	0.03	0.348
Hierarchy (1-5)	1.399	3.504	2.105	0.000
Year of Ethnicity Information (-2000BCE - 1965 CE)	1902.192	1874.007	-28.184	0.056
Ethnicities	857	272	1129	

Table A3: Centralization on Christian Syncretism

	(1) Christian Syncretism (0-3)	(2) Christian Syncretism (0-3)	(3) Christian Syncretism (0-3)
At Least Larger Chiefdoms = 1	1.380**	1.437**	1.389**
	(0.431)	(0.314)	(0.277)
At Least Larger Chiefdoms X Min Distance to Mission	-0.499**	-0.546**	-0.534**
	(0.170)	(0.175)	(0.151)
Min Distance (km) to Mission		-0.0761	-0.00686
		(0.170)	(0.133)
Ethnicity's Water Area (1000's km)		-0.609*	-0.569*
		(0.286)	(0.229)
Ethnicity's Agricultural Soil Suitability		1.394**	0.981*
		(0.521)	(0.414)
Ethnicity's Malaria Suitability		0.800+	0.689*
		(0.402)	(0.337)
Ethnicity's Distance to Coast		-0.686	-0.790*
		(0.462)	(0.361)
Ethnicity's Mean Elevation		-0.319	-0.0717
		(0.288)	(0.249)
Ethnicity's Mean Satellite Light Density (2007-08)		-0.00804	0.00851
		(0.00898)	(0.00757)
Ethnicity: Longitude		0.0241+	0.0242*
		(0.0134)	(0.0108)
Ethnicity: Latitude		0.0318+	0.00715
		(0.0189)	(0.0161)
Female = 1			-0.0384
			(0.0467)
Education (Categorical)			-0.253**
			(0.0581)
Age (Categorical)			0.0326**
			(0.0119)
Household Size			0.00334
			(0.00934)
Income (Categorical)			0.0158
			(0.0321)
Self-econ = 1			-0.135*
			(0.0662)
Muslim majority country = 1			0.632**
			(0.183)
Constant	1.120**	1.352	-1.529
	(0.0891)	(2.146)	(2.088)
Respondents	2605	2605	2605
Outcome Mean	1.396	1.396	1.396
Outcome SD	1.250	1.250	1.250
Treatment Mean	0.705	0.705	0.705
Treatment SD	0.945	0.945	0.945
R-Squared	0.105	0.211	0.252
Adjusted R-Squared	0.105	0.208	0.246
F-Statistic	5.161	14.67	21.05

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating the interaction of ancient political centralization and Christian missionary exposure
with contemporary syncretism— being both Christian but also believing in evil spirits, evil eye, and witchcraft.
First the unrestricted bivariate relationship is presented (Column 1).
Column 2 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 3, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation, and residence in a Muslim-majority country.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A4: Centralization on Religiosity

	(1) Religious = 1	(2) Religious = 1	(3) Religious = 1
At Least Larger Chiefdoms = 1	0.0459*	0.0523**	0.0542**
	(0.0200)	(0.0155)	(0.0163)
Min Distance (km) to Mission		0.0367*	0.0394*
		(0.0179)	(0.0185)
Ethnicity's Water Area (1000's km)		-0.0279^{+}	-0.0300^{+}
		(0.0165)	(0.0168)
Ethnicity's Agricultural Soil Suitability		-0.00643	-0.0128
		(0.0438)	(0.0457)
Ethnicity's Malaria Suitability		-0.00333	-0.0124
		(0.0461)	(0.0473)
Ethnicity's Distance to Coast		0.0568^{+}	0.0612^{+}
		(0.0337)	(0.0354)
Ethnicity's Mean Elevation		-0.0598*	-0.0584*
		(0.0256)	(0.0267)
Ethnicity's Mean Satellite Light Density (2007-08)		-0.00138	-0.00105
		(0.00103)	(0.000982)
Ethnicity: Longitude		0.00188	0.00196
		(0.00141)	(0.00142)
Ethnicity: Latitude		-0.00130	-0.00170
		(0.00133)	(0.00141)
Female = 1			0.0253**
			(0.00910)
Education (Categorical)			-0.00871
			(0.00705)
Age (Categorical)			0.00340**
			(0.00120)
Household Size			0.0000807
			(0.00212)
Income (Categorical)			0.00540
			(0.00609)
Self-econ = 1			0.00607
			(0.00962)
Constant	0.883**	0.408	0.322
	(0.0180)	(0.269)	(0.282)
Respondents	4691	4691	4691
Outcome Mean	0.908	0.908	0.908
Outcome SD	0.289	0.289	0.289
Treatment Mean 0	0.537		
Treatment SD 0	0.499		
Treatment Mean 1		0.537	
Treatment SD 1		0.499	
Treatment Mean 2			0.537
Treatment SD 2			0.499
R-Squared	0.00628	0.0237	0.0272
Adjusted R-Squared	0.00607	0.0216	0.0239
F-Statistic	5.276	10.13	11.63

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating ancient political centralization with contemporary religiosity.
Column 1 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 2, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A5: Centralization on Theism

	(1) Believe in God = 1	(2) Believe in God = 1
At Least Larger Chiefdoms = 1	0.0115*	0.0102*
	(0.00553)	(0.00480)
Min Distance (km) to Mission	0.00377	0.00248
	(0.00551)	(0.00480)
Ethnicity's Water Area (1000's km)	-0.0112*	-0.00994*
	(0.00425)	(0.00403)
Ethnicity's Agricultural Soil Suitability	-0.0157	-0.0142
	(0.0163)	(0.0165)
Ethnicity's Malaria Suitability	-0.0186	-0.0166
	(0.0150)	(0.0134)
Ethnicity's Distance to Coast	0.00707	0.00588
	(0.0124)	(0.0113)
Ethnicity's Mean Elevation	-0.00107	-0.000687
	(0.00976)	(0.00940)
Ethnicity's Mean Satellite Light Density (2007-08)	0.000999*	0.000951*
	(0.000396)	(0.000368)
Ethnicity: Longitude	-0.000216	-0.000271
	(0.000510)	(0.000489)
Ethnicity: Latitude	-0.00107*	-0.000953*
	(0.000439)	(0.000450)
Female = 1		0.00614+
		(0.00319)
Education (Categorical)		0.00202
		(0.00286)
Age (Categorical)		0.00108
		(0.000795)
Household Size		-0.000398
		(0.000631)
Income (Categorical)		-0.00323
		(0.00279)
Self-econ = 1		0.00482*
		(0.00225)
Constant	0.893**	0.913**
	(0.0760)	(0.0741)
Respondents	4696	4696
Outcome Mean	0.988	0.988
Outcome SD	0.109	0.109
Treatment Mean 1	0.537	
Treatment SD 1	0.499	
Treatment Mean 2		0.537
Treatment SD 2		0.499
R-Squared	0.00503	0.00739
Adjusted R-Squared	0.00291	0.00399
F-Statistic	2.346	2.173

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating ancient political centralization with contemporary theism.
Column 1 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 2, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A6: Centralization on Monotheism

	(1) Believe in one god = 1	(2) Believe in one god = 1
At Least Larger Chiefdoms = 1	0.0153*	0.0155*
	(0.00670)	(0.00690)
Min Distance (km) to Mission	0.0136*	0.0135*
	(0.00607)	(0.00607)
Ethnicity's Water Area (1000's km)	-0.00657	-0.00703
	(0.00553)	(0.00580)
Ethnicity's Agricultural Soil Suitability	0.0386*	0.0430*
	(0.0146)	(0.0171)
Ethnicity's Malaria Suitability	-0.0284	-0.0253
	(0.0182)	(0.0180)
Ethnicity's Distance to Coast	0.0406*	0.0400*
	(0.0163)	(0.0167)
Ethnicity's Mean Elevation	-0.0254*	-0.0265*
	(0.0109)	(0.0117)
Ethnicity's Mean Satellite Light Density (2007-08)	0.00143*	0.00128*
	(0.000654)	(0.000547)
Ethnicity: Longitude	0.00167*	0.00178*
	(0.000658)	(0.000697)
Ethnicity: Latitude	0.00134*	0.00152*
	(0.000565)	(0.000603)
Female = 1		0.00336
		(0.00298)
Education (Categorical)		0.00634
		(0.00467)
Age (Categorical)		-0.000547
		(0.000771)
Household Size		0.00101
		(0.000625)
Income (Categorical)		0.000621
		(0.00247)
Self-econ = 1		-0.00144
		(0.00425)
Constant	0.888**	0.874**
	(0.115)	(0.115)
Respondents	4619	4619
Outcome Mean	0.987	0.987
Outcome SD	0.115	0.115
Treatment Mean 1	0.538	
Treatment SD 1	0.499	
Treatment Mean 2		0.538
Treatment SD 2		0.499
R-Squared	0.00929	0.0117
Adjusted R-Squared	0.00714	0.00824
F-Statistic	1.880	3.367

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating ancient political centralization with contemporary monotheism.
Column 1 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 2, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A7: Centralization on Christian Syncretism: Country FE

	(1) Christian Syncretism (0-3)
At Least Larger Chiefdoms = 1	0.380*
	(0.156)
At Least Larger Chiefdoms X Min Distance to Mission	-0.173*
	(0.0713)
Min Distance (km) to Mission	0.221
	(0.158)
Ethnicity's Water Area (1000's km)	-0.375**
	(0.110)
Ethnicity's Agricultural Soil Suitability	-0.544**
	(0.163)
Ethnicity's Malaria Suitability	0.255
	(0.201)
Ethnicity's Distance to Coast	-0.494*
	(0.189)
Ethnicity's Mean Elevation	0.359**
	(0.0926)
Ethnicity's Mean Satellite Light Density (2007-08)	0.00684
	(0.00611)
Ethnicity: Longitude	-0.00234
	(0.0178)
Ethnicity: Latitude	-0.00226
	(0.0238)
Female = 1	0.00766
	(0.0414)
Education (Categorical)	-0.0758*
	(0.0371)
Age (Categorical)	0.0203+
	(0.0121)
Household Size	0.00420
	(0.00824)
Income (Categorical)	0.00000554
	(0.0307)
Self-econ = 1	-0.131*
	(0.0562)
Constant	1.259
	(4.817)
Respondents	2604
Outcome Mean	1.396
Outcome SD	1.250
Treatment Mean 0	0.705
Treatment SD 0	0.945
R-Squared	0.347
Adjusted R-Squared	0.341
F-Statistic	15.64

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
Country fixed effects regression relating the interaction of ancient political centralization and Christian missionary exposure with contemporary syncretism— being both Christian but also believing in evil spirits, evil eye, and witchcraft.
Ethnicity-centric controls include minimal distance to nearest Christian mission, amount of water, agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness, economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
In addition, individual-level controls include sex, education, age, household size, income, and idio-syncratic evaluation of one's economic situation, and residence in a Muslim-majority country.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A8: Centralization on Indigenous Beliefs

	(1) Indigenous Beliefs = 1	(2) Indigenous Beliefs = 1	(3) Indigenous Beliefs = 1
At Least Larger Chiefdoms = 1	-0.000103	0.0424*	0.0336+
	(0.0242)	(0.0201)	(0.0178)
At Least Larger Chiefdoms X Min Distance to Mission	-0.00741	-0.0340*	-0.0288*
	(0.00662)	(0.0140)	(0.0117)
Min Distance (km) to Mission		-0.00823	-0.0106
		(0.0124)	(0.0109)
Ethnicity's Water Area (1000's km)		0.0237+	0.0302*
		(0.0124)	(0.0137)
Ethnicity's Agricultural Soil Suitability		-0.0174	-0.00602
		(0.0485)	(0.0411)
Ethnicity's Malaria Suitability		0.0680	0.0685
		(0.0497)	(0.0475)
Ethnicity's Distance to Coast		-0.104*	-0.0850*
		(0.0480)	(0.0391)
Ethnicity's Mean Elevation		0.0420	0.0254
		(0.0266)	(0.0210)
Ethnicity's Mean Satellite Light Density (2007-08)		-0.00475*	-0.00450*
		(0.00214)	(0.00171)
Ethnicity: Longitude		-0.00301+	-0.00315+
		(0.00160)	(0.00160)
Ethnicity: Latitude		-0.000820	0.000697
		(0.00122)	(0.000867)
Female = 1			-0.00790
			(0.00474)
Education (Categorical)			-0.00874*
			(0.00419)
Age (Categorical)			0.00525**
			(0.00186)
Household Size			0.00252*
			(0.00116)
Income (Categorical)			-0.00243
			(0.00272)
Self-econ = 1			0.00266
			(0.00392)
Muslim majority country = 1			-0.0557*
			(0.0255)
Constant	0.0269*	0.342+	0.561*
	(0.0128)	(0.182)	(0.251)
Respondents	4726	4726	4726
Outcome Mean	0.0182	0.0182	0.0182
Outcome SD	0.134	0.134	0.134
Treatment Mean 0	1.173		
Treatment SD 0	1.382		
Treatment Mean 1		1.173	
Treatment SD 1		1.382	
Treatment Mean 2			1.173
Treatment SD 2			1.382
R-Squared	0.00591	0.0587	0.0916
Adjusted R-Squared	0.00549	0.0566	0.0881
F-Statistic	2.112	1.223	1.109

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating the interaction of ancient political centralization and Christian missionary exposure with contemporary indigenous religious beliefs.
First the unrestricted bivariate relationship is presented (Column 1).
Column 2 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 3, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation, and residence in a Muslim-majority country.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A9: Centralization on Evil Spirits

	(1) Believe in Evil Spirits = 1	(2) Believe in Evil Spirits = 1	(3) Believe in Evil Spirits = 1
At Least Larger Chiefdoms = 1	0.301*	0.309*	0.336**
	(0.132)	(0.121)	(0.0990)
At Least Larger Chiefdoms X Min Distance to Mission	-0.110*	-0.0931+	-0.108**
	(0.0483)	(0.0509)	(0.0388)
Min Distance (km) to Mission		0.0437	0.0528
		(0.0600)	(0.0448)
Ethnicity's Water Area (1000's km)		-0.0640	-0.109*
		(0.0631)	(0.0457)
Ethnicity's Agricultural Soil Suitability		0.449*	0.285*
		(0.170)	(0.117)
Ethnicity's Malaria Suitability		0.234+	0.158
		(0.133)	(0.104)
Ethnicity's Distance to Coast		-0.126	-0.203+
		(0.137)	(0.108)
Ethnicity's Mean Elevation		-0.101	0.00917
		(0.107)	(0.0815)
Ethnicity's Mean Satellite Light Density (2007-08)		-0.00321	0.00318
		(0.00373)	(0.00331)
Ethnicity: Longitude		0.00980	0.00900*
		(0.00606)	(0.00429)
Ethnicity: Latitude		0.00915	-0.00227
		(0.00700)	(0.00555)
Female = 1			-0.0146
			(0.0151)
Education (Categorical)			-0.0943**
			(0.0185)
Age (Categorical)			0.00738*
			(0.00303)
Household Size			0.000529
			(0.00373)
Income (Categorical)			0.0211+
			(0.0116)
Self-econ = 1			-0.0957**
			(0.0209)
Muslim majority country = 1			0.252**
			(0.0560)
Constant	0.502**	-0.0606	-1.242
	(0.0397)	(1.012)	(0.795)
Respondents	4552	4552	4552
Outcome Mean	0.536	0.536	0.536
Outcome SD	0.499	0.499	0.499
Treatment Mean 0	1.157		
Treatment SD 0	1.361		
Treatment Mean 1		1.157	
Treatment SD 1		1.361	
Treatment Mean 2			1.157
Treatment SD 2			1.361
R-Squared	0.0380	0.0937	0.143
Adjusted R-Squared	0.0376	0.0915	0.140
F-Statistic	2.767	4.785	14.70

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating the interaction of ancient political centralization and Christian missionary exposure with contemporary indigenous religious beliefs in evil spirits.
First the unrestricted bivariate relationship is presented (Column 1).
Column 2 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 3, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation, and residence in a Muslim-majority country.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A10: Centralization on Evil Eye

	(1) Believe in Evil Eye = 1	(2) Believe in Evil Eye = 1	(3) Believe in Evil Eye = 1
At Least Larger Chiefdoms = 1	0.119	0.269*	0.277*
	(0.145)	(0.129)	(0.106)
At Least Larger Chiefdoms X Min Distance to Mission	-0.0409	-0.0956^{+}	-0.100*
	(0.0600)	(0.0569)	(0.0440)
Min Distance (km) to Mission		0.158*	0.158**
		(0.0716)	(0.0578)
Ethnicity's Water Area (1000's km)		-0.0272	-0.0718
		(0.0750)	(0.0575)
Ethnicity's Agricultural Soil Suitability		0.388*	0.235
		(0.186)	(0.144)
Ethnicity's Malaria Suitability		0.347*	0.271*
		(0.152)	(0.130)
Ethnicity's Distance to Coast		-0.250^{+}	-0.316**
		(0.141)	(0.117)
Ethnicity's Mean Elevation		0.00380	0.102
		(0.118)	(0.0939)
Ethnicity's Mean Satellite Light Density (2007-08)		-0.00666^{+}	0.000508
		(0.00376)	(0.00372)
Ethnicity: Longitude		0.0117^{+}	0.0108*
		(0.00682)	(0.00520)
Ethnicity: Latitude		0.00302	-0.00644
		(0.00700)	(0.00569)
Female = 1			-0.00218
			(0.0124)
Education (Categorical)			-0.102**
			(0.0202)
Age (Categorical)			0.00608^{+}
			(0.00319)
Household Size			0.0122**
			(0.00392)
Income (Categorical)			0.00880
			(0.0120)
Self-econ = 1			-0.0617**
			(0.0207)
Muslim majority country = 1			0.185*
			(0.0782)
Constant	0.421**	-1.511	-2.439*
	(0.0470)	(1.144)	(0.936)
Respondents	4539	4539	4539
Outcome Mean	0.438	0.438	0.438
Outcome SD	0.496	0.496	0.496
Treatment Mean 0	1.166		
Treatment SD 0	1.373		
Treatment Mean 1		1.166	
Treatment SD 1		1.373	
Treatment Mean 2			1.166
Treatment SD 2			1.373
R-Squared	0.00582	0.0904	0.137
Adjusted R-Squared	0.00538	0.0882	0.134
F-Statistic	0.338	5.099	31.92

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating the interaction of ancient political centralization and Christian missionary exposure with contemporary indigenous religious beliefs in the evil eye.
First the unrestricted bivariate relationship is presented (Column 1).
Column 2 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 3, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation, and residence in a Muslim-majority country.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A11: Centralization on Witchcraft

	(1) Believe in Witchcraft = 1	(2) Believe in Witchcraft = 1	(3) Believe in Witchcraft = 1
At Least Larger Chiefdoms = 1	0.324*	0.396**	0.415**
	(0.138)	(0.125)	(0.103)
At Least Larger Chiefdoms X Min Distance to Mission	-0.114*	-0.122*	-0.133**
	(0.0510)	(0.0530)	(0.0415)
Min Distance (km) to Mission		0.0816	0.0877+
		(0.0623)	(0.0490)
Ethnicity's Water Area (1000's km)		-0.0880	-0.128*
		(0.0639)	(0.0486)
Ethnicity's Agricultural Soil Suitability		0.485**	0.332**
		(0.167)	(0.121)
Ethnicity's Malaria Suitability		0.292*	0.218+
		(0.143)	(0.116)
Ethnicity's Distance to Coast		-0.128	-0.194
		(0.148)	(0.118)
Ethnicity's Mean Elevation		-0.126	-0.0277
		(0.115)	(0.0907)
Ethnicity's Mean Satellite Light Density (2007-08)		-0.00501	0.00129
		(0.00381)	(0.00402)
Ethnicity: Longitude		0.0105	0.00959*
		(0.00635)	(0.00477)
Ethnicity: Latitude		0.00767	-0.00245
		(0.00733)	(0.00586)
Female = 1			-0.00661
			(0.0166)
Education (Categorical)			-0.0997**
			(0.0200)
Age (Categorical)			0.00827**
			(0.00284)
Household Size			0.00232
			(0.00396)
Income (Categorical)			0.0157
			(0.0122)
Self-econ = 1			-0.0751**
			(0.0221)
Muslim majority country = 1			0.208**
			(0.0653)
Constant	0.438**	-0.529	-1.514+
	(0.0501)	(1.095)	(0.884)
Respondents	4548	4548	4548
Outcome Mean	0.480	0.480	0.480
Outcome SD	0.500	0.500	0.500
Treatment Mean 0	1.159		
Treatment SD 0	1.364		
Treatment Mean 1		1.159	
Treatment SD 1		1.364	
Treatment Mean 2			1.159
Treatment SD 2			1.364
R-Squared	0.0428	0.125	0.168
Adjusted R-Squared	0.0424	0.123	0.165
F-Statistic	2.911	7.639	21.93

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating the interaction of ancient political centralization and Christian missionary exposure with contemporary indigenous witchcraft beliefs.
First the unrestricted bivariate relationship is presented (Column 1).
Column 2 includes ethnicity-centric controls.
These are minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
Column 3, in addition, includes individual-level controls.
These include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation, and residence in a Muslim-majority country.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A12: Centralization on Religious Knowledge

	(1) Know Christianity = 1	(2) Know African Religions = 1	(3) Know Islam = 1
At Least Larger Chiefdoms = 1	0.138*	-0.0226	-0.0477
	(0.0531)	(0.0424)	(0.0782)
At Least Larger Chiefdoms X Min Distance to Mission	-0.0524*	-0.0366+	0.0218
	(0.0246)	(0.0211)	(0.0315)
Min Distance (km) to Mission	-0.0387	-0.00600	0.102*
	(0.0475)	(0.0281)	(0.0496)
Ethnicity's Water Area (1000's km)	-0.124**	0.0327	0.0651
	(0.0454)	(0.0277)	(0.0525)
Ethnicity's Agricultural Soil Suitability	-0.140	0.0696	0.157
	(0.129)	(0.0588)	(0.170)
Ethnicity's Malaria Suitability	-0.143+	0.127	0.0917
	(0.0813)	(0.0920)	(0.118)
Ethnicity's Distance to Coast	-0.140+	-0.118*	0.137
	(0.0818)	(0.0560)	(0.0943)
Ethnicity's Mean Elevation	0.127+	0.0529	-0.164
	(0.0747)	(0.0584)	(0.0992)
Ethnicity's Mean Satellite Light Density (2007-08)	0.00974**	-0.00568+	-0.00754+
	(0.00308)	(0.00286)	(0.00383)
Ethnicity: Longitude	-0.00570	-0.00208	0.0123**
	(0.00471)	(0.00215)	(0.00454)
Ethnicity: Latitude	-0.0116*	0.00239	0.0179**
	(0.00465)	(0.00242)	(0.00583)
Female = 1	-0.00378	-0.0533**	-0.0456*
	(0.0153)	(0.0137)	(0.0180)
Education (Categorical)	0.100**	-0.0116	-0.0619**
	(0.0125)	(0.0160)	(0.0144)
Age (Categorical)	-0.000121	0.0157**	0.00307
	(0.00325)	(0.00387)	(0.00313)
Household Size	-0.00912*	0.00413	0.00737+
	(0.00347)	(0.00336)	(0.00384)
Income (Categorical)	-0.00548	-0.000995	0.0258*
	(0.00895)	(0.0103)	(0.0109)
Self-econ = 1	0.0197	-0.00477	0.0357+
	(0.0137)	(0.0162)	(0.0194)
Muslim majority country = 1	-0.0971	-0.106*	0.181*
	(0.0767)	(0.0492)	(0.0814)
Constant	0.212	0.812	0.694
	(0.812)	(0.525)	(0.967)
Respondents	4653	4359	4551
Outcome Mean	0.688	0.264	0.577
Outcome SD	0.464	0.441	0.494
Treatment Mean 0	1.173		
Treatment SD 0	1.381		
Treatment Mean 1		1.192	
Treatment SD 1		1.408	
Treatment Mean 2			1.192
Treatment SD 2			1.397
R-Squared	0.241	0.0465	0.288
Adjusted R-Squared	0.238	0.0426	0.286
F-Statistic	81.00	9.653	59.13

Standard errors in parentheses.
Standard errors clustered at the ethnicity level.
OLS regression relating the interaction of ancient political centralization and Christian missionary exposure with knowledge of Christianity, indigenous beliefs, and Islam.
Ethnicity-centric controls include minimal distance to nearest Christian mission, amount of water,
agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness,
economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude.
In addition, individual-level controls include sex, education, age, household size,
income, and idio-syncratic evaluation of one's economic situation, and residence in a Muslim-majority country.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A13: Centralization on Religiosity: Afrobarometer's Round 4

	Religiosity
At Least Larger Chiefdoms = 1	0.0552*
	(0.0266)
Ethnicity's Water Area (1000's km)	0.00369
	(0.0132)
Ethnicity's Agricultural Soil Suitability	-0.180**
	(0.0666)
Ethnicity's Malaria Suitability	0.195**
	(0.0666)
Ethnicity's Distance to Coast	-0.223**
	(0.0503)
Ethnicity's Mean Elevation	0.208**
	(0.0380)
Ethnicity's Mean Satellite Light Density (2007-08)	-0.0729**
	(0.0212)
Ethnicity: Longitude	0.00000507
	(0.0000145)
Ethnicity: Latitude	0.0000480*
	(0.0000210)
Constant	0.787**
	(0.0485)
Observations	6618
Outcome Mean	0.877
Outcome SD	0.328
Treatment Mean R4	0.655
Treatment SD R4	0.475
R-Squared	0.0748
Adjusted R-Squared	0.0735
F-Statistic	6.550

Standard errors, clustered at the ethnicity level, in parentheses. OLS regression relating ancient political centralization with contemporary religiosity using Afrobarometer's Round 4 survey. Controls are ethnicity-centric including the ethnic group's amount of water, agricultural soil suitability, malaria suitability, distance to the coast, terrain ruggedness, economic development in 2007/08 proxied by satellite-sourced nighttime lights, latitude, and longitude. I use Round 4 because it was fielded during the same period as Pew's Survey. Specifically, Afrobarometer's Round 4 was conducted from March 2008 to June 2009 while Pew's Survey was conducted from December 2008 to April 2009. This Afrobarometer sample (6,618) is 41.079% larger than the Pew estimating sample (4,691).

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

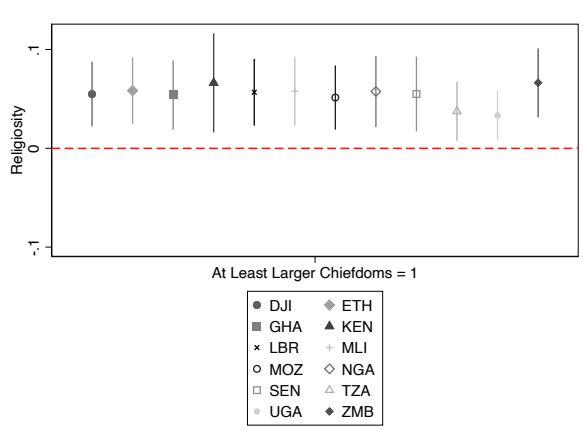
Table A14: Religiosity and Politics

	(1) Religious Politicians = 1	(2) Prefers Democracy = 1
Religious = 1	0.0827**	0.0959**
	(0.0139)	(0.0137)
Female = 1	0.0243**	-0.00834
	(0.00659)	(0.00640)
Education (Categorical)	0.0267**	0.0130+
	(0.00998)	(0.00717)
Age (Categorical)	-0.000835	-0.000919
	(0.00196)	(0.00183)
Household Size	0.00263	-0.00106
	(0.00202)	(0.00160)
Income (Categorical)	-0.000629	0.000724
	(0.00498)	(0.00457)
Self-econ = 1	0.0514**	0.0397**
	(0.0116)	(0.00991)
Christians = 1	-0.00302	0.00719
	(0.0171)	(0.0121)
Muslim majority country = 1	0.0692**	-0.0273
	(0.0218)	(0.0170)
Constant	0.617**	0.648**
	(0.0299)	(0.0246)
Observations	17128	16954
Outcome Mean	0.802	0.762
R-Squared	0.0223	0.00938
Adjusted R-Squared	0.0218	0.00885
F-Statistic	12.71	8.902

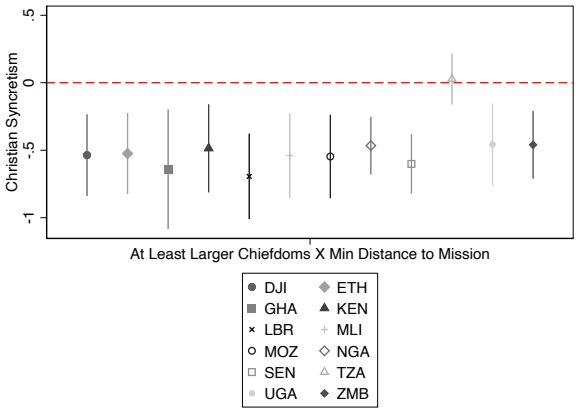
Standard errors, clustered at the ethnicity level, in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

B. APPENDIX: FIGURES

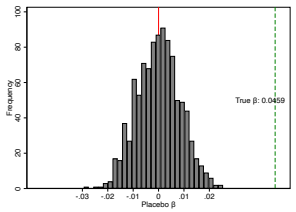


(a) Coefficients and 95% CI leaving out 1 of 12 Countries in the main specification of Centralization on Religiosity.

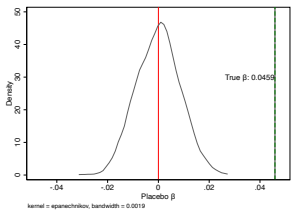


(b) Coefficients and 95% CI leaving out 1 of 12 Countries in the main specification of Centralization and Distance to the Nearest Christian Mission on Christian Syncretism.

Figure B1: Leave-One-Out Analysis: Countries. The main specification includes all controls leaving one country across 12 regressions.



(a) Histogram of coefficients from 1000 OLS regressions of placebo Centralization on actual Religiosity.



(b) Kernel density of coefficients from 1000 OLS regressions of placebo Centralization on actual Religiosity.

Figure B2: Placebo Analysis: "Fake" Centralization on Religiosity. The true coefficient of interest is denoted as the vertical green line. The placebo Centralization variable is generated from a binomial distribution with mean = 0.537. The latter is the mean from the unrestricted regression in the main results. Standard errors were clustered on actual ethnicities.

(a) A symbol of Ethiopian Christian Syncretism. The step design is characteristically Aksumite and is ubiquitous in Ethiopian religious iconography in church buildings, and church attire, for instance. As one of the most centralized groups, the Aksumites have had long-run legacies of their rule on contemporary religious beliefs and behaviors in Ethiopia today.

(b) A symbol of Kongolese Christian Syncretism. The four smaller figurines on the cross symbolize ancestors. Their presence around the Jesus Christ figure is to signal that Jesus Christ is favored by the ancestors— a symbol of his divinity and connection to the afterlife. The Kongolese are one of the most centralized groups in the continent and second only to the Ethiopians in their long-run exposure to Christian missionaries. The typical Kongolese Christian church today is replete with many elements of syncretism in the songs that are sung but also in the attire of church-goers.

Figure B3: Manifestations of Christian Syncretism Across Africa: Ethiopia and Congo. Source: The Metropolitan Museum of Art.