

Did the *Jizya* – the Islamic Tax on Non-Muslims – Cause Selection for Intelligence? The Case of the Copts of Sudan

Edward Dutton[†]

Abstract

Studies have found that Christian theological tenets and related practice have led to selection favouring increased intelligence, but this has merely been speculated on in relation to Islam. The *jizya*, the tax imposed on non-Muslims in pre-nineteenth century Muslim societies, may have selected for higher intelligence of non-Muslims such as the Copts because wealthier, so likely more intelligent, Copts could afford to pay it. We hypothesise, therefore, that Sudanese Copts would have higher IQ than the general Sudanese population. In this regard, we examine a study wherein the SPM+ was administered to a sample of 424 Coptic Sudanese children aged between 6 and 11. The results were compared to those from a sample of Sudanese children who had also been administered the SPM+, controlling for age. Using British norms, it was found that the IQ of the Copts was 88 while the IQ of the Sudanese was 78. The difference is consistent with our hypothesis.

Keywords: Intelligence, Copts, Selective attrition, Sudan, Progressive Matrices

1 Introduction

Many studies have argued that religion can be regarded as an evolutionary adaptation in that it involves all of the key aspects of an adaptation: It is associated with health and fertility, it is elevated at times of stress implying that it is a cognitive bias, it is significantly heritable, it is associated with other psychological adaptations such as group-orientation and pro-sociality, it is found in all cultures, and certain parts of the brain are associated with it (e.g. Vaas, 2009). Equally, it has been found that religion itself can cause evolutionary changes. For example, it has been averred that Christianity, which during the Middle Ages religiously sanctioned execution for all felonies, rendered the European population genetically more pro-social across time, due to the relatively high heritability of antisocial traits (Frost & Harpending, 2015). It has been maintained that, due to the correlation between intelligence (roughly defined as the ability to solve cognitive problems and learn combined with how quickly one can do so) and pro-social personality traits, and the high heritability of intelligence and personality, this same theological interpretation also increased religiosity and intelligence across the Middle Ages, using the Breeder's Equation (Dutton & Madison, 2018). It may also be relevant that intelligence is associated with pro-social behaviour via higher cognitive empathy (Dutton & Woodley of Menie, 2018). Religions can also impact the practitioners of other religions. For example, it has been averred that Christian discrimination against Jews forced Jews into cognitively demanding professions, increasing Ashkenazi Jewish intelligence across time (Cochran et al., 2006), while Christian pogroms against Ashkenazi Jews may have acted as selection events for planning, future-orientation and thus for intelligence (Lynn, 2012).

Some scholars have argued that aspects of Islamic practice, such as sanctified cousin-marriage in some Islamic cultures which continues across many generations, act to reduce intelligence at the genetic level (e.g. Dutton, 2024) and others have found that when a Muslim nation focuses too much on religion in school, IQ seems to fall for environmental reasons, because scientific thinking is not being focused on

[†]Asburo University, Poland; ecdutton@hotmail.com

(Dutton et al., 2017). But, at the time of writing, nobody has explored aspects of religiously-sanctioned policies in Islamic societies that may have elevated intelligence and certainly not in relation to their impact on groups with which Islam has interacted. In this regard, we will examine the Sudanese Copts.

Based on historical analyses, we would expect the Sudanese Copts to have higher intelligence than both the Sudanese and the Egyptians. In Egypt, a system of taxation was imposed between 641 and the beginning of British rule in 1856 on those who refused to convert to Islam. When the Muslim Arabs invaded Egypt and imposed Islamic rule, all non-Muslim males had to pay a very high tax known as the *jizya*. This poll tax seemingly caused less well-off Copts to convert to Islam. In modern societies there is a robust relationship between earnings, wealth, socioeconomic status and intelligence (Jensen, 1998). Intelligence in adulthood is highly heritable at around 0.8 in twin studies (Lynn, 2011, p. 101), and there is no convincing reason to assume that this was fundamentally different in earlier times. Indeed, it has been found that heritability of socioeconomic status, a robust proxy for intelligence, was the same in Medieval England as in modern England, at around 0.75 (Clark, 2014). We can therefore expect that less intelligent Copts would be poorer on average than more intelligent Copts and therefore — at least when controlling for levels of religious commitment — more inclined to convert to Islam. In this regard, Saleh (2018) has noted that “the poll tax rate among middle and low income Copts was, on average, 6 to 10% of the annual wage in 661-1250 but became negligible in 1250-1517; it was negligible too among high income Copts in 661-1517.” Further, “Copts shrank from almost 100% of the population in 641 to 16% in 1200 and 7% in 1848-1868. This was mostly due to voluntary conversions to Islam.”

Crucially, Salah observes that, “The Coptic-Muslim SES gap emerged in 641-969, where Copts were over-represented among white-collar workers (specifically, mid-low bureaucrats) and artisans, and the gap persisted in 1848-1868.” In essence, when the tax rate was high there was substantial conversion from Coptic Christianity to Islam. When it was lowered, conversions lessened considerably but by this time the Copts were more elite than the Muslims. Moreover, for the entire period, wealthy Copts could easily pay the tax. Hence, a reasonable conclusion is that the *jizya* turned the Copts into an intellectually elite minority in Egypt.

It may be countered that during the Mamluk Period, between 1250 and 1517, there was a specific focus on converting the Coptic elite to Islam, with non-Muslims being banned from higher positions in the Sultanate (Zaki, 2025). This might potentially reduce the intelligence of the remaining Copts. However, even so, the remaining Copts had to pay the *jizya* until 1855 and continued voluntarily converting to Islam (Findley, 1980). Moreover, the counter-argument is a simplification. Coptic Christians continued to be represented in many senior positions in the Mamluk era (Dizon, 2019) and there was no policy to force conversion, there were simply greater restrictions and their extent varied across the period (Little, 1976; TSUJI, 2006).

A group from among this minority migrated to Sudan, as already indicated. The Republic of Sudan is the third largest African country after Algeria and the Democratic Republic of Congo. It is also extremely diverse in terms of its levels of socioeconomic development and ethnic composition, including highly distinctive groups such as the Sudanese Arabs and the Nilotic Fur in Darfur. Sudan is one of the most thoroughly researched African countries in terms of intelligence. This is due to a large number of studies in which IQ tests were administered to substantial and representative samples (S. Bakhiet, 2008; S. F. A. Bakhiet & Lynn, 2015; Batterjee & Ashria, 2015; Dutton, Bakhiet, et al., 2018; Dutton et al., 2017; Dutton, Becker, et al., 2018; Irwing et al., 2008; Khaleefa, 2011). Estimated IQs vary between 65.9 and 84.0, with an unweighted mean of 75.73 (SD = 5.46) or 76.75 if weighted for sample size according to Lynn and Becker (2019). This mean score is congruous with the country’s geographical location between North Africa (Libya with an IQ of around 81, Egypt with an IQ of around 76) and Sub-Saharan Africa (Eritrea with an IQ of around 69, Ethiopia with an IQ of around 68) (Lynn & Becker, 2019). Results are also consistent with socioeconomic differences in IQ within the country, where the IQ of children of those in elite professions, such as medicine, has been found to be around 90 or 100 (Husain et al., 2019).

Many countries contain ethnic minorities that are relatively socioeconomically elite. This may be due to differences in average intelligence, modal personality or other factors. For example, the Ashkenazi Jews constitute an elite ethnic minority in many countries and it has been found that, on average, their IQ is about

Table 1: Summary of IQ scores for Sudanese Copts and comparison groups

Group	N	Mean IQ	SD	Source
Sudanese Copts	100	88	12.5	Dutton et al. (2025)
Sudanese (General)	–	78	–	Lynn & Becker (2019)
Egypt (General)	–	76	–	Lynn & Becker (2019)
Libya (General)	–	80	–	Lynn & Becker (2019)

Note. IQ estimates based on Standard Progressive Matrices Plus (SPM+).

107-112, the higher estimate almost a standard deviation above Greenwich norms (Lynn, 2012). Also their General Factor of Personality (a personality *g*-factor that has been interpreted as being associated with social effectiveness) is particularly high (Dunkel et al., 2015). By contrast, the Swedish-speaking Finns, who are strongly over-represented on numerous elite measures within Finland, have slightly lower average IQ than the Finns but considerably higher General Factor of Personality (Dutton et al., 2016). In general, however, the elite ethnic minority has higher average IQ than the majority, as has been found with regard to European and South Asian minorities in Sub-Saharan Africa (Lynn, 2006).

The Copts are practitioners of a form of Christianity which broke away from what is now known as the Roman Catholic Church after the Council of Chalcedon in 451. The dissenters, known as Miaphysites, argued that Christ is “one nature of full humanity and divinity” with the mainstream Church maintaining that He has “two natures” that are both fully divine and fully human. The Copts, then, subsequently developed outside of communion with the Chalcedonian churches of the Roman Empire, along with other Miaphysite groups such as the Armenian Apostolic, Ethiopian Orthodox and Syriac Orthodox Churches. Since the year 451, the Copts have had their own pope whose seat is in Alexandria (Meinardus, 2002). The Sudanese Copts are highly genetically distinct from most Northern Sudanese and are extremely genetically similar to Egyptians, having inter-married very little with the Sudanese. Many of them migrated from Egypt to Sudan around two hundred years ago, during the period of Anglo-Egyptian colonial rule. Today they compose about 1% of the Sudanese population, mainly living in Khartoum and other large cities. They are a mixture, genetically, between Egyptians and broader Arab populations and have about the same European admixture as do Egyptians (Hollfelder et al., 2017). Some Copts are descended from a group that migrated to Sudan when Coptic Christians began to be persecuted in Egypt after it became Islamic in the eighth century (Saleh, 2018).

On many measures the Sudanese Copts are of higher socioeconomic status than are the surrounding Sudanese. They tend to be merchants, bankers and bureaucrats and are regarded as a “privileged minority” (Kramer et al., 2013, p. 117). The Copts in Egypt are also very strongly over-represented in elite professions such as medicine and government administration (Pennington, 1982; Rugh, 2016). For our purposes, we would predict that the history of the Copts — the fact that they descend from those who paid the Islamic tax — would mean that the Copts would have higher IQ than either the Egyptians or the Sudanese. This is, of course, implied by their higher average socioeconomic status, but is it the case?

2 The intelligence of the Sudanese Copts

Dutton et al. (2025) have presented a study demonstrating that it is indeed the case. In 2017, they applied the SPM+ non-verbal intelligence test in all Coptic schools in the capital Khartoum and in Omdurman. These were Comboni in Khartoum, Alsalam in Khartoum North; and Coptic school, Pastor Comboni, and Nuns School in Omdurman. These were representative as 70% of the students participated. The results of the North Sudanese were from Husain et al. (2019), from an administration to a representative sample of Sudanese school children which took place in 2016. The scores of the Sudanese Copts on the SPM+ can be seen in Table 1. That the differences were statistically significant can be seen in Table 2.

Table 2: Inference statistics for the differences between the ethnic groups, separately for each sex and age, across ages, and across both sex and age

Sex	Age	M Copts	M Sudan	SD ²	T	D	p
Male	7	19.41	12.89	6.18	7.56	1.05	<0.0001
	8	22.12	14.74	5.62	11.4	1.31	<0.0001
	9	25.82	17.52	7.50	9.93	1.11	<0.0001
	10	28.00	18.98	–	–	–	–
Female	7	14.67	13.98	5.57	0.16	0.12	>0.1
	8	17.27	15.64	6.56	1.48	0.24	<0.1
	9	21.67	17.23	7.19	5.50	0.62	<0.0001
	10	22.93	21.86	8.03	2.92	0.41	<0.005
Male ³	7–10	28.02	20.21	7.81	17.67	1.00	<0.0001
Female ³	7–10	23.86	21.36	8.43	4.47	0.30	<0.0001
All ³	7–10	25.94	20.79	8.07	15.21	0.64	<0.0001
All ^{1,3}	7–10	26.65	20.74	7.86	17.14	0.75	<0.0001

Note. ¹N-weighted. ²SDs are pooled. ³Corrected for age differences.

3 Discussion

As historical information would suggest, Dutton et al. (2025) found that the average IQ of the Sudanese Copts is considerably higher than the average IQ of the Sudanese, at 88 where the Sudanese IQ on the SPM+ is 78. It is also higher than other countries in which the Copts have traditionally lived, that is to Egypt, where average IQ has been estimated to be 76, and Libya, where average IQ is estimated to be 80 (Lynn & Becker, 2019).

These findings are congruous with the original hypothesis that imposition of the *jizya* in Egypt and Sudan acted as a selection event. The wealthier Egyptians, whom we would also expect to have been more intelligent, could afford to pay the tax and therefore did not convert to Islam. Consequently, their Coptic descendants in Sudan today are of high socioeconomic status, something at least partially underpinned by high intelligence. We would expect those who refused to convert to also be more strongly religious, something which is itself associated with elevated General Factor of Personality (Dutton et al., 2017). As far as we are aware, this has not been tested in the populations we are studying here and it would be useful if future researchers would do so.

There is, it should be noted, a possible parallel explanation for our findings. Jensen (1998) observes a robust relationship between migration and intelligence. Intelligence predicts having the resources to be able to migrate, having the planning ability to successfully migrate, and having the future-orientation to undergo relative hardship in the present for the future rewards that migration might entail. Accordingly, we might predict that it would be relatively intelligent Copts, if not the most intelligent ones as their status in Egypt would presumably be very high, who would have migrated to Sudan under British rule. Hence, part of the present difference may be due to migration, but this is unlikely to explain all of it when we consider that even in Egypt the Copts are of much higher socioeconomic status than Egyptians, and high status is robustly predicted by intelligence.

We would also predict that the most intelligent Copts would be leaving Sudan. Currently, with Sudan being in a protracted political crisis as well as run by a relatively conservative Islamic government, it may be that the Sudanese Copts are particularly likely to migrate to the West, reducing the intelligence difference between the Copts and the Sudanese. Consistent with this, there has been a substantial migration of Copts out of Sudan since 1969, when the country came under military rule, and especially since 1989, when Sharia Law was imposed across Sudan (Abusharaf, 2002).

It is also worth noting that we cannot see any clear evidence of a so-called Simber Effect in these samples. This is the phenomenon whereby the IQs of Arab and Western children are approximately the

same when they are very young, but increasingly diverge in favour of Western children as they get older. This may be due to differences in the standard of education, differences in life history strategy (how quickly children mature intellectually being an aspect), differences in how cognitively stimulating society is, or other reasons (S. Bakhiet et al., 2018; Becker et al., 2023). In both samples in Dutton et al. (2025), IQ starts to drop, with reference to Western norms, at around the age of 9, but we would require a larger age range to be sure that this was a Simber Effect rather than simple fluctuation.

4 Limitations

We appreciate that there has been considerable criticism of national IQs by psychologists with national IQs having been attacked for unrepresentative, small and incomparable samples. However, they were all recalculated in response to these criticisms and new IQs correlated with the old ones at close to 0.9. Moreover, these IQ scores strongly correlate at about 0.9 with other national level measures of intelligence, especially with international student assessment scores such as the OECD's PISA (Lynn & Becker, 2019). It has been found that in very impoverished contexts, such as African refugee camps, IQ tests may not give accurate results (Dutton, Becker, et al., 2018), but this is not what we are dealing with here. IQ tests cannot give accurate scores under these conditions because they have never been standardized on samples with extremely low IQs.

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