



Genetics Revealed Historical and Cultural Relationship of Sunda Shelf and Cape Malays Peopling

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Abstract

Objective: The Cape Malays in Cape Town, South Africa is the descendants of the Malay population that once falls under the Malayo-Polynesian linguistic family and practice Islam. However, there has been no study reported on the mtDNA of the Nusantara Malays with the Cape Malays and their relationship. The aim of this study was to describe the relationship of the maternal genetic affinity with the historical and cultural affiliation of the Nusantara and Cape Malays. **Methods:** Blood samples were collected for nine Malay sub-ethnic groups in Malaysia, Thailand and Indonesia. Mitochondrial DNA (mtDNA) haplogroup was determined by Polymerase Chain Reaction (PCR) and Restriction Fragment Length Polymorphism (RFLP). In-depth interviews and comparisons with published data from a study by Isaacs *et al.*, 2013 were carried out. **Results:** The results of this study showed a resemblance of Cape Malays with Nusantara Malays in the contribution of maternal lineage haplogroup and similarities in the cultural-behavioral level inducing the origin of Cape Malays based on the genetic, linguistic and cultural affiliation of the Malay population in the Malayo-Polynesian region.

Keywords: Nusantara Malay, Cape Malay, genetics, cultural-behaviour, migration

Introduction

Mitochondrial DNA (mtDNA) has been an important source of phylogenetic information in human evolutionary studies. Special features of maternal inheritance with little or no recombination and rapid rate of mutations had made mtDNA as a valuable tool in the study of evolutionary genetics of modern humans and in understanding the demographic history of human populations (Ingman and Gyllensten, 2003; Pakendorf and Stoneking, 2005; Richards and Macaulay, 2001).

Human population studies have analyzed mtDNA polymorphisms from both coding and non-coding regions. The non-coding region within mtDNA is

the control region or displacement-loop (D-loop) with approximately 1,100 bp in length. The control region is the most rapidly evolving part of mtDNA which consists of three hypervariable segments: Hypervariable region I (HVI), hypervariable region II (HVII) and hypervariable III (Pakendorf and Stoneking, 2005). Both HVI and HVII regions are well known as hotspots for base pair substitutions. The evolutionary nucleotide substitution rate of this region is almost ten times more than the gene coding region and therefore tends to discriminate haplogroup markers within the coding region (Ingman and Gyllensten, 2003; Nilsson *et al.*, 2008; Shriver and Kittles, 2004).

The term 'Nusantara' was originated from an old Javanese word which literally means 'archipelago', comprising all the lands inhabited by the Malay people in the Island Southeast Asia (ISEA) (Friend, 2003; Vlekke, 1943; Zoetmulder *et al.*, 1982).

Received: 15 July 2021; **Accepted revised manuscript:** 12 September 2021 **Published online:** 21 September 2021

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Nusantara is derived from two Sanskrit words comprising of *Nusa* (island) and *antara* (in between) which have similar culture and linguistic influence (Evers, 2016). In Malaysia, the term has been adopted to mean the "Malay World" and often interchangeable with Malay Archipelago or Malay Realm (*Malay: Alam Melayu*). The Malay World refers to the Malay cultural and linguistic sphere of influence, covering the archipelago of modern-day Malaysia, Indonesia, Singapore, the southernmost part of Thailand, the Philippines, Brunei, East Timor and occasionally New Guinea.

The Malay civilization is associated with the Southeast Asian region known as the Nusantara, the Malay Archipelago, the Malay-Indonesian Archipelago, the Malay Realm and the Land of Java (Anas *et al.*, 2019; Azam, 1991; Bellwood, 2007). Studies reported that the Out of Taiwan Theory as proposed by Bellwood (2007) has indicated that the Malays came from Taiwan and China where it involved a migration from Taiwan to China and subsequently to Southeast Asia (Yaapar, 2014; Zainuddin and Goodwin, 2004). Furthermore, studies also showed that Peninsular Malaysia was originated from the earliest modern human groups that moved out from the African continent through India to Southeast Asia and finally to Australasia (Chambers and Edinur, 2013; Edinur *et al.*, 2009; Gani *et al.*, 2015; Macaulay *et al.*, 2005; Manaf *et al.*, 2016; Norhalifah *et al.*, 2016; NurWaliyuddin *et al.*, 2015; SyedHassan *et al.*, 2017). Nevertheless, it is in line with the theory of Out of Sundaland developed by Stephen Oppenheimer (Anas *et al.*, 2019; Yaapar, 2014).

Nusantara Malays are the descendants of Austronesian speakers which forms part of the greater 'Austronesian Diaspora' into Peninsular Malaysia (Chambers and Edinur, 2013). Aceh Malays are people who originated from the northernmost region of Sumatra once ruled by the Sultanate of Aceh Darussalam (1496-1903) (Din, 2011). The second influx of the Austronesian speakers into Peninsular Malaysia involved the peoples primarily from Kalimantan (Banjar Malays), Sulawesi (Bugis Malays) and Java (Jawa Malays) (NurWaliyuddin, 2018).

Kelantan Malays are people who reside at the north eastern region of the Malay Peninsula and were influenced by the traders mainly from China, India as well as the Middle East (Hussin, 2004). Meanwhile, people who originated from central

and eastern regions of Java island of Indonesia and migrated to the Malay Peninsula mostly during the first decade of Malaysia's Independence are Jawa Malays (Mas'ud, 2008). Champa Malays are originated from Vietnam and they are Austronesian speaking population (Abdul Hamid, 2006). People who inhabits the southern part of the south peninsula of Sulawesi in Indonesia are known as Makassar Malays (Barnard, 2004). Based on historical study, Kedah Malays are people originated from the core region of the Kedah Tua kingdom who were also influenced by the Arab-Muslim and Indian civilizations (Ramli and Rahman, 2012; Samsudin *et al.*, 2010). Furthermore, Pattani Malays are regarded as one of the cradles of Islam in Southeast Asia (Satha-Anand, 1992).

Linguistically, the concept of Nusantara could be stretched to include the islands of Taiwan and Madagascar, as the native languages of both islands are also Austronesian languages (Bellwood, 1991; Green and Pawley, 1966). The language spoken falls under the Nusantara cluster called Malayo-Polynesian. Malayo-Polynesian is a linguistic subgroup of Austronesian family that is widely dispersed throughout maritime Southeast Asia, Madagascar and the islands of the Pacific Ocean, as well as few regions on continental Asia. Today five Malayo-Polynesian languages have official status in five important states: Malay, in Malaysia; Indonesian (also called Bahasa Indonesia, and based on Malay), in Indonesia; Pilipino (based on Tagalog), in the Philippines; Malagasy, in Madagascar; and Maori, in New Zealand.

Generally, the term Nusantara encompasses broad regions where Malayo-Polynesian languages and associated cultures are dominant. Nevertheless, the Cape Town of South Africa is not included in the concept of Nusantara region, but the Cape Malays in Cape Town is the descendants of Malay population that once falls under the Malayo-Polynesian linguistic family and practice Islam. The Cape Malay community is rich in culture and religious traditions that have played a major role in shaping the history and diversity of Cape Town, South Africa. The Cape Malays, who are also known as Coloureds, brought the culture and religions, predominantly Islam into Afrikaans (Mandivenga, 2000). Researchers explained that Cape Muslims came to be known as 'Cape Malay' because Malay was the lingua franca of the Indonesian

Archipelago and the language was widely spoken at the Cape during and prior to the nineteenth century (South African History Online, 2011).

The Cape Malays are originally people from maritime southeast Asia, mostly from Indonesia and Malacca of Malay Peninsula which were held by the Dutch from 1641 to 1824 (Wan-Teh, 2009; Winstedt, 1948). At present, the Cape Malays are one of ethnic groups in the city of Cape Town which is composed of various communities diverse in heritage and culture. The terms Malay and Muslim are often used as synonyms, however the term of Malay stands for that section of the local Muslim community in which the descendants of Eastern Malays (mainly from Indonesia) are to be found (Haron, 2005). The historical facts of the Cape Malays and their relatedness with the Nusantara Malays, mainly from Makassar, Indonesia have been well documented but yet no specific genetic studies have been done.

Hence, this present study aims to utilise the mitochondrial DNA (mtDNA) for dissecting the genetic profile of the Nusantara Malays and the Cape Malays as it allows tracing of a direct genetic line and to determine the level of genetic affinity between the Nusantara Malays and the Cape Malays. To the best of our knowledge, there has been no study reported on the mtDNA of the Nusantara Malays and the relationship between them and Cape Malays. To date, Isaacs and team led a study based on genetic marker and have attempted to determine the lineage of mtDNA (maternal) and Y-chromosomal (paternal) gene pool of the Cape Muslim population (Isaacs *et al.*, 2013). The results of this present study will provide genetic evidence to the historical link between the

Nusantara Malays and the Cape Malays. By collaborating this study and the previous study done by Isaacs *et al.*, a correlation between genetic, linguistic and cultural affiliation of the Malay population in the Malayo-Polynesian region as well as shed some insight on the origin of Cape Malays.

Materials & Methods

Sampling

The approval to conduct this study was obtained from the Research Ethics Committee (Human), Universiti Sains Malaysia (JEPeM Code: USM/JEPeM/17020073). Subjects were selected from eight ethnic groups of Nusantara Malays from various countries including Peninsular Malaysia, Indonesia and Thailand. The subjects were chosen based on the Nusantara cluster and linguistic influence which is Malayo-Polynesian. Each subject was selected based on a very strict criteria to establish the authenticity of their ancestral lineages. The subject must be at least three generations of the respective ethnic groups (no history of mix-marriage) and must have resided in the respective location/village for at least three generations. The 92 healthy subjects were from Aceh (Malaysia), Banjar (Malaysia), Bugis (Indonesia), Bugis (Malaysia), Champa (Malaysia), Makassar (Indonesia), Kedah (Malaysia), Kelantan (Malaysia), Jawa (Malaysia) and Pattani (Thailand). The distribution and sample size of each ethnic group were described in Table 1.

Table 1: Sample size distribution of the study.

Ethnic group	Country	Sample size
Acheh		7
Banjar		6
Bugis		15
Champa	Peninsular Malaysia	15
Kedah		9
Kelantan		6
Jawa		13
Bugis	Indonesia	11
Makassar		2
Pattani	Thailand	8
Total		92

DNA extraction and quantification

Genomic DNA was extracted from participants' whole blood sample using commercially available kit, QIAamp® DNA Mini Kit, based on the manufacturer's guidelines (QIAGEN Ag., Germany). The extracted DNA samples were analysed for DNA integrity using 2% agarose gel electrophoresis. The purity and concentration of DNA were determined by using Infinite 200 NanoQuant machine (TECAN, Magellan, Austria, GmBh) with the value of pure DNA was A260/A280 ratio of 1.8 to 2.0.

PCR-RFLP analysis

Genetic analysis was conducted based on Polymerase Chain Reaction (PCR) and Restriction

Fragment Length Polymorphism (RFLP) protocols, which is also known as PCR-RFLP. The PCR products were subjected to RFLP protocols using restriction enzymes (RE) to detect the single nucleotide polymorphisms (SNPs) in revealing and screening the mtDNA haplogroup. For each DNA extract, several amplifications were carried out systematically. Nine combination sets of PCR primers and restriction enzymes (REs) were used to amplify and detect the SNPs of the mitochondrial DNA to represent eight mtDNA haplogroups were listed in Table 2. The annealing, incubation and deactivation temperatures of the PCR-RFLP reagents were based on manufacturers' protocol (Table 3).

Table 2: List of primers and restriction enzymes for PCR-RFLP of the mitochondrial DNA region.

Set	Primers	Sequence (5' to 3')	Restriction Enzyme	Nucleotide position	mtDNA Haplogroup
1	L5160 H5442	GCA CCA CGA CCC TAC TAC TAT GCG ATG AGT GTG GGG AGG AA	<i>AluI</i>	-5176	D
2	L12978 H13773	CAA GCC TCA CCC CAC TAC TA GGT AGA GGG GGA TTG TTG TT	<i>AluI</i>	+13262	C
3	L12233 H12630	GCT CAC AAG AAC TGC TAA CTC ACA GTG AGA ATT CTA TGA TGG AC	<i>HincII</i>	-12406	F
4	L6889 H8385	GAA GCA ATA TGA AAT GAT CTG C GTA ATT ATG GTG GGC CAT ACG G	<i>HhaI</i>	-7598	E
5	L6949 H7052	CCG TAG GTG GCC TGA CTG GC TGA TGG CAA ATA CAG CTC CT	<i>AluI</i>	-7025	H
6	L13627 H13725	TCG AAT AAT TCT TCT CAC CC TAG TAA TGA GAA ATC CTG CG	<i>BstOI</i>	-13704	J
7	L3388 H3717	CTA GGC TAT ATA CAA CTA CGC GGC TAC TGC CTC GCA GTG	<i>HpaI</i>	+3592	L
8	L10252 H10527	TTG ATC TAG AAA TTG CCC TC GTA TTC CTA GAA GTG AGA TG	<i>DdeI</i> <i>AluI</i>	-10394 +10397	M

Table 3: The incubation and deactivation temperatures of the PCR-RFLP reagents.

Restriction enzyme	Incubation		Deactivation	
	Temperature (°C)	Time (minutes)	Temperature (°C)	Time (minutes)
<i>AluI</i>	37	15	80	30
<i>DdeI</i>	37	15	65	20
<i>HhaI</i>	37	15	65	20
<i>BstOI</i>	60	15	37	20
<i>HpaI</i>	37	15	65	20
<i>HincII</i>	37	15	65	20

Maternal lineage of the Nusantara and Cape Malays

Nusantara Malay samples were screened using PCR-RFLP analysis, viewed under agarose gel with the exception of the 9 bp deletion for haplogroup B. If the PCR products were digested into two fragments by the restriction enzyme, it is considered that the sample is having the single nucleotide polymorphism (SNP) and represents the mtDNA haplogroup tested as followed by Table 2. The presence of two bands viewed under ultraviolet light confirms the PCR products digested by the restriction enzymes. The maternal lineage of the Nusantara Malays was compared with the Cape Malays based on the mitochondrial DNA haplogroup identified by Isaacs *et al.*, (2013). The mtDNA haplogroup represented by the Cape Malays include haplogroup H, J, L and M.

In-depth interview of the Cape Malays

The nature of the cultural research is exploratory, specifically abductive research strategy. Four key residential informants, with South Africans of Cape Malays’ ethnic background were identified. In-depth interview, either face-to-face or via web/internet were applied. Without being boxed

into specific categories of responses based on preconceived variables, the informants were given the space to define the parameters of their answers.

Results

mtDNA genetic testing and haplogroup determination

mtDNA haplogroup of the Nusantara Malays was detected as the agarose gel was viewed under ultraviolet light (Figure 1) and was listed in Table 4. The mtDNA haplogroup distribution represented by the Nusantara Malays was compared with the Cape Malay Muslim (Isaacs *et al.*, 2013). The distribution of the mtDNA haplogroup of the two Malays displays almost similar pattern as haplogroup M and H were identified in both populations as shown in Figure 2. Haplogroup M is the majority haplogroup detected in Nusantara while the second highest haplogroup for Cape Malay Muslim. The percentage of haplogroup H detected in Nusantara Malay and Cape Malay Muslim are quite identical i.e., 25% and 19%, respectively. However, haplogroup D is only shown by the Nusantara Malays.

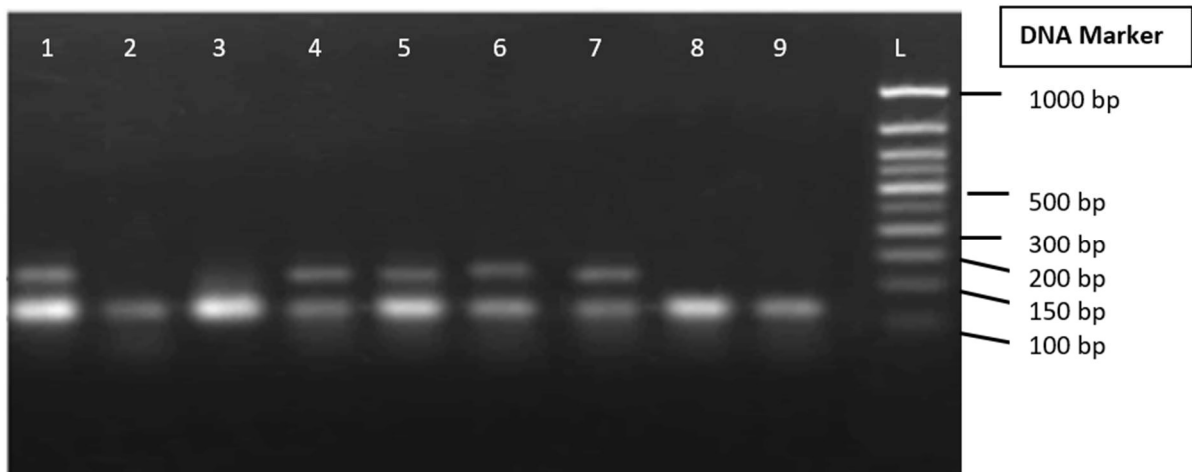


Figure 1: RFLP screening for the mtDNA haplogroup M. [Lane L: DNA marker; Lane 1, 4,5 and 7: 10394 *DdeI* site showing Nusantara Malay individuals harbouring the polymorphism (142 bp and 133 bp); Lanes 6: 10397 *AluI* site showing Nusantara Malay individuals harbouring the polymorphism (145 bp and 130 bp); Lanes 2, 8 and 9: Nusantara Malay individuals not harbouring the polymorphisms.]

Table 4: List of mtDNA haplogroup distribution for Nusantara Malays.

Nusantara Subgroup (n, total number of samples)	mtDNA Haplogroup	Number of samples	Sample ID
Acheh, Malaysia (n=7)	M	4	A3, A8, A10, A11
	H	3	A2, A4, A5
Banjar, Malaysia (n=6)	M	2	BJ131, BJ132
	H	4	BJ125, BJ126, BJ128, BJ133
Bugis, Malaysia (n=15)	M	13	BU94, BU95, BU96, BU98, BU99, BU100, BU104, BU105, BU106, BU107, BU109, BU112, BU113
	H	2	BU92, BU111
Bugis, Indonesia (n=11)	M	11	BG1, BG2, BG3, BG4, BG5, BG6, BG7, BG8, BG9, BG10, BG11
Champa, Malaysia (n=15)	M	15	C1, C4, C5, C6, C7, C9, C10, C11, C12, C15, C16, C17, C18, C19, C20
Jawa, Malaysia (n=13)	M	7	JV68, JV69, JV70, JV71, JV74, JV75, JV76
	H	5	JV64, JV66, JV72, JV73, JV77,
	D	1	JV63
Kedah, Malaysia (n=9)	M	5	KD13, KD23, KD25, KD27, KD28
	H	3	KD2, KD3, KD6
	D	1	KD16
Kelantan, Malaysia (n=6)	H	6	Kel1, Kel2, Kel3, Kel4, Kel5, Kel11
Pattani, Thailand (n=8)	M	8	UP1, UP6, UP10, UP12, UP13, UP16, UP19, UP20
Makassar, Indonesia (n=2)	M	2	M1, M2

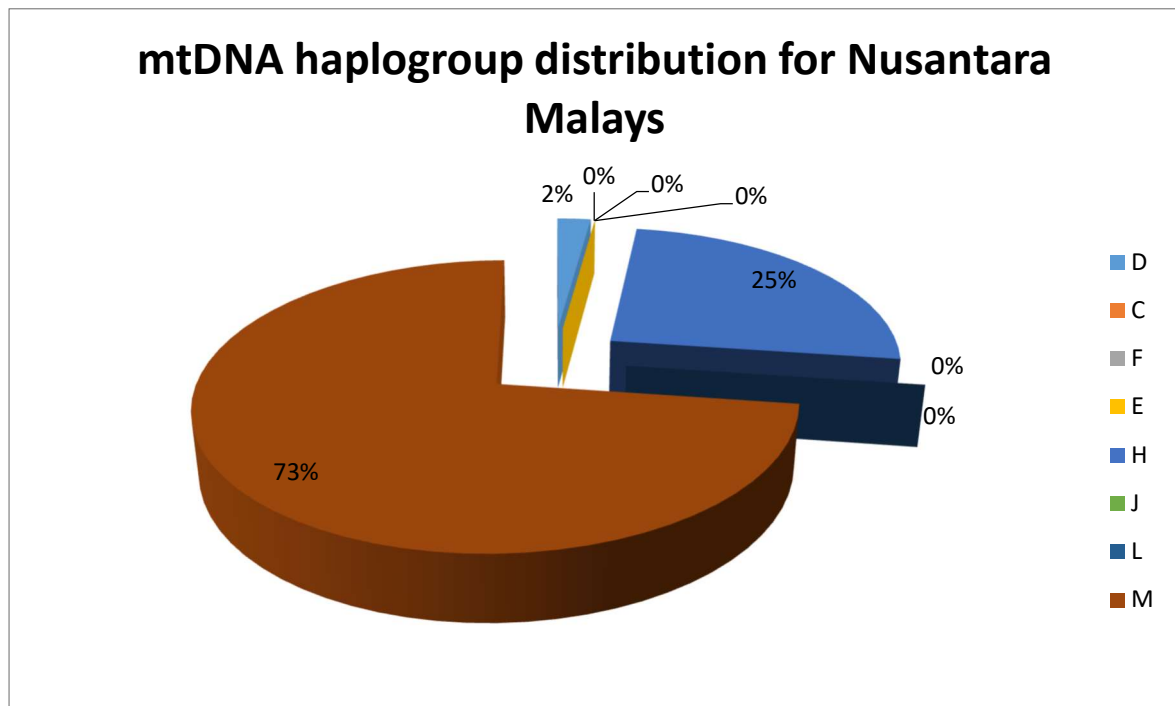


Figure 2(a): mtDNA haplogroup variation in the Nusantara Malay population.

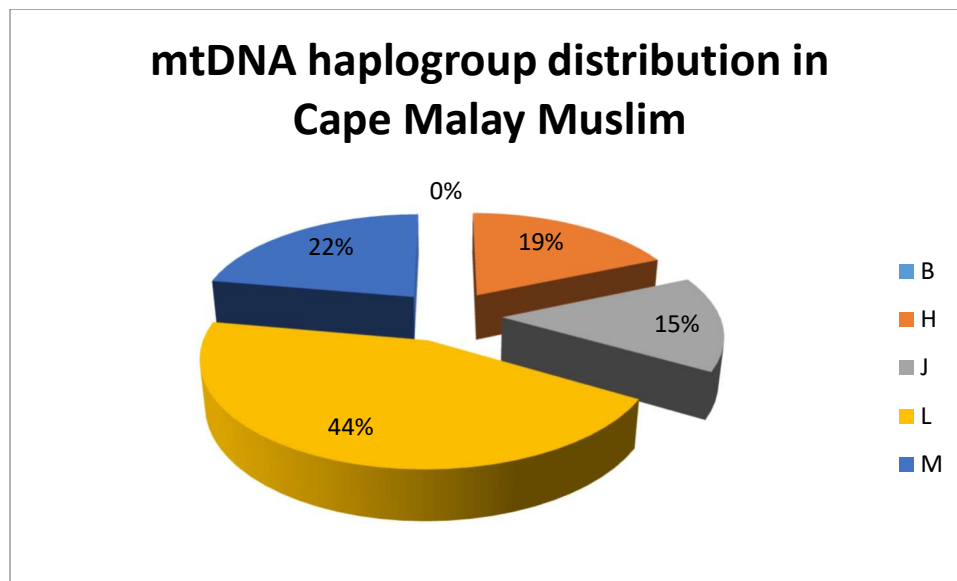


Figure 2(b): mtDNA haplogroup variation in the Cape Malay Muslim population. (Data was adapted from (Isaacs et al., 2013))

Classification of Ethnic Groups of the Cape Malays

In mapping the cultural DNAs of ethnicities especially that of Cape Malays, it is useful to first understand the ways in which the various ethnic groups are being constructed or categorised. In South Africa, due to the political-historical context of apartheid, 'skin colours' play a major role in defining the ethnic identities. Classification of colours are divided into three cultural categories, Black, White and Coloured.

Among those who are classified as Coloured, they are further seen as belonging to three groupings: non-muslim Indians, muslim Indians and last but not least Malays. The term Malays and Cape Malays can be used interchangeably. However, there is another cultural layer to the mapping of Malay identity in South Africa. Malays are defined by an affirmative identity of race or ethnicity, and a negative cultural identity, i.e. non-Indian and the third dimension is a religious identity, i.e. muslim. The group-identification or self-identification of Malays emerges out of two possibilities. The first is through ancestry, which those who claim to be Malays are able to trace through family genealogy up to particular Malay individual or family; and the second is through marriage. Largely due to the apartheid system of racial and ethnic segregation, the Cape Malay identity is being preserved.

Based on preliminary analysis and findings from the interviews, we conclude as follows; (1) as the personality characteristics of the Cape Malays, they claim that there is a social perception that the Malays are a respected minority group. The Malays are said to be more trustworthy as the court would uphold Malays as reliable witnesses in legal cases. (2) If food is taken as a cultural marker, the Cape Malay food culture has indeed fused with other minority groups as well as the locals. Therefore, food as a cultural DNA may not be a useful indicator as it has mixed with other traditions, especially those of Indians. (3) Nevertheless, it can also symbolise that the Cape Malays have an opened food culture and have the general cultural practice of integrating others into their culinary tradition. This openness in food culture is very much consistent with the Malays in Southeast Asia.

Discussion

Maternal relationship of the Nusantara and Cape Malays based on mitochondrial DNA genetic marker

The maternal lineage of both Nusantara and Cape Malays might be correlated based on the mtDNA haplogroup obtained. Interestingly, both Asian and European haplogroup i.e., macrohaplogroup

M and haplogroup H, respectively are predominant in both populations. The presence of macrohaplogroup M and haplogroup H in the Nusantara Malays in this study might corroborate the relationship of the Nusantara and Cape Malays with the human migration pattern.

The dominant haplogroup, macrohaplogroup M might express the Asian lineage in view of its diverse distribution among Asian populations and found dominantly in India with possible place of origin in South Asia, Southwest Asia, Southeast Asia or East Africa (Kivisild, 2015; Macaulay *et al.*, 2005; Soares *et al.*, 2012). The date of origin for haplogroup M in absolute terms is only known with great uncertainty. Based on the 'Out of Africa' theory, anatomically modern humans carrying ancestral haplogroup L3 lineages were involved in the migration from East Africa into Asia. Many studies proposed that the ancestors of modern haplogroup M dispersed from Africa through the southern route across the Horn of Africa along the coastal regions of Asia onwards to New Guinea and Australia (Hill *et al.*, 2007; Soares *et al.*, 2012).

The result of this study was consistent with previous findings as most of the Nusantara Malays displayed highest frequency for haplogroup M, which is 73% of total population, analogous with the Cape Indian Muslims, Cape Coloured Muslims, Cape Malay Muslims and Cape Other Muslims. The origin of the maternal lineage was likely mainly derived from female slaves originating from India and South East Asia. Besides that, haplogroup M may even have been introduced via slavery from Madagascar due to their mixed Indonesian ancestry and recently through admixture with Indian and other Asian populations.

Haplogroup H was the second most dominant (25%) mtDNA haplogroup for Nusantara Malays and the third most frequent mtDNA (19%) in Cape Malays. It is believed that haplogroup H have originated in southwest Asia, around 20,000 to 25,000 years ago. The clade dominates present-day western European yet was less common among early Neolithic farmers and virtually absent in Mesolithic hunter-gatherers (Brotherton *et al.*, 2013). Haplogroup H is very common in north Africa, middle East, northern India, central Asia and is the most prevalent haplogroup in all European populations except the Saami, and indigenous Finno-Ugric people inhabiting Saami, which today encompasses large northern parts of Norway, Sweden, Finland and within Russia. Among the

mtDNA haplogroups of Europe, haplogroup H displays two unique features: a very high frequency in most of its range and an extremely wide geographic distribution (Achilli *et al.*, 2004).

Several studies have shown that haplogroup H was proposed to be originated from the Middle East about 30,000 to 21,000 years ago, and expanded to Europe in association with a second Paleolithic wave and was strongly involved in the post-glacial population re-expansion from southwestern Europe to the rest of the continent (Achilli *et al.*, 2004; Hernández *et al.*, 2017; Richards *et al.*, 2000; Torroni *et al.*, 1998). The lineages of haplogroup H were also dispersed outside of Europe with pertinent example in North Africa, Cape Malays in South Africa (Isaacs *et al.*, 2013) and also in Nusantara Malays in Southeast Asia as shown by this study.

Surprisingly, both Nusantara Malays and Cape Malays (Isaacs *et al.*, 2013) did not represent haplogroup B. Haplogroup B was high to moderate frequency among Southeast Asians especially in the east Indonesians and Malays (Merriwether *et al.*, 1999; Schurr and Wallace, 2002; Stone and Stoneking, 1998) and was routinely inferred to Asian and Polynesian ancestry (Ballinger *et al.*, 1992; Berniell-Lee *et al.*, 2008; Edwin *et al.*, 2002; Stone and Stoneking, 1998). Therefore, the absence of this haplogroup in both Nusantara and Cape Malays was unexpected, as most of slaves who travelled to South Africa were originated from the Indonesian Archipelago (Bradlow and Cairns, 1978; Da Costa and Davids, 1994; Davids, 1980).

Based on the maternal lineage affinity, Nusantara Malays also shows resemblance and identity of the Malays who are also known as the Modern Malays (Nur Haslindawaty, 2012) and Orang Asli (Eng, 2014) in Peninsular Malaysia and Malagasy and Indonesians from Island Southeast Asia. Most of the Austronesian speakers moved eastward, settling the Pacific Ocean, others moved westward through the Indian Ocean, reaching Madagascar and eastern and southern Africa (Trejaut *et al.*, 2005). The Austronesian expansion and the wave of migration in human prehistory were dominated by the sea nomad groups. Macro-haplogroup M is one of the major contributors in of the seafaring populations from Nusantara or Malayo-Polynesian region to Cape Town in South Africa (Kusuma *et al.*, 2015) as Sheikh Yusuf may have contributed to the

founding effects and genetic drift of the maternal lineage in the Cape Malays.

The migration theory of the Nusantara Malays could be further supported with other research and comparison studies across the South East Asia region and population utilizing other genetic markers such as Y-chromosome short tandem repeats (Y-STRs) to determine the paternal relationship of Nusantara and Cape Malays. Sequencing of the hypervariable regions of the mitochondrial DNA rather than RFLP alone will allow the confirmation of the haplogroup distribution with the detection of polymorphisms. Additional historical, linguistic and cultural evidence will support the association and genetic kinship of the Nusantara and Cape Malays.

Nusantara and Cape Malays as part of the Sunda Shelf

Based on the findings from this study, the connectedness between Cape Malays in Cape Town, South Africa and Nusantara Malays in Sunda Shelf is proclaimed. The Oppenheimer's theory of Holocene outmigration from the former continent of Sundaland in present-day Southeast Asia were against the evidence relating to the "Out of Taiwan" hypothesis for Austronesian language dispersal. It was argued that the "Out of Taiwan" movement of Austronesian language speakers could have occurred later as a migratory counterflow accompanying the Holocene maximum, and that an "Out of Sunda" scenario of migration (Palmer, 2007).

The former inhabitants of Sunda-Sahul were divided into two distinct groups; the Austronesian speakers in eastern Sundaland which may have contributed sailing technology, magic, religion (i.e., Islam), astronomy, hierarchy and concepts of kingship; and the Austro-Asiatic speaking people (of western Sundaland) may have contributed the more down-to-earth skills of cereal-farming, and even bronze (Oppenheimer, 1998; Oppenheimer, 2012a; Oppenheimer, 2012b; Oppenheimer and Richards, 2001). The relationship of the Cape Malays and Nusantara Malays is also due to the strategic location between the South and East Asia continents as the trade network reached as far as coastal Africa including Cape Town, Arabia and Europe (Belle, 2014; Norhalifah *et al.*, 2016).

The connectedness of these two groups might be on the basis of evidence available which conclude

from a single, southern anatomically modern human exit from Africa, with rapid migration round the Indian Ocean coast to the Sunda Shelf with a significant pause before colonization of the Sahul (Oppenheimer, 2009) as the genetic confidence intervals straddle the Toba event i.e., before or after the last super-eruption of the Toba volcano (74,000 years ago) (Oppenheimer, 2012b). The age of haplogroup M estimated elsewhere are mainly around 60,000 years ago, however, the other branch is surprisingly young in South Asia where it has a predominantly eastern distribution at 49,400 years ago (Soares *et al.*, 2009).

Based on a review of the current genetic, archaeological and environmental data, the demographic patterns in Arabia and South Asia are more interesting and complex than surmised to date as modern humans were present in Arabia and South Asia earlier than currently believed, and probably in coincidence with the presence of *Homo sapiens* in the Levant between 130,000 and 70,000 years ago due to the climatic and environmental fluctuations during the Late Pleistocene which have had significant demographic effects on Arabian and South Asian populations, though indigenous populations would have responded in different ways (Petraglia *et al.*, 2010). The preliminary evidence on dating the Nusantara and Cape Malays would suggest a prolonged period of recovery, consistent with a local population bottleneck.

Analogous cultural-behavioural level of the Nusantara and Cape Malays

From the analysis of findings, one of the strongest cultural linkage of the Cape Malays with the Malay and Nusantara heritage is religion. The Cape Malays, who are a part of the Coloured Muslims do practise the religious customs similar as the Nusantara Malays.

One of the cultural characteristics of Cape Malays which shows similarities with the Malay heritage is *Ratibul Hadad*. Even though the term *Ratibul Hadad* is not commonly used in Southeast Asia, it is the same as the latter's '*majlis tahlil*' and '*majlis yassin*'. *Ratibul Hadad* is a religious ritual that is practiced on Thursday evenings. The Cape Malays will gather and recite Quran together, especially the *Surah Yassin*, conduct dzikir and *tahlil*. It is reported that *Ratibul Hadad* is a tradition passed down through many generations of the Cape Malays. This social-spiritual gathering is hosted at

home by different families in the community, whereas in Southeast Asia, *majlis tahlil* and *majlis yassin* are commonly held in the *masjids* (mosques).

The ethnic identity of the Cape Malays is intertwined with its religious identity of the Muslims. The Muslim identity is amalgamated into the social construct of being a Cape Malay. This occurs to the extent that in these socio-geographical space, the terms Malays and Muslims are used interchangeably. Hence, the identity concept of 'Cape Malays' or 'Malays' in these South African communities is a cultural-religious manifestation.

Furthermore, the Malay heritage in the linguistics of teaching Quran, apart from the vowel usage of *fatah* ('*di atas*' which means up), *qasrah* ('*di bawah*' which means down), and *dommah* ('*di depan*' which means frontal), which signifies the placement of the vowel symbols. This distinction demonstrates the linkage of cultural DNA to the Nusantara / Malays / Malay Muslims since this is not the language used in India or Arabian peninsular.

Another dimension in the cultural mapping of the Cape Malays is the *Sufi paradigm* of cultural heritage conservation. This is reported to be one of the significant legacies of Sheikh Yusuf and Tuan Haji (both of whom originated from the Malay Archipelago) (Mandivenga, 2000), the two highly regarded early founders of Cape Malay spiritual-cultural heritage.

The belief in *tasawuf* (a path of inner spiritual purification and development) as a strong emphasis for spiritual enlightenment and in '*sufi guru's*' as guides are held strongly by the community. Although this is not the mainstream, there is a significant following of *sufi* traditions among the Southeast Asia Malay communities, especially the Nusantara Malays, either through specific *tariqahs* (*sufi* orders) or more generally embedded in everyday religious teachings and practices.

As in most of Malaysia and Indonesia (Nusantara Malays), the *tariqah* in the Cape Malay communities are taught informally, even though the order may follow strict discipline and practices. Yet, the *tariqahs* have also their cultural artistic expressions including the famous sword dance.

The presence of *keramats* (people or *gurus* of high levels of spirituality) and *makam* (holy tombs) is highly significant. There are thirty-six of such *keramats* and *makams* and they are placed in high regard, supposed not just by the Malays but also by other locals in those areas, as many of the *makams* are located the white neighbourhoods.

In addition, the Cape Malays were considered as more polite and well-mannered in daily speech. They have one negative word '*Babis*' which literally means Indian shop. The Cape Malays have never been slaves in South Africa but rather than political prisoners and seen as the Dutch enemies. If food is taken as a cultural marker, there are a few Cape Malays' food and cuisine which show similarities with the Nusantara Malays including '*gulai melayu*' (Malay curry), '*gulai India*' (Indian curry), '*biryani Melayu*' (Malay biryani) and '*biryani India*' (Indian biryani).

Historical background of the Cape and Nusantara Malays

The slavery and slave trade flourished of in the Southern Africa after the Dutch settlers arrived in 1652. A greater part of those being brought were Muslims, were caught and sent into exile from provinces, for example, Madagascar, India, Ceylon and the Dutch East Indies (known as Indonesia today). Different migrants were from Philippines, Japan, Macau, Malacca (in Peninsular Malaysia), West Indies, Brazil and potentially New Guinea. The starting points of this migration can be followed to right off the bat in the sixteenth century when, toward the end of Indonesia's Majapahit Kingdom, European military entrance and against Islamic oppression caused opposition which was squashed by the Dutch (South African History Online, 2011).

One prominent figure among the exiles, or Orang Cayen (Men of Repute), who resisted the Dutch occupation of the East Indies, was Sheikh Yusuf al-taj al-khalwatial-Maqasari (known as Sheikh Yusuf, the founder and the Islamic influencer of the Cape Malays). Sheikh Yusuf was the son of Makassarese nobility. Another prominent Islamic influencer was Imam Abdulla Kadi Abdus Salaam, now referred to as 'Tuan Guru' (Master Teacher). Both figures were from Nusantara i.e., Sulawesi and Indonesia, respectively (South African History Online, 2011).

Conclusion

The results of this study showed a resemblance of Cape Malays with Nusantara Malays in the contribution of maternal lineage haplogroup suggesting the origin of Cape Malays based on the genetic, linguistic and cultural affiliation of the Malay population in the Malayo-Polynesian region. Such study of the genetic diversity of international communities sharing the same linguistic and cultural diversities can give genetic evidence of their origins, migration histories, and their relatedness to each other, and especially the contribution of these communities to each other's gene pool, through intermarriages, conversion and blending.

Nevertheless, a definite conclusion is impossible as sequencing of the DNA samples were not done. This deficiency might have considerable implications. Further studies with the use of advanced technology can help to verify and confirm this hypothesis.

International collaboration that was established among Nusantara countries (Malaysia, Indonesia and Thailand) with South Africa has helped to realise this study. This is in accordance with the 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015 (United Nations, 2021). Two out of the 17 Sustainable Development Goals (SDGs) were achieved in this study i.e., Goal 16 (Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels) and Goal 17 (Strengthen the means of implementation and revitalise the global partnership for sustainable development). Hence, a wider scope and more enhanced related studies with future involvements of the United Nations countries will allow greater achievements especially in assuring the migration theory, social development and promoting a better world.

Acknowledgments

This work was supported by the Universiti Sains Malaysia (USM) Research University Individual (RUI) Grant: 1001/PPSP/8012301, Nanyang Technological University Grant (Muhammed Ariff Research Grant (MAS)): 304.PPSP.6150148.N119 and the USM Bridging grant: 304/PPSP/6316166. All authors contributed to aspects of the conception or design of the experimental work,

analysis of data, reviewing and approving the final content of the manuscript.

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