1 *The Austronesian world*

1.0 Introduction

Many aspects of language, especially in historical linguistics, require reference to the physical environment in which speakers live, or the culture in which their use of language is embedded. This chapter sketches out some of the physical and cultural background of the Austronesian language family before proceeding to a discussion of the languages themselves. The major topics covered include 1. location, 2. physical environment, 3. flora and fauna, 4. physical anthropology, 5. social and cultural background, 6. external contacts, and 7. prehistory.

1.1 Location

As its name ('southern islands') implies, the AN language family has a predominantly insular distribution in the southern hemisphere. Many of the more westerly islands, however, lie partly or wholly north of the equator. The major western island groups include the great Indonesian, or Malay Archipelago, to its north the smaller and more compact Philippine Archipelago, and still further north at 22 to 25 degrees north latitude and some 150 kilometres from the coast of China, the island of Taiwan (Formosa). Together these island groups constitute insular (or island) Southeast Asia. Traditionally, the major eastern divisions, each of which includes several distinct island groups, are Melanesia (coastal New Guinea and adjacent islands, the Admiralty Islands, New Ireland, New Britain, the Solomons, Santa Cruz, Vanuatu, New Caledonia and the Loyalty Islands), Micronesia (the Marianas, Palau, the Caroline Islands, the Marshalls, Nauru and Kiribati), and Polynesia (Tonga, Niue, Wallis and Futuna, Samoa, Tuvalu, Tokelau, Pukapuka, the Cook Islands, the Society Islands, the Marquesas, Hawai'i, Rapanui or Easter Island, New Zealand, and others). Because a number of Polynesian 'Outlier' languages are also spoken in Melanesia and Micronesia, the Polynesian heartland is often distinguished as 'Triangle Polynesia', defined by a northern apex in Hawai'i, and a southern base connecting New Zealand to Easter Island. Three of these regions thus take their names from characteristics of the land forms within them ('Indian islands', 'small islands', 'many islands'), while the fourth ('black islands') takes its name from a physical characteristic of its inhabitants. A few cases, as the Fijian Islands and the tiny island cluster of Rotuma, resist easy categorisation. Together these large geographical regions constitute Oceania. In more recent treatments the terms 'Near Oceania', describing the larger and generally intervisible islands of the western Pacific, and 'Remote Oceania', describing the smaller and more widely scattered islands of the central and eastern Pacific, have taken precedence over the terms 'Melanesia', 'Micronesia' and 'Polynesia', particularly among Pacific archaeologists (Pawley and Green 1973, Green 1991). Rather surprisingly, at the western edge of the Indian Ocean is a lonely outpost of the Austronesian world—the large, and geologically long-isolated island of Madagascar. In addition, a few AN languages are spoken on the Asian mainland, including Malay in the southern third of the Malay peninsula, Moken off

the western coast of peninsular Burma and Thailand, and members of the Chamic group, numbering some seven or eight languages in Vietnam and Cambodia, and a single language (Tsat) on Hainan Island in southern China.

The boundaries of the AN world, proceeding clockwise, are as follows. In the west the Great Channel separates the 1,600 kilometres long and entirely AN-speaking island of Sumatra (together with Sabang and other near offshore islands) from the small Austroasiatic-speaking Nicobar Islands which stretch in a north-south chain some 160 kilometres to the north between the Bay of Bengal and the Andaman sea. In contrast to the distinct break made possible by a sea interval, language families on the Asian mainland interlock in a bewildering ethnolinguistic puzzle. In the southern third of the Malay Peninsula the typically coastal Malays yield ground in the upper courses of the major rivers to the Austroasiatic-speaking 'Orang Asli' (Malay for 'original people') of the interior rainforest. On the Malaysia-Thailand border, and continuing northward for some distance, speakers of phonologically aberrant Malay dialects commingle with speakers of Thai. North of the Malays on the west coast of peninsular Thailand and in Myanmar (Burma), the AN-speaking Moken, sometimes called 'sea gypsies' from their migratory life in houseboats, wander over the numerous islands of the Mergui Archipelago and parts of the adjacent mainland, where they come into contact with speakers of Thai (Tai-Kadai), Burmese, and Karen (Sino-Tibetan). Across the Andaman sea, some 500 kilometres to the west, lie the Andaman Islands, once home to speakers of languages that belong to two widely divergent groups (North Andamanese, South Andamanese), long thought to have no external linguistic relatives, but assigned by Joseph Greenberg in 1971 to a highly speculative and generally rejected superfamily called 'Indo-Pacific' (Blust 1978c, Pawley 2009a). Only a small population of South Andamanese speakers survives today.

The northern boundary of the AN language family in Asia is relatively sharp. All of the 15 surviving aboriginal languages of Taiwan and the dozen or so that are extinct are AN, whereas the Ryukyu Islands north of Taiwan are home to various forms of Ryukyuan, regarded either as divergent dialects of Japanese, or as a distinct language or languages closely related to Japanese.

Since the Polynesian languages extend to the easternmost inhabited islands of the Pacific, it might be said that the eastern boundary of the AN language family falls between these and the west coast of the Americas. But a large island of alien speech lies between Indonesia and the Pacific. With an estimated 750 languages belonging to a number of distinct families, the mountainous island of New Guinea (about one and one half times the area of France) is perhaps the nearest real-life equivalent of the biblical Tower of Babel. Although the languages and the population of the greater part of the island are often called 'Papuan', in its linguistic sense this term has never meant anything more than 'non-Austronesian.' Over the past three decades evidence has accumulated that roughly two-thirds of the Papuan languages of New Guinea probably belong to a single large, diffuse genetic grouping that the pioneering Papuanist S.A. Wurm in the 1970s christened the 'Trans-New Guinea phylum' (Pawley, Attenborough, Golson, and Hide 2005). The remaining non-AN languages of the region are partitioned between ten other 'phyla.' Foley (1986:3) adopts a more conservative position, recognizing "…upwards of sixty Papuan language families plus a number of Papuan languages, probably a couple of dozen, which are isolates."

In eastern Indonesia non-AN languages are found on Timor, Alor, Pantar, and Kisar in the Lesser Sunda Islands, and on Halmahera in the northern Moluccas. A language that appears to have been non-AN was also spoken near the western tip of Sumbawa in the

Lesser Sundas until the first decade of the nineteenth century. This language, known only from a vocabulary of 40 words collected during the Raffles governorship of Java, disappeared following the catastrophic eruption of Mount Tambora in 1815. Donohue (2007:520) argues, largely on the basis of typological traits in the inferred phonology, that this was "a Papuan language spoken by a trading population of southern Indonesia."

Other non-AN languages are spoken on New Ireland and New Britain in the Bismarck Archipelago, on Rossel Island in the Louisiade Archipelago southeast of New Guinea, on Bougainville and the smaller islands of Vella Lavella, Rendova, New Georgia, the Russell Islands, and Savo in the western and central Solomons. Greenberg (1971:807) has maintained that "the bulk of non-Austronesian languages of Oceania from the Andaman Islands in the west on the Bay of Bengal to Tasmania in the southeast forms a single group of genetically related languages for which the name Indo-Pacific is proposed. The major exception to this generalisation is constituted by the indigenous languages of Australia, nearly all of which are generally accepted as related to each other." Since the Australian family shows no evidence of relationship to AN, the southern boundary of the AN language family in insular Southeast Asia falls between the island world to the north and the continent of Australia.

Finally, although distant genetic relationship has been suggested between AN and various language families of mainland Asia or Japan, the classification of particular languages as AN is rarely problematic. As will be seen, the distribution of genetically problematic languages nonetheless shows a distinct geographical bias: whereas the western boundary has been seriously disputed only once (vis-à-vis the position of the Chamic languages), and then through an error that was later widely recognised as such, the boundary between AN and Papuan sometimes still presents difficulties in the classification of the languages of Melanesia.

1.2 Physical environment

Most of the AN world lies within ten degrees of the equator, making it almost exclusively tropical or sub-tropical. Many of the islands are volcanic in origin, and several areas, including the island of Hawai'i (from which the Hawaiian chain is named), parts of Vanuatu and western Melanesia, and an extensive zone skirting the southern and eastern boundaries of Indonesia and extending northward through the Philippines, are centers of active volcanism and seismic activity. The violent and destructive eruptions of Mount Tambora in 1815, of the islet of Krakatau in the Sunda strait between Java and Sumatra in 1883, of Gunung Agung on the island of Bali in 1962, and of Mount Pinatubo in the Zambales Mountains of western Luzon in 1991 are only among the more recent and spectacular instances of volcanic activity which has been a continuing feature of the environment of many AN-speaking peoples for millennia. Reflexes of *linuR or *luniR 'earthquake' are widespread in Taiwan, the Philippines, and western Indonesia, but no widely distributed cognate set for 'volcano' is known, although the structural collocation 'fire mountain' appears in a number of languages.

The islands of Indonesia are commonly divided into Greater Sunda and Lesser Sunda groups, a distinction based in part on size and in part on geological origin. Among the former are Borneo, Sumatra (third and sixth largest in the world), Java, and Bali. The Lesser Sunda chain includes the smaller islands from Lombok east to Timor and beyond, where the eastern Lesser Sundas and southern Moluccas merge across a vaguely defined boundary. Although not generally enumerated among the Greater Sunda Islands, the

smaller islands flanking Sumatra, Borneo and Java, including the Barrier Islands west of Sumatra, Bangka and Belitung (Billiton) between Sumatra and Borneo, Madura off the north coast of Java, Bali just east of Java, and Palawan in the southwestern Philippines, like their larger neighbors, rest on the submerged Sunda Shelf, a submarine extension of the Asian mainland that was exposed during the last glacial maximum.

The Aru Islands in the southern Moluccas, like the great island of New Guinea of which they are geologically a part, lie on the Sahul Shelf, a submarine extension of Australia. All other islands in Indonesia and the Philippines, including the Moluccas (once famous for their cloves, mace, and nutmeg), and the relatively large island of Sulawesi in central Indonesia, formerly called 'the Celebes' or 'the orchid of the equator' from its curious shape, occupy Wallacea, a zone of geological instability between these shelves named after the nineteenth-century British naturalist Alfred Russel Wallace. During glacial maxima the area that now includes insular Southeast Asia and Australia-New Guinea thus consisted of three large divisions: 1. Sundaland, an extension of the Asian mainland, 2. Sahulland, a single landmass which during glacial minima split into New Guinea, Australia and Tasmania, and 3. Wallacea, a shifting island world between these larger, more stable continental blocks.

An important geological boundary in the Pacific is the Andesite Line. Islands that lie to the west of this line rest on the continental shelf of Australia (e.g. New Caledonia, Fiji), while those lying to the east are true Oceanic islands (e.g. the Societies or Hawai'i). The latter, being of volcanic origin and never having been connected to any continental land mass, suffer from varying degrees of biological impoverishment.

On some of the larger islands, as Borneo, where dense vegetation, high rainfall and dangerous or noxious animals can greatly impede progress by foot, the rivers form natural avenues to the interior. The subgrouping of the languages of northern Sarawak and Sabah suggests that the settlement of northern and western Borneo by AN speakers proceeded along the coast and then up the major river systems. It is also along such a relatively open route (the Markham valley) that AN-speakers made their only significant penetration of the hinterland of New Guinea. In some areas heavy rainfall produces considerable loss of topsoil, which is carried downriver to the sea. The resulting alluvial deposits around the mouths of major rivers have created large sections of eastern Sumatra and southern Borneo within the relatively recent past. Deforestation resulting first from swidden agriculture and more recently from international logging undoubtedly have accelerated this process.

A number of the inhabited islands of Micronesia and some elsewhere in the Pacific, as the Tuamotus of French Polynesia, are coral atolls rising no more than a few meters above sea level. Micronesian atolls are a particularly precarious habitat, as many lie in the typhoon belt that runs from the region of Chuuk (Truk) in the eastern Carolines, west and northwest to the Philippines, Taiwan and southern Japan. Typhoon damage to vegetation may require six or seven years for recovery, and in a fragile atoll environment that in any case offers limited opportunities for food production, this can be disastrous (Alkire 1977).

There is considerable seasonal rainfall over much of the AN world, although in general the region can be characterised as wet. In the monsoon regime of island Southeast Asia and western Melanesia sailing conditions and other facets of economic life are greatly affected by the seasonal variation in dominant rain-bearing winds. That these conditions have been important to AN-speaking peoples for millennia seems likely from such linguistic expressions as Malay *mata aŋin*, Fijian *mata ni caŋi* (lit. 'eye of the wind') as the general term for 'direction, point of the compass', and by such specific reconstructed directional terms as *habaRat 'west monsoon' and *timuR 'east monsoon.'

The more low-lying areas of many of the larger islands of the AN world are hot and humid, and malaria is a serious problem in much of Melanesia. Surrounded as they are by cooling waters and gentle sea breezes, however, the smaller and more remote islands of Polynesia have been regarded by European romantics with some justification as earthly paradises. Much the same could be said for the generally even smaller islands of Micronesia, although the majority of these are atolls and have failed to capture the European imagination to the same extent as the more striking high islands of Samoa, Tahiti or Hawai'i. The more elevated inhabited areas of the larger islands, such as the Imerina plateau of central Madagascar, or the Kerayan-Kelabit or Usun Apau Highlands of central Borneo, are often quite cool at night and are subject to occasional hailstorms. In only a few areas of extreme altitude (the 4,200 meter Mauna Kea and Mauna Loa volcanoes on the of Hawai'i), high latitude (the south island of New Zealand), or a combination of these in more moderate degree (various peaks rising from 3,000 to over 4,000 meters in central Taiwan) is snow seen.

1.3 Flora and fauna

Most islands in the AN world present a similar array of shore trees. Prominent among these is the ubiquitous coconut (*Cocos nucifera*). Other trees that are frequently encountered just back of the beach are the pine-like casuarina (*Casuarina equisetifolia*), the shade trees *Calophyllum inophyllum*, *Barringtonia asiatica*, and *Terminalia catappa*, some of which produce valued fruits or nuts, and such economically useful shrubs or low trees as the pandanus, or screw-pine (*Pandanus tectorius* and *Pandanus odoratissimus*), and the brightly flowering hibiscus (*Hibiscus tiliaceus*). In swampy coastal areas extensive mangrove forests are sometimes found, sending down their long prop roots into the salty or brackish water where they provide a haven for small fish or crustaceans, and a place for the attachment of oysters.

Important non-food plants include the nipa palm (*Nipa fruticans*), the leaves of which—like the leaves of the sago palm—are widely used in island Southeast Asia as material for walls and roofing, a littoral pandanus (*Pandanus odoratissimus*) from which mats are woven for floor coverings and (in the Pacific) as material for canoe sails, the *Hibiscus tiliaceus*, the bark of which is used for cordage, various types of bamboo of which the larger species are used in island Southeast Asia as vessels for carrying water or cooking food, rattan and various vines used for tying, *Derris elliptica*, the pulverised root of which is mixed with river water to immobilise fish, and a great variety of trees which yield timber for the construction of houses, canoes, etc.

Among the more important food plants common to much of the AN world are the coconut, banana (*Musa* sp.), breadfruit (*Artocarpus* sp.), sago palm (*Metroxylon sagu*), yam (*Dioscorea alata*), and taro (principally *Colocasia esculenta*, although the giant swamp taro *Cyrtosperma chamissonis* is important in some parts of the Pacific). Some plants were traditionally prized both for their food value and for other kinds of practical uses, as the *Artocarpus*, which yields the large edible breadfruit as well as a sticky sap used as birdlime. Rice is important virtually everywhere in island Southeast Asia, although its centrality in the economy diminishes in moving eastward through Indonesia, where sago assumes increasingly greater importance as a staple. East of the Moluccas grain crops are entirely absent, except in the Mariana Islands, where rice evidently was introduced by the ancestral Chamorros some 3,500 years ago. Millet is also important in parts of eastern Indonesia, as well as in Taiwan.

The interior of most islands is covered by tropical rainforest. Exceptions are the southern side of Timor and neighboring islands which lie in the path of the seasonal hot, dry winds sweeping north from the desert of central Australia, and islands at some distance from the equator (Taiwan, New Zealand). In some parts of island Southeast Asia and New Guinea extensive tracts of abandoned agricultural land have been taken over by sawgrass (*Imperata cylindrica*), and so transformed into permanent savanna.

It is impossible to discuss the animal life of the AN world meaningfully without reference to geological history. In 1869 the English naturalist Alfred Russel Wallace published his observations concerning the natural history of what he called the 'Malay Archipelago.' The most important of these observations concerned a curious division of the terrestrial fauna and of certain groups of birds between two very distinct faunal zones—a western zone which shows close affinities with mainland Southeast Asia and India, and an eastern zone which shows much stronger affinities with Australia. The break between these two zones is in some areas surprisingly abrupt. Wallace (1962:11) noted, for example, that the neighboring islands of Bali and Lombok quite unexpectedly contain radically different faunal assemblages: "In Bali we have barbets, fruit-thrushes, and woodpeckers; on passing over to Lombock these are seen no more, but we have abundance of cockatoos, honeysuckers, and brush-turkeys, which are equally unknown in Bali, or any island further west. The strait is here fifteen miles wide, so that we may pass in two hours from one great division of the earth to another, differing as essentially in their animal life as Europe does from America."

Among terrestrial mammals characteristic of one or more of the western islands are the elephant, tapir, rhinoceros, wild ox, sambhur deer (*Cervus equinus*), muntjac or barking deer (*Muntiacus muntjac*), and the mousedeer (*Tragulus kanchil*), the Malayan sun bear (*Ursus malayanus*), the tiger and clouded leopard, the pangolin or scaly anteater (*Manis javanica* in western Indonesia, but *Manis pentadactyla* in Taiwan), porcupine, wild pig, civet cat, orangutan and gibbon, various monkeys, the tupai (a tree shrew), slow loris, tarsier, otter, badger and the rat. Terrestrial mammals characteristic of the eastern islands include various species of cuscus, bandicoot (marsupial rat), tree kangaroos (Aru Islands and New Guinea), the echidna, or spiny anteater, and the rat. Wallace showed that this faunal distribution could be explained most simply if the Greater Sunda Islands exclusive of Sulawesi once formed an extension of continental Asia. Similarly, the eastern islands were once connected with or in closer proximity with Australia, but the western and eastern biotic zones have long been separated by a water barrier that is impassible by most terrestrial mammals and land birds. Wallace's inferences from faunal distribution were later found to correspond closely to measured sea depths, and in his honor this major zoogeographical boundary was named the 'Wallace Line.'

It is now known that the boundary between the Indian and Australian biotic zones is somewhat less clear that might be imagined from a 'line' drawn between them. The large island of Sulawesi partakes to some extent of both faunal regions, having a lemur (*Tarsius spectrum*), and apparently indigenous species of monkeys and wild pig characteristic of the western islands, as well two species of cuscus, and a megapode characteristic of the eastern islands. In other respects Sulawesi is zoologically unique, with two species of dwarf buffalo (genus *Bubalus*) found nowhere else, and the strange long-tusked *babirusa* (Malay for 'pig deer'), a member of the pig family found only on Sulawesi and a few smaller adjacent islands.

The northern continuation of the Wallace Line has been a matter of some controversy, but it seems clear that if the Wallace Line is taken to mark the western limit of marsupials

the Philippine Islands lie in the Indian biotic zone, although only the Island of Palawan and the smaller Calamian and Cuyo Islands near it rest on the Sunda shelf. Various types of monkeys, the sambhur deer, wild pig, and civet cat are found on most of the Philippine Islands, and within historical times a pangolin was found on Palawan and the neighboring Calamian Islands to the north. Related forms of all of these are found on Taiwan, along with species of buffalo, wild goat (serow), bear, leopard, rabbit, otter, mole, vole, and several types of squirrel. A unique species of wild buffalo (*Bubalus mindorensis*) is found on the Island of Mindoro in the central Philippines.

As various writers have observed, both the rat and various species of bats have achieved a far wider distribution (reaching Polynesia) than other non-domesticated animals, the former undoubtedly owing to its successes as a stowaway, and the latter due to its power of flight. In general, however, there is a steady decrease in the number and supra-species level variety of life-forms (particularly terrestrial mammals) as one moves from the great land masses of Asia and Australia into the realm of true oceanic Islands, culminating in the highly depauperate native biota of such isolated biological outposts as Hawai'i and Easter Island. Because they offered a wide range of virtually unoccupied habitats for the few organisms that were able to reach them before Western contact, true oceanic Islands such as those in the Hawaiian chain presented a striking contrast between numerous unique species that had arisen by adaptive radiation, but relatively few genera and families.

Widespread birds of some cultural prominence, as reflected in cognate names, include two doves (genus *Ducula*, genus *Treron*), the hornbill (in Southeast Asia and the western Pacific), white egret, woodpecker, wild duck, owl, and a quail or partridge. Within the Pacific the albatross, frigate bird and various terns or gulls are prominent.

Among reptiles the crocodile is common from the northern Philippines to the Solomons, although individual animals have been found as far east as the Marquesas in eastern Polynesia (Darlington 1980:229). Various species of snakes occur in the western Pacific and as far east as Fiji, Tonga, Samoa and Futuna in western Polynesia, but are generally absent in Micronesia, and are completely unknown in central and eastern Polynesia. In several of the languages of the Philippines and Indonesia the reconstructed term for 'python' (*sawa) has become the generic term for 'snake', attesting to the psychological prominence of this genus in the region. The distribution of the monitor lizard (genus *Varanus*) approximates that of the saltwater crocodile. One species, the 'Komodo dragon' (*Varanus komodoensis*), confined to the western tip of the Island of Flores and a few smaller Islands in the Lesser Sunda chain, is the largest extant lizard, sometimes reaching an adult length of three and one half meters.

Only in the interior of the larger Islands or on the Asian mainland is one ever far from the sea. Most AN-speaking societies are thus not only acquainted with a locally distinct terrestrial fauna, but also with the far less localised wealth of life that swarms in tropical seas. This includes such acquatic mammals as the whale (hunted in only a few isolated locations), dolphin, and in the western Pacific the dugong, as well as eels, sea snakes, sea turtles, the giant clam (genus *Tridacna*), conches (the shells of which are widely used as signal horns), octopus and squid, lobsters, various types of crabs, sharks and rays, and a dazzling variety of other fish noteworthy for their food value (Spanish mackerel, various tuna, mullet), danger on the reef (stonefish), or striking appearance (butterfly fish, parrot fish, puffer fish).

1.4 Physical anthropology

Likely survivors of a pre-AN population are seen in the short, dark-skinned, wooly-haired Negritos of the Philippines, who were traditionally (and in some cases still are) foragers living in cultural symbiosis with the dominant agricultural Filipinos (Garvan 1963). Some writers also distinguish a 'Dumagat' population on the east coast of northern Luzon, which is said to be 'Papuan-like', but others recognise no such distinction. Negrito groups are found in several parts of Luzon, in some of the Bisayan Islands (as Panay and Negros), and in Palawan and Mindanao. Outside the Philippines they are found in the interior of the Malay peninsula, where they speak Austroasiatic languages, although the number of loanwords from Malay is high, and apparently growing (Benjamin 1976). Other groups are found in the Andaman Islands, where they are linguistically distinct. The Negritos of Southeast Asia are presumed to represent the survivors of a population that reached this area during the Pleistocene at least 40,000 years ago. Today, all Negrito groups in the Philippines speak AN languages, but there must have been a time when this was not the case, and it has been claimed that many of the modern Negrito groups of Luzon share a pre-AN linguistic substratum (Reid 1987, 1994a). It is likely that the linguistic assimilation of Negrito bands in the Philippines and Malay Peninsula came about through trade contacts that led over time to an increasingly tighter economic interdependence of foragers and agriculturalists. The distinctiveness of the Negrito population is explicitly recognised in reflexes of the term *qaRta which appear in a number of Philippine languages as Agta, Alta, Arta, Ata, Atta, Ati, or Ayta (sometimes written Aeta). These words are often used by the dominant population of the Philippines to mean 'Negrito', but are sometimes self-appellations used by Negrito groups themselves. Reflexes of *qaRta are also found in both western and eastern Indonesia, and as far east as New Caledonia, where the meanings vary over 1. person, human being, 2. slave, and 3. outsider, alien person. Given Proto Austronesian *Cau, Proto Malayo-Polynesian *tau 'person, human being', and PWMP *qudip-en 'slave', PMP *qaRta probably meant 'outsider, alien person', an inference that is consistent with its application to the Negrito peoples of the Philippines.

In sharp contrast to the Philippines, there are no extant Negritos in Borneo, although the archaeology of Niah Cave in northern Sarawak has revealed a pre-Neolithic population extending back some 40,000 years. Given the broader ethnological picture for Southeast Asia the most likely bearers of the pre-Neolithic cultures at Niah Cave would have been ancestral Negritos. When and why these populations disappeared is unknown, but despite occasional claims of evidence for Negrito admixture in some groups (e.g. among the Muruts of Sabah), it would seem that AN and pre-AN populations in Borneo had little or no contact. Similarly, earlier accounts speak of 'Veddoid' physical characteristics among some Sumatran groups, but the population of Sumatra does not appear to differ markedly from that of Borneo or other parts of western Indonesia.

The situation in Taiwan is somewhat more complex. Dyen (1971d:171) stated that "there are reports of 'little black men', presumably Negritos, distributed widely on the west side of the Central Mountains, who disappeared about 100 years ago." Although discoveries in the Chang-pin caves and elsewhere have documented a pre-Neolithic (presumably Negrito) population on Taiwan for millennia before AN-speakers arrived, mythological references to a race of dwarfs that are current among Formosan aborigines do not indicate that they were black, and such stories are comparable to other tales of 'little people' that are widespread in the Pacific (Ferrell 1968, Luomala 1951).

Most AN-speakers in Taiwan, the Philippines, and western Indonesia are described as of 'modified Mongoloid' type. Skin color varies from olive to moderately dark brown. Hair is dark brown to black, and straight to wavy, with occasional crispness even in areas (like Java), where contact with earlier populations is not generally assumed. Eyes are dark brown to black, and ordinarily lack the Mongolian eye fold. Chai (1967), who distinguishes between an epicanthic fold and a Mongolian fold, reports frequencies of total absence ranging from 85% (Rukai men) to 61.1% (Amis women) for the former, and 96.3% (Tsou women) to 50.9% (Atayal women) for the latter among various Formosan aborigines. The Mongolian fold is thus unusually prominent among Atayal speakers, the northernmost mountain people on the Island. Chai found the mean stature of Formosan aboriginal men to vary from 164.6 cm (Amis) to 156.6 cm (Paiwan), and the mean stature of Formosan aboriginal women to vary from 155.9 cm (Amis) to 146.2 cm (Bunun). Setting aside the Amis, who appear to be unusually tall (and fair-skinned), these figures probably are representative, within fairly narrow limits, for most of the Philippines and western Indonesia. Although relatively short, the men of some groups are stocky and muscular, and obesity is rare.

The population of Madagascar is described by Murdock (1959:212) as "a complex mixture of physical types—Negroid, Mongoloid, and Caucasoid." The relatively light-skinned and straight-haired peoples of the Imerina Plateau conform to a general Southeast Asian type, while more African-influenced physical types predominate in the arid parts of the west coast (Sakalava, Bara, Mahafaly). The Caucasoid element is of limited distribution, and appears to be a product of intermarriage with Arab or European seafarers in relatively recent centuries.

Whereas in the Philippines the Negrito and southern Mongoloid populations are rather sharply distinguished populations, the physical anthropology of eastern Indonesia shows greater intergradation, ranging from western Indonesian to Papuan types. In the western Lesser Sundas, as in Sumbawa, Flores, Sawu or Sumba, physical type does not differ markedly from that in western Indonesia. Further east, in approaching New Guinea, phenotypes show much greater variation, sometimes diverging sharply from what is typical of western Indonesia. In general the most markedly Papuan physical types are found among speakers of non-AN languages, as on Alor, although the correlation between language affiliation and phenotype has been blurred by centuries of social and economic contact and gene flow on Islands such as Timor.

Mismatches of linguistic affiliation and physical type suggest that the northern Moluccas have had a complex history of human settlement. Both Papuan and AN languages are spoken on the Island of Halmahera. In general Papuan languages are spoken in northern Halmahera and on the adjacent Island of Morotai (the 'North Halmahera language family'), while AN languages are spoken in southern Halmahera. However, on the small Island of Makian off the west coast of Halmahera, Makian Dalam, or Taba, the language of the 'inside' of Makian (facing Halmahera) is AN, whereas Makian Luar, the language of the 'outside' of Makian (facing away from Halmahera) is Papuan. Surprisingly, the physical anthropology of Halmahera is the converse of the linguistic classification: many north Halmaheran speakers of Papuan languages such as Ternate, Tidore or Galela are physically Indonesian in type, while most south Halmahera speakers of AN languages exhibit a physical type more commonly associated with speakers of Papuan languages in the western Pacific. This skewing of physical type and linguistic affiliation suggests that language replacement has taken place in both northern and southern Halmahera, perhaps through centuries of jostling for control of the spice trade. In

the central and southern Moluccas physical type varies from the predominantly Indonesian type of areas such as Buru, Seram, Ambon, or Tanimbar, to the predominantly Papuan type found in the Aru Islands of the southeastern Moluccas.

Most AN speakers in New Guinea and the Bismarck Archipelago have dark brown skin and frizzy hair. However, this general description conceals a wealth of variation. Among peoples who are commonly characterised as Melanesian, skin color ranges from reddish-brown (Mekeo, Motu, Kilivila and similar peoples in Southeast New Guinea), to coal black (Buka, Bougainville, and other parts of the western Solomons).[1] Hair is naturally black to brown, reaching reddish-brown in some areas, and artificial bleaching with lime produces blond hair in parts of western Melanesia (as New Britain and New Ireland). Howells (1973) has noted that hair coils in Melanesia typically are looser than in African populations. As a result hair form is not frizzy, but ranges from wooly (Bismarck Archipelago) to bushy (Fiji). Eyes are dark brown, and the Mongolian fold occurs in some areas (as the north coast of New Guinea). Stature is variable, from relatively short in much of western and central Melanesia, to nearly the Polynesian norm in Fiji and New Caledonia. Physically, speakers of AN and non-AN languages in Melanesia appear to grade imperceptibly into one another. The attempts of some writers to distinguish a 'Melanesian' from a 'Papuan' physical type appear groundless, although there are clear somatic differences between highland and lowland populations in New Guinea that are independent of linguistic affiliation.

In addition, a few of the AN-speaking peoples of Melanesia are much closer in physical type to the populations of island Southeast Asia or Micronesia than they are to other populations in Melanesia. In some cases, as with the dozen or so Polynesian Outlier communities in the Solomon, Santa Cruz, Vanuatu and Loyalty Archipelagos, this variation can be explained as a product of back-migration. In other cases, however, the explanation must be different. The people of the tiny islands of Wuvulu and Aua, some 170 kilometres north of the mouth of the Sepik River in New Guinea and 375 kilometres due west of the island of Manus in the Admiralty group, have yellowish-brown skin with wavy to slightly frizzy hair, yet their home islands lie within Melanesia as it is usually defined. Even more significantly, Wuvulu-Aua subgroups with the languages of the dark-skinned, frizzy-haired peoples of the eastern Admiralties. A similar light-skinned, relatively straight-haired physical type appears to have been common in the now extinct population of the Kaniet Islands, some 170 kilometres northwest of Manus, and what is described as a 'mixed' Melanesia physical type is found on the tiny Island of Tench (or Tenis), 100 kilometres north of New Ireland and 65 kilometres east of the island of Emira in the St. Matthias Archipelago. It is noteworthy that where malaria is severe light skin and straight or wavy hair do not appear, but where it is mild or absent these physical traits sometimes are present. The German linguist Otto Dempwolff, who studied the problem of differential resistance to malaria during his earlier career as a medical doctor, regarded this partial correlation as a key to certain major features of the racial history of the Pacific. He concluded that early AN speakers were southern Mongoloids who had little resistance to malaria. In the western Pacific this latecoming wave of maritime immigrants encountered a long-established, dark-skinned, frizzy-haired population that had acquired malaria resistance through generations of exposure and selection. Those AN speakers who remained in severe malarial areas without intermarrying with the local population died out.

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[1] Andrew Pawley (p.c. 4/22/09) has pointed out that "clear Southeast Asian characteristics" are found even among the Koita, a Papuan-speaking group that has long been in intimate contact with the Motu, and has no doubt been strongly affected by gene flow from them.

Those who remained and intermarried survived, and in many cases passed on their language and culture, but were modified in physical type. Those AN speakers who moved on to non-malarial areas quickly enough were able to pass on their language and culture without modifying their physical type.

In general, Micronesians differ sharply in physical type from typical populations in Melanesia. They are sometimes described as intermediate between Southeast Asians and Polynesians, since they tend to be larger than most Southeast Asians, but are shorter and darker than most Polynesian groups. The Palauan phenotype shows possible contacts with western Melanesia, but this is not true of any other Micronesian population.

A similar physical type prevails throughout Triangle Polynesia, although some Polynesian Outlier populations show evidence of gene flow with neighboring Melanesian groups. As noted repeatedly by early European voyagers, Polynesians differ strikingly in physical type from most peoples of Melanesia in at least two respects: they are much taller, with lighter skins and straighter hair. Young men often have powerful builds, and not only do both sexes tend to corpulence as they age, but over much of Polynesia corpulence was institutionalised as a cultural value. Fijians are usually described as physically Melanesian, but they are culturally closer to Polynesians, vary considerably in skin color, and are far taller than most Melanesian populations further west. Rotumans are physically similar to Polynesians, but speak a non-Polynesian language.

1.5 Social and cultural background

AN-speaking societies cover a wide range of ecological adaptations and levels of control over their environment. Technologically, and in other ways as well, the simplest societies are those of the hunter-gatherers. Hunting and gathering groups have been known for some time in the Philippines and in Indonesia, as with the various Negrito groups of Luzon, the central Philippines and Mindanao, the Penan/Punan of Borneo, the Kubu and Lubu of Sumatra, the Toala of Sulawesi, and the Kadai of the Sula Archipelago in the central Moluccas.

In 1971 reports of a few previously uncontacted hunting and gathering families in the forested mountains of Mindanao caused a popular sensation. To some writers these simple people -- the Tasaday --, with their claimed ignorance of agriculture, their stone tools and lack of permanent habitations, represented the ‘original Filipinos.’ However, these views never sat well with the linguistic evidence, which showed that Tasaday and Blit Manobo, spoken by a sedentary agricultural population in Mindanao, shared a common linguistic ancestor some 500-750 years ago (Molony and Tuan 1976). The simplest explanation for Tasaday nomadism thus appeared to be reversion from an earlier sedentary lifestyle to a life of foraging. In 1987 the case of the Tasaday was asserted to be an elaborate hoax, contrived for political and monetary gain. After much, often acrimonious debate among social and cultural anthropologists, this view in turn has been overthrown, and it is now believed that the original reports, although not necessarily the interpretations that accompanied them, were accurate (Hemley 2005).

Heated debate has also characterised discussions of the origin of the forest nomads of Borneo. Hoffmann (1986) sees the Penan and Punan as earlier agriculturalists who reverted to forest nomadism as part of a supply system stimulated by the Chinese demand for forest products. Brosius (1988) and Sellato (1988) vigorously contest this view, arguing that the history of Penan/Punan nomadism is no different from that of the Negritos of the Philippines: nomadic groups in Borneo represent a pre-AN population that adopted AN

languages through contact, and historically have shown a pattern of sedentarisation and cultural assimilation to neighboring agricultural groups. This view is not inherently implausible, but the burden of proof certainly rests on those who argue that the forest nomads of Borneo, who are phenotypically, linguistically, and in some respects culturally very similar to their sedentary trade partners, have acquired their linguistic affiliation through language shift and their physical similarities to sedentary populations through chance. Rather than comparing them with the Negritos of the Philippines, who are biologically distinct from other Filipinos, a more revealing comparison of the Bornean nomads can perhaps be made with the Tasaday, who are also linguistically and phenotypically very similar to neighboring sedentary groups, and who appear to have abandoned an earlier sedentary lifestyle. Moreover, in at least two cases foraging is known to be historically secondary. The first of these is the Mikea, who follow a semi-nomadic lifestyle in the thorn forests of southwest Madagascar, but are descended from the agricultural founding population of Austronesian-speakers who migrated from Borneo (Kelly, Rabedimy and Poyer 1999). The second is the Moriori of the Chatham Islands. This Polynesian group, which reached the Chathams from New Zealand, was forced to adapt to a colder climate and a significantly impoverished natural environment in comparison with other Polynesian peoples. As a result, they lacked cultivated plants, domesticated animals and large trees for the construction of canoes or houses. When first encountered by Europeans they were largely migratory (Skinner 1923).

Like the Punan and Penan of Borneo which have received more attention in the recent literature, Sumatra has its own nomadic or formerly nomadic groups of hunter-gatherers. These go under a variety of names, including ‘Orang Mamaq’, ‘Orang Ulu’, ‘Batin’, ‘Kubu’ and ‘Lubu’. Those found in the alluvial lowlands of southeast Sumatra between the Musi and Batang Hari Rivers are known in the literature as ‘Kubu’, while other groups in contact with the Mandailing Batak further north are called ‘Lubu’. Essentially the same debate that has taken place during the past two decades with regard to the origin of the forest nomads of Borneo took place a century ago in the (mostly) German literature on the ethnology of Sumatra. In both cases one position holds that the nomads have undergone a ‘devolution’ from sedentary agriculturalist ancestors, while the other holds that they represent pockets of cultural conservatism. The cultural state of the Kubu is particularly striking, as these peoples are found near the site of ancient Śrīwijaya, a major center of Buddhist learning and maritime commerce in the seventh century. All Kubu groups appear to speak dialects of Malay, while the Lubu speak a dialect of Mandailing Batak. Such culturally conservative groups as the Tenggerese of east Java, or the Bali Aga of central Bali are sometimes said to show physical differences from the mainstream populations around them, but the idea that they represent relic populations with a radically different history is unsupported. Rather, like the Sundanese-speaking Badui of western Java, they appear to represent pockets of cultural conservatism of a type not unknown in western societies, as with the Amish of Pennsylvania.

Although the people of the isolated Mentawai and Enggano Islands west of Sumatra are sedentary horticulturalists, it is often remarked that at the time of western contact they possessed a very impoverished material culture. Early accounts maintained that the inhabitants of both groups lacked rice agriculture, weaving and metallurgy. Mentawai is said to have also lacked the manufacture of pottery and the use of betel. The occasional claim that these cultures are ‘archaic’ (Schefold 1979-80:13ff), like similar claims about the Tasaday, imply the preservation of a way of life once common to other speakers of AN languages. Comparative linguistic data relating to early AN culture, however, shows

unambiguously that, rather than being 'living fossils', these atypical cultures are products of reversion to a materially simpler way of life.

There is no known trace of a Negrito presence in the population of Sulawesi. A single group, the Toala (< *tau 'person, human being' + *halas 'forest', hence 'forest people') of the southwestern peninsula, were nomadic in the past, but reportedly were removed from rockshelters and settled in a single village through the intervention of the dominant Buginese of the region within historical times. Reports of other foraging groups sometimes surface, including claims that small segments of sedentary populations in the Gorontalo region adopted a nomadic lifestyle during the Dutch administration in order to find relief from the colonial taxation system, but in general the reported incidence of nomadism in Sulawesi is much lower than that in Borneo or Sumatra.

Unlike areas further west, hunter-gatherers have not been reported in the Lesser Sundas. The reasons for this difference between the Greater Sundas and Lesser Sundas are unclear, but two factors which distinguish the regions stand out. First, islands such as Borneo or Sumatra, or even Mindanao are considerably larger than Timor (the largest of the Lesser Sundas). To some extent, then, nomadism may correlate with quantity of available land for foraging populations to sustain themselves. Second, the relative abundance of edible forest products probably is a factor determining the possibility of maintaining a hunting and gathering lifestyle. The nomadic Punan of Borneo rely heavily on stands of wild sago, which they themselves help to propagate. By contrast, several of the Lesser Sunda Islands present a semi-arid savanna-like landscape of scattered trees and scrub growth that is far poorer in greenery than the rainforests of Borneo or Sumatra.

Most Austronesian speakers are agriculturalists. Village organisation varies from the dispersed hamlets of groups like the Saisiyat (Taiwan), Ibaloy (Luzon) and Subanen/Subanun (Mindanao), to the highly concentrated longhouse communities characteristic of much of central and western Borneo, parts of southern Sumatra, and the Chamic area of mainland Southeast Asia. Perhaps the most common type of village consists of a cluster of family dwellings arranged around a square, together with a communal building used for the conduct of social, political, and in some cases religious affairs. Bachelors' clubhouses were traditionally found in Taiwan, the northern Philippines, Kalimantan, Sumatra, western Micronesia (the Marianas, Palau) and most of Melanesia, and in central Micronesia large menstruation houses are found as well. In Island Southeast Asia rice granaries, and in Melanesia yam storage houses are common village structures. Traditional villages are often divided by a path or stream into two mutually supportive, mutually antagonistic halves—a type of dualistic organisation reported from traditional societies in many parts of the world. In some areas, such as Madagascar, New Zealand and the Island of Rapa in the Austral Islands, settlements were built on hilltops and fortified.

House types vary greatly, but frequently recurring features include 1) a gabled roof, 2) thatching of palm leaves, and 3) elevation on houseposts, and use of a (usually notched log) ladder to enter. Among the Atayal in the mountains of northern Taiwan, where winter temperatures can dip to freezing, traditional dwellings were semi-subterranean, and some excavation of the floor is also found in a few more southerly groups which lie in the Pacific typhoon belt, as with the Yami of Botel Tobago Island off the southeast coast of Taiwan, and the closely related Itbayaten and Ivatan in the Batanes Islands of the northernmost Philippines. In terms of sheer size the most imposing structures in the AN world are the longhouses of Borneo, some of which are said to reach a length of 400 meters. In the extreme case these constitute a single-structure village, although villages

may contain more than one longhouse. Like most single-family dwellings, longhouses are raised some two to three meters from the ground on wooden pillars. Typically, the structure is divided along its length into public and private portions, the former constituting a gallery where work, play and social contact take place, and the latter subdivided by walls into nuclear family units. Although less grand, the single (extended) family dwellings of some other western Indonesian peoples—particularly the Batak, Nias and Minangkabau of Sumatra, and the Toraja of central Sulawesi—are sometimes architecturally magnificent structures (Waterson 1990).

Almost everywhere in the AN world boats are important for transportation. Although evidence for the outrigger among Formosan aborigines is problematic, this distinctive stabilizing device is almost universal among AN-speaking populations outside Taiwan. Double-outrigger canoes are the norm in island Southeast Asia and Madagascar, and are found in parts of western Melanesia, while single-outrigger canoes are confined to the insular Pacific. On the larger islands of island Southeast Asia simple dugouts without an outrigger are poled or paddled on the rivers. Some riverine populations which traditionally have had no contact with the sea, such as the Kayan and Kenyah of central Borneo, are nonetheless skilled canoemen. Both boat construction and house construction were traditionally accomplished without the use of nails. Boat planks were joined by means of dowels and lashing, and house beams by mortise and tenon joints.

Most Micronesian islands are low coral atolls, and so are quite small, but these are punctuated by occasional high islands that form major population and political centers. The contrast between low and high islands in Micronesia is fundamental both in terms of population size (and hence political influence), and in terms of culture history. While it is clear that Micronesia could not have been settled without a sophisticated navigational technology, for example, the practice of long-distance voyaging has been lost on all of the high islands, where it is no longer of critical importance. On the atolls, however, open-sea voyaging is crucial to survival, since the seasonal typhoons can leave these islands temporarily uninhabitable, and under these conditions only those groups that could successfully relocate could pass on their culture and language.

The economy of most of the indigenous peoples of Taiwan, the Philippines, Indonesia, and Madagascar is based on rice, although millet is equally or even more important among some Formosan aboriginal groups. In the relatively arid islands around Timor maize, probably introduced by the Portuguese in the sixteenth century, has within historical times been the major crop. Sago is the staple over much of the Moluccas, as well as in isolated pockets to the west, most notably in the swampy Melanau coastal zone of Sarawak. Throughout island Southeast Asia yams, taro, and other root crops generally are of secondary importance, but in a few scattered parts of Southeast Asia, and in the Pacific as a whole, these plants have become central to the economy. The South American sweet potato—a subject of both ethnobotanical and ethnohistorical controversy—has assumed considerable importance in some areas (Yen 1974, Scaglion 2005).

Rice cultivation is of two types: dry and wet. Dry rice is grown by slash-and-burn agriculture in small lowland or hillside swidden plots, where it typically is intercropped with other cultigens. Soil fertility is rapidly depleted, and many plots eventually give way to sword grass (*Imperata cylindrica*), creating long-term or permanent ‘green deserts’. Wet rice provides a much higher yield, but also requires far greater labor for construction and maintenance of the irrigation system. Among the most impressive achievements of traditional agriculture anywhere are the massive rice paddies of the Ifugao and their

neighbors in northern Luzon, where entire mountain slopes have been transformed into irrigated terraces descending for 500 meters or more (Conklin 1980).

Major refreshments include the nut of the betel palm (*Areca catechu*), which is wrapped in a leaf with powdered lime and chewed, and *kava*, a mildly intoxicating drink made from the fermented root of the *Piper methysticum* shrub. While the betel nut is chewed in much the same way that cigarettes are smoked in the modern world, *kava* has ritual and ceremonial associations in many Pacific Island cultures, and typically is drunk as part of a formal gathering rather than by individuals in isolation. In general the use of these refreshments is geographically complementary, the former being characteristic of insular Southeast Asia and the western Pacific, and the latter of Remote Oceania. Some early twentieth century ethnologists, as Friederici (1912-1913) and Rivers (1914), even spoke of betel and *kava* 'cultures' as historical strata in the settlement of the Pacific, although the two distributions overlap in some areas, as in the Admiralty Islands, where betel is widely used, but *kava* is also part of the traditional culture on the islands of Baluan and Lou.

The most widespread domesticated animals are the dog, pig, and fowl, all of which are eaten, the latter two more commonly than the former. Reflexes of *maŋ-asu 'to hunt using dogs' (< *asu 'dog'), are found in a number of languages in the Philippines and Indonesia, thus attesting to the traditional value of dogs as companions of the hunt. Over much of island Southeast Asia the word for dog reflects *asu, while in the Pacific it is extremely variable. This striking difference in lexical variability almost certainly is due to the impoverishment of land fauna on Pacific Islands: where hunting decreased in importance so did the economic importance of the dog, and in times of scarcity it became a competitor for food—or food itself. Under such circumstances dogs disappeared from many islands, only to be later reintroduced with new names. In the Philippines and Indonesia the carabao is an important work animal, used especially to plough rice paddies. Aging animals are slaughtered and eaten on important ritual occasions. Goats and horses are kept in some parts of Indonesia and the Philippines, and cattle are of great importance in Madagascar, where (following an African pattern) they are a measure of wealth.

Typical manufactures include pottery, made almost everywhere that suitable clays are available, the outrigger canoe and its associated paraphernalia, nets and traps of various kinds for fishing and capturing small game, the bow and arrow, the blowgun (common in insular Southeast Asia, but rare in the Pacific), bark cloth (most typical of the central and eastern Pacific, but also found in Taiwan and Indonesia), the back loom and woven fabrics made with it (widespread in insular Southeast Asia, scattered in the Pacific), such musical instruments as the bamboo nose flute and hollowed log slit-gong, and various household implements. In Taiwan, Indonesia, the Philippines, and Madagascar, metallurgy was traditionally important (Chen 1968, Marschall 1968). In at least the first three areas this included the smelting of iron ore in a charcoal furnace by means of a vertical wooden or bamboo bellows operated with a piston. Bronze casting by the lost wax method occurs in Indonesia and the Philippines, as does the working of silver, gold, tin, and tumbaga (an introduced copper-gold alloy).

Trade is the major form of relationship between most AN-speaking communities. In Indonesia hunting-gathering groups and their sedentary neighbors are said to have engaged in 'silent trade', the former leaving jungle produce and the latter salt and manufactured goods in a predetermined location. Far more sociable are the great trade networks of Melanesia, in which communities are linked through individual trade partnerships that may pass down from father to son. One of these, the *kula ring*, which encompassed the Trobriand, Amphlett, and other islands in the Massim area southeast of New Guinea, is

especially well-known through the work of the British anthropologist Bronislaw Malinowski. In this trade network two types of goods—long necklaces of red shell and bracelets of white shell—circulate in opposite directions through many hands over a roughly circular area more than 170 kilometres in diameter. Both Malinowski and his French contemporary Marcel Mauss stressed that in such systems the material dimension of trade is subsidiary to social, political, and magico-religious considerations. Another important traditional trading partnership linked Motu speakers in the region of modern Port Moresby with both AN-speaking and Papuan-speaking peoples around the Gulf of Papua. The trading voyages of the Motu in their large sailing canoes were called 'hiri', and the simplified form of Motu that was used as a medium of communication in the commercial transactions during these trading voyages came to be called 'Hiri Motu.' Unlike these systems of exchange, which were basically egalitarian, tributary systems based in part on inequality were found in both Micronesia and Polynesia. One of these linked Tahiti with certain of the Tuamotu atolls in southeastern Polynesia. Perhaps the most spectacular of these tributary systems, sometimes called the 'Yapese empire', linked Yap with other communities in the western Caroline Islands of Micronesia as far east as Nómwonweité (Namonuito) atoll, some 900 kilometres distant, and was driven by a belief that the Yapese could magically control the destructive typhoons that periodically sweep across this region.

Over much of eastern Indonesia and in parts of Sumatra at least some types of trade are closely linked with systems of kinship and marriage. Members of the Leiden School of ethnology in the 1930s noted that systems of kinship and marriage in eastern Indonesia are characterised by the widespread (but not universal) occurrence of three general features: 1) unilineal descent groups (corporate kin groups defined with reference to an 'apical' ancestor), 2) preferential matrilateral cousin marriage, and 3) 'circulating connubium', better known in the more recent literature as asymmetric exchange. Since it involves the circulation and counter-circulation of certain narrowly specified categories of symbolically 'male' and 'female' goods (the latter including wives), asymmetric exchange can be seen not only as a system for the regulation of marriage, but also as a system of political alliance with intriguing general resemblances to the non-marriage based trade networks of Melanesia. In the Philippines and western Indonesia apart from Sumatra descent groups are absent. Although descent groups are present in the great majority of Formosan and Pacific Island societies, matrilateral cousin marriage is far less common among them than in eastern Indonesia, and the kinds of alliance systems built upon it are rare, but may have once been more common (Hage and Harary 1996).

Many AN-speaking societies are characterised by marked social stratification. Many of the ethnic groups of central and western Borneo recognise hereditary classes of nobles, commoners, and slaves. Similar tripartite systems of hereditary rank are reported from Nias, Sulawesi, various groups on Sumba, Sawu, Flores, Roti and Timor in the Lesser Sundas, Kei and other parts of the central Moluccas, and in Yap and among the early contact Chamorros in Micronesia. Slaves usually were war captives, but could be debtors or serious violators of customary law in their natal communities. Perhaps the most striking manifestation of social stratification in the AN world occurs in Polynesia, where a high chief traditionally was seen as so charged with sacred power (*mana*) that contact with him or anything that he touched could jeopardise the life of a commoner. Micronesian paramount chiefs had great authoritiy, and often ruled over an extensive tributary domain, but do not appear to have been invested with a sacral character. Most Melanesian societies, by contrast, are characterised by a 'bigman' system of achieved status based on acquired wealth, although hereditary rank is found sporadically, as among the Mekeo of New

Guinea, and in various groups in the southeast Solomons, Vanuatu, New Caledonia and the Loyalties. Given the absence of strong centralised power, polities in Melanesia are typically smaller and more fragmentary than those in Micronesia or Polynesia, with the result that language communities are often much smaller as well.

Traditional religious ideas in the Austronesian world center about the placation of spirits. In non-Muslim and non-Christian communities in the Philippines and Indonesia disease is diagnosed and treated by a shaman who often is female, or a transvestite male. Scattered widely in island Southeast Asia is (or was) a belief in minor souls located in each of the shoulder joints, and a major soul located in the head. Souls were regarded as capable of taking flight, thereby causing faintness or even death to their possessor. The rice plant was regarded as having a soul (Malay: *səmangat padi*), the loss of which could prevent germination. Among Malays, Javanese, and some other western Indonesian peoples, rice intended for consumption could be harvested with a sickle, but seed rice was harvested with a small blade concealed in the palm of the hand so as to avoid startling and possibly causing the flight of the rice-soul.

Headhunting traditionally was important over much of island Southeast Asia. Major headhunting expeditions were often correlated with the agricultural cycle, and in some areas with an annual death feast. Independent ethnographic accounts state that this practice served not only to secure trophies in war, but also (and in the native mind perhaps more importantly) to renew the collective vitality of the human and agricultural community through the capture and ritual incorporation of extraneous soul-force in compensation for soul-force lost from the community during the previous growing cycle.

Finally, although the AN world can be defined by a sharp linguistic boundary in the west, physical and cultural boundaries seem more blurred. With the exception of the strongly sinicised Vietnamese, the physical type of mainland Southeast Asians covers much the same range as that of insular Southeast Asians of corresponding latitudes. Many of the cultural traits that have been described for island Southeast Asia occur as well among speakers of Austroasiatic, Tai-Kadai or Sino-Tibetan languages. In some cases cultural agreements are striking, as with the use of a distinctive headhunting tattoo among certain Naga (Sino-Tibetan) peoples of central Assam and the AN-speaking Atayal of northern Taiwan, Dusun of Sabah, and Mentawai of the Barrier Islands west of Sumatra, or the 'clapping bamboo' dance among the Hlai (Tai-Kadai) of Hainan Island in southern China, the Karen (Sino-Tibetan) of peninsular Burma, and AN-speaking groups ranging from at least the Philippines to eastern Indonesia. Physical and cultural similarities between the Karen, Nagas, and other Sino-Tibetan speaking peoples of the Asian mainland, and the Kayan and similar AN-speaking groups of central Borneo struck some early observers (as Hose and McDougall 1912:2:241) with such force that they imagined connections by migration, despite the absence of corroboratory linguistic evidence. While migration is now all but universally rejected as an explanation of cultural resemblances between mainland and insular Southeast Asian peoples unless supported by evidence of linguistic relationship (e.g. Chamic), the question of whether such resemblances are due to diffusion or to an ancient community of origin is a serious one to which we shall return in discussing the external relationships of the AN languages.

1.6 External contacts

Important external cultural and linguistic influences began to affect AN-speaking peoples about 2,000 years ago in insular Southeast Asia. These can be distinguished in

their historical order of appearance as 1. Indian, 2. Chinese, 3. Islamic, and 4. European (primarily Portuguese, Spanish, Dutch, and English). External influences on the AN-speaking peoples of the Pacific have been both shorter in duration and more fragmentary in their distribution than those of island Southeast Asia.

The most important early external contacts with AN-speaking peoples came from India. Around 2,000 years ago Hindu notions of divinity, kingship and the state, as well as Indic scripts, began to penetrate mainland Southeast Asia and western Indonesia. Hindu-Buddhist states arose in Sumatra and Java, producing numerous architectural structures, of which the most famous surviving examples are the stupa of Borobudur and the temple of Prambanan in central Java. Syllabaries derived from the ancient Brahmi script (via the southern Pallava script) form the basis of various indigenous traditions of syllabic writing on palm leaves or bamboo in Indonesia and the Philippines. Somewhat unexpectedly, these traditions appear in some groups, such as the Batak of Sumatra, and the Hanunóo of Mindoro Island in the Philippines, that have been relatively isolated in historic times.

By the late seventh century Hindu-Buddhist states based on Indian notions of kingship and world order had arisen in southern Sumatra. The most powerful of these was Śrīvijaya, which probably was Malay-speaking, an inference supported by a group of five short commemorative inscriptions on stone from southern Sumatra and the adjacent Island of Bangka, which are written in what is generally described as 'Old Malay', heavily interlaced with Sanskrit (Mahdi 2005). Three of these inscriptions bear dates ranging from 683 to 686 AD. Moreover, the Chinese Buddhist pilgrim I-ching, who journeyed from China to India in 671, stopped enroute for six months to study Sanskrit grammar at the port of (Shih-li) fo-shih, described as some twenty days passage from Canton. On his return voyage after ten years in India he spent four more years in the same location, copying Buddhist texts from Sanskrit into Chinese. Coedès (1971) identifies Shih-li-fo-shih with Śrīvijaya, and quotes I-ching as saying that in 671 the same region was called Mo-lo-yu, a name that can be identified with Melayu, the name of a historical state in southern Sumatra, and the ethnolinguistic self-designation for speakers of Malay.

It is probable that Indian cultural and linguistic influence extended beyond southern Sumatra during or even prior to the Śrīvijaya period, but the available evidence is fragmentary. Dahl (1951:368) noted that a stone inscription in Sanskrit from Muara Kaman in east Borneo records an apparently abortive attempt to establish an Indianised state in that area around 400 AD. In subsequent centuries the center of Hindu-Buddhist state formation in Indonesia shifted from southern Sumatra to Java, where it reached its apogee in the kingdom of Majapahit (1293-early sixteenth century). In time Majapahit was submerged under the rising tide of prosperous Muslim port cities that gradually increased in power after the beginning of the sixteenth century, and Indian religious, cultural, and linguistic influence ceased to exist in Java, although much of the earlier tradition was transported from eastern portions of Java to Bali, where it survives today.

The Indian period in western Indonesia lasted nearly a millennium, and left a major linguistic legacy. Although there is no evidence that the Philippines was directly exposed to Indian cultural or linguistic influence, Sanskrit loanwords are also found in a number of Philippine languages. The most likely explanation for this situation is that Malay speakers disseminated both native vocabulary and nativised Sanskrit words during the centuries immediately preceding western contact. Perhaps the strongest type of surviving cultural evidence that might be cited in support of direct Indian contact with the Philippines is the presence of nativised syllabaries of Indian origin in sixteenth century Tagalog and some relatively isolated modern ethnolinguistic groups both in Indonesia and the Philippines, but

not among Malays. However, even this distribution is most plausibly explained as a product of contact with Malays, since 1. Malay loanwords in Philippine languages indicate significant Malay contact with the Philippines in any case, and 2. the Indic script used in the Old Malay inscriptions of Śrīvijaya could have been widely disseminated by pre-Islamic Malay traders before it was replaced among Islamic Malays, who adopted the Arabic script, and Christianised lowland Filipinos, who adopted the Roman alphabet.

To show the extent of lexical borrowing from early Indian sources, about half of the more than 25,000 base entries in the Old Javanese dictionary of Zoetmulder (1982) are of Sanskrit origin. While this is an impressive record of contact, it must be kept in mind that the language of the Old Javanese texts was that of the courts, and hence reflects the linguistic world of the educated elite, not the peasantry. Moreover, despite a wealth of Sanskrit loanwords relating to religion, government, trade, and such material objects as pearls, silk, gemstones, glass and beads, the basic vocabulary of Old Javanese was almost untouched, the 200-item Swadesh basic vocabulary for Old Javanese having only two known Sanskrit loans: *gəni* (Skt. *agni*) 'fire' and *megha* (Skt. *megha*) 'cloud.'

Chinese contact with the Philippines began during the Northern Sung dynasty (960-1126), although sustained trade relations came later. Unlike Indian contact, which introduced writing, architectural styles, notions of the state and religious ideas, or Arabic contact, which introduced various religious and legal ideas, Chinese contact with Island Southeast Asia was largely commercial. Although the seventh-century Buddhist pilgrim I-ching was from Canton, and thus presumably spoke an earlier form of Cantonese, most Chinese settlers in Southeast Asia within historical times have been speakers of Southern Min (Minnan), or Hakka. Schurz (1959) notes that when the Spanish colonisers of the Philippines initiated the galleon trade between Acapulco and Manila in 1565 they found Chinese junks in Manila Bay already engaged in lively trade with the local population. Sung dynasty records suggest that trading contacts with parts of the Philippines had begun by the beginning of the eleventh century, and it evidently involved merchants sailing both from Canton and the Fujian coast. Probable Chinese loanwords that are widespread in insular Southeast Asia include *waŋkaŋ* 'Chinese junk', *uaŋ* 'money', *hupaw* 'money-belt', and *hunsuy* 'smoking pipe'. It is unlikely that most of these words spread into Island Southeast Asia earlier than the Ming dynasty (1368-1644).

Hall (1985:213) reports that the north coast of Sumatra was visited by Arab traders from "at least the tenth century A.D.," and Chinese records from the late thirteenth century indicate that Islam had begun to take hold in Jambi, southern Sumatra by that time. However, Islamic influence evidently was not yet strong or uniform, since Marco Polo visited the port of Samudra in northern Sumatra in 1292, and noted that its population had not yet converted to Islam. This situation soon changed, as Islam became firmly established in Sumatra by the beginning of the fourteenth century, and was exported from there by Malay-speaking missionaries. Islamic sultanates were founded at Brunei in northwest Borneo, at Ternate and Tidore in the northern Moluccas, and in the Sulu Archipelago in the southern Philippines. The Islamic penetration of the Philippines was accomplished by Malay missionary-traders from the sultanate of Brunei, and led to the introduction of numerous Malay, Sanskrit, and Arabic loanwords not only into the languages of the southern Philippines (where Islam survives today), but also into those of the central, and to some extent, the northern Philippines.

The Arabic vocabulary in Malay/Indonesian has been described by Jones (1978), who cites over 4,500 loanwords. Many of these are concentrated in the areas of religion and law, but they also include names of the days of the week, astronomical bodies, and the like.

Many of the same loanwords are found in Acehnese, Sundanese, Javanese, and other languages spoken by strongly Islamised ethnic groups in western Indonesia, as well as by the Muslim populations of the southern Philippines. As with the Sanskrit loans in the Philippines, Arabic loanwords are found in a number of Philippine languages spoken by populations that are not known to have ever been Islamic. Again, the diffusion of this vocabulary appears to have been mediated by Malay traders. The distinctive appearance of a final glottal stop for expected zero in words that originally ended with a vowel, points to Brunei Malay as the source for many of these forms. No AN language east of the Moluccas shows clear evidence of early loans from Sanskrit, Chinese, or Arabic.

Although European contact with languages of the AN family dates from at least 1292, when Marco Polo stopped in northern Sumatra on his return from China, linguistic materials were not collected until early in the sixteen century. In 1521, Antonio Pigafetta, the Italian chronicler of the Magellan expedition, recorded a vocabulary of about 160 words for the language of Cebu Island, in a region of the central Philippines where Magellan was shortly to meet his untimely death. Toward the end of the same year around 425 words were recorded for a Malay dialect from an unstated location, although given the known route of the expedition this probably was the northern Moluccas. The vast majority of AN languages were still undiscovered and their interrelationships unrecognised, yet Pigafetta's vocabularies mark the beginning of western scholarly interest in what we now know was the most widespread language family on Earth prior to the great European colonial expansions of the period 1500-1800 (Cachey 2007).

The Magellan expedition was the forerunner of a far heavier traffic on the world's seas in the century to follow. During this period (1600-1700) the Dutch wrested control of the lucrative spice trade from the Portuguese in the Moluccas, and established themselves for more than three centuries as colonial masters of the island world later to be known as 'Indonesia.' To the north of the Philippine Archipelago, which the Magellan expedition had claimed in the name of King Philip of Spain, Holland secured a second, smaller foothold in the AN world on the island of Formosa (Taiwan).[2]

As in Indonesia, the Dutch presence in Formosa (1624-1662) grew out of mercantile motives, and was initially limited to trade between the Dutch East Indies Company and local producers or distributors. In both areas there was a subsidiary interest in religious conversion, but this interest tended to play a larger role in Formosa than in Indonesia. There were no doubt several reasons for this difference of focus, but one seems especially important. When European contact began, Malay was widely used as a *lingua franca* in coastal areas of island Southeast Asia, and it was through this language that the Dutch conducted trade with the local populations. By the very fact of their acquaintance with Malay, however, these coastal populations had been exposed to other foreign influences. Christianizing efforts were made in Indonesia during the seventeenth century, but these appear to have been largely thwarted by the presence of Islam in most of the more accessible areas. Because no such obstacle existed in Formosa, the study of the local languages began at once in preparation for the translation of the scriptures. As a result, although practical vocabularies of Malay and Javanese (de Houtman 1603) and even a short Malay-Dutch dictionary (Wiltens-Danckaerts 1623) were published during this period, the major Dutch publications of linguistic interest in insular Southeast Asia during

[2] Since Taiwanese is a dialect of Southern Min (one of the languages commonly included under the cover term 'Chinese'), it is customary to use 'Formosan' to refer to the aboriginal languages of Taiwan. I follow this practice, and use 'Formosa' as a geographical designation for the pre-modern period, but 'Taiwan' when referring to the island as a modern political entity.

the seventeenth century did not concern the languages of Indonesia, but rather the AN languages of Formosa (Happart 1650, Gravius 1661).

Dutch missionary activity, and with it the translation of the gospels into the local languages, was cut short by the expulsion of the Dutch from Formosa in 1662. Since penetration of the hinterland and consequent contact with ethnic groups that had not yet been reached by Islam was delayed for several centuries in Indonesia, few publications appeared on Indonesian languages other than Malay until the 1850s. A similar situation obtained in Malaysia under British rule, but the Spanish friars of the Philippine missions produced dictionaries, grammars and doctrinal materials in Tagalog, Bikol, the major Bisayan dialects, and some other local languages from the second half of the sixteenth century onward, and an important grammar of Chamorro, the native language of Guam and the other Mariana Islands, appeared very early (Sanvitores 1668).

Language barriers, together with national and ecclesiastical rivalries, did not favor the ready diffusion of linguistic information between the major European colonial powers. Opportunities for comparing Malay or other politically important languages of Indonesia with Tagalog or other politically important languages of the Philippines were thus limited during the colonial period. While the Spanish supply route to the Philippines crossed the open Pacific from Mexico with a single stop in Guam, Dutch voyages to Indonesia included a distant way-station after the sometimes difficult passage around the Cape of Good Hope: the great island of Madagascar off the coast of east Africa. It was thus perhaps inevitable that the relatively transparent relationship of Malagasy to Malay would be recognised by Dutch sailors who had been exposed to both languages. When this recognition came, early in the seventeenth century, the existence of a language family spanning at least the rim of the Indian Ocean was established.

Based on imperfect and mislabeled vocabularies collected by the Dutch voyager Jacob Le Maire in western Polynesia during the previous century (Engelbrecht and van Hervarden 1945:133-138, R.A. Kern 1948), Hadrian Reland (1708) further indicated the likelihood of an eastern extension of Malay-related languages to at least western Polynesia. The true geographical extent of this still unnamed language family was, however, only suspected. Surprisingly, the relationship of the Formosan languages to Malay—in some cases no less evident than that of Malagasy to Malay—apparently was not recognised, at least in print, until the nineteenth century. But a vast region between Southeast Asia and the Americas remained virtually unknown to Europe. In 1768 the Englishman James Cook began the first of three voyages of exploration in the Pacific Ocean. During the second of these voyages (1772-1775) vocabularies were collected on a number of Polynesian islands, on the large southerly Melanesian island of New Caledonia, and at several locations in the New Hebrides chain (modern Vanuatu).

In a book published in 1778 a Swiss member of this expedition, Johann Reinhold Förster, expressed what would become a persistent confusion of language and physical type in accounts of the linguistic relationships of Pacific peoples. He noted that the many widely scattered islands of the eastern Pacific (‘Polynesia’) were inhabited by a tall, well-built, relatively fair-skinned people of similar language, while the larger, often malarial islands of the western Pacific (‘Melanesia’) were home to a shorter, darker, frizzy-haired population speaking a babel of tongues. Förster observed that the ‘Polynesian language’ resembled Malay, but the languages of Melanesia, in accord with the differing physical type of their speakers, were not related to these, or even to one another.

Even though many details needed to be added and others corrected, sufficient data now existed to determine the east-west scope of the language family that included Malagasy,

Malay, and the Polynesian languages. With Förster's publication the territorial extent of the AN language family appears to have become general knowledge among Europe's intelligentsia: both the English scholar William Marsden (1783) and his Spanish contemporary Lorenzo Hervas y Panduro (1784) noted that Malay-related or Polynesian-related languages extended from Madagascar in the west to Easter Island in the east, an extraordinary 206 degrees of longitude. As further data were collected this general conclusion was confirmed many times over. Despite such progress, a belief that classifications based on linguistic criteria must correspond to those based on racial criteria continued to dominate thinking regarding the languages of Melanesia.

In 1834 William Marsden reasserted the existence of a far-flung language family that includes Malagasy, the languages of the Malay Archipelago, and those of the eastern Pacific. He called the former 'Hither Polynesian' and the latter 'Further Polynesian', conceiving of the two as divergent expressions of a single 'general language'—an oblique reference to what today would be called a proto language. Marsden's use of the name of a limited geographical region to designate a language family that extends well beyond it was inappropriate, and did not find general acceptance. Shortly thereafter the influential German scholar Wilhelm von Humboldt (1836-39) used the term 'Malayisch' to designate the same collection of languages. Again, the terminology was inappropriate, and did not take hold. At about the same time the German Indo-Europeanist Franz Bopp (1841), became convinced that Malay, Javanese and the Polynesian languages are related to Indo-European, and for convenience of reference he proposed that they be called by a compound term formed from the name of a western and an eastern member. Since Malay, now represented by the grammar and dictionary of Marsden (1812), was the best-known western language, the family was christened, somewhat belatedly, 'malayisch-polynesisch' (Ross 1996a).

During the second half of the nineteenth century scientific work on the Malayo-Polynesian languages began in earnest. The details of this work will be described later. For now it is enough to note that the name 'Malayo-Polynesian' became established by general usage. This term had the advantage of making the relationship of Malay to the Polynesian languages transparent, but it also tended to perpetuate the illusion that the languages of Melanesia belong elsewhere. Although he spoke of 'Malayo-Polynesian' languages von der Gabelentz (1861-73) concluded that the grammatical similarities of Melanesian and Polynesian languages are too numerous and basic to be due to borrowing. Codrington (1885), who like von der Gabelentz opposed the view that the Melanesian languages are unrelated to Malay and Polynesian, avoided the term 'Malayo-Polynesian' altogether, referring instead to the 'Ocean' family of languages.

It was not until the twentieth century that a name was found for the Malayo-Polynesian language family which avoided an implicit appeal to race. In 1906 the Austrian linguist and ethnologist Wilhelm Schmidt showed that the Mon-Khmer languages of mainland Southeast Asia are related to the Munda languages of India. He called this language family 'Austroasiatic' ('southern Asiatic'). At the same time he pointed to resemblances between the Austroasiatic and Malayo-Polynesian languages, and suggested that the two families form coordinate branches of a larger superfamily which he called 'Austric.' In keeping with the term 'Austroasiatic' and the established names 'Indonesia', 'Melanesia', 'Micronesia', and 'Polynesia', Schmidt renamed the Malayo-Polynesian family 'Austronesian' ('southern islands'). Although Schmidt's Austric hypothesis was not generally accepted, his terminological innovation was taken up by Jonker (1914), Blagden (1916), and more significantly by Otto Dempwolff, both in his major early papers (1920,

1924-25), and in his three-volume *Vergleichende Lautlehre des austronesischen Wortschatzes* (1934-1938), a work which laid the foundations for the modern comparative study of the AN languages. Some writers, as Stresemann (1927), and Dyen (1947a, 1951, 1953b, 1962) nonetheless continued to favor the older terminology. As a result the names 'Malayo-Polynesian' and 'Austronesian' were used in an equivalent sense from the early part of the twentieth century until quite recently.

The American linguist Isidore Dyen published a genetic classification of the AN languages (1965a) in which he suggested that 'Austronesian' be used for the entire language family, and 'Malayo-Polynesian' for a lexicostatistically-defined subset of it. From this point on the names 'Malayo-Polynesian' and 'Austronesian' have for many scholars ceased to be synonymous but, as will be seen, Dyen's definition of 'Malayo-Polynesian' never achieved wide currency. In the mid-1970s Mills (1975:2:581) and Blust (1977a) independently proposed that the term 'Malayo-Polynesian' be used for all non-Formosan AN languages, and this usage has since been generally adopted by other scholars in the field.

Before leaving the subject of terminology one other matter should be mentioned. A terminology with misleading implications was used by the Swiss linguist Renward Brandstetter (1916) who, despite making important contributions to comparative AN linguistics, excluded the languages of the Pacific. Long after the relationship of Malay to the languages of Polynesia had been clearly established he was thus able to speak of 'Common Indonesian' and 'Original Indonesian' as though the term 'Indonesian' designates a language family, or even a linguistically justified subgroup. As a step in the reconstruction of Proto Austronesian phonology Dempwolff (1934-1938) posited a 'Proto Indonesian' (PIN) sound system, but then explicitly acknowledged that his PIN could account for all historical developments in the languages of Melanesia, Micronesia, and Polynesia, and so was equivalent to Proto Austronesian. Similarly, the English linguist Sidney H. Ray (1926) and his Australian protégé Arthur Capell (1943) avoided the term 'Austronesian' on the (generally unshared) assumption that the AN languages of Melanesia descend from a prehistoric pidgin spoken by trader-colonists from island Southeast Asia. Although both writers refer to the 'Indonesian' origin of widespread vocabulary in the languages of Melanesia, they are silent on the relationship of the languages of Polynesia and Micronesia to those of Indonesia.

Finally, Dutch writers after Kern have sometimes spoken of 'Indonesian' languages not out of explicit opposition to the arguments offered for an AN language family, but rather out of the use of an accident of colonial history (Dutch control of Indonesia) to define a field of scholarly endeavor. This point is worth emphasizing for two reasons. First, as will be seen, there is no linguistic basis for recognizing an 'Indonesian' branch of the AN language family, since the languages of western Indonesia appear to be more closely related to those of the Philippines, Malaysia, Madagascar and mainland Southeast Asia, than they are to the languages of eastern Indonesia. Second, the tendency among Dutch scholars to isolate the languages of Indonesia as a self-enclosed field of study has shown signs of increase during the second half of the twentieth century. Thus, although Adriani (1893) spoke of 'Malayo-Polynesian' languages, and Esser (1938) referred to groupings of 'Malayo-Polynesian' languages in Indonesia, more recent writers, as Gonda (1947), and Teeuw (1965) refer to 'Indonesian languages', or even to an 'Indonesian family of languages'. This isolating tendency was resisted by Anceaux (1965), and Uhlenbeck (1971:59), and younger Dutch scholars who have worked abroad have in general come to

view the AN languages of Indonesia as a politically-defined subset of the AN language family rather than a natural unit of comparison.

1.7 Prehistory

Even in the absence of other lines of evidence, the wide distribution of grain agriculture, the cultivation of tubers, animal domestication, pottery manufacture, loom weaving, house construction, the outrigger canoe complex, and the like strongly suggest that the common ancestor of the AN-speaking peoples already possessed a culture of 'Neolithic' type, an impression that is supported by both archaeological and lexical data.

Although human history in insular Southeast Asia can be traced back over one million years, only the last few millennia are relevant to the AN diaspora. Very ancient remains of human ancestors have been found in Java. These include the celebrated fragments of Java Man (*Homo erectus*), discovered by Eugene Dubois in the bed of the Trinil River in 1891 and 1892, and initially dated to the Middle Pleistocene between 130,000 and 700,000 years ago. With improved dating techniques the age of these and of similar remains found subsequently in comparable geological contexts has now been recalculated to at least 1.2 million years BP. An apparently more advanced *Homo erectus* population which may have practiced cannibalism some 100,000 years ago, is represented by the Ngandong remains found in deposits of the Solo River. Later human remains from Southeast Asia include Upper Pleistocene cranial fragments found by Dubois at Wadjak, central Java, in 1890 (*Homo wadjakensis*), and one of the earliest skulls yet recovered of modern humans (*Homo sapiens sapiens*), from Niah Cave, Sarawak, dated at roughly 40,000 BP.

It has been suggested that Australia was initially colonised by a segment of the *Homo wadjakensis* population which crossed the sea barrier from the southern end of the now submerged Sunda shelf. Unambiguous signs of human presence in northern Australia are now placed minimally at 50,000 years BP, with some proposals suggesting far earlier (but not yet universally accepted) dates. In the Pacific pre-Neolithic populations have been dated to at least 50,000 BP on the north coast of New Guinea, and to earlier than 30,000 BP in some of the islands of the Bismarck Archipelago. There is little doubt that these remains represent an ancestral Papuan population. For at least New Guinea this population would not have been physically separated from that of Australia until the end of the last glaciation, when the Torres strait which lies between the two landmasses was flooded by rising sea levels.

Astonishingly, in the Fall of 2003 archaeological excavations on the island of Flores in the Lesser Sunda chain uncovered evidence of an entirely new human species, christened *Homo floresiensis*. Fossil evidence suggests that this dwarfed cousin of modern humans survived until at least 13,000 years ago, and local traditions of little people have fueled speculation that it may have coexisted with AN-speaking peoples who reached the island within the past 4,000 years. However, given the wider context of 'little people' stories in the AN world the use of oral tradition as evidence for the recency of *Homo floresiensis* survival must be treated with caution.

Paleolithic remains with dates as early as 47,000 BP are also known from the Tabon caves of the central Philippines, Niah Cave in northern Sarawak, the Changpin caves on the east coast of Taiwan, and the Leang Burung rockshelter on the island of Sulawesi. Some of these are found in areas (Taiwan, Borneo) which form part of continental shelves that were exposed as dry land during glacial maxima, and these pre-Neolithic populations could very well have reached their attested locations on foot. As noted already, the living

descendants of these prehistoric hunter-gatherers in insular Southeast Asia almost certainly are the widely-scattered populations of Negrito foragers. Australia-New Guinea and probably Sulawesi, on the other hand, could only have been reached by the use of very early watercraft, perhaps bamboo sailing rafts. By the time AN-speakers began to arrive in island Southeast Asia the physical environment was very different. Following the glacial retreat some 10,000 years ago sea levels rose, flooding many low-lying areas on the continental shelves, and so leaving the more elevated regions as a new world of islands.

The earliest Neolithic culture identified to date in island Southeast Asia is a cord-marked pottery tradition called 'Tapenkeng' by its discoverer, K.C. Chang. Tapenkeng pottery in association with quadrangular stone adzes, polished slate points, and stone net sinkers is widespread on the western plain of Taiwan, and marks the initial settlement of the island by sedentary Neolithic populations (Chang 1969). Although originally dated as early as 6,300 BP, Chang's chronology is now questioned by many prehistorians, and a consensus is emerging that the earliest firmly dated Neolithic sites in Taiwan cluster around 5,500 BP (Tsang 2005). Direct physical evidence of grain crops in Taiwan cannot yet be dated to the earliest levels, but it is clear from the linguistic evidence that rice and millet were cultivated at the time the AN language family began to divide into primary dialect regions. In Chang's interpretation, by about 4,500 BP the Tapenkeng culture had produced two descendants, the Lungshanoid culture in western and southern Taiwan, and the Yüanshan culture in northern and eastern Taiwan. The former shows similarities with contemporaneous archaeological cultures on the Chinese mainland, and the latter with Neolithic cultures in the Philippines and Indonesia. More recent archaeological evidence has documented an AN settlement of the northern Philippines between 4,000 and 4,500 BP, with somewhat later dates from most parts of Indonesia.

As in Taiwan and the Philippines, the arrival of Neolithic cultures in the western Pacific appears to have been abrupt. Because of its durability and great potential for stylistic and material variation, pottery is a key cultural marker in most archaeological assemblages. By far the most noteworthy pottery type in the Pacific, or the AN world as a whole, is Lapita ware, named from a type site first excavated in New Caledonia in 1952 (Gifford and Shutler 1956). Lapita pottery is not a drab utilitarian product, but an elaborately decorated ware that probably had important functions as an article of trade. Pacific archaeologists have been so captivated by the appeal of this ceramic tradition that they sometimes speak of a 'Lapita culture', a 'Lapita homeland', or even the 'Lapita peoples' (Kirch 1997). Lapita sites are characterised by a preference for coastal settlement, or settlement on small islands lying offshore from often much larger landmasses. The economy was based on fishing and horticulture, and included such cultigens as the yam, several types of taro, sugarcane, banana, breadfruit, and coconut, but no grain crops.

The earliest Neolithic site associated with Lapita pottery is the remains of a pile village near the island of Mussau in the St. Matthias Archipelago, some 160 kilometres northwest of New Ireland, and dated to about 3,500 BP. Within a few centuries cultures with very similar pottery had appeared in Fiji and western Polynesia. The rapid spread of Lapita pottery through Island Melanesia and into western Polynesia indicates a highly mobile population capable of open sea navigation, that probably was engaged in long-distance trade of both manufactured and natural products. Among the latter, obsidian from either of two traceable sources, Lou Island in the Admiralty group, and the Talasea Peninsula of New Britain, has been found in archaeological sites as far east as the southeast Solomons, and as far west as Sabah in northern Borneo (Bellwood 1997:224).

It is now clear that Papuan speakers preceded AN speakers in New Guinea and Island Melanesia by tens of millennia. Radiocarbon dates from Matenkupkum in New Ireland, and Kilu on the island of Buka in the western Solomons, show that stone age peoples managed to reach these islands with some type of watercraft more than 30,000 years ago. In addition, the cuscus was introduced to these islands from mainland New Guinea by human intervention around 9,000-10,000 BP, and the wallaby by about 7,000 BP, showing that there was continuing contact between New Guinea and the Bismarcks by means of some type of watercraft (Spriggs 1993). A similar settlement history almost certainly applies to islands in the western Solomons, which during the Pleistocene were part of the single united landmass of 'Greater Bougainville'.

Pawley and Green (1973) proposed the term 'Near Oceania' for the Pacific Islands from New Guinea through the Solomons, and 'Remote Oceania' for those that are further removed from insular Southeast Asia. To a large extent this distinction correlates with that part of the Pacific in which sailing involves intervisible islands as opposed to that part in which sailing requires at least an overnight voyage, and hence a more critical dependence on a navigational knowledge of the stars, winds, and tides. The Solomons chain thus appears to mark a critical boundary in the settlement of the Pacific. Although it was long thought that two Papuan languages reached the remote Santa Cruz Islands some 350 kilometres southeast of the Solomons, Ross and Næss (2007) have argued convincingly that these are highly aberrant AN languages that may form a primary branch of the Oceanic group. No Papuan languages are found further south or east, although some of the languages of southern Vanuatu, New Caledonia, and especially the Loyalty Islands are phonologically and lexically very divergent. Moreover, despite the absence of Papuan languages in southern Melanesia or of archaeological evidence of a pre-Lapita population in this region, the physical anthropology, distinctive cultural traits, and such linguistic features as the repeated innovation of non-decimal numeral systems and extensive use of serial verb constructions, are widespread in Vanuatu, New Caledonia and the Loyalty Islands, strongly suggesting a history of contact with Papuan speakers, although the details of how and where this contact occurred are yet to be reconciled with other types of evidence (Blust 2005a, 2008b, Pawley 2006).

The prehistory of New Caledonia may still hold some major surprises. The population is of a general Melanesian physical type, but some individuals -- particularly in the north -- show a striking phenotypic resemblance to aboriginal Australians. On the other hand, unlike most parts of Melanesia, in which a 'big man' system of acquired rank is prevalent, hereditary rank is important in many of the native cultures of New Caledonia and the Loyalties. Extensive prehistoric stoneworks on the Island of Maré in the Loyalties indicate that a centralised chiefly authority capable of summoning corvée labor for public works has existed in this area for some centuries.

Lapita pottery is found in the earliest levels in Tongan sites at about 3,000 BP, but it shows a gradual simplification in decorative motifs, and reduction in types of vessel forms, before disappearing entirely around 2,000 BP (Kirch 1997:68, 159ff). At a much later date pottery was reacquired from neighboring Fiji, where a ceramic tradition was maintained, although decorative styles understandably underwent many changes. Polynesian cultures might be characterised in archaeological terms as 'post-Lapita' traditions, since they derive from a culture that made this distinctive pottery, yet by historical times had evolved into descendants that were completely aceramic.

The archaeology of Micronesia lags behind Fiji and Polynesia, although much progress has been made in recent years. So far there are few radiocarbon dates of over 2,000 years,

despite a surprising cluster of questionable dates from around 3,500 BP in the Marshall Islands. Given the widespread subsidence of coral atolls it is possible that some of the earliest archaeological sites in Micronesia are now below water. As will be seen, Palauan and Chamorro have very different histories from most languages of Micronesia. The archaeology of Palau is still relatively undeveloped, but it is already clear that Marianas prehistory differs radically from that of other Pacific areas dominated by the Lapita pottery tradition. A large suite of radiocarbon dates have shown that the Marianas were settled by the ancestral Chamorros by at least 3,500 BP, an achievement which required an open sea voyage of about 2,200 kilometres—by far the longest successful open-sea voyage attested from this early period. Guam and some of the other Mariana Islands are notable for the large dolmen-like stone formations, called *latte* in Chamorro, which were erected in many places, perhaps as supports for community buildings or temples. In addition, rice was traditionally cultivated by the Chamorros, making the Marianas the only part of the Pacific in which grain crops formed a dietary staple.

Table 1.1 presents a range of radiocarbon dates associated with Neolithic sites in insular Southeast Asia and the Pacific (Pacific dates from Kirch 2000:89, 94-95). These are chosen to highlight the earliest dated assemblages in each area, so as to clarify the relative chronology of the AN expansion out of Southeast Asia into the Pacific. It should be noted that some of these dates have been recalibrated since 2000, and there is now general agreement that secure dates for the appearance of Neolithic cultures in the Philippines cluster around 4,000 BP or slightly earlier. However, the overall pattern of a west-to-east cline of decreasing time-depths in the radiocarbon record remains unchanged.

Table 1.1 Dating of Neolithic cultures in insular Southeast Asia and the Pacific

Area	Location	Site	Date (BP)
Taiwan	Tainan	Industrial Park	5500
Philippines	northern Luzon	Rabel, Laurente	4800
Indonesia	Sangir Islands	Leang Tuwo Mane'e	4000
Indonesia	south Sulawesi	Ulu Leang 1	4000
Indonesia	Timor	several caves	4000
Melanesia	Mussau	Talepakemalai	3550-2700
Melanesia	Mussau	Etakosarai	3500-3300
Melanesia	Santa Cruz	Nanggu	3200-3100
Melanesia	Vanuatu	Malo Island	3100-3000
Melanesia	New Caledonia	Vatcha	2800
Central Pacific	Fiji	Natunuku	3200-3100
Polynesia	Samoa	Mulifanua	3000
Polynesia	Tonga	Moala's Mound	3000
Polynesia	Hawai'i	Halawa (Moloka'i)	1400

Although this section describes the prehistory of areas where AN languages are currently spoken, or were historically spoken, it would be incomplete if it omitted areas

where AN languages may have once been spoken, but no longer are. Throughout their reconstructable history AN-speaking peoples have been a territorially expanding population; the settlement of Triangle Polynesia within the past three millennia is only the most recent expression of a much longer history of movement out of Asia. And just as Australoid or Negrito populations probably were widespread in insular Southeast Asia prior to the arrival of the Austronesians, so AN-speaking peoples probably were once found in areas that today are dominated by other groups.

The Pescadores, or Penghu (P'eng-hu) Islands are located in the Taiwan strait some 50 kilometres west of south-central Taiwan, and 150 kilometres from the coast of Fujian province in southern China. Chinese immigration to these islands began during the Sung dynasty (960-1279 AD), perhaps as early as the late eleventh century. Chinese records mention no earlier inhabitants of the Pescadores, but Tsang (1992) has shown that the material culture of these islands from about 4600 BP exhibits striking similarities to the contemporaneous cultures of southwestern Taiwan. These similarities include not only manufactured products such as pottery and artifacts of stone, bone, and shell, but also inferable cultural practices such as ritual tooth evulsion (common within the ethnographic present among many Formosan aboriginal groups).

Given their position between mainland China and Taiwan it is natural to ask whether the Pescadores might have been settled by Neolithic farmers as part of a series of population movements out of coastal southern China. Chang (1986) has argued that Dapenkeng (Ta-p'en-k'eng) is a regional variant of an archaeological culture that was widely distributed on the adjacent coast of southeast China as early as seven millennia ago. If the Pescadores once had an AN-speaking population that has disappeared without a linguistic or cultural trace, the same could be true for southern China.

Bellwood (1997:208-213) has suggested that the founding Neolithic culture of Taiwan can most plausibly be derived from the rice-growing archaeological cultures of the lower Yangzi River, which are well-attested prior to 7,000 BP. At the site of Hemudu on the south shore of Hangzhou bay, waterlogging created an anaerobic environment in which normally perishable materials were remarkably well preserved. The basal levels, radiocarbon dated to between 7,200 and 6,900 BP, contain evidence of pile dwellings with sophisticated mortise and tenon joints, boatbuilding, matting, loom weaving, abundant stores of rice, and domesticated animals including the dog, pig, chicken and carabao. One excavated pile building was seven meters in width and 23 meters in length, suggesting either a communal residential structure or a public building of some type. There are thus clear indications that the lower Yangzi River in the late sixth millennium BC was an area of abundant food resources which could have supported a substantial and probably continuously expanding population.

Much later, during the Han dynasty (206 BC to 220 AD) Chinese expansion out of the Yellow River basin initiated the lengthy historical process of the sinicisation of southern China. A few non-Chinese groups, as the Hmong-Mien (formerly: Miao-Yao) peoples of the Guizhou plateau and adjacent areas, and some Tai-speaking peoples, as the Zhuang of Guangdong, have survived among the engulfing majority, but there can be no doubt that many other non-Chinese minorities were culturally and linguistically absorbed during the centuries of Chinese expansion southward from the Yellow River valley. In addition to historical references in Chinese sources to the 'thousand Yueh', a term for the numerous non-Chinese minorities that once occupied China south of the Yangzi, recent genetic studies have suggested that 'Chinese' is a cover term for two genetically distinct populations, one which groups more closely with the non-Chinese peoples of the northern

steppelands, and another which groups more closely with Southeast Asians (Cavalli-Sforza, Menozzi and Piazza 1994).

These remarks take us outside the historically-defined AN world, but they are important as an indication of how much the distribution of human populations may have changed during the past several millennia. As recently as two thousand years ago a large part of Polynesia, including Hawai'i, Easter Island, New Zealand, and many other islands east of Samoa, still lay beyond the expanding eastern boundaries of the AN world. And, just as certainly, the Pescadores Islands and probably coastal portions of southern China, lay within the contracting western boundaries.