

Roscoe, Paul, 2011, The Abelam 'Invasion' and the Rise of Ilahita Revisited. In: Echoes of the Tambaran: Masculinity, History and the Subject in the Work of Donald F. Tuzin. David Lipset and Paul Roscoe, eds. Pp.25-43. Canberra: ANU e-Press.

1. The Abelam 'Invasion' and the Rise of Ilahita Revisited¹

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Introduction

With a 1959 population of not quite 1300, the Arapesh-speaking village of Ilahita in the East Sepik Province was by no means the largest of New Guinea's villages. This honour belonged instead to several coastal fisher-forager groups. The Kawenak Asmat village of Ayam was found to have 1409 inhabitants in its first reliable census, in 1960; in 1930, 1702 inhabitants were counted in the census in the Waropen village of Nubuai; and the two village complexes that made up the Koriki 'tribe' in the early 1920s had 3960 inhabitants between them (Roscoe 2006:40). Even in the Sepik, Ilahita was only marginally larger than the fisher-forager, Kambot-speaking village of Kambaramba, which had a mid-1950s population of about 1100 people (Roscoe 2006).

What set Ilahita apart from its rivals, however, was its subsistence base: it was by far the largest village of any cultivating society in New Guinea. By Tuzin's own account, it was Ilahita's size that induced him to make it his field destination and the analytical focus of his first major book, *The Ilahita Arapesh: Dimensions of Unity* (1976).² *The Ilahita Arapesh* was a remarkable work, not least because, to explain Ilahita's rise and continued functioning, it adumbrated practice theory several years before practice theory became current in English-speaking social science. Tuzin himself claimed to have adopted methodological individualism as his approach, but close readers of his text noticed that he was at pains to emphasise what methodological individualism (and its anthropological counterparts, action theory and interactionism) commonly took for granted or, worse, cast as nothing but patterns emergent from the actions of individuals (see Evens 1977): the social and cultural context that constituted the grounds of an agent's action. Tuzin perceived that a focus on the individual as a motivated and strategising agent had to be tempered with attention to the cultural context in which that agent is enculturated and must operate and which he or she

1 For comments on previous versions of this chapter, I am extremely grateful to Terence Hays and two anonymous reviewers.

2 Subsequently summarised and integrated with the findings of his second volume, *The Voice of the Tambaran* (1980), as *Social Complexity in the Making* (2001).

reproduces or transforms—the recursive linkages that became the heart of practice theory (Bourdieu 1977; Giddens 1984; Ortner 1984; Sahlins 1981; see also Gardner, this volume).

The main purpose of *The Ilahita Arapesh*, however, was to deploy this framework to account for the rise of an extraordinarily large village of cultivators and to investigate the strategies that its members had developed to cope with the resulting problems of scale. In this chapter, I want to critique the former explanation in order to bolster the importance of the latter. Drawing on an argument that still holds force in Sepik anthropology, Tuzin attributed the rise of Ilahita to the northwards migration from the Sepik River of dense populations of Abelam-speaking people—a demographic momentum that provoked intensified fighting to Ilahita's south, a flight of refugees northwards to Ilahita, and the consequent explosive rise in Ilahita's size. This proposition is untenable, however; given the facts that Tuzin reported, immigration from the south is an implausible explanation for Ilahita's growth; as I shall try to show, the Abelam 'invasion' never occurred, at least as it is commonly represented; and the dense Abelam populations to the south of Ilahita were the product instead of unusually favourable local ecological conditions. Why then was Ilahita so large? Far from a historical accident, I shall argue, the village simply represented an unusually large exemplar of standard village formation processes in the area. The consequence of these conclusions is that the second, major aspect of Tuzin's argument—his investigation of the strategies that enabled Ilahita to function—should be taken not as a sociology of a unique village but as a generalisable theory of how villages in the Ilahita/Abelam region adapted to the demands of large-scale social organisation.

The Abelam Invasion and the Rise of Ilahita

The hypothesis that the Abelam represented a southern group intrusive on Torricelli-speaking peoples to their north derives from two sources. The first was Donald Laycock's (1965) pioneering linguistic work on the Ndu language family, of which the Abelam are members. From his survey of languages in the region, their lexicostatistical relations and the manner in which they were distributed across the landscape, Laycock had deduced that speakers of the Ndu language family must have migrated northwards from the Sepik River region many centuries before contact, eventually intruding on the Torricelli peoples of the Prince Alexander and Torricelli mountains and their foothills. At contact, the Abelam had reached no further than these foothills (Figure 1.1), but to their east, Laycock's linguistic data indicated, the Ndu-speaking Boiken had managed to push their way even further northwards, across the foothills and mountains to the coast of the Bismarck Sea. Laycock also drew attention to another feature

of the linguistic distributions in this area, what we might call the Maprik 'bulge'—the aneurism-like protuberance of Abelam speakers around Maprik Government Station into Arapesh-speaking, Torricelli lands (partly visible, top right of Figure 1.1), which suggested that migrational pressure exerted from the south by Abelam people had created a localised 'blow-out' into Arapesh territory.

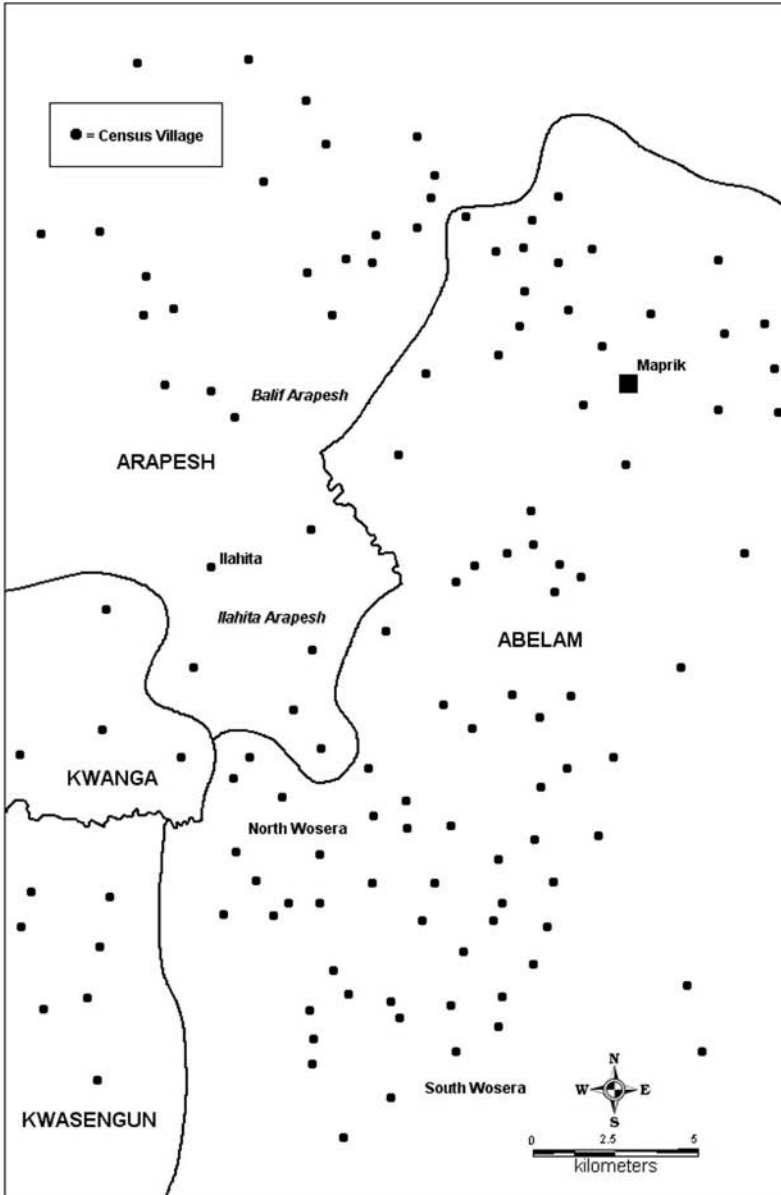


Figure 1.1 Ilahita village and the Abelam–Arapesh region

The second body of evidence used to advance the notion of an Abelam ‘invasion’ was the region’s ecology—specifically, the juxtaposition of the rolling grasslands of the Sepik Plains, which stretch from the Sepik River to the foothills of the coastal mountain chain, and the forested foothills themselves. Whereas the grass plains are thinly populated by the Ndu-speaking Sawos languages, the foothills are thickly populated with Ndu-speaking Abelam and Boiken populations. To explain this unusual situation, Haantjens et al. (1965) proposed that the grasslands had once been forested but had then been over-cultivated, leaving an exhausted, terminal-succession grassland. Anthony Forge, Tuzin’s doctoral advisor, voiced the logical conclusion that tied the two bodies of evidence—linguistic and ecological—together (Forge 1965). Dense populations of Ndu speakers had moved northwards from the Sepik River, propelled forward by their over-cultivation of the land, leaving the grasslands in their wake. As far as the Abelam were concerned, Forge (1965:24) suggested there had been a

jostling together of large, fairly densely packed Abelam villages, fighting each other and gradually moving as a whole in a northerly and later westerly direction...[U]p till the imposition of government control this process was still going on, especially in the west of the Abelam area, where the Abelam of the Wosera were pushing back the [Ilahita] Arapesh to the north and the Gawanga [that is, Kwanga] to the west [Figure 1.1].

It was to this scenario that Tuzin contributed a chronology of the Abelam ‘invasion’ of the North Wosera–Arapesh region and a hypothesis concerning its social consequences for Ilahita. In Tuzin’s telling, the *ur*-Torricelli-speaking inhabitants of the Wosera–Arapesh area had started out as small-scale communities similar to those that Margaret Mead had described in the 1930s among the Mountain Arapesh to the east.

There seems little doubt that these people were once distributed sparsely across the face of the Torricelli and Prince Alexander foothills. They lived in movable communities of not more than 100 to 200 persons, subsisting on sago and the products of hunting and gathering. What horticulture they may have practiced would have been rudimentary and marginally productive by today’s standards. In fact, groups of precisely this description still inhabit large areas of the Torricelli Mountains and also the hills south of the Sepik River in its upper reaches. (Tuzin 1976:82–3)

In the Ilahita region, according to Tuzin, this situation prevailed until about 1880, when the impact of the Abelam incursions into the North Wosera began to make itself felt. Pressing northwards against the Torricelli speakers, the wave of Abelam newcomers began to intensify competition and warfare over

land in the North Wosera. The Abelam held the advantage in this fighting. As a predatory, *village*-based people, supported by intensive yam cultivation, they easily prevailed over the small, mobile, hamlet-based communities of the Arapesh. Those of the latter who were not exterminated in these confrontations had little alternative but to flee north to areas of lower population pressure and less intense fighting.

In these hapless refugees, Tuzin detected the grounds of Ilahita's extraordinary size and the transformation of social organisation in the region. Ilahita's size stemmed from the military interest that speakers of the Ilahita dialect of Arapesh had in the refugees fleeing from the fighting in the North Wosera: by incorporating them into their villages, they could add to their military ability to resist the encroaching Abelam threat to their south. As a result, population densities and group sizes among the Ilahita Arapesh increased rapidly. Ilahita village was especially favoured by these migrations and incorporations, however, because it had an abundance of land in its gift. As Arapesh villages to the south of Ilahita grew larger, they reached a point at which they were unable to accept more immigrants and were obliged to pass them on northwards to Ilahita. With resources to spare, Ilahita could afford to wax ever larger to their rear until, about 60 years after the onset of the Abelam encroachment, it had reached some 1200 in size.

To contain and control these increases of scale, Ilahita dialect speakers were obliged to transform their social organisation. They did so by consolidating their hamlet-based society into the village-based organisation of their Abelam enemies and adopting Abelam cultural devices for integration such as the *Tambaran* cult. The ironic result was an eventual stalemate: the Abelam intrusion into the North Wosera was eventually brought to a standstill by communities of a scale and organisation that 'were indirectly the creation of the Abelam themselves' (Tuzin 1976:74). No group was forced to transform itself more extensively than the Ilahita giant, however, and after 'pacification' had frozen the system in place, these social and cultural innovations were to become the other focus of Tuzin's inquiries.

The Rise of Ilahita

Perhaps the most pressing difficulty with Tuzin's scenario for the rise of Ilahita is the extreme brevity of its chronology. By absorbing successive refugees, according to Tuzin, Ilahita had gone from a population of 'not more than 100 to 200' (Tuzin 1976:82) people to a population of 1200 or more in the space of just 60 years (1880–1940). In support of this conjecture, his inquiries in Ilahita identified a significant immigrant population. Three clans (of a total of 39) and

two wards (of a total of six) identified themselves as immigrants (Tuzin 1976:72, 92, 162), indicating that some 41 per cent (7.7 per cent plus 33.3 per cent) of Ilahita's population were immigrants or descended from immigrants. To be generous, let us say that half of Ilahita's population in 1940 were immigrants from fighting further south—yielding a ratio of one 'immigrant' for every one 'indigenous' resident.

A moment's reflection will reveal how low a ratio this is to explain such a large population expansion in so short a time if it was indeed driven by immigration. If immigration was the principal cause of Ilahita's unusual size then we should expect a ratio more in the neighbourhood of 1:5 or 1:11 (depending on whether Ilahita's original population was 100 or 200).³ What the actual ratio of 1:1 tells us is that about 50 per cent of Ilahita's growth must have come from natural increase, not immigration. To complicate things further, one of the two wards that Tuzin listed as immigrants, Ilifalemb, was descended from refugees from fighting not in the North Wosera to the south but among the Bumbita Arapesh to the *north-west* of Ilahita (Tuzin 1976:72, Table 3, 77, fn. 2). Accordingly, if we remove Ilifalemb—about 17 per cent of Ilahita's population and about 40 per cent of its immigrant population—from the calculation, the ratio of immigrants to aboriginal Ilahita population falls to about one in three. In this scenario, about two-thirds of Ilahita's expansion has to be attributed to natural growth rather than immigration.

What makes these calculations so problematic for Tuzin's argument is the conclusion to which they lead: whether we remove the Ilifalemb immigrants from the calculation or retain them, natural growth over the period 1880–1940 must in itself have contributed markedly to Ilahita's size. Indeed, to take the analysis one step further, we need hardly invoke immigration at all to explain Ilahita's size! Under Tuzin's scenario, to achieve a ratio of 1:1 for the immigrant and autochthonous inhabitants of Ilahita, natural growth rates would need to lie between 2 per cent and 3 per cent, depending on whether the 1880 population was 100 or 200.⁴ And here is the problem: at these rates, an aboriginal population of 100–200 would reach 1200 within just 80–90 years. (If we remove Ilifalemb from the calculations then the ratio of immigrants to indigenes falls to 1:3. To achieve this ratio, natural growth would need to be 2.5–3.75 per cent—rates that by themselves could achieve an end population of 1200 in just 65–70 years.) Given Tuzin's description of the immigrant/autochthonous composition of Ilahita in 1940, in other words, it would take an original population of 100–

3 If the original population was 200, then roughly 1000 members of the end population—that is, one in five—would have to originate from immigrants. If the starting population was 100 then roughly 1100 members of the end population—one in 11—would have to be descended from immigrants.

4 The relevant equation for the precise ratio, R , by which immigrants should outnumber Ilahitans is given by: $R = (1200 - P_0 \times e^{60r}) / (P_0 \times e^{60r})$, in which P_0 is the population of Ilahita in 1880 ('no more than 100 to 200') and r is the natural rate at which this population grew in the 60 years from 1880 to 1940.

200 people between just five years longer and no more than 30 years longer to reach 1200 *through reproduction alone* than if its growth also incorporated the proportion of immigrants that Tuzin documented in Ilahita.

If Tuzin's figures for the composition of Ilahita village in 1940 are correct, in sum, his explanation and chronology for the rise of the village are trapped in a vicious circle. There is no way to attribute Ilahita's rapid growth to immigrants fleeing fighting induced by an Abelam intrusion without also requiring that Ilahita's natural growth rate be so high as to make immigration almost irrelevant as an explanation for Ilahita's growth!

Perhaps, then, the chronology is wrong? It might be significant that Tuzin deduced from his informants that Ilahita's growth began in 1880. In the late 1960s, when he conducted the fieldwork for *The Ilahita Arapesh*, this would have been the generational period just beyond the memory of the oldest of Ilahita's living denizens—a potential fracture line that facilitates 'telescoping' in orally transmitted chronologies. Among the Yangoru Boiken, 45 km to the east, I found this same period—between the penultimate (*woranga*) and ultimate (*andeka*) generations of the kinship terminology—to be a temporal dumping ground for all sorts of legendary events, some of which, on historical evidence, could have occurred only scores if not hundreds of years earlier. Perhaps, then, the Abelam invasion, the fighting in and flights from the Wosera, and the growth of Ilahita all occurred as Tuzin claimed, but instead of beginning about 1880 they were in train an unknown number of generations earlier?

On current evidence, there is nothing to gainsay this scenario. The problem is that the more we push the beginnings of Ilahita's growth back into prehistory, the more plausible it becomes to attribute that growth to reproduction alone rather than immigration. If we suppose that the process started in 1800 instead of 1880, for example, Ilahita could have grown from 100–200 to 1200 people under natural growth rates of between 1.2 per cent and 1.7 per cent. If we suppose the process started 200 years before it terminated then natural growth rates of just 0.9–1.2 per cent would have been sufficient. Growth rates such as these, though, are so typical of 'tribal' societies that we should then be surprised if Ilahita's emergence were *not* the result of natural growth. So perhaps there is no reason to invoke an Abelam 'invasion' to explain Ilahita's size? Perhaps there was no dense jostling of Abelam villages fighting their way northwards? But how then are we to explain the distributions of languages and the variation in population density in the region that suggest otherwise? It is to this issue that I now turn.

Rethinking the Abelam 'Invasion'

There is considerable evidence that a population speaking one or more proto-Ndu languages once lived in the region of the Middle Sepik River and, at some point in the past, spun off migrants who did indeed begin to move northwards, eventually intruding into territory controlled by speakers of Torricelli-phylum languages. In addition to Laycock's lexicostatistical evidence (cited above), settlement histories from villages throughout Abelam, Boiken and Sawos-speaking territories relate movements from the southern parts of the Sepik Plains northwards into the Torricelli and Prince Alexander foothills (Roscoe 1994:56–61). Subsequent to the publication of *The Ilahita Arapesh*, in fact, geo-archaeological evidence suggested a possible explanation for these migrations. Some 6000 years ago, the Middle Sepik and the swamplands to its south were covered by a large inland sea that extended at least as far west as the Chambri region, due south of Maprik. Subsequently, this shoreline began to progress eastwards due to sediment infilling from the Sepik River, eventually reaching its modern position some 1000 years ago (Swadling 1997; Swadling et al. 1989).

If modern environments and social systems are any guide, many of the populations living along the shores of this ocean embayment would have been fisher-foragers with densities in the region of 3–7 people/sq km and settlement sizes in the hundreds (Roscoe 2005). As the shoreline retreated to the east, however, these populations would have experienced significant transformations in their ecological relationships as open ocean became lakes, then marshlands, and finally dryland. In the initial phases of this transformation, the environment might have become temporarily more productive rather than less, since tidal lakes and marshes are commonly more food rich than salt or freshwater alone (Roscoe 2006). As these changes progressed, however, and the land began to dry out even more, subsistence likely became more difficult, and it is not difficult to imagine migrants occasionally spinning off in search of better fortune elsewhere (Roscoe 1989).

All of this accords with Forge's and Tuzin's hypotheses of an Abelam intrusion into the Torricelli populations north of the Sepik Plains. What we should doubt, however, is that the refugees spun off by the environmental transformation of the Middle Sepik advanced northwards at anything like the densities that Tuzin and Forge envisaged. The idea that the Abelam advance involved a dense population seems to have originated, at least in part, from a desire to explain the extraordinary densities of Abelam populations in the Maprik and Wosera areas. From at least the 1960s, commentators have designated these densities as the highest in New Guinea outside the Highlands. If my calculations from census registers are any guide, in fact, the densities of some Abelam communities might have been the highest *anywhere* in New Guinea, reaching well more than

200 people/sq km (Figure 1.2). Be that as it may, a mass intrusion of migrant populations from the south was one way of accounting for the region's unusual demography. It is not, however, the only way to account for the situation, nor is it without its problems.

To begin with there is the ecology of the Sepik Plains themselves. These days, the plains are covered with little but *kunai* sword grass—a vegetational cover that Haantjens, Forge, Tuzin and others have taken as evidence that the plains were once home to populations so dense as to exhaust their soils (see above). What this overlooks, however, is evidence that the plains were *always* relatively infertile. To begin with, they are sparsely watered. On the standard topographic map, watercourses are absent from scores of their square kilometres. This compares with the heavily populated foothills to the north, where barely a square kilometre of mapped land is not transected by a stream or river. Compared with the foothills, in other words, populations, crops and vegetation on the plains would have encountered significantly greater difficulty procuring water. Tellingly, perhaps, the few contemporary settlements that exist in the plains are all to be found in narrow bands of gallery forest along the rivers that bisect the plains. Nor is it clear that the soils of the plains could ever have supported intensive cultivation. Today, they constitute clay soils, and there is no reason to believe they were ever otherwise. Rather than having been farmed to exhaustion, in sum, the plains to the north of the Middle Sepik might have been no different from those of the Sandaun Province to the west. To the best of our knowledge, the Sandaun Plains have never had to support dense farming populations, yet their grassland and gallery forest ecology is remarkably similar to that of today's Middle Sepik Plains.

As for the distribution of languages in the Abelam–Arapesh region, this is certainly congruent with a hypothesis that Abelam is intrusive on the Torricelli languages, but it provides no reason to suppose any large-scale 'invasion'. For one thing, it is unsafe to interpret the Maprik 'bulge' as some kind of linguistic aneurism caused by the pressure of Abelam migrants bursting through into Arapesh populations (cf. Laycock, see earlier). Rather, it appears to be an artefact of topography: the foothills of the Torricelli Mountains, which generally lie on an east–west axis, swing sharply to the north-west in this particular region. What appears to be a bulge on the linguistic map is simply a band of Abelam settlement following the curve of the foothills until it meets southern Arapesh territory.

Migration, moreover, is not the only—nor even, perhaps, the prime mechanism—that determines the distribution and spread of language boundaries. People can maintain their residences and yet import speech forms from their neighbours through relationships of exchange, trade, religious movements, and so on. People can also move and yet leave their speech forms behind; in the small-

scale, patri-local communities that characterise much of New Guinea, wives are the classic example—moving to the settlements of their husbands and, if their husbands speak a different language, assimilating it. Wives who are linguistic immigrants can also serve as potent vectors of linguistic change because, as the primary enculturators of their children, they might mix their natal language with that of their husbands', thereby transforming it. Thus, as I have argued elsewhere, differences in marriage rules might be as important as migration in explaining the distribution of the Ndu languages (Roscoe 1994).

In sum, the Abelam might have intruded on the Torricelli languages of the southern foothills, but there is nothing in the available evidence to compel a conclusion that they did so *en masse*, as a 'migration'. What proponents of an Abelam intrusion seem to have overlooked, in fact, is that, under favourable ecological conditions, humans can achieve high population densities in a surprisingly short time purely through *natural* population increase. The important question, then, is this: were conditions in the Abelam–Arapesh region sufficiently favourable to natural population growth to account for their high densities? A comprehensive response to this question is difficult given the limited ecological data currently available, but there is good reason to believe they were.

The general distribution of population in the hinterlands of the Sepik coast is one of moderate densities along the coast, low densities in the peaklands of the coastal ranges, and comparatively high densities along the southern foothills of the chain. This population distribution is quite consistent, in fact, with how we would expect the density of cultivating peoples on this kind of gross geomorphology to vary. To consider the peaklands first, there are two reasons their slopes are less fertile—and hence less densely populated—than those at their base. First, they are steeper; second, rainfall erosion continually carries soils from higher elevations to lower altitudes. Thus, along the Prince Alexander–Torricelli mountain chains, the soils of the peaklands are thin and difficult to farm, subject to rapid erosion, and largely unreplenished with sediment from elsewhere. As a result, population densities in the mountains themselves are low; indeed, several extensive sections are effectively unpopulated.

In contrast with peaklands, the lower flanks of mountain chains are more favourably positioned to support population: their slopes are more moderate, and they are dissected by multiple waterways carrying eroded sediments out of the mountains. The most favourable environments of all, in fact, are those at the immediate base of the ranges. Here, as the steep slopes of the mountains transition to flatter lands, the sudden change in the angle of outflow causes waterways from the mountains to deposit especially heavy loads of their suspended sediments, creating a band of exceptionally rich, shallow-sloping alluvial soils. On the ocean side of the Sepik's coastal range, this transition is

very abrupt and the band of rich soil is comparatively narrow; on the southern flanks, however, the transition extends over several kilometres and the band of rich soils is considerably broader.

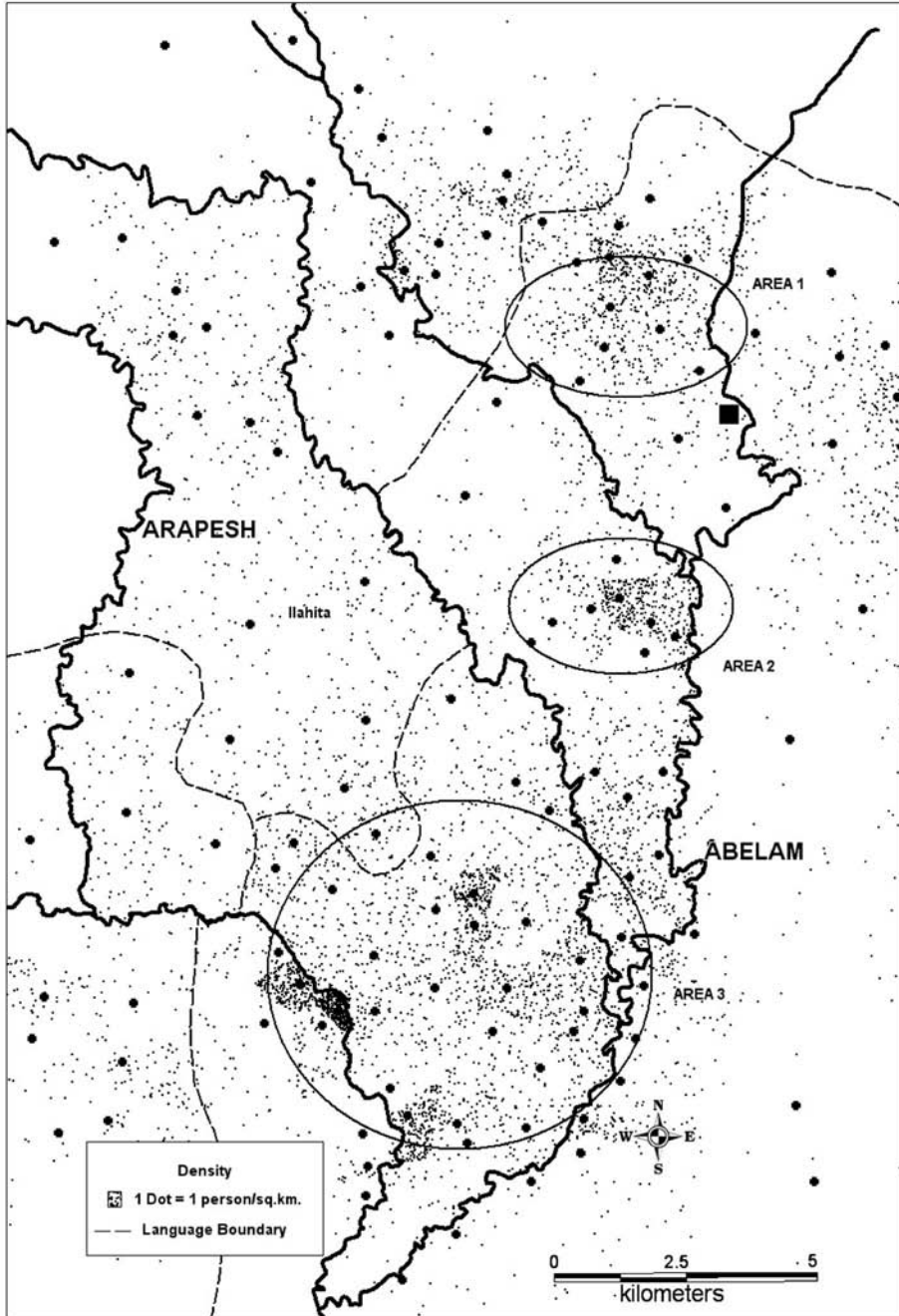


Figure 1.2 Population densities in the Arapesh-Abelam region

The consequence of this geomorphology can be seen in the top right-hand quadrant of Figure 1.2, which plots the distribution of population in the Arapesh–Abelam region shown in Figure 1.1. The band of higher population running diagonally across this quadrant from upper left to lower right marks the region where the mountains to the north flatten out towards the lower foothills and plains to the south. Within this band, the area of especially high population density marked as Area 1 nicely illustrates the link between geomorphology and density (Figure 1.3). Villages in the high foothills and mountains (for example, Nungalimb, Maputma, Sahali), where slopes are steep, support comparatively low population densities (9–39 people/sq km). Villages in the low foothills removed from the mountains (for example, Apangai, Bongiora, Yamelikum, Neligum and Cheragum) have similar to somewhat higher densities (10–60 people/sq km). The highest densities, however—between 87 and 124 people/sq km—are found in several of the villages located right at the immediate base of the mountains (for example, Kuminibus, Kukwal, Gwoingwoin and Wamsak), where the mountain slopes break sharply into the lower foothills depositing rich loads of sediment.

What this suggests is that Abelam populations in the southern foothills of the coastal mountains are dense, first and foremost, because they happen to inhabit a band of rich environmental resources. There is no reason, in other words, to evoke some massed immigration in the past to account for their density; they would be just as high if a sparse aboriginal population had a couple of centuries or so to increase through natural growth alone.

The same line of argument can be applied to the high densities of the Wosera region, which Tuzin saw as critical to explaining Ilahita's size. Here, though, the ecological advantage derived from the three major rivers: the Amuk, Screw and Nanu, the largest in the entire region between Yangoru and Dreikikir. The lower quadrants of Figure 1.2 show the distribution of population density in relation to the Abelam–Arapesh border (dotted lines; cf. Figure 1.1). The first thing to note from Figure 1.2 is that the distribution of population does not fit well with a hypothesis that the Abelam were 'bulldozing' Torricelli speakers northwards. If this were the case, we should expect the highest densities to lie along the Abelam–Arapesh border, where the 'bulldozing' was actually taking place. In fact, they lie from 2 to 7 km south of it. What Figure 1.2 suggests instead is that the high densities in the Wosera are related to its ecology. As can be seen, the core of the Wosera—demarcated in Figure 1.2 as Area 3—lies where the Amuk, Nanuk and Screw rivers converge. Tumbling from their headwaters in the Torricelli Mountains, these waterways course through the foothills along incised channels, and then debouch into the Wosera core. At this point, their gradients become shallower and their banks lower, allowing large sediment loads to be deposited over substantial areas, especially during wet-season flooding, to produce rich alluvial soils and significant stretches of productive wetland. Not surprisingly, the Maprik Agricultural Surveys of the 1960s found these to be the most agriculturally productive soils in the entire survey area (TPNG 1965).

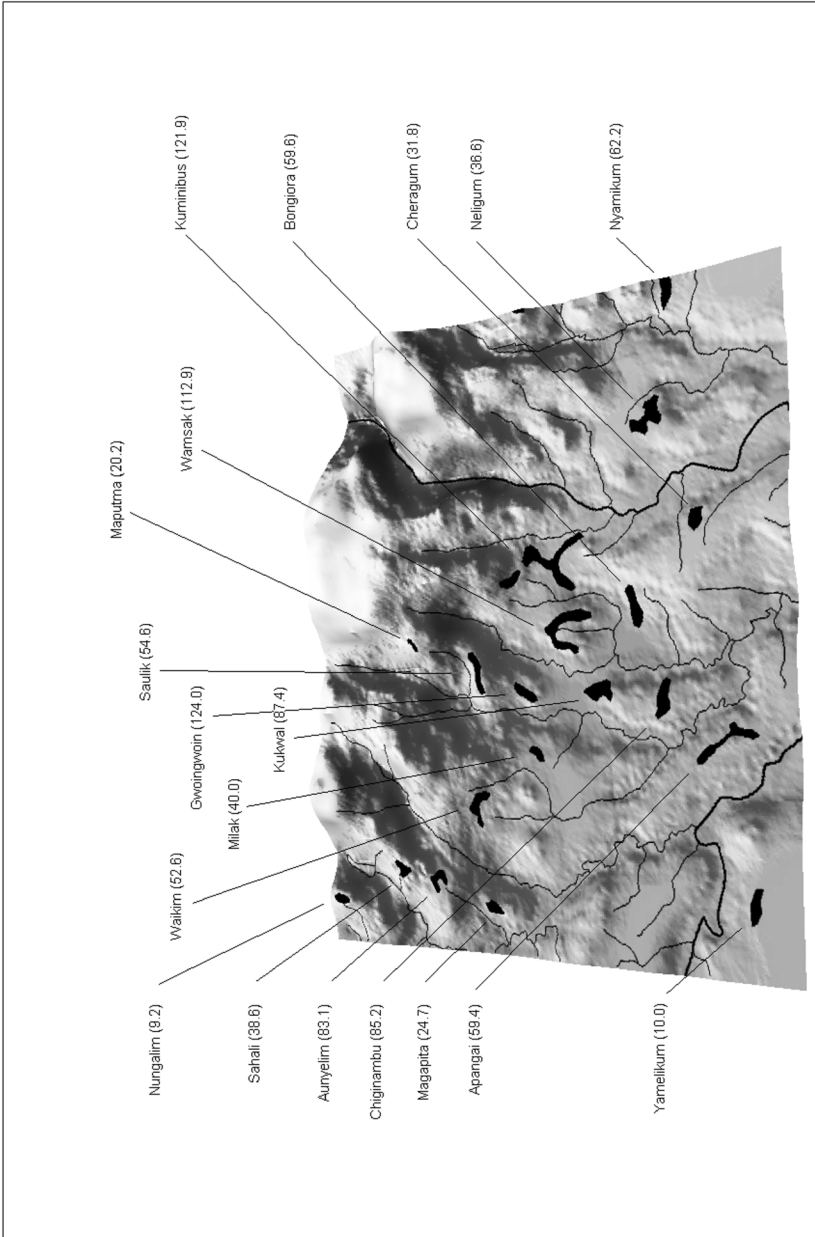


Figure 1.3 Foothill contours in Area 1

Note: Figures in parentheses are village densities as people/sq km.

Areas of exceptionally high density on Figure 1.2 are possibly artefactual, but they occur where local ecological peculiarities would lead us to expect them: where river gradients change suddenly or where wetlands occur that can be exploited with high-yield yam varieties. Area 2, for example, marks a set of villages located at the base of the foothills where the Ninab and Screw rivers join before immediately debouching onto flatter land. The arc of higher density population running from approximately 12 to 3 o'clock in Area 3 represents several villages that overlook an extensive area of wetland to their east. The exceptionally high-density area at 9 o'clock in Area 3—the Stapigum–Gulakim–Sarakim region—is at the base of the low foothills and overlooks an expanse of wetland to its south. And the area of higher density at 7 o'clock borders the same wetlands.

Rethinking the Growth of Ilahita Village

Where does all of this leave the question that motivated *The Ilahita Arapesh*? If, as I am suggesting, there was no Abelam 'invasion', if ecology rather than migration accounts for the distribution of population in this region, and if the growth of Ilahita village had little to do with the historical contingencies of immigration and emigration then what does explain the variations we observe in the size of Abelam and Arapesh villages, and in particular the inordinate size of Ilahita? To address these questions, we need first to consider a more fundamental question. What *is* a village? This issue has largely been overlooked in anthropology; the fact that humans create spheres of sociality tends to be taken as a given, as self-evident, when in fact it needs to be explained. It is here, I believe, that the real value of *The Ilahita Arapesh* lies. Whatever the merits of his migrational hypothesis for the rise of villages in this region, Tuzin's crucial insight was to link warfare to the development of *social groups*. Specifically, he cast these villages as defensive responses to particularly intense warfare. Now, his particular interests were the communities of the Abelam–Arapesh border region. But it is possible radically to generalise his proposition. At contact, warfare was endemic throughout the Sepik. Consequently, it is but a small step to suggest that defensive responses to war were responsible for the formation not just of especially *large* villages, but of *villages everywhere* in New Guinea.

As I have argued elsewhere at much greater length (Roscoe 1996, 2009), the formation and reproduction of Sepik villages were motivated primarily by defensive concerns with the threat posed by surprise attacks. According to Tuzin, this was the case for Ilahita Arapesh villages, and in the case of Ilahita village itself defence was the *only* occasion when its members 'unanimously convened' (Tuzin 1976:56, 59). Likewise among the Abelam: 'strong forces work towards village cohesion...In pre-contact times there was the mutual need to

defend the village against aggression and even now the village lands have to be defended against rival claims in the [law] courts' (Lea 1964:48). The Abelam village, according to Forge (1990:162) was 'a defensive but not necessarily an offensive unit'. 'Western Abelam villages are clear-cut political units with boundaries defended by all the villagers' (Scaglione 1976:82).

This role of village groups as defensive units was not limited to the Abelam–Arapesh region but was found throughout the Sepik. Among the Yangoru Boiken (Roscoe 1996, 2009), the village was a mutual defence unit against the threat of attack at night. Likewise among the Iwam of the Upper Sepik, 'the main function of the village as a whole is defense against an attack from outside' (Rehburg 1974:221). According to Harrison (1993:6), the component descent groups of Middle Sepik River villages could, and often did, act quite independently of one another in launching war, but 'a village acted as a unit only for defence'. For the Anggor, 'the ultimate manifestation of village solidarity is encountered in warfare, when co-villagers stand together to defend their community against violence and destruction' (Huber 1974:214). Villages were the important defensive units in other parts of New Guinea as well, but in many places different kinds of units emerged that constituted the security group. In the Central Highlands, the clan (and in a couple of places perhaps also the 'tribe') appears to have been the defensive organisation; in south-west New Guinea, it was sometimes the men's-house group; and in yet other areas it was a longhouse or hilltop hamlet (Roscoe 2009:80–8).

The threat of attack not only motivated the formation of villages as mutual defence units, it also exerted pressures to enhance their military strength by increasing their size. The physical properties of space and time coupled with particular subsistence and topographic circumstances, however, exerted countervailing tendencies that differentially constrained the compass of village boundaries. And in these circumstances lie the explanation for the varying sizes of villages in the Abelam–Arapesh region and elsewhere. For a mutual-defence group to function, its members must live sufficiently closely together to be able to render one another effective military aid in the event of an attack. There is little point in forging defensive relationships with people who live so far distant that, by the time they arrive to render military aid, the attack is over and done with. One factor affecting how many people can live in close enough proximity to render mutual military aid is population density. The more people that subsistence productivity can support per unit area of land, the more people can live sufficiently closely together to provide effective military support. As noted already, population densities in the Abelam–Arapesh region were among the highest in New Guinea, providing a ready explanation for the large mean village sizes that Tuzin remarked upon and attempted to explain. My best estimate of contact-era density in the environs of Ilahita Village, for instance, is about 44.2

people/sq km. Density in the Stapigum region—one of densest in the North Wosera—was about 89.6 people/sq km. These figures are far above those for most of the Sepik beyond Maprik.

In foothill regions such as those of the Abelam–Arapesh area, however, topography is a second determinant of village size—one that is especially important in imposing variability about the general mean. In rugged terrain, dwellings located on the same ridge complex are better able to render one another military aid than settlements located equally closely together but separated by deep valleys that impede a speedy response. Ilahita vividly demonstrates the point. Ilahita's topography differed significantly from that of its smaller neighbours, and Tuzin himself pointed out the implications:

In addition to its unusually large size, Ilahita is also somewhat atypical in its physical configuration. Most villages in the region are, following the north–south grain of the foothills, arranged linearly with hamlets strung out end-to-end for the entire length of the village. Other villages are formed on horseshoe-shaped ridges or are divided between parallel ridges. Ilahita, on the contrary is sprawled over a star-shaped system of ridges, with the several wards radiating out from a central hub. The effect of this is that...the village can grow large and *yet remain relatively self-contained geographically*. (Tuzin 1976:87, emphasis added)

Ilahita was so large, I suggest, not because of intense, migration-induced warfare but because of the defensive implications of this topographic peculiarity. With the exception of three outlier hamlets, the contact-era village occupied some 4.5 km of a single, continuous ridge-top complex. Were this population strung out along a linear ridge, it would be far too elongated to constitute a discrete sphere of mutual defensive interest; only about 40 per cent of the inhabitants would live within 1 km of its geographical centre. Ilahita's unusual star-shaped topography, however, concentrated this length in such a way that about 80 per cent of the population lived within 1 km of its geographical centre, along ridge-top paths (Tuzin 1976:57, 91). With so many warriors able to live so closely together, Ilahita was able to grow to an enormous size while still retaining its defensive *raison d'être*.

Conclusion

The Ilahita Arapesh: Dimensions of Unity amply demonstrated the elegance of Don Tuzin's thought; it foreshadowed the influence his work would have within and beyond Sepik anthropology; and it is a bitter reminder of what we have lost with his passing. More than 30 years later, I continue to return to this volume, not just in admiration of the breadth and depth of its propositions

and insights but also to assess and retest what is perhaps the most remarkable sociological work that Melanesian anthropology has ever produced. In this chapter, I have tried to show that the first component of the book's argument—the explanation for Ilahita's emergence—is difficult to sustain. Rather than the emergent product of historical contingency, Ilahita more likely arose from natural population growth in favourable ecological conditions, its atypical size reflecting the military implications of its unusual topography.

Rather than diminishing the value of *The Ilahita Arapesh*, however, my intent has been to elevate it. The main body of Tuzin's volume was devoted not to Ilahita's rise but to an exquisitely delicate dissection of the strategies that Ilahitans had developed to cope with the rivalries and conflicts engendered by life in such a gigantic conglomerate. Tuzin's presentation of Ilahita as the product of historical contingency had the effect of limiting the applicability of this analysis; it implied that these coping strategies were associated with a social entity that, if not unique, was at least highly unusual. If, in contrast, and as I contend in this chapter, Ilahita represented but one tail in a distribution of social units in the Sepik, different in degree from other village groups but not in kind, *The Ilahita Arapesh* becomes a trenchant analysis not of one unusual Sepik village but of them all. The dual organisation that accommodated Ilahita's putative growth by progressive structural subdivision and ritual integration—a system of mechanical solidarity that contrived interdependency among the parts of the community while simultaneously dissipating the hostilities between individuals and subgroups that otherwise might destroy the village—was one that we should look for in many other communities in the Sepik, if not perhaps in all small-scale societies (Roscoe 2009:89–101).

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