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THE CULTURAL RELATIONSHIPS
OF THE POLYNESIAN OUTLIERS

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PREFACE

In a sense a study which attempts to determine something of the prehistory of the Outliers from what meager linguistic and ethnographic data are available is at this date rather anachronistic, since the archeological investigations which can supply positive information on this subject are already under way on several of the islands. It will, however, be at least a decade or so before the general pattern of Outlier settlement which these excavations will give us finds its way into print, and in the interim this study may serve as an indication of areas where archeological investigation is particularly needed. It should also serve to test the effectiveness of a combined quantitative comparison of lexical and cultural material as a tool to gain insight into the prehistory of an archeologically untouched area. But perhaps its greatest value is as a data source; to my knowledge it contains the largest amount of Outlier vocabulary, kinship terminology, and data on material culture available in a single work.

I would like to acknowledge the aid of the Bishop Museum Library staff in research, and am grateful to Dr. Kenneth P. Emory, Verne Carroll, Anthony Lord, Andrew Pawley, and particularly to Irwin Howard for unpublished information received from them.

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CHAPTER I:

INTRODUCTION AND BACKGROUND

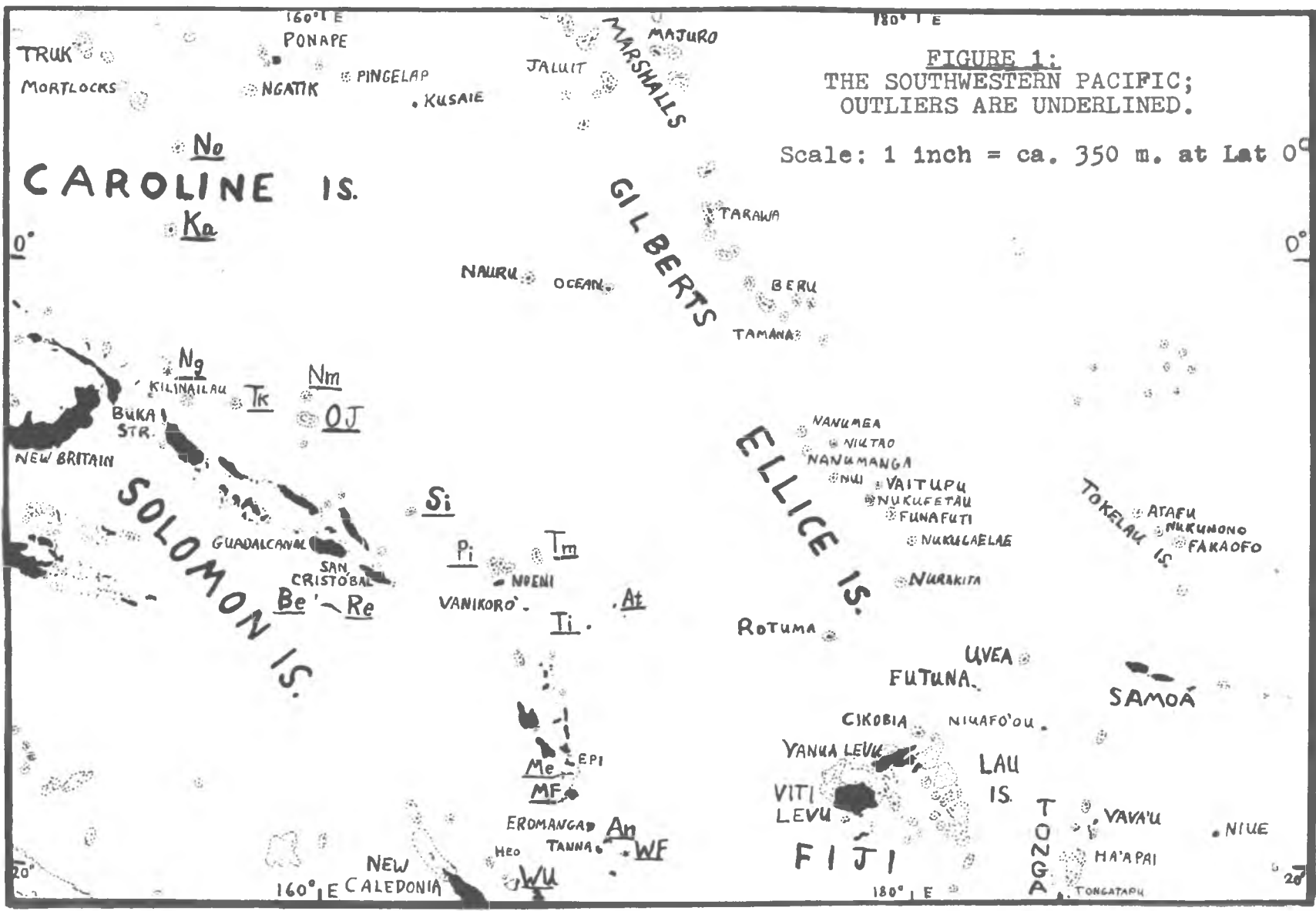
THE POLYNESIAN OUTLIERS

The term "Outlier" is used to distinguish certain Polynesian communities on the fringes of Micronesia and Melanesia from the better-known and more populous islands of central Polynesia¹ to the east. To my knowledge, this term was first used by Buck (1938: 47); it has since gained general acceptance, and is currently applied to all of the eighteen islands on the western edge of the Polynesian triangle whose inhabitants speak languages that are clearly more closely related to those of central Polynesia than to the speech of their Melanesian and Micronesian neighbors. But racial and cultural affinities are by no means so clearly defined. Physical types vary from the apparently unmixed Polynesian inhabitants of Tikopia to the people of Ontong Java, whom Shapiro (1933: 375) has described as predominantly Micronesian, while the populations of Futuna, Aniwa, and other Outliers in the New Hebrides show a considerable degree of admixture with the surrounding Melanesian peoples. As might be expected, cultural variation is even greater, being dependent upon environmental differences as well as the influence of contact with nearby non-Polynesian populations. It is apparent that the Outliers form a continuum of variation from Polynesian physical and cultural norms (if such may be said to exist) which precludes their classification into well-defined groups based on any criteria save location.

The Outlier settlements form a fairly symmetrical S-shaped curve (Fig. 1) running south from Nukuoro (No)² and Kapingamarangi (Ka) in the southern Caroline Islands through a cluster of five atolls lying north of the Solomons; these are Nuguria (Ng), Takuu (Tk), Nukumanu (Nm), Ontong Java or Luangiua (OJ), and Sikaiana (Si). The curve continues south and east into the Santa Cruz Islands, represented by Pileni (Pi), Taumako (Tm), Tikopia (Ti) and Anuta (At). Lying somewhat off the curve, to the south of Guadalcanal and San Cristóbal, are Rennell (Re) and the smaller adjoining island of Bellona (Be).

The southern leg of the curve is made up of the islands of Mae (Me), lying between Epi and Efate; Mele and Fila (MF), which are two small islands in Mele Bay, Efate; and Futuna or West Futuna (WF) and Aniwa (An), to the south and east of Eromanga and Tanna. The southernmost Outlier is represented by the Polynesian community on Uvea in the Loyalty Islands; in this study it will be referred to as West Uvea (WU) to avoid confusion with Uvea or Wallis Island in western Polynesia.

Although these islands have in common small land areas when compared to the large high islands which adjoin all but No and Ka, they represent a considerable range of environmental variation, and include among them all of the three generally recognized island types. While No, Ka, Si, OJ, Tk, Nm, and Ng are atolls, Re, Be, Pi, An, and WU are raised coral islands, and the remainder are volcanic in origin. Mele and Fila are unique in that they immediately adjoin the large island of Efate and its Melanesian inhabitants, a condition otherwise



approached only by the Polynesian settlements on WU, which they share with the Melanesian Iai, and by Pi, where a Melanesian community is to be found adjoining the Polynesian settlement.

For the sake of convenience the Outliers may be split into the following four groups, based on location and island type: the northern atolls (No and Ka), the central atolls (Ng, Tk, Nm, OJ, and Si), the central high islands (volcanic Ti, At, and Tm plus raised coral Re, Be and Pi), and the southern high islands of Me, MF, WF, An, and WU. These groupings are of course solely geographical and ecological, and are not meant to imply any cultural unity aside from similarities in adaptation to similar environments. But in fact the microenvironmental variation within any one of the latter three groups is relatively large, and will be discussed in the detailed description of the Outliers to follow in Chapter Two.

In addition to their common Polynesian relationships, there is only one other important factor common to most of the Outliers: a lack of detailed ethnographic, archeological, and linguistic data. With the exception of Firth's detailed works on Tikopia, Hogbin's less extensive description of Ontong Java, and Emory's recent ethnography of Kapingamarangi, cultural data on the Outliers are extremely scanty. This is the case as well with archeological information; excavation on the Outliers is only just beginning, and is thus far limited to work in progress on Nukuoro and preliminary surveys

on Mae and Mele (Garanger 1965) and West Futuna and Aniwa.³ Data on these excavations have not been published at this date.

Linguistically the situation is little better; Kapingamarangi, Ontong Java, Mae, and Futuna-Aniwa are the only Outliers whose languages have received even slightly more detailed coverage than that given by the brief surveys of vocabulary and grammar of Ray (1912-20).

Despite the lack of factual data which would allow for accurate interpretation of the position of the Outliers in respect to central Polynesia, considerable speculation, much of it without regard for what little facts are available, has come forth over the past half century as to the origins of these communities and their place in the general sequence of Polynesian settlement; it would be well to review the more important theories of Outlier settlement put forth thus far prior to a discussion of the aims of the present study.

HISTORICAL BACKGROUND

Early explanations of Outlier populations fall for the most part into one of two general patterns, based largely on the theorist's view of the wider picture of Polynesian movement out from Asia and across the Pacific. Until recently some such view was thought necessary to explain what seemed to be irreconcilable differences in speech, physical type, and "temperament" between the Polynesians and their Melanesian neighbors. Both of the most common theories derived the Polynesians from some undetermined point in Indonesia or the

Southeast Asian mainland, but while the first saw them moving from the Philippines or Moluccas through the southern Carolines, Gilbert and Ellice Islands to Samoa, Tonga, and eastern Polynesia, the second had them moving in one or more massive migrations through Melanesia, passing to the north or south of New Guinea, then through the Solomons, New Hebrides, and Fiji, leaving traces of their passage in the vocabulary and culture of the Melanesians with whom they came into contact.

The two major theories of Outlier settlement follow quite naturally from the above views. To the proponents of the Melanesian route, the presence of the Outliers was strong evidence for their case, since they apparently represented remnants of the original Polynesian movement eastward. Churchill, one of the principal advocates of this theory, divided the Outliers into three categories: the "Polynesian verge", consisting of those islands Polynesian in both language and race (all the northern and central Outliers); "Polynesian inclusions", which represent communities of mixed Polynesian-Melanesian racial types speaking Polynesian languages (Me, Pi); and finally Melanesian populations ". . . speaking languages preponderantly non-Polynesian, who yet derive some portion of their vocabulary from Polynesian loan material" (1911:4). Although admitting the possibility that genetic relationship might be responsible for such Polynesian-Melanesian resemblances, he remained convinced that the loan explanation was the correct one.

In Churchill's view the Outliers represented "crop

settlements" where the Polynesian voyagers rested and replenished their supplies, protected by the small size of the islands from the attacks of the Melanese, who either did not inhabit such islands or were not numerous enough to fight off the Polynesian invaders, arriving as they did in a "great ethnic swarm." Having replenished their supplies, the Polynesians then moved on, leaving a colony behind them as a relic of their passage. Through such relics Churchill traced the paths of two major "streams" of migrants; the Samoa stream left behind it the central Outliers, while the more southerly Viti stream settled the islands of Me, WF, and An en route to Fiji (1911:138-42). Nukuoro is an exception to the general pattern of pre-Polynesian settlement, since Churchill believed it to be a later settlement from Samoa (ibid.: 42).

While much of the above appears clearly dated in view of later investigations into the nature of Polynesian-Melanesian relationships, it should be remembered that only recently has the notion of Polynesia and Melanesia as two discrete racial and cultural units, with Fiji as a sort of corridor of diffusion between the two, been replaced with the recognition that the two areas represent a continuum of racial, linguistic, and cultural variation. That this continuum is the result of a genetic connection between the two areas and not solely the product of diffusion has yet to gain general acceptance.

This genetic relationship was recognized to some extent by Rivers (1914: 75-6), who attributed the similarities he found in the two areas to common settlement by the "kava

people" and the "betel people," two waves of migration roughly comparable to Churchill's Samoa and Viti streams. The great cultural and linguistic diversity present in Melanesia was the result of the impact of these two peoples with a third "dual people" who had settled the area at a considerably earlier date (ibid.: 574-5). The only Outlier dealt with specifically was T1, which while Rivers felt it preserved an early stage of Polynesian culture might represent either a remnant of the original migration eastward or a later settlement from Tonga. Either possibility was acceptable to his general scheme of Melanesian history:

The important point is that the Polynesians and the immigrants into Melanesia seem to have been one and the same people; I can leave till later the discussion whether the immigrants reached Melanesia directly from the former home of the Polynesian people, or whether they separated from the general body after it had already settled in Polynesia (ibid.: 238).

The only strong support for the pre-Polynesian settlement of the Outliers at the present time comes from Capell (1938, 1958, 1962a, b, c). Basing his argument on the lack of ". . . typical PN [Polynesian] religious and social organization," and certain aspects of Outlier morphology and vocabulary which he feels are archaic, he concludes that the ". . . outliers represent colonies left behind during the eastward movement of the Polynesians and are therefore actually older than either western or eastern PN" (1962a: 391-2).⁴ His arguments will be treated in some detail below.

To the adherents of the second school of Polynesian migration, those supporting the Micronesian route from Asia or

Indonesia to western Polynesia, the Outliers were of secondary importance, since their location alone precluded any possibility of pre-Polynesian settlement. The only exceptions to this statement are Ka and No, whose position south of the Caroline Islands puts them only slightly off the main Micronesian corridor; however, none of the advocates of the Micronesian route has proposed that they are remnants of this movement. On the contrary, No and Ka, along with all other Outliers, are viewed as "throwbacks" from an already-populated Polynesia; they thus could not have been settled prior to the occupation of western Polynesia and may indeed be considerably later settlements.

Thilenius' work (1902) on the northern and central Outliers represents the first attempt to trace in any detail the sources of Outlier settlement; it is as well the first and one of the best treatments of the mechanisms of settlement which must have produced the variations in language, race, and culture which he encountered in these islands. Since he believed that the ancestors of the Polynesians passed to the north on their way to western Polynesia, he was not concerned with the task of proving the antiquity of the Outlier settlements. As a result, he could accept with equanimity such facts as the uniform location of the Outliers on the windward sides of the major Melanesian island groups, where they would logically be if settled by canoes blown from western Polynesia, rather than be forced to offer, as Churchill does (1911: 140-2), arguments based on the navigational

skill and adventuresome character of the pre-Polynesians.

Utilizing linguistic as well as ethnographic evidence and the traditions of settlement held by the people of the various Outliers, Thilenius arrived at the conclusion that the Outliers were predominantly of Polynesian origin, although with considerable Micronesian influence present. He concluded further that the Outliers were not settled from a single source; he felt that the linguistic relationships ". . . berechtigen aber nicht ohne weiteres auch zu der Ansicht, dass die Bevölkerungen aller Inseln in die Hauptsache gleichen Ursprungs sind"⁵ (1902: 24).

He offered as probable sources for the northern and central Outliers the western Polynesian islands of Samoa, Uvea, and the Tonga and Ellice groups, with additional voyagers from the Marshall and Gilbert Islands to Ka and OJ. In place of Churchill's "ethnic swarm," he visualized a much more realistic if less dramatic method of settlement: "Die Bevölkerungen der nordwest-polynesischen Inseln sind allmählich aus kleinen Anfängen entstanden durch die Landung meist einzelner Bootbesatzungen und durch seltenere Eroberungsfahrten"⁶ (*ibid.*: 83). He also made an attempt to define specifically the various sources of these settlers, as well as the sources and extent of Melanesian influence upon the central Outliers (*ibid.*: Tafel 5).

The general view of a Polynesian migration through Micronesia, bypassing Melanesia rather than deriving from it, has been held until quite recently and has served to support

the "throwback" theory of Outlier settlement. Buck, writing in 1938, held both theories to be correct, and as late as 1952 Spoehr proposed the establishment of "Micro-Polynesia" as a genetically related culture unit based on the assumption that the two areas are more closely related to each other linguistically, racially, and culturally than either is to Melanesia (p. 458). Like Buck, he felt the Outliers represented a "backlash" from Polynesia;⁷ however, he has since firmly retracted his "Micro-Polynesia" proposal in the light of new evidence (1957: 177).

While the two theories discussed above make up the majority of opinions offered on the prehistory of the Outliers, there is one other view which might be mentioned; although concerned primarily with the settlement of OJ, it may be assumed that it should apply to some extent to Tk, Ng, Nm, and perhaps Si as well. After a thorough anthropometric comparison of the OJ physical type with those of other Polynesian, Melanesian, and Micronesian peoples, Shapiro reached the conclusion that the people of OJ were significantly closer to Caroline Islanders than they were to any Polynesian group, despite the fact that the ethnographic and linguistic relationships pointed to Polynesia. He stated, "In the case of the Ontong Javanese it seems to me that a reevaluation of the ethnological material might reveal latent connections with Micronesia which would minimize the importance of the Polynesian relationship" (1933: 375). Reviewing some of the ethnological evidence, Damm also finds OJ to be primarily

Micronesian: "Die ethnologische Betrachtung zeigt also, dass auf Ongtong-Java, und das gilt auch für einige benachtbare Randinseln [probably Nm, Ng, and Tk], ein ältere polynesische Kultur von einer kräftigen Kulturwelle aus den Karolinen überlagert wurde"⁸ (1935: 94).

The above summary hopefully demonstrates that the two major views of Outlier settlement were until quite recently tied to one of two general theories of Polynesian migration from an unspecified Savaiki in Indonesia or beyond to their present location. Not until the latter half of the last decade did evidence begin to appear indicating that the origins of the Polynesian and eastern Micronesian peoples lay in the immediately adjoining islands of Melanesia; such evidence is still in the process of emerging today.

The general linguistic picture of a subgroup of Austronesian containing the languages of Micronesia, Polynesia, and Melanesia on the one hand and those of Indonesia on the other which was developed through the efforts of Dempwolff (1934-8) has since undergone further elaboration. Grace's definition of an Eastern Austronesian subgroup (1955), and particularly his demonstration to the satisfaction of most workers in the field that Fijian, Rotuman, and Polynesian form a subgroup as compared to other Melanesian languages (1959), have added to the already considerable evidence opposing a mass migration of Polynesians from the west through Melanesia. A recent lexicostatistical study of major importance by Dyen (1963a) also tends to rule out any close relationship of Polynesian

to the languages of Micronesia, while supporting their closer connections with Fiji, Rotuma, Mota, and other Melanesian languages.

In addition to the linguistic evidence, recent work by Green (1963) analyzing what archeological materials are available from New Caledonia, the New Hebrides, and Fiji in the light of Samoan and Tongan sequences also supports a probable derivation of the Polynesians from eastern Melanesia, and most particularly from Fiji. This evidence, when joined with that of linguistics, seems strongly to indicate that the most economical explanation of the origins of the Polynesian population is to be found in a movement from Fiji to Tonga and Samoa, rather than one from Southeast Asia to the Ellice Islands or Tahiti.

If we tentatively accept this conclusion as the best available at present, we find the "throwback" theory of Outlier settlement to be the most tenable. However, a sort of "remnant" theory, while highly unlikely, is not impossible: if the Outliers represent settlements made from Fiji or whatever location the Polynesians were later to leave for their present area, and if these settlements were made prior to the departure of the Polynesians, then it might prove possible for these Outliers to preserve a language and culture somewhat closer to those of the proto-Fijian-Polynesians than is currently found in either of the latter. This would of course imply that the Outliers should show more or less equally close correspondences to all of central Polynesia and to Fiji,

and no one has ever attempted to show that such correspondences do in fact exist. On the contrary, emphasis has always been placed, with few exceptions, on the dominant Polynesian elements in Outlier language and culture. In fine, based on present evidence, the "throwback" theory seems by far the most valid from the standpoint of extra-Polynesian relationships.

THE PRESENT STUDY

Based on intra-Polynesian correspondences, the present study will attempt to demonstrate conclusively that the Outliers do indeed represent retrograde westward migrations from central Polynesia; but the primary goal of this study will be to determine with as much accuracy as possible the specific sources of Outlier populations in western Polynesia. To do this, as many of the Outliers as available data permit will be compared with the five most likely sources for their settlement in central Polynesia: Tonga (To), Samoa (Sm), Futuna or Hoorn Islands (Fu), Uvea or Wallis Island (Uv), and the Ellice Islands (El). The Tokelau Islands (Tl), a sixth possible source in western Polynesia, will be only partially represented due to lack of data, particularly linguistic information. In order to test for any special degree of relationship between eastern Polynesia and particular Outliers such as Capell postulated for S1 (1938: 25), some data from Hawaii (Ha) will be considered; while a better choice for an eastern Polynesian representative in this

study might be found in central eastern Polynesia, rather than on its periphery, the ready availability and completeness of Hawaiian data dictated its inclusion.

Three quantitative indices of comparison will be used in this study: a lexicostatistical comparison based on the standard 200-item Swadesh list (see Appendix I), a comparison of 22 kinship terms (Appendix II), and a study of the distribution of some 58 traits of material culture, technology, and subsistence techniques (listed in Appendix III). Non-quantitative evidence considered more briefly includes a comparison of whatever traditional evidence is available from the Outliers concerning their settlement, the relative feasibility of routes of potential settlers as indicated by prevailing winds and currents, and the distribution of certain grammatical devices and culture words other than kinship terms. Primary emphasis will, however, be placed on the three quantitative comparisons.

Sufficient data were available to include all Outliers save Tm and At in at least the lexicostatistical comparison. Tm may be assumed to be quite closely related to Pi (Davenport in Capell 1962a: 401), and the same is true linguistically for At with respect to Ti; At, however, was apparently a relatively recent settlement from To (Firth 1954: 107, 121). Re and Be will here be treated as a unit, as will Ng, Nm, and Tk; the last will serve to give a representative sample of the language of these three islands, which an earlier study by the writer (Bayard n.d.a) has shown to be

subject to only slight dialectal variation from a lexicostatistical standpoint. This close relationship also holds for mutual intelligibility and for the most part for cultural continuity as well (Irwin Howard, personal communication). Represented in this study by the lexicostatistical index alone are P1, S1, Me, MF, and WU; lack of data prevented their inclusion in the kinship and technology comparisons.

The Bau dialect of Fijian (F1) was the only non-Polynesian language compared; it should serve to indicate by significantly different correspondences whether any Outlier language did in fact separate from Polynesian prior to the settlement of central Polynesia. The comparison of kinship terms also included F1, as well as Ha, Tl, and the other locations in western Polynesia. A number of additional locations were included in the technology survey to gain some indication of the influence of Melanesia and Micronesia on the Outliers; these include Eromanga (Er) and the Buka Straits area (BS) as well as F1 in Melanesia, and Truk (Tr) and Ponape (Po) in Micronesia.

A final and purely subsidiary goal of this study which the inclusion of the above non-Polynesian areas makes possible is to establish the position of F1 with respect to Polynesia in general as compared to other Melanesian and Micronesian societies, and to compare the results with earlier studies (particularly Grace 1959 and 1961). In addition, some degree of reevaluation of the cultural and linguistic relationships existing between the islands of

western Polynesia, particularly Fu, Uv, and El, will be indicated by the results of this study.

THE PROBLEM

It is clear from the data available that the Outliers are not all equally Polynesian in race and culture, and a good measure of variation in vocabulary is also present, particularly in the southern Outliers. A continuum of variation is evident ranging from islands such as T1, whose background and contacts have been largely confined to Polynesian sources, to Outliers as significantly influenced and altered by their Melanesian and Micronesian neighbors as An, MF, and No. The continuum extends even further to include those Melanesian and Micronesian areas which have been heavily influenced by Polynesians, apparently through the absorption of Polynesian voyagers into the indigenous population. Melanesian examples of such "Polynesian absorptions" are found along the east coast of New Caledonia (Guiart 1953a, Brügger 1944) and in Open Bay, New Britain (Lanyon-Orgill 1942);⁹ the Gilbert Islands are to a large extent the Micronesian equivalent, but seem to represent the absorption, largely by conquest, of the Gilbertese into previously Polynesian communities rather than the reverse (Koch 1961: 11).

If such a range of variation is present in terms of the extra-Polynesian relationships of the Outliers, it would be well to be alerted to the possibility of a similar range of variation insofar as the relationships between the

Outliers and their central Polynesian points of origin are concerned; i.e., a particular Outlier may have been settled only once, receiving its language, culture, and racial stock from a single source in central Polynesia, or it may have been settled repeatedly by voyagers from several locations and thus represent an amalgam of several Polynesian cultures, plus whatever influence any non-Polynesian arrivals have exerted on it.

The statements of Thilenius quoted above demonstrate that he was fully aware of this problem, and believed that most of the northern and central Outliers were in fact the results not of massive migrations of "ethnic swarms," but of repeated landings by drift voyagers. Working from a knowledge of wind and current conditions and traditional material from the Outliers he visited, he concluded:

Diese Traditionen lassen, so unvollkommen sie auch sein mögen, zweierlei erkennen, was von Wichtigkeit ist. Bezüglich der Art der Besiedlung lässt sich aus ihnen entnehmen, dass die kleinen Inseln ihre Bevölkerung nicht auf Grund einer grösseren Wanderung erhielten, welche ein Volk oder Stamm ausführte, sondern durch einzelne Boote, welche zu verschiedene Zeiten eine jedesmal geringe Anzahl von Leuten an den Inseln trugen [*italics Thilenius*'].
 . . . endlich erfährt man die Herkunft wenigstens eines Theiles der Kolonisten; sie kamen aus den Ellice-, Gilbert- und Karolinen-Inseln, aber auch von den anderen Inseln der hier in Rede stehenden Gruppen, wie z.B. Sikaiana¹⁰ (1902: 347).

The latter conclusion will be seen to be valid in the light of the results of this study; the first and more general conclusion has recently gained strong support from the writings of Sharp (1961, 1964), who concisely and logically

deflates the image of purposeful two-way voyages of colonization by fleets of Polynesians in regard to both the Pacific as a whole and the Outliers in particular: "The thought that Polynesians, having discovered these islands, went back to Polynesia and took colonizing expeditions to them is unrealistic. The realistic view is that one-way voyagers from Polynesia settled the islands when they were uninhabited" (1964: 112).

While the general mechanism of Outlier settlement thus tends to produce multiple one-way contacts by Polynesians not necessarily from a single location in central Polynesia, the degree to which multiple settlement takes place would seem to depend on the frequency of arrivals by voyagers, whether they be exiles, fishermen blown off course, or a war party bent on conquest. The indications from what ethnographic data are available from the Outliers are that the frequency of arrivals of such voyagers was considerably higher than at first would seem possible, given the vastness of the ocean and the small area of most of the Outliers. Thus Kubary (1900: 77) recorded traditions of canoes arriving on No from Katao, Pingelap, Ponape, and Makeni in the Carolines, Majuro and Jaluit in the Marshalls, Tarawa in the Gilberts, and from Rotuma, Fiji, Yap, and Ruaniwa (OJ?), among others. Woodford recorded traditions on Si of two double canoes from Tonga and two from Samoa arriving there some nine generations ago; in addition, a number of Gilbertese had settled there during the three or four decades

prior to his visit. That even longer voyages were possible is evidenced by his account of another arrival: "About the same time a boat with eleven natives arrived at Sikaiana from the island Mangarewa, in the Paumotu or Low Archipelago. They are said to have left the island in consequence of differences with the missionaries and had intended to make for Fiji, but they sighted no land and sailed on before the southeast trade wind until they reached Sikaiana. The distance covered must have been about 3,700 miles" (1906a: 168). Similar accounts of recent examples of Polynesian voyaging are given by Parkinson (1897: 106-7) for OJ.

It seems obvious from the above that proponents of the "Golden Age" theory of Polynesian voyaging, such as Parsonson (1962: 63) and Koch (1960: 226) are mistaken; as far as the Outliers are concerned, settlement has been taking place gradually over at least the past millennium, probably began almost as soon as the Polynesian islands to windward were settled, and is still going on today. Thus multiple settlement is highly likely, and the problem of tracing any one Outlier to a point of origin in central Polynesia becomes considerably more difficult.

Given the problem of multiple settlement, as well as the lack of any detailed archeological data from the Outliers and its scarcity in western Polynesia, it would appear impossible at present to give a single central Polynesian point of origin for each Outlier, or even to state with certainty the home of its first settlers as opposed to more recent

arrivals. This study will limit itself to the description of three types of Outlier-central Polynesian relationships:

1) Primary settlement: that settlement responsible for the majority of culture on a particular Outlier insofar as such culture is represented by the three indices used here; that central Polynesian island which seems to have a significantly higher set of correspondences with a particular Outlier than any other central Polynesian location in this study will be referred to as the primary source of that Outlier. It should be strongly emphasized that the use of the term primary in this context is not chronological, and a primary settlement need by no means be the first settlement on any Outlier. While the likelihood that primary settlement does in fact represent the initial colonization of an Outlier is probably greater in the case of high islands such as Ti, Me, or WF due to the possibility of rapid increase of the original settlers and the lack of population-limiting devices found on low islands (see below), it cannot be assumed that this is always the case.

2) Secondary settlement: a settlement which apparently made a significant contribution to the culture of an Outlier, but was not the major donor. Voyagers from a secondary source might either represent the initial inhabitants of an Outlier whose culture was later drastically modified by a larger primary settlement, or they may have arrived subsequent to the island's settlement from a primary source and made only a moderate contribution to the already existing culture. The

significance of secondary settlements is greater in dealing with atolls and raised coral islands than with high islands, for as mentioned above the former exhibit considerably less stability in population than the latter. Vayda (1959: 820) discusses the action of typhoons and tidal waves in contributing to this instability of atoll populations, which are already limited by the environmental restrictions on land and food supplies. Drought might also be added to the list of disasters which may reduce an atoll population to such a degree that a relatively small number of new arrivals might have a significant impact on the culture, thus making it difficult to distinguish between primary and secondary sources in terms of relative degree of influence.

3) Continued contact: those resemblances which probably stem from repeated or occasional one- or two-way voyaging between an Outlier and neighboring Outlier or central Polynesian, Micronesian, or Melanesian islands rather than from primary or secondary settlement. An example would be the introduction of tattooing motifs and betel pepper to Re from Ti (Birket-Smith 1956: 207).

In addition to the obvious difficulty in distinguishing between the above three types of relationship with a high degree of certainty, two further problems arise. The first of these is the extent to which the distinction between primary and secondary sources for a particular Outlier represents the difference between a high degree of correspondence and a more doubtful correlation rather than actual

degrees of cultural influence; thus primary and secondary are to some extent to be taken as indices of certainty of relationship as well as relative degrees of cultural influence. A second problem arises in considering the probability that any small group of people, such as one would find in the average canoe load which was the likely source for original settlement on any Outlier, do not bring with them a completely representative sample of their home island's culture, and thus cannot recreate it completely in their new home (Vayda and Rappaport 1963: 133-5; Goodenough 1957: 151).

Hopefully these factors making for distortion of relationships will be to a considerable extent counteracted by the use of three scales of comparison rather than reliance on lexicostatistical relationships or trait distributions alone. The three scales fortunately seem to favor different types of relationship, at least insofar as core vocabulary and kinship terms have considerably more cultural stability and less environmental adaptability than material culture and technology, and would thus tend to serve as indicators of genetic relationship, while technology would seem a more accurate index of continued contact once potential similarities due only to environment are eliminated.

While these scales and the other data assembled in this study do not represent the total amount of information available on the Outliers, they do represent the majority of strictly comparable and reliable data. Detailed anthropometric data are lacking everywhere save OJ; the dearth of

ethnographic and linguistic information has already been mentioned. A second reason for not including what ethnographic data were available lies in the inability of such data to shed any meaningful light on historical relationships. Such studies as that of Sahlins (1958), however controversial their major conclusions may be, have proved to the writer's satisfaction that sufficient ecological determinism and subsequent cultural adaptation exist to obscure much of the historical value of comparative ethnology.

CHAPTER II

THE OUTLIERS AND WESTERN POLYNESIA

LOCATION AND DESCRIPTION OF OUTLIERS

Since the area and landform of an Outlier and the population which it is able to support would appear to have some influence on the indices of relationship used in this study, particularly on the technology comparison, a more detailed description of each Outlier, as well as its more or less exact location will be given below.¹ While it would be highly desirable to compare such ecological factors as area of cultivable land, area actually under cultivation, percentages of dependence on marine as opposed to agricultural produce, and other factors having a bearing on population limits and therefore perhaps on the speed and susceptibility of the society to change, these data are completely unavailable; in some cases even simple outline maps are lacking. Thus the following descriptions will be limited to alternate names for the Outlier, if any, a brief physical description including latitude and longitude, distance to the nearest inhabited island, and population figures, including early as well as recent figures if they are available. The majority of the information is taken from British Naval Intelligence Divison 1944-5, while the landform terminology used is that of Thomas (1963: 20-1).

Nukuoro, formerly known as Monteverde Island, is an atoll about five miles long by four wide lying at $3^{\circ} 15' 51''$ N and $154^{\circ} 58'$ E; the principal island of the same name is about one mile long and less than half that in width. The

population in 1878 was 124 (Kubary 1900: 78); it was 198 in 1935. Ponape lies about 300 miles to the northeast, Truk slightly farther to the northwest, and Ka about 190 miles to the south. Together with the latter, No is the most isolated of the Outliers.

Kapingamarangi (Pikiram or Greenwich Island) is also an atoll, and is slightly larger than No (lagoon diameter $6\frac{1}{2}$ by $4\frac{1}{2}$ miles); the principal island, Hare, is smaller, being only a mile long by 300 yards wide. However, the associated thirty-odd small islets are larger in area than those of No, and the population is correspondingly larger, numbering some 399 in 1935. No is the nearest inhabited island, while Truk is 480 miles NNW, Ponape 440 NNE, and New Ireland 200 miles to the southwest. Ka is located at Lat $1^{\circ} 04'$ N, Long $154^{\circ} 48'$ E.

Nuguria (also known as Niguria, Nugarba, Fead Islands, and Abgarris Islands) is the westernmost of the central atolls, lying at Lat $3^{\circ} 20'$ S, Long $154^{\circ} 45'$ E. It is actually two atolls, a southeastern one some 20 miles long by 5 wide, and a northwestern one three miles distant some five miles in length. Nugarba and Malum are the largest of the 50 islets in the two atolls. The population in 1940 was 80. The Feni Islands off New Ireland are the closest land, some 80 miles south of Ng, while Tk is about 160 miles ESE.

Takuu is actually the principal island of an atoll usually called Tauu, but also Mortlock or Marqueen Island, at $4^{\circ} 45'$ S and $157^{\circ} 10'$ E. There are some 22 other smaller islets in the atoll, supporting a population of 178 in 1940;

however, the population had been reduced to 17 shortly after 1890 (I. Howard, personal communication).² The atoll of Killinailau, inhabited by a Bukan population, lies 90 miles to the west, while Bougainville is 120 miles southwest, and Nm is 170 miles east. As mentioned above, Tk will serve to represent the islands of Nm and Ng in this study.

Nukumanu or Tasman is an atoll $11\frac{1}{2}$ miles in length at $4^{\circ} 20' S$ and $159^{\circ} 25' E$; the main islet of the same name is about five miles long. No population figures are available. The atoll lies about 30 miles north of OJ.

Ontong Java (Ongtong Java, also called Lord Howe Island, Luangiua, Liuanua, Leuanua, etc.) is the largest of the central atolls, 45 miles in length and 30 wide; the major island, properly Luangiua, lies at $5^{\circ} 30' S$ and $159^{\circ} 40' E$, and is five miles in length by 400 yards wide. The only other permanent settlement is located on Pelau Island, at the northern end of the atoll. The population in 1939 was 588. Tk and Nm are the closest inhabited islands.

Sikaiana (Sikayana or Stewart Island) is an atoll lying between $8^{\circ} 20' S$ and $162^{\circ} 40' E$ and $9^{\circ} S$, $163^{\circ} E$; it is more probably a group of raised atoll fragments than a true atoll. The main island, Sikaiana, is about $1\frac{1}{4}$ miles long with a maximum elevation of 150 feet; there are three other inhabited islands in the group, which is surrounded by a barrier reef. The population in 1935 was 235. Malaita is the closest inhabited island, lying 110 miles ESE.

Pileni is one of the six islands in the Reef or Swallow group ($10^{\circ} 20' S$ -- $166^{\circ} 10' E$) which are inhabited by Polynesian speakers; the remainder of the group is populated by speakers of languages related to those on Ndeni. The islands are apparently fragments of a raised atoll; no figures are available on the size or area of the Polynesian-inhabited islands. The Polynesian speakers numbered 489 in 1960 (Davenport in Capell 1962a: 401). Ndeni lies some 30 miles SSW.

Taumako is the principal island of the Duff group, located at $9^{\circ} 57' S$ and $167^{\circ} 13' E$. Unlike all of the above islands, Taumako and the adjoining islands of Obelisk and Treasurer's are volcanic in origin, although considerably eroded. An apron or fringing reef is present; Taumako has a maximum elevation of some 1200 feet. The population of 220 is currently concentrated in the group's only village, Tahua. This Outlier will be treated with P1, which lies 60 miles WSW, since the P1 population speaks the same dialect as do the inhabitants of Tm, and view themselves as having originated there (Davenport, ibid.).

Tikopia (Lat $12^{\circ} 18' S$, Long $168^{\circ} 48' E$) is likewise a volcanic island; in fact, it is a long-extinct crater with a brackish lake (Te Roto) in the interior. It is about three miles long by two wide, reaches a maximum elevation of 1235 feet, and is surrounded by a fringing reef; a barrier reef is lacking. The population in 1944 was 1517. Excepting At, Vanikoro is the nearest inhabited land, lying 115 miles WNW.

Anuta or Cherry Island is also volcanic in origin, and also possesses a fringing reef, but is only one-half mile in length. It lies at $11^{\circ} 40' S$ and $167^{\circ} 50' E$, some 70 miles ENE of T1. Its population in 1944 was 133. As mentioned above, it is probably the result of a late settlement from To, but lack of data prevents its inclusion in the comparisons made here.

Bennell Island, also known by its native name of Mung-gava, is by far the largest of the Outliers in overall size, stretching for just under 50 miles along Lat $11^{\circ} 40' S$ between $159^{\circ} 55'$ and $160^{\circ} 37' E$. Its width varies from a minimum of $1\frac{1}{2}$ miles at Kanggava Bay to a maximum of about 16 miles toward the western end of the island. The eastern end contains what is reputedly the largest lake in Oceania, Te Nggano, which is about 18 miles in length by a maximum of eight in width. Despite the presence of this large body of water, the land area appears to be approximately 145 square miles, well over twice that of WU, the next largest Outlier. Re is a raised coral reef, with an average elevation of 300 to 480 feet; the heights are concentrated around the edges of the island, giving it a dish-shaped profile. The land surface is almost entirely made up of broken coral blocks; due perhaps to this and the resultant difficulty of agriculture, and particularly to the lack of fresh water (Te Nggano is brackish), the population of Re in 1951 was only about 1000, or two-thirds that of the much smaller T1. A fringing reef surrounds only about one-half of the shoreline. With

the exception of Be, described below, the nearest land is San Cristóbal, about 100 miles to the northeast; Guadalcanal lies about 120 miles to the north.³

Bellona Island, or Munggiki, is located about fifteen miles northwest of Re at Lat $11^{\circ} 17'$ S and Long $159^{\circ} 50'$ E. It is much smaller than Re, and is also a raised coral island with a maximum elevation of about 250 feet. A fringing reef is present, but there are no data on its extent. The population was estimated at 500 in 1930. Guadalcanal and San Cristóbal are both about 100 miles distant. Since the populations of Re and Be are almost identical in language and culture, Re will represent Be in this study.

Mae (also written Emae or Emwae and sometimes called Three Hills Island) is located between Epi and Efate in the New Hebrides at Lat $17^{\circ} 5'$ S and Long $168^{\circ} 20'$ E. It is of volcanic origin, about $5\frac{1}{2}$ miles in length and $2\frac{1}{2}$ in width; the highest elevation is 2171 feet. A fringing reef is present. The population was an estimated 150 or slightly more in 1936. The neighboring islands of Makura and Mataso are inhabited, but their cultural and linguistic affiliations are not available. Epi lies about 15 miles to the north, and Tongoa about ten to the northwest.

Mele and Fila are two small islands located in Mele Bay, on the southwest side of Efate. Fila is located at the mouth of Vila harbor, at the east end of the bay; the location of Mele is less certain, however; Capell states that it too is located inside Vila harbor (1942: 153), but Nevermann's

description (1953: 196) and Garanger's map (1965: 4) both place it to the west of Malapoa Point and Fila, well outside Vila harbor proper. Neither island is over one mile in length and half that in width; both are surrounded by fringing reefs. The population of Fila in 1934 was 200, that of Mele, 380. Neither island appears to be more than a half mile from Efate.

Futuna (Fotuna, Erronan) is an apparently volcanic island in the southern New Hebrides, at Lat $19^{\circ} 31'$ S and Long $170^{\circ} 11'$ E. It is approximately circular, with a diameter of two miles. The maximum elevation is 1931 feet; no reef is mentioned. The population in 1936 was 259. Aniwa lies about 28 miles WNW, and Tanna about 36 miles west.

Aniwa itself is a raised coral island probably resting on volcanic rock located at $19^{\circ} 18'$ S and $169^{\circ} 35'$ E. It is slightly larger than WF (four miles by two), but with a maximum elevation of only 150 feet. Perhaps due to the relative infertility of the coral-derived soil, the population is smaller than that of WF, being recorded as 176 in 1936. Tanna is the closest inhabited island, lying about 13 miles WSW. Since the inhabitants of An and WF are apparently quite similar in language and culture, WF will represent both islands in the lexicostatistical and technology comparisons, although a sufficiently different kinship system was obtained from each island to merit the inclusion of both.

Uvea (Ouvéa, West Uvea, Halgan) is the southernmost of the Outliers and the northernmost of the Loyalty Islands (Lat $20^{\circ} 30'$ S, Long $166^{\circ} 30'$ E). It is formed from half of a

raised atoll, and might be termed a semi-table reef; the eastern, outer edge of the island reaches a maximum elevation of about 100 feet. The island is about 22 miles long, with a maximum east-west width of three miles. The Polynesian-derived peoples are concentrated at the northern and southern extremities of the island, and on the atoll of Heo (Beautemps-Beaupré) about 20 miles to the west; the center of WU is occupied by the "aboriginal" Iai. The island has a fringing reef on its eastern edge as well as the lagoon formed by the remainder of the atoll, known as the Pleiades Islands. Leverd (1917: 43) states that the population in 1917 consisted of 2-3000 "métis"; in 1931 it was given as 1,937, including Polynesians, Melanesians, and a few European residents. New Caledonia is about 60 miles distant to the southwest; Lifu lies about 35 miles to the southeast.

WESTERN POLYNESIAN SOURCES

A glance at a map of the Pacific will at once make clear the choice of the western Polynesian islands used for comparative purposes in this study. While it is certain that some of the Outliers have received settlers from islands other than these (e.g., the Mangareva-Sikaiana voyage mentioned above), it would seem highly likely that the vast majority of Outlier settlements stem from voyagers whose homeland lay in the line of islands formed by El, Fu, Uv, and To, or in Sm slightly farther to the east. These islands form a rough chain located about a thousand miles to windward of the

Outliers during most of the year, and are thus in an ideal position to supply potential settlers.

The problem of cultural and linguistic variation within an island group does not exist in the case of Fu and Uv and may be considered moderate in as relatively compact a group of high islands as Sm, but requires more attention in the case of To and El. While the southern Tongan islands up to and including Vava'u were apparently in close contact during most of their history, the isolated northern islands of Niuafu'ou and Niuatoputapu, whose position makes them the most likely sources of Outlier settlers in the Tongan group, were apparently not so closely tied to the Tongan kingdom (Gifford 1929: 283-6). Unfortunately there are almost no data available from these islands, and they will as a result be represented in this study by data drawn from the better-known southern islands, principally Tongatapu.

The problem of cultural and linguistic uniformity is even greater within the 600-mile span of the Ellice group. These islands are traditionally viewed as having been settled primarily by voyagers from To and Sm. While Gifford (1929: 15) states he was informed by a trader that the Ellice island of Nukufetau is peopled by descendants of Tongans, and that this island and Niutao have Tongan names, Hedley (1896: 8, 43) placed the two islands in two of three distinct cultural groups in El: the northern, including Niutao, Nanumea, and Nanumanga; the island of Nui, settled by Gilbertese (cf. Koch 1961: 11); and the southern group formed by Vaitupu,

Nukufetau, Funafuti, Nukulaelae, and presumably Nurakita. He derived this southern group from Sm. It would thus seem unlikely that To played any major part in settling the Ellice group, although the extreme paucity of available data from the latter makes any firm conclusion impossible. But the problem of cultural variation remains nonetheless; since almost all information on El is drawn from Vaitupu and Funafuti, these two islands will have to suffice as representative of the entire group.

Another factor which must be reckoned with in determining western Polynesian relationships to the Outliers is the possibility of distortion introduced through inter-island contact within western Polynesia following the separation of some of the Outlier populations. Such contact is particularly marked between To, Sm and Fi (primarily eastern Viti Levu and the Lau Islands), and has resulted in considerable borrowing of technology, vocabulary, and other cultural items.⁴ Kinship terminology has been less radically affected, and together with lexicostatistical results compensated for inflated percentages due to borrowing should serve to give some indication of relative degrees of relationship of both Sm and To to the other western Polynesian areas compared as well as to the Outliers.

Also helpful in this regard is the linguistic distinction between To and its "satellites" of Uv and Niue on the one hand, and the remaining languages of Polynesia on the other. Elbert (1953: 170) decided that the first division to

take place within Proto-Polynesian (PPN) was the above one, based on the evidence of phonology, lexicostatistical results, and differences in grammar, and he placed To, Fu, Uv, and Niue in a separate "Proto-Tongan (PTo)" group as opposed to a group consisting of all remaining Polynesian languages, for which he later suggested the term "Proto-Nuclear Polynesian" (personal communication). Despite this division, in his 1953 study he nonetheless felt that sufficient evidence was present to support the more traditional division of western versus eastern Polynesian languages as well. However, for the purposes of this study the division between PTo and PNPN would seem the most useful, in that it should be possible to trace the language of any particular Outlier to one or the other group.

There is a problem as to the exact membership of the PTo group, however; lexically the languages of To, Uv, Fu, and Niue share high percentages with one another and almost uniformly low percentages with the rest of the Polynesian languages in Elbert's study (1953: 158). This is supported by Dyen's 1963 study which, while it did not recognize a PTo group coördinate with all other Polynesian languages, did place To and its "satellites" in a separate subgroup within his "Western Polynesian hesion" (pp. 39-40). In addition, a study by the writer (Bayard n.d.b) gave consistently higher extra-Polynesian correspondences (to two Fijian dialects, Tagalog, and Malay) for To, and consistently lower intra-Polynesian figures than No, Sm, and Ha, the other

languages compared.⁵ In conclusion it would seem that there are sufficient grounds for considering To and Uv to be somewhat closer historically than each is to the remainder of Polynesia as far as language is concerned. But the position of Fu is considerably less certain; it is phonologically close to the PTo group in sharing the PPN glottal stop which has vanished in other western Polynesian languages (including Niue) but is retained also by Re and Easter Island, but dissimilar in losing PPN /*h/, which is retained in Niue, To and partially in Uv. In addition, PPN /*s/ is reflected as /s/ in Fu, but /h/ in the other three of Elbert's PTo languages. Lexically Fu appears intermediate between the PTo group as it will be defined for the purposes of this study (To, Uv, and Niue only) and the remainder of western Polynesia.

The position of Fu, and Uv as well, is an important one to consider for this study, since together with El they are the nearest western Polynesian islands to the majority of the Outliers. Uv is not only linguistically close to To, but also strongly linked to the latter traditionally (Burrows 1937: 19 ff.). Fu, on the other hand, seems to occupy an intermediate position in terms of traditional contacts as well as language. There is one further difference which will be seen to be of considerable importance later in this study: while Uv has a smaller area than Fu (22 square miles versus 36 for Fu and Alofi combined), Uv has consistently supported about four times the population of Fu over the past hundred

years (Burrows 1936, 1937). Both are volcanic islands, but while Uv possesses an extensive barrier reef and lagoon, Fu and Alofi have only small fringing reefs. This difference in resources appears in the light of this study to have been one with considerable significance as far as the relationships of these two islands to Outlier settlement are concerned, and will be discussed in some detail below.

CHAPTER III

METHODOLOGY

SOURCES

As mentioned above, one of the chief problems encountered in this study was the lack of data in sufficient quantities to enable detailed comparison, or indeed any comparison at all in some cases. This problem is not limited to the Outliers, but is characteristic of Oceania in general. Thus while there exists a reasonably detailed body of data on the social organization and traditions of the major islands of central Polynesia, there are large gaps in the knowledge of other aspects of these cultures. A description of the material culture of Fi or To has yet to be published (although there is an unpublished manuscript on the latter island by McKern available at the Bishop Museum, Honolulu), and Mead's brief list (1930: 129-30) of Samoan kinship terms is, to the writer's knowledge, the only one available.

TABLE I: QUANTITY OF DATA AVAILABLE

C = complete A = adequate S = subadequate - = not done

	<u>Ha</u>	<u>Sm</u>	<u>To</u>	<u>Fu</u>	<u>Uv</u>	<u>El</u>	<u>Tl</u>	<u>No</u>	<u>Ka</u>	<u>Tk</u>	<u>OJ</u>	<u>Si</u>	<u>Pi</u>
LEXICOSTATISTICS:	C	C	C	C	C	S	-	C	C	C	C	C	A
KINSHIP:	C	S	C	S	S	A	C	A	C	C	C	-	-
TECHNOLOGY:	-	C	C	A	A	C	-	S	A	A	A	-	-

	<u>Tl</u>	<u>Re</u>	<u>Me</u>	<u>MF</u>	<u>WF</u>	<u>An</u>	<u>WU</u>	<u>Fi</u>	<u>BS</u>	<u>Er</u>	<u>Tr</u>	<u>Po</u>
LEXICOSTATISTICS:	A	C	S	S	S	-	S	C	-	-	-	-
KINSHIP:	A	C	-	-	C	C	-	C	-	-	-	-
TECHNOLOGY:	S	C	-	-	S	-	-	S	A	A	A	S

The relative completeness of data used in each of the three quantitative comparisons for all of the locations included in this study is shown in Table I. "Complete" indicates that all 22 kinship terms and all 58 items of technology are present, and that at least 190 items on the 200-word list are available. "Adequate" is used for those locations represented by at least 20 kinship terms and 54 of the technology traits, and between 180 and 190 of the lexical items. "Subadequate"¹ is used to describe those cases where less than the above quantities of data are present. The lower limits of the adequate range define the presence of a gap in the completeness of data rather than any particular statistical index of reliability; subadequate lists are usually well below the lower adequate limit rather than just under it. The least complete of these subadequate lists are the WF lexical list (139 items), the Sm kinship list (17 items), and the WF-An technology list (49 items). The averages, however, are considerably higher: lexical, 181.2 items; kinship, 21 items; technology, 54.5 items. All three averages thus fall within the adequate range. It should also be noted that while only two locations are represented by complete lists in all three areas, all locations involved in more than one comparison have at least one complete list or two adequate lists.

The data were taken from a considerable number of different sources (given in the appendices), not all of which are equally reliable. They range from missionary

memoirs such as Turner 1861 and Paton 1898 to such recent ethnographies as Sahlins 1962 and Emory 1965. It goes without saying that the more modern sources were given preference over older and less reliable ones whenever possible; the latter were used mainly as supplements in the case of incomplete coverage by later ethnographers. While the correlation of early date and reduced reliability is by no means an absolute one, the fact remains that ethnographic detail was of secondary importance to most missionary writers encountered in this study, and many of the earlier ethnographic accounts of the Outliers are based either on a brief visit or on hearsay or both.

LEXICOSTATISTICS

The test list utilized in this study is the standard 200-item Swadesh list, somewhat modified for Polynesian use. The list in its original form (see Hymes 1960: 6) contains many semantic ambiguities when viewed from the standpoint of Polynesian; thus "when" is represented in most Polynesian languages as either "when future" (PPN *ʔafea) or "when past" (*ʔanefe(a)). In these and other cases of lack of correspondence between English and Polynesian domains a single qualified English term was selected and its Polynesian counterpart as consistently compared as possible (see basic list, Appendix I). If two equally suitable items were available, one was randomly selected; this was the case in less than 1% of the 3800 possible occurrences.

The problem of retention versus elimination in the case of two items on a particular list for which the language in question has a single word has been discussed by Swadesh (1955:125-6). The principle followed here, as in the two studies previously mentioned, was to retain duplicated items unless items were duplicated throughout all the languages considered, and no case of this occurred in the present study. In the opinion of the writer, expansions of one term's semantic domain to include that formerly covered by another term which are shared by two languages (when such expansion is relatively obvious and not a phenomenon common to the all of the language group under study) are as much shared innovations as the replacement of a particular term with a new term cognate in the two languages. While retention of duplicates will tend to produce higher percentages than would otherwise be the case, this study will treat percentages as relative indices of relationship rather than as indicators of any sort of absolute date of separation of the languages involved (see below).

The percentages given in the following chapter represent the results of some 34,200 lexical comparisons (counting missing items as present), and are a combination of figures from both the earlier studies mentioned plus roughly twice as much new data resulting from this study. While every effort was made to maintain identical criteria for determining cognation, the methods of scoring underwent some degree of evolution from one study to the next. In the

original study (Bayard n.d.a), involving Ha, Sm, To, No, Ka, Tk, Nk, OJ, Re, Si, and Pi, pairs were scored as either definitely cognate or non-cognate; this latter category also included partial and doubtful cognates, with the exception of items differing only in certain common affixes.² Some 9000 of the correspondences which the figures here reflect were scored in this fashion.

The F1-To, F1-Sm, F1-Ha, and F1-No percentages were arrived at in the second study, which utilized a more complex method of scoring. Pairs were marked (1) definitely cognate, (2) definitely non-cognate, or (3) doubtfully or partially cognate (i.e., corresponding in one morpheme of a two-morpheme item, excluding the affixes mentioned above). Four formulae were then used to produce percentages:

$$A = \frac{\Sigma 1}{\Sigma 1 + \Sigma 2} \qquad B = \frac{\Sigma 1}{\Sigma 1 + \Sigma 2 + \Sigma 3}$$

$$C = \frac{\Sigma 1 + \Sigma 3}{\Sigma 1 + \Sigma 2 + \Sigma 3} \qquad D = \frac{A + B + C}{3}$$

The system used in the present study, which introduced lists from Fu, Uv, El, Me, MF, WF, WU, and a new and more accurate list from No, is similar to the above. But when it became apparent that El, Me, MF, WF, and WU were to be represented by severely subadequate lists, a further modification was introduced. A minimum list of the 94 items which were present on all 19 lists was recorded and scored separately from the remainder of the items; (1'), (2'), and (3') were used to score these 94 items. Percentages for the minimum list were then derived by substituting these values in

the above formulae. Those items not on this minimal list were then scored (4) cognate, (5) non-cognate, or (6) partially or doubtfully cognate, and five additional formulae were then used to derive representative sets of percentages using all available items:³

$$E = \frac{\Sigma 1' + \Sigma 4}{\Sigma 1' + \Sigma 2' + \Sigma 4 + \Sigma 5} \quad F = \frac{\Sigma 1' + \Sigma 4}{\Sigma 1' + \Sigma 2' + \Sigma 3' + \Sigma 4 + \Sigma 5 + \Sigma 6}$$

$$G = \frac{\Sigma 1' + \Sigma 3' + \Sigma 4 + \Sigma 6}{\Sigma 1' + \Sigma 2' + \Sigma 3' + \Sigma 4 + \Sigma 5 + \Sigma 6} \quad H = \frac{E + F + G}{3} \quad I = \frac{D' + H}{2}$$

The end result of the above is that E1 and the southern Outliers, for which sufficient data are lacking to produce fully reliable percentages, are represented by two sets of figures, the first based on items found in all 19 lists and the second based on comparison of all available items. This is also the case with Fu and Uv, and with all No correspondences save to F1.

Two of the nine percentage sets will be used in this study: set F, the only one with all locations represented through the inclusion of those figures derived according to formula D in the first two studies, and which represents the percentage of definitely cognate items out of all items available; and set D, which is available only for the eight languages mentioned above to all other languages, and is the result of the correspondences of the minimum list using formula D. While the 94 items represented on the minimal list on which set D is based are doubtless more stable in general than the remaining 106 items, and will thus tend to produce higher percentages on the average, set D

should give a more accurate picture of the relationships of E1 and the southern Outliers than would otherwise be the case. It might be added that set D was chosen over sets A, B, and C, all of which also used the minimum list, simply because it represents the average of the first three; in fact, all nine sets of percentages show very similar patterns of relationships, varying only in the greater or lesser overall range of percentages; sets C and G naturally show higher figures for all languages than sets B and F, but the ratios between individual percentages are very close.

A final note must be added on the internal consistency of the set F figures; although every attempt was made in the current study to observe the same rules of cognate determination followed in the original study, the unavailability of a partial-doubtful category in the latter may have tended to produce a greater number of items scored as (1) which would have been scored as (3) or (6) in the latter studies. Thus the percentages from the earlier study may be somewhat inflated with respect to the later figures. This will be taken into account in the analysis of the results..

LEXICOSTATISTICAL INTERPRETATION

It is necessary to emphasize the fact that the treatment accorded the data discussed above will be lexicostatistical and not glottochronological; i.e., this study is not concerned with determining absolute dates of separation of the languages involved, which is the most generally

accepted current definition of glottochronology (Hymes 1960: 4, Voegelin 1958: 58), but rather with ". . . the study of vocabulary statistically for historical inference" (Hymes, ibid.). For example, we are not concerned here with the absolute dates of separation of Fu, Ti, and El, but we are concerned with the significantly higher correspondences which Fu shows to Uv, a correspondence not shared by Ti and El despite their high figures with Fu, since the Fu-Uv percentage gives evidence of considerable influence and borrowing between the two islands which may then be used to explain certain phonological features which Fu shares with Uv but not with El and Ti.

Once the notion of lexicostatistical percentages as indicators of absolute time depth is discarded, the problem remains as to the reliability of the figures themselves. Once the obvious distortion resulting from extensive borrowing between two languages in close contact and the less obvious factor of possible word taboo as an accelerator of lexical replacement are accounted for, do languages replace their core vocabulary at a regular rate, regardless what that rate may be? Opinions vary widely on this question. Dyen has stated that "Every significant difference between lexicostatistical percentages implies a historical fact determinable from the configurations of percentages" (1963b: 66), the historical events being borrowing, which would tend to inflate percentages, and word taboo, which would deflate them; aside from these, the percentages accurately reflect

genetic relationships through amount of regular vocabulary replacement in each language.

However, a study by Bergsland and Vogt (1962) indicates that rates of core vocabulary replacement vary significantly from language to language independently of the factors of borrowing and taboo. This has almost certainly been the case with No and Ka in the present study; while they show lower percentages on the average than the other languages considered, it would be hard to conclude from this that they were the first Polynesian islands settled. Borrowing could not very extensive due to their isolation, and word taboo has not been reported from either location.

In addition to variability in overall rate of replacement, recent work by Lord (n.d.) has demonstrated that not only do different semantic and grammatical categories represented in the 200-word list change at different rates, but that the rates themselves vary strikingly from language family to language family. This and the above would seem to justify a lack of reliance on lexicostatistical data as an infallible indicator of historical relationships, and these data will be interpreted in the light of the other evidence uncovered in this study.

KINSHIP

Kinship terminology would seem to be a suitable subject for "micro-lexicostatistical" comparison in that it is an area of vocabulary which is both flexible enough to be

relatively well-differentiated throughout Polynesia and yet not readily amenable to change through sporadic or even relatively common contact with a neighboring island (cf. Fu and Uv). [In addition, even when faced with a change in social organization, the kin terms will tend to linger on even after the kinship system itself has altered (Murdock 1960: 221-2). Unlike many items of material culture and subsistence techniques, kinship terminology is relatively non-adaptive; even if in the shift of a high island culture to an atoll certain changes in kin groups and group behavior do take place as Sahlins has postulated (1958), it would be unlikely that more than a fraction of the terminology would be replaced, although terms may be altered in respect to the categories of kinship they encompass. It is certain at any rate that atolls settled separately from two different locations will not tend to develop parallel kinship terminology, as may perhaps be the case with kinship systems and will almost certainly occur in the realm of technology.]

The methodology followed in making the comparison used here was relatively simple; 22 categories of relationship were established, based on the most commonly occurring distinctions made in the Outliers, western Polynesia, and F1; these are listed with the terms in Appendix II. These terms and associated categories were then compared word for word and scored as cognate, non-cognate, or partially cognate in that one of the pair of terms covered another one of the 22 categories as well as the one compared; this was

particularly common in the case of sibling terms and grandparent-either-sex versus GF and GM. Such cases were divided by two for each location, added to the total number of cognate correspondences and divided by the total number of terms available to produce a percentage. Considerable range in percentages was encountered: Tk scored 64% with OJ, while Fi scored 0% with An. It should be noted that the WF terms given in the appendix are stated by Capell (1958) to be from An; the An terms supplied here are those of Guiart, who believes Capell's terms are most probably from WF (1961: 39).

TECHNOLOGY

The third quantitative index of comparison used in this study has been referred to above under the heading of technology; this is, however, a blanket term used to describe the 58-item trait list used here, of which 44 may be categorized as items of material culture and methods of manufacture (canoes,⁴ fishing apparatus, tools, weapons, houses, and clothing manufacture). The remainder of the traits deal with the presence or absence of domesticates (dog, pig, fowl, kava, and betel), details of subsistence patterns (cooking and fishing techniques), bodily ornamentation, and a single item of social organization (presence of normative or relatively common cross-cousin marriage). The complete list of traits, their distribution, and the sources for each location are given in Appendix III.

The chief problem encountered in the selection of these traits was procuring a significantly large list of traits which were not either subject to severe environmental limitation or were highly ecologically adaptive and hence subject to diffusion through a minimum of actual contact rather than through genetic relationship or substantial continuous contact.⁵ It should be noted that while some of the traits are certainly more likely from the standpoint of environment to occur on high islands than on atolls, the influence of environment has its limits, and the presence of these traits on atolls is almost always feasible. Thus while EI does not produce tapa, and the breadfruit tree from which it can be made is not indigenous, the tree has been successfully introduced by Europeans and currently thrives there (Koch 1961: 44). Similarly, the presence of pigs and fowl on OJ is due to recent European introduction (Parkinson 1897: 112), and their previous absence has a historical rather than an ecological explanation.

Nonetheless, the fact remains that given the lack of complete documentation of the material culture and technology of the Outliers, some degree of correlation in the traits selected due to environment rather than historical contact is almost inevitable. Note that only seven of the Outliers were sufficiently covered in the literature to permit their inclusion in the technology comparison, and only Ka is represented by a complete list (see Table I). To obtain some idea of the degree to which this factor

affects the percentages, those of all high islands to other high islands were averaged; the same was done with all low to low (including raised coral islands) and high to low correspondences. The results appear below in Table II, along with the results of the same procedure applied to the lexicostatistical and kinship figures. It is clear that while the first two indices are not affected significantly by island type, as shown by the medial position of the averaged high-low figures, this is not the case with the technology percentages, where the high-low average is six points below the averaged high-high and low-low figures. While other factors may help to account for this, including relative degrees of historical relationship of the high versus the low islands in this study, the high-low correspondences must still be treated as somewhat deflated.

The percentages themselves are the total of shared traits divided by the total number of traits for the two areas, corrected by subtracting the number of traits for which data were lacking; traits for which data were missing in both areas were of course only counted once. Shared absences of traits were not computed.

TABLE II: AVERAGED CORRESPONDENCES OF HIGH TO HIGH, LOW TO LOW, AND HIGH TO LOW ISLANDS

	<u>LEXICOSTATISTICS</u> (excluding F1)		<u>KINSHIP</u>	<u>TECHNOLOGY</u>	
	<u>Set D</u>	<u>Set F</u>			
HIGH TO HIGH	34.3	50.6	24.3	31.0	average 30.1
LOW TO LOW	39.4	52.1	28.4	27.0	
HIGH TO LOW	35.4	51.9	24.9	24.1	24.1

CHAPTER IV

THE LINGUISTIC EVIDENCE

This chapter will discuss the lexicostatistical results obtained in this study, as well as the phonological and grammatical evidence pertinent to Outlier-central Polynesian relationships. Correspondences and resemblances in patterns of relationship will be pointed out, but most detailed inferences as to sources of Outlier population will be left until the ethnographic evidence has been considered in the following chapter.

LEXICOSTATISTICS

The lexicostatistical results are presented in Table III on the following page. As mentioned above, only two of the nine sets of percentages are presented here: set F, using all available items and counting doubtful and partial cognates as non-cognate; and set D, based on the minimum list of 94 words and representing an average of the percentages obtained by formulae A, B, and C. Comparisons of these results with other studies are difficult to make due to lack of correspondence between the formulae used here and those used by Dyen and Elbert. The set F figures are roughly comparable to those available in Dyen's study (1963a), although consistently somewhat lower. Comparison with Elbert's results are complicated by the fact that he did not use the standard 200-item list, but rather a specialized list including ". . . such Oceanic terms as banana, coconut, harbor,

TABLE III: LEXICOSTATISTICAL CORRESPONDENCES

Underlined figures in set F
those also in parentheses

are those from earlier studies;
are taken from Bayard n.d.b

SET F:
(to nearest .1%)

	<u>F1</u>	<u>To</u>	<u>Uv</u>	<u>Sm</u>	<u>El</u>	<u>Fu</u>	<u>T1</u>	<u>Re</u>	<u>P1</u>	<u>Si</u>	<u>OJ</u>	<u>Tk</u>	<u>WU</u>	<u>MF</u>	<u>Me</u>	<u>WF</u>	<u>Ka</u>	<u>No</u>	
Ha	(<u>15.7</u>)	<u>33.5</u>	23.2	<u>32.5</u>	26.3	23.7	25.5	<u>34.4</u>	<u>34.3</u>	<u>35.3</u>	<u>35.1</u>	<u>35.1</u>	25.8	23.7	24.1	22.1	32.1	31.6	Ha
No	(15.5)	36.3	27.8	39.9	25.7	29.9	27.7	30.6	26.5	25.7	27.4	32.5	32.9	32.6	26.4	24.7	35.7	////	No
Ka	10.8	<u>37.1</u>	27.5	<u>35.5</u>	30.8	30.3	26.8	<u>43.7</u>	<u>42.0</u>	<u>39.9</u>	<u>44.3</u>	<u>43.7</u>	34.2	29.3	28.5	23.6	////	53	Ka
WF	10.7	25.6	31.6	27.3	33.3	25.5	29.5	31.0	32.5	27.0	25.5	28.1	31.2	33.4	37.0	////	45	41	WF
Me	13.9	34.5	42.4	34.5	38.7	38.1	39.8	31.3	31.8	35.5	36.7	40.3	29.6	40.2	////	49	50	46	Me
MF	16.3	30.4	35.8	26.6	33.1	34.6	31.9	28.4	30.0	29.4	29.2	31.9	37.8	////	54	46	45	43	MF
WU	12.8	37.7	37.2	34.2	36.9	48.6	39.7	36.6	38.8	31.8	30.5	36.5	////	47	54	43	45	42	WU
Tk	11.3	<u>41.0</u>	34.2	<u>41.0</u>	49.2	38.6	38.0	<u>46.2</u>	<u>47.1</u>	<u>62.0</u>	<u>67.2</u>	////	53	50	59	48	--	48	Tk
OJ	9.6	<u>36.7</u>	29.6	<u>39.6</u>	39.3	34.8	31.4	<u>46.2</u>	<u>45.3</u>	<u>60.0</u>	////	--	48	45	54	45	--	46	OJ
Si	10.3	<u>37.4</u>	30.1	<u>37.6</u>	40.2	32.5	32.5	<u>42.9</u>	<u>52.6</u>	////	--	--	52	43	53	45	--	45	Si
P1	9.2	<u>42.3</u>	30.8	<u>42.0</u>	35.1	32.5	34.2	<u>45.7</u>	////	--	--	--	45	46	53	44	--	43	P1
Re	11.4	<u>43.2</u>	34.9	<u>42.6</u>	35.6	36.8	34.0	////	--	--	--	--	51	45	54	43	--	41	Re
T1	12.2	30.7	36.7	32.0	46.4	42.9	////	56	56	61	59	66	58	51	65	50	50	45	T1
Fu	11.6	40.8	56.9	34.7	40.9	////	71	60	55	61	62	66	62	50	64	50	53	46	Fu
El	12.5	35.3	42.4	34.4	////	71	70	55	52	63	64	69	55	50	58	49	48	45	El
Sm	(<u>17.2</u>)	<u>47.4</u>	33.3	////	50	52	50	--	--	--	--	--	44	40	49	38	--	57	Sm
Uv	15.7	59.9	////	54	63	63	60	52	50	53	52	58	48	46	58	44	46	43	Uv
To	(<u>21.8</u>)	////	72	--	56	58	53	--	--	--	--	--	45	41	53	42	--	53	To
F1	////	--	23	--	26	28	26	23	22	24	25	24	23	24	25	23	22	--	F1
Ha	--	--	43	--	49	47	46	--	--	--	--	--	40	41	40	37	--	51	Ha

SET D:
(to nearest 1%)

outrigger float, and pandanus" (1953: 150); only 119 terms on the two lists coincide. The Elbert figures are roughly in the range of set D in this study, but show a somewhat smaller range of variation, probably due to the high cultural content of the list and Elbert's "multiple cognate" method of scoring (ibid.: 152).

Prior to a discussion of the Outlier percentages specifically, the F1 and Polynesian (PN) correspondences should be examined. The F1 figures support the independence of the F1 and PN subgroups, in that F1 appears equally distant from all the PN languages considered with the exception of To. The low correspondence of Uv to F1 and the relatively high Sm-F1 figure, probably reflecting borrowing either from F1 directly or through To, indicate that the high To-F1 percentage is due to borrowing or a specifically Tongan higher retention rate, rather than to a separate derivation of PTo from proto-F1-PN, a higher retention rate for the languages descended from PTo, or other genetic explanations (see note 5, Chapter II).

Within western Polynesia the five languages compared form two fairly well-defined groups with Uv in an intermediate position: Sm and To, with low percentages to most of the Outliers, and Fu and El, with considerably higher ones, particularly in the case of Fu-southern Outliers and El-Tk, El-Si. Fu and El, along with Ti, form a strikingly close group in terms of the overall pattern of their percentages to the other languages involved; this is illustrated by the

plotting of their percentages against the remainder of the languages considered which is shown in Figure 2; the No figures have been added for contrast. There are, however, several significant differences. The high Fu-Uv relationship is to be expected as a result of the long-term contact between these two islands, but the high correspondence of both El and Fu to T1, and the low figure the latter shares with Sm, cannot be solely the result of borrowing. In addition, the uniquely high Fu-WU set F figure should be noted (see Figure 3), as well as the high El-Tk and relatively high El-Si and El-OJ percentages. The generally low level of Uv correspondences (aside from Uv-Fu and Uv-Me) is also apparent. The position of Uv as a language closely related to To but heavily influenced through contact with Fu is shown by its lack of high percentages with T1 and El despite its quite high figure with Fu.

Turning to the southern Outliers, Me shows the highest general level of correspondence to other areas, and particularly to the El-T1-Fu group; this pattern is less emphatically shared by MF and WF, both of which show their highest percentages to Me with the El-T1-Fu groups ranking second in both cases. The overall level of figures for WF is quite low, probably indicating considerable borrowing from the neighboring islands of Eromanga and particularly Tanna. The pattern of WU is quite distinct from the other three southern Outliers (Fig. 3), most notably in its low figures with Me, El, and T1 and relatively much higher figure with Fu.

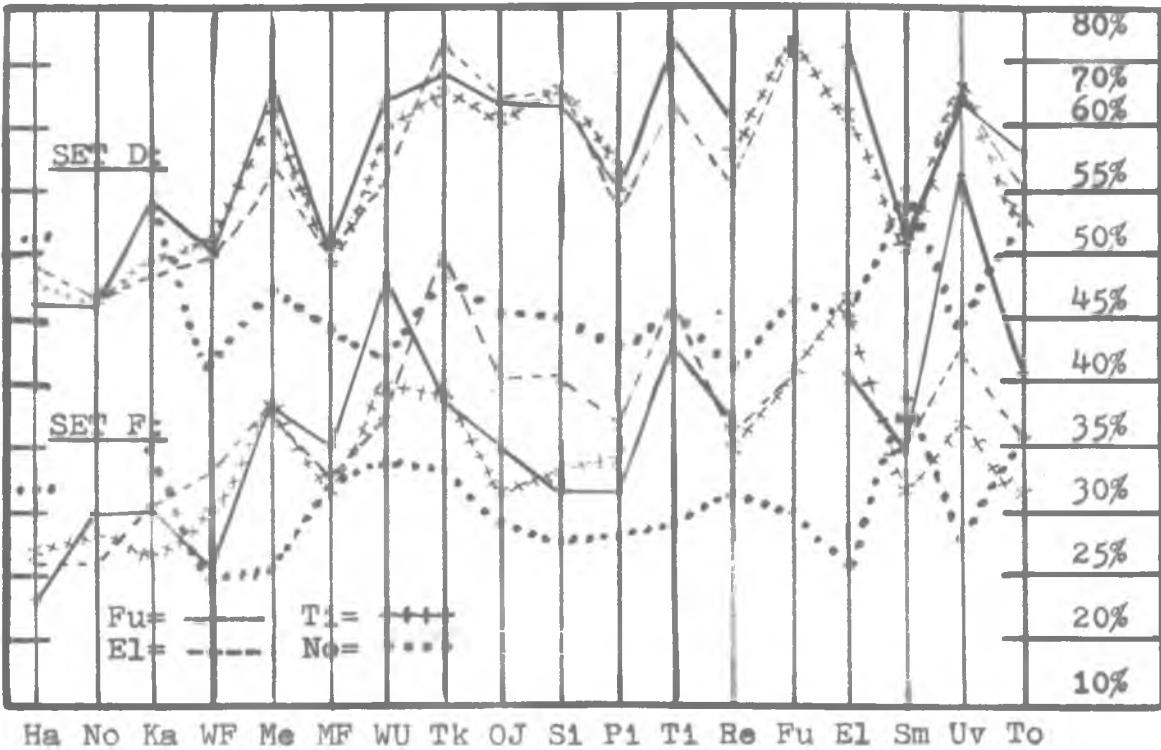


FIGURE 2:
 PLOTTED LEXICOSTATISTICAL PERCENTAGES OF Fu, El, T1, AND No.
 (excluding F1; values shown are approximate)

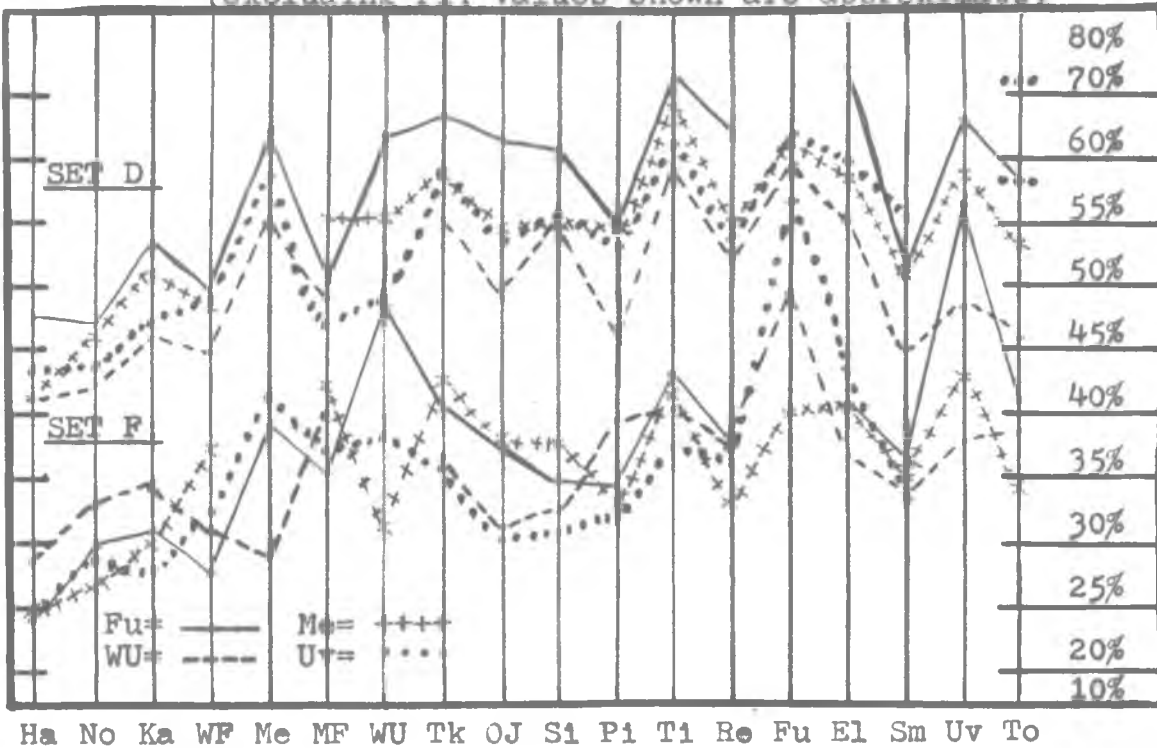


FIGURE 3:
 PLOTTED LEXICOSTATISTICAL PERCENTAGES OF Fu, Uv, WU, AND Me.
 (excluding F1; values shown are approximate)

Despite the fact the the population of WU is generally thought to be the result of a migration from Uv some 250 years ago (Burrows 1937: 50-1; Brügger 1944: 132; Cané 1948: 15; Guiart 1948, 1952, 1953; Hollyman 1959: 361; Leverd 1917ab, 1922), the data clearly do not support this explanation.

The central atolls of Tk, Si, and OJ form a fairly close-knit group in terms of high correspondences with each other, but differ in their relationships to central Polynesia. Tk and Si show high levels of correspondence to El, but considerably less to Fu, Sm, and To. OJ, on the other hand, seems closest to both El and Sm, and less so to To; all are low to Uv.

Among the other central Outliers, T1 has already been discussed; save for a slightly higher level of correspondence to nearby Outliers, its pattern is very similar to those of El and Fu. P1 and Re share high figures with each other and with the central atolls, Ka, Sm and To, but lower ones with T1, No, the southern Outliers, El, Fu, and Uv. Since the locations to which they show high correspondences are those involved in the earlier study mentioned above which lacked a doubtful-partial category, it appears that these percentages may well be some five points higher on the average than those arrived at in the later calculation, based on the Ha figures as a standard of minimum relationship in both studies. Unfortunately no set D figures are available for comparison between these locations. Finally, no distinctively high relationship between Re and P1 and other locations is apparent.

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Among the other central Outliers, Ti has already been discussed; save for a slightly higher level of correspondence to nearby Outliers, its pattern is very similar to those of El and Fu. Pi and Re share high figures with each other and with the central atolls, Ka, Sm and To, but lower ones with Ti, No, the southern Outliers, El, Fu, and Uv. Since the locations to which they show high correspondences are those involved in the earlier study mentioned above which lacked a doubtful-partial category, it appears that these percentages may well be some five points higher on the average than those arrived at in the later calculation, based on the Ha figures as a standard of minimum relationship in both studies. Unfortunately no set D figures are available for comparison between these locations. Finally, no distinctively high relationship between Re and Pi and other locations is apparent.

The two northern atolls seem dissimilar in their correspondences despite a relatively high figure shared between them. Even allowing for the possibility of inflated percentages, Ka appears consistently higher to the central atolls of Tk, OJ, and Si than does No, which shows high figures only to Sm, To and Ka.

PHONOLOGY

Perhaps the most important single phonological distinction within Polynesian as far as a determination of the sources of the Outliers is concerned is that existing between the PTo and PNPn subgroups mentioned above. While the three PTo languages retain PPN /*h/, this phoneme is lost in all other PN languages, and is in fact fully reflected only in To and Niue. PPN /*ʔ/ is also retained by To and partially reflected in Uv, but is lost in Niue; in addition, it is also reflected in Re and partially reflected in Fu and in Easter Island as well (Fuentes 1960), and was thus apparently present in the phonemic inventory of PNPn following its separation from PTo. The latter group is further characterized by the reflection of PPN /*s/ as /h/, but this cannot be said to be distinctively PTo, since a similar shift in proto-Eastern Polynesian (PEPN) apparently took place.

A glance at the phoneme correspondences of Outlier languages presented in Table IV will show that none of the Outliers has retained PPN /*h/, and Re alone reflects PPN /*ʔ/. On a strictly phonological basis, the choice of sources

TABLE IV: CONSONANT PHONEME CORRESPONDENCES FOR THE LANGUAGES IN THIS STUDY

F1	PPN ¹	To	Uv	Re	Fu	Sm	El	Ti	S1	Tk	OJ	P1	Ka	No	Me	MF	WF	AN	WU	Ha
mb	p	p	p	p	p	p	p	p	p	p	p	p/ph	p/ph	p/ph	p	p	p	p	p	p
t/nd ²	t ³	t	t	t	t	t	t	t	t	t	k	t/th	t/th	t/th	t	t	t	t	t	k
k/Ng	k	k	k	k	k	?	k	k	k	k	?	k/kh	k/kh	k/kh	k	k	k	k	k/g	?
∅	?	?	?(∅)	?	?/∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
v	f	f	f	h	f	f	f ⁴	f	h	f-h	h	f	h	h	f	f	f	h	f	h
w	v	v	v	b	v	v	v	v	v	v	v	v	v-w	v	v	v-w	v	v	v	w
s(ð)	s	h	h	s	s	s	s ⁴	s	s-h	s	s-h	∅	h	s-h	s	s	s	s-h	s	h
ð(s)	h	h	h(∅)	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
l	l	l	l	Ng ⁵	l	l	l	l/r	l	l/r	l	l	l	l	l/r	l/r	l/r	l/r	l/r	l
r/ndr	r ⁶	∅	l	Ng ⁵	l	l	l	l/r	l	l/r	l	l	l	l	l/r	l/r	l/r	l/r	l/r	l
m	m	m	m	m	m	m	m	m	m	m	m	m/hm	m/hm	m	m	m	m/mw	m/mw	m	m
n	n	n	n	n	n	n	n	n	n	n	N	n/hn	n/hn	n	n	n	n	n	n	n
N	N	N	N	N	N	N	N	N	n	n	N	N	N	N	N	N	N	N	N/k	n

Notes: 1) from Elbert 1953: 154.

2) items in parentheses are less common reflexes; those separated by slant lines are distinct phonemes; those joined by hyphens are allophones.

3) PPN /*ti-/ is palatalized to To, Uv /si-/, Fu /tsi-/, MF /si-/, /ʃi-/, WF /š̥i-/,

4) /f/ and/or /s/ have developed /h/ allophones in northern El. / An /č̥i-/.

5) /N/ on Be.

6) Elbert reconstructs /r/ on the basis of the To /∅/ reflex alone; no other distinctive reflexes are forthcoming thus far.

for the Outliers would thus seem to be limited to Sm and El among the languages treated in this study. While this agrees with the lexical relationships exhibited by To and Uv, it conflicts strongly with the high figures shared by Fu to several Outliers.

Figure 4 represents an attempt to diagram a series of phonological shifts which may partly reconcile the conflict, although problems still remain. These are as follows:

(1) PPN splits into PNPN (/ *h/ > /ø/) and PTo (/ *s/ > /h/).

(2) A: PEPN becomes distinct from what will be called here "proto-Western Polynesian" (PWPN); PEPN retains / *ʔ/, but / *s/ becomes /h/.

(2) B: At approximately the same time the language ancestral to Re splits off from PNPN, retaining PPN

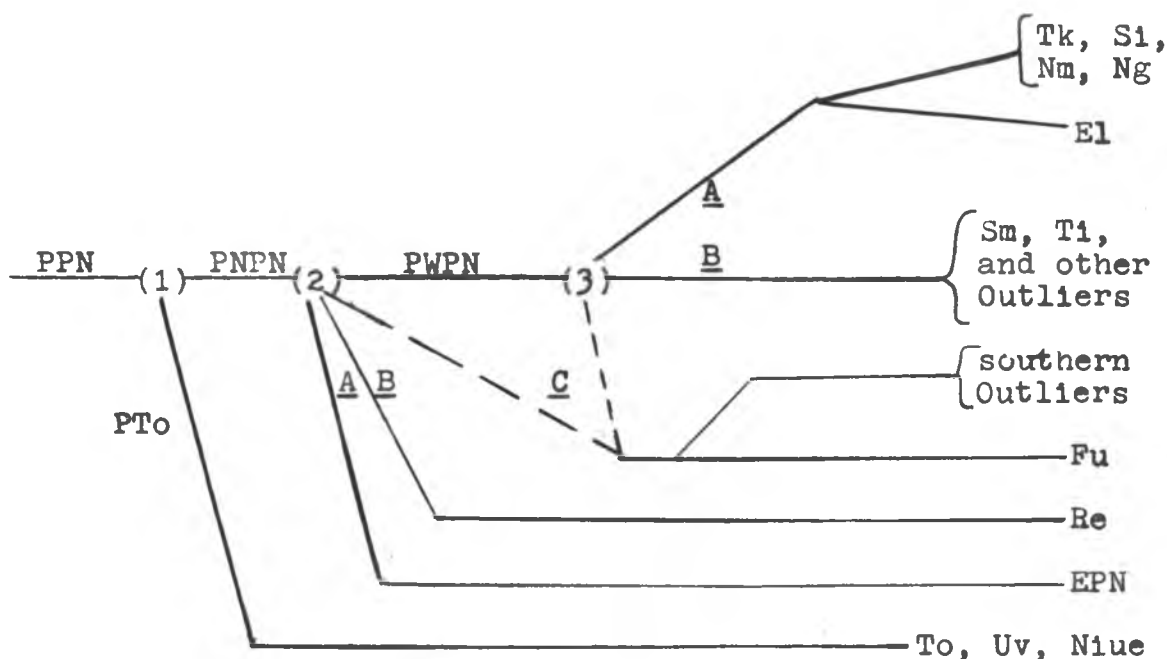


FIGURE 4: POSSIBLE SEQUENCE OF PHONEMIC SHIFTS IN POLYNESIAN.

*/*s/* as */s/* and */*ʔ/*, but at some time shifting */*f/* to */h/* and */*l/-/*r/* to */ŋg/*.

(2) C: Fu either separates from PNP prior to the loss of */*ʔ/* in PWP and retains this phoneme or is descended from PWP, and is later subjected to considerable influence, including settlement, from Uv (Burrows 1936: 51, 56); at this time */ʔ/* is reintroduced to the Fu phonemic inventory, first through extensive borrowing from Uv and later through expansion to native Fu vocabulary. This latter might explain the occurrences of Fu */ʔ/* where PPN has */ø/* (cf. Burrows, *ibid.*: 6-7), as well as the only partial retention of */*ʔ/* by Uv due to borrowing from Fu, but it is the more tentative of the two alternatives. Even more problematical is the loss of */*ʔ/* in all southern Outlier languages; this phoneme is seemingly very easily lost, however, as witness its EPN retention only in Easter Island.

(3) PWP also loses this phoneme, and subsequently

A: El and the language ancestral to Tk, Nm, and Ng develop a series of *[h]* allophones of */f/* and/or */s/*, as well as phonemic consonantal length through reduction of forms of the shape $C_1V_1C_1V_1C_2V_2$ to $C_1C_1V_1C_2V_2$. (this reduction also occurs medially, as in Tk makalli, "cold" *makalili). Tk, Nm, Ng, and Si */*N/* */n/*.

B: Sm and Tl retain the PWP phonemic system unchanged, while No, Ka, and Pl develop a series of contrasting aspirated and lengthened stops (and in the case of the

latter two, a series of nasals as well); while this is a similar phenomenon to that described in the above paragraph, the former seems to represent more a development of a general phoneme of consonantal length rather than parallel series of contrasting stops and nasals. Although the processes involved in both phonemic expansions were very probably the same, it seems likely that these expansions are the results of at least two independent innovations, and very possibly more.

There are a number of problems in the above analysis; chief among them is the low lexical correspondence shown by Sm to other NPN and WPN languages as compared to its relatively high percentages with To. Extensive borrowing over a long period of time is the only answer immediately forthcoming. The problem of retention of PPN /*ʔ/ in Fu and its absence in languages lexically close to Fu is even more difficult to answer, but the partial explanations offered above seem more economical than the proposition that /*ʔ/ remained in all NPN languages, including those here grouped under WPN, until after the settlement of the Outliers and was then lost by all WPN languages independently. It would seem more likely that while /*ʔ/ was retained in PEPN, as evidenced by its presence in Easter Island, it was subsequently lost in PWPN.¹

If this assumption is correct, it gives one of the few available hints as to the relative chronology of the

settlement of the Outliers, in that those grouped here under WPN (all but Re and the southern Outliers) must represent settlements made after PEPN had split off from PWP, and thus postdate the initial settlement of eastern Polynesia. But phonology sheds little light on the internal chronology of Outlier settlement, and the order used to describe the phonological developments under (2) and (3) above is purely arbitrary.

A final note should be added concerning the arguments put forth for a pre-central Polynesian settlement of the Outliers based on phonology. These have almost entirely focused on the phonemic contrast of /l/ and /r/ in Ti, Me, MF, WF-An, and WU, while ignoring the lack of reflexes there of PPN /*ʔ/ and /*h/. The chief proponent of this argument is again Capell, who states: "Futuna-Aniwa (New Hebrides) does distinguish these two (and so does Mae), and this fact, as well as the much greater morphological complexity of these languages, argues for an early date" (1962a: 380). In a reply in the same article, Elbert comments, "An l/r distinction does exist in these languages . . . but the distinction does not correspond with the suggested PPN l/r distinction [see note 6, p. 58 above] and probably developed after the languages had separated from other PN speech" (p. 405). A recent article by Firth (1963) has established the fact of an l/r distinction in Ti, and its existence in Tk is also likely (G. Grace, personal communication), but like the southern Outliers these seem almost certainly the results of late

phonemic expansion (perhaps stimulated by Melanesian loan words in some cases) rather than proto-Polynesian survivals.

GRAMMATICAL EVIDENCE

Prior to dealing with the grammatical evidence for internal Polynesian relationships pertinent to the Outliers, it might be well to continue the above discussion and examine the arguments offered for a "remnant" theory of Outlier settlement on grammatical and morphological grounds. In discussing the "morphological complexity" of Outlier languages mentioned above, the argument which Capell presents in greatest detail concerns the dual and plural pronominal systems of Outlier versus central Polynesian languages.

The standard NPN plural pronouns are as follows: 1st person inclusive, ta(a)tou; 1st exclusive, ma(a)tou; 2nd, koutou; 3rd, la(a)tou. Capell states, "On the other hand, some of the outliers present plural pronouns retaining the initial syllable of *AN kita, 'we, inclusive'; [2] Sikayana kitatou, as against the more frequent tatou" (*ibid.*: 392). Given as preserving the ki- prefix are Tl, Vaitupu (El), Sm, To, Ka, No, Si, Ng, Re, Pi, WF, An, and WU; the Outliers where it is not present are OJ, Tk, Tl, MF, and Me. The retention of ki- in the Outliers in the former group demonstrates their antiquity in relation to central Polynesia.

There are two objections to this theory: a) sources vary considerably as to the presence or absence of this prefix; thus while Ray (1919-20: 61-2) gives it as present

on Ng, a later list collected by Grace shows it not present. What may be responsible for this is b) that at least as far as Sm, To and Si are concerned, both the prefixed and un-prefixed forms are present, the latter being used in pre-verbal position (Grace 1959: 42). One may conclude that both forms were present in PPN, and some languages have selected one form over the other for retention; EPN seems to have chosen the shorter form exclusively.

However, a satisfactory explanation is lacking for the puzzling fact, also pointed out by Capell (1962b: 6, 46), that while the usual central Polynesian sentence pattern is V-S-O, Me, WF, An, and other New Hebrides Outliers have the pattern S-V-O; this is also true of Tk (I. Howard, personal communication). But it should be mentioned that V-S-O order, while prevalent in central Polynesian, is not an absolute rule, and frequent exceptions conforming to the S-V-O pattern may be noted (e.g., in Kennedy 1945). Influence from neighboring Melanesian languages, a number of which have S-V-O word order, is another possible reason for this phenomenon.

Such contact may also explain another of Capell's pre-Polynesian "survivals": "PN has a set of plural pronouns which are historically trials . . . but in Futuna-Aniwa these occur as trials and there is a separate set of plural pronouns, illustrated by Futuna kitea, 'we (inclusive)'. These could hardly be borrowings from Tanna, because the nearest Tanna dialect has ketaha, 'we,' keteha-r, 'we

three'--a different formation" (1962a: 392). In the writer's opinion a WF borrowing from Tanna ketaha is more likely than a retention from a pre-PN pronominal system, particularly in view of the fact that no other New Hebrides Outlier (or any other Outlier, for that matter) has such a form.³

While the evidence for retention of pre-central PN grammatical or morphological forms in any group of Outliers or even single Outliers seems inadequate, there is a larger amount of such evidence which serves to relate them to central PN, and specifically to NPN as opposed to PTo. Pawley, in a recent paper (n.d.) on the subgrouping of PN through the use of shared innovations in the area of minor morphemes, finds the PTo-NPN distinction borne out by a number of such innovations. He further makes a good case for the grouping of Fu with NPN rather than PTo, thus supporting the lexical and phonological evidence presented above. The 1st inclusive and exclusive and 3rd person non-singular pronoun roots make a convincing example: To tau-, mau-, nau-; Niue tau-, mau-, lau-; Uv ta-, ma-, na-; Fu and general NPN ta-, ma-, la-. The Uv loss of u is probably due to Fu influence; it does, however, retain the na- rather than la- 3rd person form. Another example is To, Uv, Ni e, "singular definite article," as compared to Sm, Fu le, general NPN te.

Unfortunately, little has been done in the way of comparative grammar and morphology as far as the Outliers

specifically are concerned; Ray's work (1919-20) is perhaps the only comprehensive one, and it relies heavily on vocabulary comparison as well. However, all the data present agree with the NPN forms Pawley presents rather than with the PTo forms; the only exception apparent is the presence of na- rather than la- in Ka. While the PTo pronominal forms might be recent innovations and hence not diagnostic, it is highly unlikely that all of the distinctions which Pawley presents in other minor morphemes are such, and the presence of NPN forms in as many of the Outliers as there are data for must be viewed as significant.

CHAPTER V

THE ETHNOGRAPHIC EVIDENCE

Before presenting the results of the kinship and technology comparisons and a discussion of what evidence has been recorded concerning Outlier traditions of settlement and original homelands, it is necessary to consider first the ethnographic arguments advanced in favor of the pre-PN "remnant" theory. These are for the most part based on the simplicity of Outlier culture and the lack of "advanced" or "fully developed" social organization, religious ritual, and the like on most of the Outliers.

Capell's position on the above has already been stated in Chapter I. In a discussion of the social organization of WF and An, he concluded ". . . all the evidence to date suggests the idea that these western Polynesian settlements [the Outliers] are stagnated remains from very early migrations, not throwbacks from eastern Polynesia" (1958: 9). The An kinship system is offered as evidence of deviation from central Polynesian norms in that ". . . the kinship terms show a social organization where marriage with the cross cousin prevails" (*ibid.*: 7), but the system given by Capell (see WF, Appendix II) is a standard Hawaiian one as far as cousin terms are concerned. The system collected by Guiart from the same location (An, Appendix II) does show the influence of preferential cross-cousin marriage, and Guiart states that in fact MBS-FZD marriage is the norm. However, both the marriage pattern and a number of the terms are almost certainly borrowings from neighboring Melanesian

islands, most probably Tanna.

Birket-Smith, after a thorough comparison of the cultural elements he found on Re with the remainder of Polynesia, concludes that Re is comparatively distantly related to the latter:

One outcome of our analysis is the demonstration of the relative poverty of Rennellese culture. Now it is a well-known fact that throughout the Pacific the culture of the coral islands is always markedly poorer than that of the volcanic groups, simply because the natural resources are more limited. That, however, will hardly account for everything as far as Rennell is concerned. As we have seen not only the specific eastern traits but also many of the elements which are found elsewhere in western Polynesia are lacking here. Another characteristic of its culture is its old-fashioned stamp. By far most of its elements are so widespread that they must be considered proto-Polynesian, and some of them are even remarkably primitive as for instance the bark-cloth techniques, the functioning of the chief-priests as inspired prophets, etc. The conclusion must be that the population of Rennell separated from the rest of the stock at an early period and since then has had but little intercourse with the other islands (1956: 206).

The results of the technology study to be presented below, however, show that while Re does not have the number of central PN high-island traits shared by To, Sm and Fi, among others, it nonetheless is considerably less "impoverished" in this regard than some other Outliers; the atolls are lower, as would be expected, and the high island of Er is lower still. Several of the elements Birket-Smith mentions as being characteristic of western PN (p. 205) are either mostly absent there (as food pounders) or represent such post-settlement introductions to To and Sm from Fi as slit gongs and panpipes (Hans Fischer 1961); most of the rest are

absent primarily due to the infertile topography of Re and its lack of a barrier reef and lagoon.

The conclusion to be drawn is that the relative paucity or "primitiveness" of Outlier cultures can in most instances be traced to the limitations which environment and isolation have established. In some cases the environment of the original home of an Outlier's population might also have had an equally limiting effect: a canoeful of Ellice Islanders landing on even an exceptionally fertile uninhabited high island will not recreate To or Sm culture, but rather innovate as well as borrow suitable items of culture from whatever other people are encountered in the vicinity. It is probable that most of the "primitive" or non-central Polynesian elements in Outlier culture may be accounted for by these two mechanisms.

KINSHIP

The results of the kinship terminology comparison listed in Table V support for the most part the groupings already indicated by the linguistic evidence presented in the previous chapter. Within western PN, the distinctiveness of To and Uv is again demonstrated. The F1 correspondences show that in this case it is To and Uv which have deviated from the general western PN norm; the Ha system, which is fairly representative of EPN, is also shown to be quite distinct. Although only incompletely represented, the Sm system seems also to be quite different from any other. The

	<u>Ha</u>	<u>An</u>	<u>WF</u>	<u>No</u>	<u>Ka</u>	<u>Tk</u>	<u>OJ</u>	<u>Re</u>	<u>T1</u>	<u>Fu</u>	<u>El</u>	<u>Tl</u>	<u>Sm</u>	<u>F1</u>	<u>Uv</u>
To	11	11	14	8	9	16	16	43	26	40	24	27	24	9	61
Uv	18	3	5	9	13	13	13	37	18	29	18	18	25	8	
F1	23	0	21	29	14	34	32	25	24	26	19	18	27		
Sm	16	12	12	6	21	15	15	24	13	25	16	34			
Tl	23	16	25	26	14	34	34	32	38	50	55				
El	24	10	31	32	19	41	41	38	41	53					
Fu	24	13	34	32	21	45	45	55	55						
T1	29	17	43	34	21	48	52	50							
Re	25	9	32	34	21	36	43								
OJ	25	14	43	34	25	64									
Tk	23	14	39	40	27										
Ka	7	7	18	37											
No	13	3	32												
WF	23	21													
An	7														

TABLE V: KINSHIP TERMINOLOGY CORRESPONDENCES

Fu-EI-TI group once again shows high correspondences, particularly in the case of Fu-EI and Fu-TI. The TI system, while quite close to EI and Fu, shows a uniquely high relationship to Sm,¹ but is less closely related to the Outliers in general than EI or Fu, which are clearly the central PN areas most closely related to the Outliers as a whole.

The central Outliers of OJ, Re, and TI show their highest central PN correspondences to Fu; Tk is only slightly less close to EI, as are OJ and TI. All four Outliers are closely related, particularly Tk-OJ, OJ-TI, and Re-TI; Re is unique in its high percentage with To. Save for this latter correspondence, the general pattern is quite similar to that emerging from the lexicostatistical comparison.

The only southern Outliers represented are WF and An, although it is doubtful how much the two systems recorded reflect differences in social organization between WF and An as opposed to general instability and individual variation on both islands. Both systems, but particularly that of An, are apparently in a process of change reflecting a considerable degree of acculturation to Tannese-Eromangan norms of kinship and marriage. An is very distantly related to the remainder of the systems considered here as a result, although as would be expected its highest correspondence is with WF. The latter, however, seems considerably closer to the central Outliers than to An; particularly high percentages are shared with TI, OJ, and Tk, as well as with Fu.

The two northern atolls both seem more distantly related to the central Outliers and Polynesia in general than any other of the areas considered here except An. In the case of Ka, this is due to a striking reduction in number of kin terms and distinctions recognized; seven terms suffice for the entire system, including affinals, and no sibling distinctions of any sort are made, all being grouped under the term used elsewhere for MB. No has undergone a similar loss of sibling distinctions, but retains the normal teina, as well as separate affinal and grandparent-grandchild terms. However, it has borrowed the terms for spouse (potu) and parent-in-law (saurapa) from Micronesia--compare Ponapean paut and šaulap (Hambruch and Eilers 1936). Given the low figures which result from these changes, both Ka and No seem to have their closest relationships to the central Outliers, Fu and El; No is about equally close to all, but with a notably higher Tk figure, while Ka seems closest in general to OJ and Tk, aside from the expected high figure to No.

TECHNOLOGY

Perhaps the first conclusion to be drawn from the figures listed in Table VI concerns the position of Fi relative to other areas in Melanesia (here represented by BS and Er) on the one hand, and to western PN on the other. It is clear that in technology, as in kinship (Table V and Appendix II) and language (Grace 1959), Fi is far more closely related to PN than to BS, Er, and other areas in Melanesia.²

	<u>Sm</u>	<u>Uv</u>	<u>To</u>	<u>Er</u>	<u>WF</u>	<u>Fu</u>	<u>El</u>	<u>T1</u>	<u>Re</u>	<u>Tk</u>	<u>OJ</u>	<u>BS</u>	<u>Ka</u>	<u>No</u>	<u>Po</u>	<u>Tr</u>
F1	54	48	60	22	36	40	31	39	33	29	33	29	29	22	40	38
Tr	33	30	37	6	20	28	33	34	26	31	38	22	38	32	40	
Po	33	31	39	14	24	31	28	37	31	24	37	30	33	28		
No	20	16	24	4	11	18	22	21	24	24	24	11	28			
Ka	30	23	35	9	22	22	32	34	30	32	35	15				
BS	22	23	24	12	16	22	13	27	17	12	21					
OJ	32	25	32	7	20	22	35	36	25	28						
Tk	24	19	28	6	17	18	22	27	20							
Re	26	19	38	20	31	22	24	36								
T1	38	34	40	16	24	38	30									
El	28	21	29	7	18	18										
Fu	40	42	40	13	21											
WF	27	22	39	25												
Er	15	13	24													
To	53	49														
Uv	49															

TABLE VI: TECHNOLOGY CORRESPONDENCES

BS and Er, on the other hand, are more closely related to areas in Polynesia and Micronesia than to each other, thus supporting the currently emerging picture of Melanesia as an area of widespread linguistic, cultural, and racial diversity from which Micronesia (excluding Palau and the Marianas) and particularly Polynesia are relatively recent derivations (see Goodenough 1957 and Grace 1955; also Howells 1943 as an example of the attempts made to reconcile this diversity by the postulation of successive waves of migration).

The figures also indicate two primary sources of diffusion of the elements considered: Tr and Po in Micronesia, and the F1-To-Uv-Sm complex in western Polynesia. The latter has had its greatest influence on Fu and T1, whose somewhat lower percentages are probably due to the lack of a reef-lagoon ecology and secondarily to isolation. The Tr-Po center has had the majority of its contacts with Tk, OJ, and probably with Nm, Ng, and Si as well, although lack of data prevented their inclusion in this comparison. As might be expected, the two high-island, reef-lagoon culture centers also show high correspondences with each other due to this similarity in environment. For the same reason, El stands isolated in western Polynesia; its figures indicate contact with Micronesia, presumably through Gilbertese settlers and invaders, as well as a relatively strong relationship to the F1-Sm-To group and a somewhat closer one to T1. Also apparently significant are the El-OJ and

El-Ka figures, since they are at least ten points higher than the percentages of El with the remaining atolls of No and Tk; however, this might be due in some measure to the smaller land area of No and Tk and consequent lack of contact and cultural elaboration when compared to Ka and OJ respectively.

The Outliers themselves reflect the impact of their small size and limited ecology by almost universally showing equally high or higher correspondences to one or both of the two centers of diffusion than they do to each other, a situation quite the opposite of the lexicostatistical and kinship figures. However, some correspondences which seem to reflect continued contact and post-settlement influence exist. The Ti-Re figure is supported by known contacts (e.g., Firth 1931); less contact, if any, seems to have taken place between Re and the central atolls. Within the latter, the Tk-OJ figure is surprisingly low, considering the high lexical and kinship correspondences. Interestingly enough, Tk is some 7% higher to Tr than to Po, while OJ shows only a 1% difference. Due to its considerably larger size, OJ is in a better position to receive voyagers than Tk, and is as well somewhat less isolated, which may account for its higher figures in general and apparent influences from both Tr and Po.

While John Fischer has stated in regard to Ka and No that "The closest cultural similarities of each island appear to be to each other" (1958: 11), this does not seem to be the case at least as far as the traits used in this study are concerned. Ka scores higher to Tr, Po, and all of

the central Outliers as well as to Sm and To than it does to No; its ties seem to be primarily with the central atolls, although it has received considerable Micronesian influence.

No on the other hand scores a maximum of 32% with Tr, 28% with Po and Ka, and 24% or less with all other areas. It thus seems to have been subjected to a greater amount of Micronesian influence, either as a result of more frequent contact or of longer exposure to it. While it is closer to Ka than to any other PN island, it shows almost as much Micronesian as Polynesian influence in kinship and in art styles (Mason n.d.) as well as in technology. This is also partially responsible for the low lexicostatistical percentages of No, as some nine words on the No list give evidence of being Micronesian borrowings (Nos. 49, 77, 131, 133, 139, 190 and possibly 60, 66 and 200); a thorough check of the languages of the Mortlocks and Tr would probably reveal even more. The cultural vocabulary would logically be still more influenced; in fact seven of twelve No lunar month names are obvious borrowings from Tr or a closely related language.³

The only southern Outlier for which data were available is WF, here representing An as well. It scores highest with Fi and To, but is also relatively high to Re and Er, the latter to be expected due to its location. Contact with Re is unlikely in view of their distance from each other, and the correspondence may represent the borrowing of generally similar traits by Re from nearby Guadalcanal or San Cristóbal.

TRADITIONAL EVIDENCE

While the use of legends and traditions of Pacific peoples as evidence of their prehistory has come into considerable disrepute in recent years, largely as a result of the abuses made of such evidence in areas like New Zealand and Hawaii, traditions of voyages and place names may provide some clues to origin, although for the most part highly unspecific ones in view of the widespread distribution of similar Polynesian place names. In addition, traditions of relatively recent arrivals on the Outliers may give some evidence of the sources and amount of outside influence. A brief summary of the traditions of settlement, knowledge of surrounding islands, and arrivals of voyagers on each Outlier thus seems justified.

No: Kubary states of the inhabitants of No: "Sie stammen nach noch erhaltenen Überlieferungen von Nukuhetau hier, von wo sie einst in zwei Fahrzeugen auf Nukuoro ankamen. Schon seit jenen Zeit kannten sie ausser ihrer direkten Heimath Nukuhetau noch: Nanumea, Nanumanga, Tonga, Tongatapu, Barotonga, Katao, Pingilapa, Natiki, Paheini, Hiti, Ruaniwa, Rotuma, Tarawa, Makeni, Noto, Tapiteruvea, Pahila me Langi [supposedly Ka], Ponepe, Rapoi, Rua Utu Hengai" (1900: 75).⁴ While this list seems almost too extensive to be believed, some connections with El seem certain, as well as many later ones with the Mortlocks, Gilberts, and Po.

Ka: Parkinson (1897: 105, 108) gives Tarawa, No, Katiariki (?), and Haraparapa (?), as sources of settlement, and a later contact from Ninigo; Thilenius (1902: 70) lists Nukufetau, No, Nm, Si, Tarawa, and Ninigo. Hogbin (1941: 111) cites a more plausible tradition of settlement from OJ, which he states to be the case for Tk and Si as well.

Tk: Thilenius gives OJ, Ndeni, and Tau; Parkinson mentions recollections of late (ca. 1880) arrivals from the Gilberts who had not been allowed to land on OJ (ibid.: 107).

Nm: Thilenius gives To, Sm, and OJ as sources of settlement; no other data are available.

OJ: Kennedy (1953: 34) states that the Ontong Javanese have no tradition of a prior homeland, but Thilenius gives Si, Ng, Ka, Rotuma, and Ponape as sources of population and the Gilberts and Buka as sources of visitors. He is here as above apparently relying on other than traditional evidence. Hogbin also contradicts Kennedy, stating that: "Voyagers from Ngiua, whom the present population, claiming them as ancestors, worship as gods, were in every case said to be responsible for the initial settlement of Ontong Java" (1940: 203). This may however be a recently arisen "tradition" (see below), since none of the other sources mention it.

Si: Kennedy states (ibid.: 35) that the people of Si have a tradition of migration from the east; several families trace their descent from ancestors from El, some of which are from Nui, which is settled by a mixed El-Gilbertese population. The people of Si, like all of the inhabitants of the

central atolls, are aware of the other atolls in the group, and visits are fairly common; P1, Tm, and a place known as Fenuahala which may be Re are also known to the people of S1 (Woodford 1906: 167).

Re-Be: Authorities are agreed on the Re tradition of a homeland called Ubea (MacGregor 1943; Birket-Smith 1955, 1956; Roberts 1958). The route as given by MacGregor (pp. 32-3) was said to have been from Ubea to Nggotuma to T1 to At to Hutuna to Henua Tai to Boungo (San Cristóbal) to Re and Be. If Hutuna and Henua Tai are in the Reef Islands, as Birket-Smith (1956: 24) assumes they are, this would serve as an explanation of the Re-P1 correspondences in overall lexicostatistical relationships. A better explanation is the Re tradition of later settlers from Tm (Hogbin 1931: 178). The Rennellese also have a tradition of a people called Hiti or Hitihiti who occupied Re prior to their arrival, following which they were exterminated by the present inhabitants. Hiti is of course the Re equivalent of Fiji, but they are said to have looked like the Rennellese themselves rather than like Melanesians (Hogbin, Birket-Smith, *ibid.*). A comparison of several genealogies (Roberts 1958: 10 ff.) places their settlement at about 19 generations ago on the average.

P1-Tm: Davenport states (in Capell 1962a: 401) that the people of P1 claim to have come from Tm; the inhabitants of Tm ". . . have no myths or beliefs in a Savaiki (Hawaiki), nor have they traditions of their ancestors having migrated

into this area from elsewhere."

Ti-At: According to Firth (1961), the Tikopia have no legends of any homeland save Ti, which was raised from the sea in the manner common to Polynesian islands (p. 26); they are acquainted with all of the central Outliers out to and including OJ. Genealogical evidence dates the arrival of the ancestors of their oldest lineage at about A.D. 1450 (p. 165). The people of At, on the other hand, are by their traditions the descendants of Tongans arriving about ten generations ago; this is strongly supported by their kinship terminology: paē, M; tamai, F (Firth 1954: 99, 102).

Southern Outliers: No reliable data are available from Me and MF, although Nevermann (1953) discredits several highly unreliable myths from the latter. The people of WF and An believe themselves to be autochthonous, their islands (or at least WF) having been pulled up by Mwačikičiki in the same fashion as Ti (Guiart 1961: 50). Leverd (1917a: 20), in discussing Polynesian influence and settlement in eastern Melanesia, states: "Tous les noms soulignés [including Me, MF, WF and Niua or An] sont franchement polynésiens, et ont, plus particulièrement, une physionomie samoane ou wallisienne."⁵ He gives no concrete data on traditions of migration save to state that the people of MF ". . . déclareraient . . . être venus de Nouvelle-Zélande . . . Ce fait mérite confirmation" (ibid.).⁵

In regard to WU, however, all authorities agree on the origin: "On sait qu'à la fin du dix-huitième siècle, une

mîgration polynésienne venue de Wallis toucha Ouvéa et s'installa aux deux extrémités de l'atoll. . . . Les Polynésiens, venus sans femmes, ou presque, se marièrent sur place. L'étude de leur organisation sociale là montre aujourd'hui calquée sur celle du fonds melanesien de la population" (Guiart 1953b: 93). Leverd (1917b) and Burrows (1937: 50-2) state the legend accounting for the settlement in WU and Uv respectively. Cané (1943: 15) agrees, and also believes that WF and An were populated en route to WU. While all the evidence compiled in the present study tends to support a primary settlement from Fu rather than Uv for WF, An, and particularly WU, the legend may be describing a later secondary settlement by a single canoe of Uvean men. In this regard Guiart's statement implying the influence on social organization exerted through marriage of the incoming Polynesians to the original inhabitants is probably an important factor in the "Melanesianizing" of all five of the southern Outliers, but probably more so in WF and An than in WU.

One interesting general note is the frequency with which legendary references are met to battles with invading canoeloads of Tongans and Fijians (recorded from No, Si, Tm, At, and Mare in the Loyalty Islands); the legend persists as well on OJ of the driving off of the 16 Gilbertese canoes mentioned above. One of the chief fears of all Outlier communities must have been that of conquest or sudden overpopulation by castaways and subsequent famine. Firth's

account (1931) of the arrival of two castaways from Ti on Re is enlightening in this regard: the Rennellese found the two men hiding in a tree, fully expecting to be killed at once, but after very detailed questioning of the two men as to the size of the Tikopia party and a search of the coastline, the Rennellese became quite friendly and allowed the two Tikopia to remain.

A final question exists as to the antiquity of many of these legends. There is a strong possibility that many of them arose as a result of European contact and Polynesian travel on European vessels. Thus Sharp (1964: 89) comments on the legend concerning the settlement of WU from Uv, supposedly present on both islands, as follows: "Since both Uvea and the Loyalty Islands had long been French possessions, Uea [WU] had long been recognized as a Polynesian outlier, and the resemblance of the names Uvea and Uea is eye-catching, one need go no farther than the teachings of early French missionaries for a foundation for these late traditions."

CHAPTER VI

CONCLUSIONS

FIJI AND WESTERN POLYNESIA

The results of this study support the close ties, stemming from both genetic relationship and continued contact, between F1 and western Polynesia, To and Sm in particular. The lexicostatistical results agree with those of earlier studies (Grace 1959, 1961; Dyen 1963a) in the approximate degree of relationship of F1 and PN; the latter two studies cited showed the relatively closer degree of relationship of F1 to PN than to the great majority of other Melanesian languages compared. The kinship comparison made here also supports this conclusion, in that the F1 system used (from inland Vanua Levu, but almost identical with one from the Lau Islands taken from Sahlins 1962: 148-53) is in many cases closer to Polynesian systems than they are to one another.

While there is no evidence that F1 is the source of any Outlier, or indeed is more closely related to any one people in Polynesian than to another, the position of F1 as an important cultural contributor to central Polynesia and through it to the Outliers is strongly supported by the results of the technology distribution comparison. That F1 is not simply an extension of Melanesia in this respect, but rather at the Polynesian end of a Melanesian continuum of great diversity in language, race, and culture is shown by the contrasting position of F1 as compared with those of Er and BS in relation to Polynesia in this study.

The long and continuous contact between F1, To and Sm has as well an unfortunate effect as far as the goals of this study are concerned, in that the continual diffusion between the three areas, and the equally important intensive specialization which the cultures of To and Sm seem to have undergone relatively independently of each other and of F1, have tended to obscure the historical relationships of both to the Outliers. The same holds true for the relationship of To and Sm to E1, which must have undergone a history of settlement much like that of the Outliers as far as mechanisms of settlement are concerned. A similar but less marked masking effect has apparently resulted from Uv influence on Fu; the contact has been less intensive in this case, however.

The position of Fu in this study has in the end come to assume an importance much greater than its size and population would at first indicate. If the indices used here are at all a valid indication of historical relationship, Fu must be viewed as the source of primary settlement not only for the southern Outliers and perhaps for T1, but also as the major contributor to the settlement of E1, at least as far as Vaitupu and Funafuti are typical of that group. While Sm appears to have had a large part in the settlement of T1, based on the kinship correlations between the two, its part in the peopling of E1 is either a minor one or is hidden by the further development of Sm culture following the departure of the E1 settlers. The answer awaits detailed linguistic, ethnographic, and particularly archeological work there.

In marked contrast to the high correspondences of Fu to many of the Outliers, Uv is distinguished by a lack of obvious relationship to any locations but To and Fu. The former seems almost certainly the point of origin for Uv, while its correspondences with Fu are equally probably to be the results of borrowing. Both islands are among the closest central Polynesian communities to the Outliers, particularly to the southern ones. The answer to the greater contribution of Fu to the peopling of the Outliers must lie in a much higher frequency of voyages leaving Fu than is the case with Uv.

There would seem to be an excellent reason for this, and one supported to some extent by the ethnographic evidence. As mentioned in Chapter II, Fu is much like Uv in topography with one chief difference: the lack of any reef-lagoon system whatsoever. Uv, on the contrary, possesses an extensive lagoon and almost complete barrier reef (Burrows 1936: 6; 1937: 9). The climate of both islands is identical in that both are subject to relatively frequent hurricanes, often severe enough to ruin crops. On Uv the lagoon was present to alleviate the resulting famine, but no such recourse was available to the inhabitants of Fu. A comparison of cannibalism on the two islands serves to illustrate the importance of this difference; on Fu it was seemingly a response to famine (Burrows 1936: 36), while on Uv human flesh was a ritual delicacy (Burrows 1937: 96).

One alternative to starvation for the people of Fu during a famine would be to set out for a new island. Despite the fact that Polynesians were certainly fully aware of the dangers inherent in over-the-horizon voyaging, it seems equally evident to the writer that the Polynesian world view saw the Pacific as being considerably more populated with islands than is the case. To a man descended by necessity from the survivors of dozens of successful long-distance voyages and a witness to the occasional arrivals of castaways on his own island, the decision to emigrate was by no means a light one, but neither did it represent the ultimate in desperation. Defeat in war, quarrels with chiefs, and the possibility of starvation were all motives for voluntary exile, and the last would seem to have been particularly common in Fu, while the lagoon as a reserve food source in times of famine on Uv would have sharply reduced the necessity of such voyages there. A final factor in the higher number of voyagers from Fu seems to lie in the lack of a protected lagoon for fishing, and the consequently frequent involuntary voyages of windblown fishermen (Burrows 1936: 44).

Prior to a discussion of the Outliers proper, it might be well to insert a brief note as to the clues to central Polynesian sources made available by the patterns of prevailing winds and currents. All areas considered in this study lie to the west of the South Pacific primary trade wind zone, and are instead in the area of seasonal (May-October)

southeast trades alternating with sporadic westerlies during the summer months (see Thomas 1963: 28-32). During the winter months the prevailing winds blow at an angle across the roughly parallel lines formed by western Polynesia and the Outliers. Countering these winds to some extent are currents which for the most part set to the southeast. Near the equator winds and particularly currents become highly variable, and such variation in wind direction and intensity is found during the summer months to the south as well. Thus the factors of winds and currents have little specific information to give as to the probable direction of drift from any particular central Polynesian island, or the probable direction of the homeland of any Outlier. The one significant fact is the location of all the Outliers save Re and Be on the windward sides of the major island chains they adjoin, where they form the logical end point of a voyage before the prevalent southeast trades. Doubtless the majority of Polynesian voyagers following this route passed through the wide-meshed screen of potential Outliers to land on the major islands themselves, but were absorbed by the indigenous Melanesian population. This evidence is of course one more argument against occupation of the Outliers prior to the settlement of central Polynesia.

SOURCES OF THE OUTLIERS

While the evidence presented in the preceding two chapters may be able to support a rather wide variety of somewhat

different conclusions on the central Polynesian origins of each Outlier, those given below seem to the writer to be the most justifiable from the standpoint of a general overall pattern of Outlier settlement; they remain somewhat subjective, however, and others may wish to interpret the data in a slightly different manner. The Outliers discussed below are ranked in order of relative strength of the evidence supporting the central Polynesian points of origin given. These as well as apparent sources of diffusion through extensive contact will be described in the terms given on pages 21-2. The Outliers fall into two general groups as far as the conclusiveness of the evidence of their origins is concerned: the first group, up to and including MF-WF-An, is more strongly supported by the data than the second group (from OJ on), for which the conclusions are much more tentative.

TIKOPIA: Primary settlement was almost certainly from El or Fu. Its name would suggest a confusion of the island by voyagers arriving from the latter with the island of Cikobia (Thikombia) off the north coast of Vanua Levu, which was known to the people of Fu (Burrows 1936: 45) and is only slightly farther from Fu than is Uv. Whichever of these two locations was the first to send settlers to T1, the second has had an almost equally strong influence on it. More than a common relationship to Fu seems to be involved in the high T1-El correspondences in the lexical and kinship comparisons. T1 has had continued contact with the other central Outliers (at least with Tm-P1, S1, and Re), and with Vanikoro, Ndeni,

and other of the larger Santa Cruz Islands.

ANUTA: Almost certainly settled from To within the past three to four hundred years; secondary settlement and continued contact have come from Ti.

TAKUU-NUGURIA: Primary settlement took place from El, either directly or from Si after it had been settled from the same source. OJ has supplied both secondary settlement and continued contact. Contact is also evident with the Carolines and with the Gilberts as well, although the latter may be due to contact with Gilbertese-influenced OJ. There has been a considerable influx of people from the neighboring Melanesian islands following the reduction in population prior to the turn of the century (see note 2, Chapter II), and probably Melanesian contacts before that time, but these have apparently had little effect on the language or culture.

NUKUMANU: Primary settlement was from Tk or Tk sources, but was followed by a greater amount of secondary settlement and contact with OJ, as well as contact with Micronesia through occasional arrivals.

SIKAIANA: Primary settlement came from Ellice; secondary settlement took place from OJ, Pi-Tm, and/or the other central atolls. Fairly extensive Micronesian contact has taken place, as well as contact with the southern Solomons, Pi-Tm, and perhaps Re.

KAPINGAMARANGI: Primary settlement probably took place from Tk, Nm, Ng, or Si. Secondary settlement has occurred from the Gilberts and El as evidenced by tradition. There

has been relatively extensive contact with No, given the limited navigational abilities of these islands in pre-European times (V. Carroll, personal communication), and considerable contact with the Carolines and Gilberts, but not to the extent found in No. Such contact is probably responsible for a legend of settlement from Tamana recorded by Elbert (1949: 240) and Emory (1965: 28-9).

WEST UVEA: Like the rest of the southern Outliers (excepting WF-An) this island is represented only by sub-adequate lexical data; thus while the evidence present seems conclusive, WU and the other southern Outliers are placed in an intermediate position as far as accuracy of conclusions is concerned. Despite traditional evidence for an origin in Uv, WU is apparently the result of a relatively late primary settlement from Fu independent of that responsible for the other southern Outliers. A still later secondary settlement from Uv may account for the legend. Contact with the Melanesian Iai has of course been continuous, since they share the island with the Polynesians.

MAE: Primary settlement very probably came from Fu; Ti is a possibility, but an unlikely one due to its location. A relatively high Me-Uv lexicostatistical figure suggests either settlement from Fu following the onset of Uv influence there or a secondary settlement from Uv itself.

MELE-FILA, WEST FUTUNA, ANIWA: These islands were almost certainly settled from Me, although there is a slight possibility that either MF or WF-An may represent independent

movements from Fu. Their lexicostatistical patterns of correspondence to other languages in this study are so similar, save for varying degrees of closeness which are very probably due to variation in Melanesian influence on lexicon, that this possibility is an unlikely one. WF-An shows the greatest amount of Melanesian contact, MF is intermediate, and Me shows the least, judging from vocabulary alone.¹

ONTONG JAVA: This island is apparently the result of primary settlement from either Fu or Sm; the lexical relationships are inconclusive. Secondary settlement took place from El or from El-settled Tk or S1, probably the latter; a significant amount of secondary settlement as well as contact has also come from Micronesia, primarily the Gilberts.

RENNELL-BELLONA: The lexical evidence is inconclusive; kinship figures support Fu or Ti. Grammatical and phonological evidence places Re in NPN, but like Fu not in WPN. Re may have been settled by Uveans living on Fu, which would account for their traditional history; equally likely is settlement from a central Polynesian source not included in this study due to inadequate linguistic and cultural documentation (Niuafu'ou, Niuatoputapu, etc.). Secondary settlement took place from P1-Tm. There has been a limited amount of continued contact with Ti, and Melanesian influences are apparent on lexicon, phonology (Re /l/ and /ɣ/ are found only in Melanesian loan words), and material culture.

PILENI-TAUMAKO: Only lexicostatistical figures are available, and these are as inconclusive as those of Re-Be.

Fu, Ti or Sm are all possible sources of primary and/or secondary settlement, which may also have come from an unincluded location as was suggested for Re-Be. Contact has apparently occurred with Ti, Si, and Re, but has probably been limited mainly to Ndeni.

NUKUORO: No clear source of primary settlement is evident from the lexicostatistical percentages; Sm is closest. Tradition supports settlements from Nukufetau, El, but the legend may well be a modern one stimulated by the visits of Ellice Islanders on European ships. It is becoming apparent that the population of No has been there a considerable time, probably significantly longer than the people of Ka; cultural deposits of some four meters' depth are currently being investigated there (V. Carroll, personal communication). Secondary settlement from Ka and Micronesian islands is likely, and extensive continued contact has occurred between No and areas in the Carolines, principally the Mortlocks, Tr, and Po, with contacts from the Gilberts and Marshalls as well.

CHRONOLOGY

Given the evidence available, any sort of chronology of Outlier settlement is exceedingly difficult to arrive at. Contact with neighboring non-Polynesian islands in varying amounts produces equally variable distortions in the visible cultural relationships, and differential borrowing acts similarly on the vocabulary. Linguistic change, particularly

- 3) Settlement of T1 from Fu and/or El; settlement of Uv from To; No is probably settled during this period.
- 4) Beginning of intensive Uv influence on Fu; Me is settled from Fu; settlement of Re, Tm, and OJ from undetermined sources; El settles Tk, Si, and perhaps Ng and Nm in this or the next period.
- 5) MF, WF, and An are settled from Me; Ka is settled from the central atolls; settlement of P1 from Tm during this or the next period.
- 6) A separate movement from Fu settles WU; At is settled from To.

It goes without saying that this sequence is extremely tentative, and any speculations on dates for these periods are even more so. All that might be ventured is that period (1) probably dates prior to 500 B.C. and period (2) prior to the beginning of the present era; periods (4), (5), and (6) are perhaps later than A.D. 1000, and period (6) itself probably began in the Sixteenth Century. These dates and a detailed, more positive reconstruction of the prehistory of the Outliers await the results of archeological investigations which are only just beginning.

NOTES:

CHAPTER I

1 "Central Polynesia" is used in this study in a geographical sense, and refers to the Polynesian Triangle area, or Polynesia in general in contrast to the Outliers; "western Polynesia" is likewise used here in a geographical sense, and includes Samoa, Futuna and Alofi (Hoorn Islands), Uvea (Wallis Island), and the Ellice, Tokelau, and Tonga Islands.

2 For the sake of economy and clarity the Outliers will be referred to throughout this study by the abbreviations given here; other abbreviations will be introduced as they occur in the text.

3 A brief description of Shutler's work on WF, An, and Fila may be found in the Journal of the Polynesian Society, 73(3): 252 (1964).

4 This view is also held by Woodford (1916a), Kennedy (1953), and Marshall (1956).

5 ". . . also do not allow, without further work, the view that the populations of all these islands are in the main from the same source."

6 "The populations of the northwestern Polynesian islands have arisen gradually from small beginnings through the landing of at most a single boat's crew and through rarer voyages of conquest."

7 Other writers supporting the "throwback" theory include Bay (1919-20), Parkinson (1897), Kubary (1900), Shapiro (1933), Hogbin (1941), and Elbert (1953 and in Capell 1962a).

8 "Thus ethnological considerations show that on Ongtong Java, as well as on several neighboring atolls, an older Polynesian culture has been overlaid by a powerful culture wave from the Carolines."

9 If one uses the generally accepted criterion of language to distinguish Polynesian Outliers from Polynesian-influenced communities, Lanyon-Orgill's brief vocabulary (pp. 87-8) would seem to place this settlement in the former category. It is thus unfortunate that data are otherwise lacking on this New Britain "Outlier".

10 "As incomplete as these traditions may be, they allow two important points to be recognized. It may be gathered from them that relative to the method of settlement these

small islands basically did not receive their population from a larger migration which transported a people or tribe, but through small boats which from time to time brought each time a limited number of people to an island. . . . finally, one may deduce the origin of at least a portion of the colonists; they came from the Ellice, Gilbert, and Caroline Islands, but also from other islands in the group under discussion, as for example Sikaiana."

CHAPTER II

¹In several cases there are conflicting reports as to exact latitude and longitude.

² While it might seem that such a drastic reduction in population must produce enough radical cultural change to render the relating of Takuu's "original" culture to any central Polynesian location invalid, the situation differed from the examples given by Vayda (1959) in that post-1900 immigrants to Tk arrived singly or as single families from different locations. Some must have come from closely related Nm, Ng, and OJ, and could thus adapt easily to the cultural norms they encountered on Tk. But it is known that many of the immigrants came from the surrounding Melanesian islands. These latter, coming one by one or only a few at a time, apparently fitted themselves to Tk culture as they arrived, and thus had little impact on it.

³For a more complete description of Re, see Birket-Smith 1956, from which this summary was taken.

⁴ The uniformity which has resulted has led some writers to postulate two separate Polynesian migrations to account for it. Burrows (1938), for example, suggests a movement from Micronesia into eastern Polynesia, followed by a later one through Melanesia to account for Samoa and Tonga. His grouping of all western Polynesian low islands in a group intermediate between east and west would seem to indicate a division on ecological rather than historical grounds.

⁵ Since in that study no other language in Elbert's proto-Tongan group was compared, it was impossible to determine whether the high extra-Polynesian correspondences of Tonga were the result of a higher retention rate for the proto-Tongan subfamily as a whole or due to Tongan borrowings from F1. In view of the low Fiji-Uvea figures obtained in this study, the latter seems to be the case, although the higher Tonga-Malay and Tonga-Tagalog figures remain unexplained.

CHAPTER III

¹ This term is adopted with a slight change in meaning from Dyen (1963a).

² Reflexes of PPN *faka- and *fai- (causative prefixes) and transitive suffixes (usually -a) are the most common examples.

³ As in the previous lexicostatistical studies, percentages were calculated by the 7040 computer of the Computer Center of the University of Hawaii, and I would like to express my gratitude to Mr. Walter S. Yee of the Center for writing the program involved. The percentages in the kinship and technology comparisons were arrived at by hand.

⁴ The emphasis in the list on details of canoe construction reflects the availability of data on this area of technology due to the complete and detailed study by Haddon and Hornell (1936-8).

⁵ Examples of traits considered and discarded from the list included such obviously environmentally limited ones as the presence of stone adzes of any type vs. their absence, and predominance of lagoon over deep-water fishing. Traits so clearly adaptive and hence widespread as to make their diagnostic value nil included the fire plow and multiple-point fishing spears. Other traits were eliminated because their distribution was so limited as to make them useless for tracing relationships (e.g., coiled basketry).

CHAPTER IV

¹ This might also help to explain the puzzling fact that while only two of the 13 WPN languages in this study (one might add Tl and Pukapuka) have /ʔ/ represented at all in their phonemic inventory (Sm and OJ), this phoneme is present as a reflex of one or more PPN velar phonemes in eight of the eleven EPN languages in Elbert's study.

² This derivation is unlikely, since the ki- prefix is applied to 1st exclusive and 3rd person pronouns as well, and in To to all non-singular pronouns; in addition, To and Sm both possess kita (?ita in Sm) as a "1st person inclusive" pronoun (see Grace 1959: 47).

³ WF kitea may also have developed through a shift in meaning of the pronoun mentioned in the above note.

CHAPTER V

¹ This supports Tl traditions of an origin in Sm; see MacGregeor (1937).

² For a BS kinship system see Blackwood (1935: 56-7); for Er, see Humphreys (1926: 131).

³ The Ponapean equivalents are: 49, m^Waam^W; 77, 190, p^Woaud or paut; 139, sem^Wok; 60, kiloN; 66, pee lima; 200, oaNoaN. Apparently from Gilbertese are 131, kora; 133, kakaN, although the last may be a borrowing from Polynesian. The No and Trukese month names mentioned are: No manu, Tr man (this is probably a cognate correspondence rather than borrowing); No maetiki, maelapa, Tr meinap; No salapoli, Tr serepwun; No alomoi, Tr aromoi; No tumulu, Tr tumur; No seta, Tr suta; No rak, Tr na. Oddly enough, three of the remaining five No names (mataliki, takeko, and itiit) are found only in Hawaii and Marquesas as month names, although they are widespread as star names (No months from Elbert 1948: 268; Tr from Elbert 1947: 259; both with some changes in orthography).

⁴ "According to traditions still preserved, they came here from Nukuhetau, from which they arrived on Nukuoro in two vessels. Even to this time they know in addition to their immediate home of Nukuhetau: . . ."

⁵ "All the underlined names are clearly Polynesian and have an especially Samoan or Wallis appearance . . . they claim . . . to have come from New Zealand . . . this fact deserves confirmation."

⁶ "It is known that at the end of the Eighteenth Century a Polynesian migration coming from Wallis reached Uvea and settled at two ends of the island. . . . The Polynesians, coming without women, or with almost none, took wives there. A study of their social organization shows there today traces of the Melanesian base of the population."

CHAPTER VI

²
~~2~~ This idea was suggested to me by Verne Carroll.

¹
~~2~~ Considerable time depth for the Polynesian community on Mele is indicated by Garanger's preliminary survey (1965); he encountered continuous cultural deposits of some 160 cm, all of which seemed to reflect a long occupation by the present inhabitants (p. 8).

(from Hymes 1960: 6, with adaptations used in selecting items for the lists used in this study; items on the minimal list of 94 are underlined)

- | | |
|--|---------------------------------------|
| 1. all | 51. float (intrans.) |
| 2. <u>and</u> (noun connective) | 52. flow |
| 3. animal | 53. <u>flower</u> |
| 4. ashes | 54. <u>fly</u> (vb.) |
| 5. at | 55. fog |
| 6. <u>back</u> (n.) | 56. <u>foot</u> |
| 7. <u>bad</u> | 57. <u>four</u> |
| 8. <u>bark</u> (n.) | 58. freeze |
| 9. because | 59. <u>fruit</u> |
| 10. belly | 60. <u>give</u> (to spkr.; 3rd pers.) |
| 11. <u>big</u> | 61. <u>good</u> |
| 12. <u>bird</u> | 62. grass |
| 13. <u>bite</u> (vb.) | 63. green |
| 14. <u>black</u> | 64. <u>guts</u> |
| 15. <u>blood</u> | 65. <u>hair</u> (of head) |
| 16. blow (as wind) | 66. <u>hand</u> |
| 17. bone | 67. <u>he</u> |
| 18. breathe | 68. <u>head</u> |
| 19. burn (intrans. vb.) | 69. <u>hear</u> |
| 20. <u>child</u> (male if disting.) | 70. heart (organ) |
| 21. <u>cloud</u> | 71. heavy (of objects) |
| 22. <u>cold</u> | 72. <u>here</u> |
| 23. <u>come</u> (to spkr.; 3rd pers.) | 73. <u>hit</u> (with hand) |
| 24. count | 74. hold-take |
| 25. cut (as with knife) | 75. how (interrogative) |
| 26. <u>day</u> (not night) | 76. hunt (or chase) |
| 27. <u>die</u> (of humans) | 77. husband (or spouse) |
| 28. dig | 78. <u>I</u> |
| 29. dirty | 79. ice |
| 30. dog | 80. if |
| 31. <u>drink</u> (vb.) | 81. <u>in</u> (inside) |
| 32. <u>dry</u> (adj.) | 82. <u>kill</u> (of humans) |
| 33. dull (as knife or needle) | 83. <u>know</u> (facts) |
| 34. dust | 84. lake |
| 35. <u>ear</u> | 85. <u>laugh</u> |
| 36. <u>earth</u> (dirt) | 86. <u>leaf</u> |
| 37. <u>eat</u> (of humans) | 87. leftside |
| 38. egg (chicken) | 88. <u>leg</u> |
| 39. <u>eye</u> | 89. <u>lie</u> (on back or side) |
| 40. <u>fall</u> (as dropped from hand) | 90. <u>live</u> (exist) |
| 41. <u>far</u> | 91. liver |
| 42. fat-grease | 92. <u>long</u> |
| 43. <u>father</u> | 93. louse |
| 44. <u>fear</u> (be afraid) | 94. <u>man-male</u> |
| 45. feather | 95. many |
| 46. few | 96. meat-flesh |
| 47. fight (with fists) | 97. <u>mother</u> |
| 48. <u>fire</u> (n.) | 98. mountain (or hill) |
| 49. <u>fish</u> (n.) | 99. <u>mouth</u> |
| 50. <u>five</u> | 100. <u>name</u> |

101. narrow (as path, etc.)
 102. near
 103. neck
 104. new
 105. night
 106. nose
 107. not
 108. old (of humans)
 109. one (numeral)
 110. other (another kind)
 111. person
 112. play
 113. pull (toward spkr.)
 114. push
 115. rain (n.)
 116. red
 117. right-correct
 118. rightside
 119. river
 120. road
 121. root
 122. rope
 123. rotten (of food)
 124. rub (body)
 125. salt
 126. sand
 127. say (or speak)
 128. scratch (body)
 129. sea (as opposed to land)
 130. see
 131. seed
 132. sew
 133. sharp (as knife)
 134. short (of humans)
 135. sing
 136. sit
 137. skin
 138. sky
 139. sleep
 140. small
 141. smell
 142. smoke
 143. smooth
 144. snake
 145. snow
 146. some
 147. spit
 148. split (in two, divide)
 149. squeeze
 150. stab-pierce
 151. stand
 152. star
 153. stick
 154. stone
 155. straight
 156. suck (not nurse, if diff.)
 157. sun
 158. swell (vb.)
 159. swim (vb.)
 160. tail
 161. that (away from spkr.)
 162. there (" " ")
 163. they (plural)
 164. thick (of solids)
 165. thin (" ")
 166. think
 167. this
 168. thou
 169. three
 170. throw
 171. tie
 172. tongue
 173. tooth
 174. tree
 175. turn (around)
 176. two
 177. vomit
 178. walk
 179. warm (or hot)
 180. wash (oneself)
 181. water (fresh)
 182. we (plural, inclusive)
 183. wet
 184. what (interrogative)
 185. when (future)
 186. where (interrogative)
 187. white
 188. who (interrogative)
 189. wide
 190. wife (or spouse)
 191. wind (n.)
 192. wing
 193. wipe
 194. with (together with)
 195. woman
 196. woods (or brush)
 197. worm (earthworm)
 198. ye (plural)
 199. year
 200. yellow

HAWAII (S.H. Elbert; 198)	SAMOA (S.H. Elbert; 200)	TONGA (A. Schütz; 197)
1 'apau	1 'uma	1 kaatoa
2 a me	2 maa	2 moo
3 holoholona	3 manu	3 manu
4 lehu	4 lefulefu	4 efuefu
5 i	5 i	5 'i
6 kua	6 tua	6 tu'a
7 maika'i 'ole	7 leaNa	7 kovi
8 'ili	8 pa'u	8 kili (-'akau)
9 no ka mea	9 'auaa	9 koe'uhi
10 'oopuu	10 manava	10 kete
11 nui	11 laapo'a	11 lahi
12 manu	12 manu lele	12 manu (puna)
13 'aki	13 uu	13 'usi
14 'ele'ele	14 uliuli	14 'uli'uli
15 koko	15 toto	15 toto
16 ani	16 aNi	16 aNi
17 iwi	17 ivi	17 hui
18 hanu	18 maanava	18 maanava
19 'aa	19 muu	19 vela
20 keiki	20 tamaitiiti	20 tamasi'i
21 ao	21 ao	21 'ao
22 anu	22 maaluuluu	22 momoko
23 hele mai	23 sau	23 ha'u
24 heluhelu	24 faitau	24 lau
25 'oki	25 tipi	25 tu'usi
26 laa	26 aso	26 'aho
27 make	27 oti	27 mate
28 'eli	28 'eli	28 keli
29 palapalaa	29 'elee'elea	29 'uli
30 'iilio	30 maile	30 kuli
31 inu	31 inu	31 inu
32 malo'o	32 maNo	32 moomoa
33 kuuumuumu	33 matatupa	33 peku
34 lepo	34 pefu	34 efu
35 pepeiao	35 taliNa	35 teliNa
36 lepo	36 'ele'ele	36 kelekele
37 'ai	37 'ai	37 kai
38 hua	38 fua (moa)	38 fo ('i moa)
39 maka	39 mata	39 mata
40 haa'uile	40 pa'u	40 too
41 mamao	41 mamao	41 mama'o
42 kelekele	42 Na'o	42 Nako
43 makuakaane	43 tamaa	43 tamai
44 maka'u	44 fefe	44 manavahe
45 hulu	45 fulu	45 fufulu
46 kekahi	46 itiiti	46 toko
47 haakaahaa	47 fusu	47 fuhu
48 ahi	48 afi	48 afi
49 i'a	49 i'a	49 ika
50 lima	50 lima	50 nima

UVEA (Bataillon 1932;196) FUTUNA (Grézel 1878; 194) ELLICE (Kennedy 1945, Hale 1846, Ray 1912;150)

1 katoa	1 kaatoa	1 katoa
2 ma / mo	2 mo	2 ma / mo
3 manu	3 manu	3 manu
4 lefulefu	4 muNalafu	4 -
5 'i	5 ki / i	5 i
6 tu'a	6 tua	6 tua
7 (aNa)kovi	7 veli	7 masai
8 kili	8 kili	8 -
9 he	9 talie (ke)	9 i te mea
10 kete	10 manava	10 manava
11 lahi	11 lasi	11 lasi
12 manu lele	12 manu	12 manu
13 'ola	13 (u)'uti	13 u
14 uli	14 'uli	14 uli
15 toto	15 toto	15 -
16 aNi	16 aNi	16 aNi
17 hui	17 ivi	17 -
18 maanava	18 maanava	18 manava
19 vela	19 vela	19 ka
20 tama(-liki/si'i)	20 tama(-liki)	20 tamaliki
21 a'o	21 'ao	21 kaumanaa
22 moko(-sia)	22 makalili	22 makalili
23 ha'u / 'o mai	23 au / (Nai-)mai	23 vau / o(ko) mai
24 lau	24 lau	24 -
25 hele	25 sele	25 selesese
26 'aho	26 'ao	26 ao
27 mate	27 mate	27 mate
28 keli	28 foa	28 -
29 liko	29 kelekele	29 -
30 kuli	30 kuli	30 -
31 inu	31 iNu	31 inu
32 maha	32 masa	32 -
33 feku	33 -	33 -
34 efu	34 efu	34 kefu
35 taliNa	35 taliNa	35 taliNa
36 kele	36 kele	36 (lau-)kele
37 kai	37 kai	37 kai
38 fua	38 fua (moa)	38 fuamoa
39 mata	39 mata	39 mata
40 to	40 to	40 to
41 mama'o	41 mama'o	41 mamao
42 Nako	42 Nako	42 -
43 tamai	43 tamana	43 tamana
44 matakū	44 'i / kilo	44 matakū
45 fulu	45 fulu	45 fulu
46 si'i / tamutamu	46 'iki'iki / teisi	46 poa
47 fuhu	47 vusu / poko	47 fusu
48 afi	48 afi	48 afi
49 ika	49 ika	49 ika
50 nima	50 lima	50 lima

TIKOPIA (Williams 1926-7; 189)	PILENI (S.H. Elbert; Ray 1912-20; 181)	RENNELL (S.H. Elbert; 194) (/b/= [β])
1 katoa	1 osi	1 'oti
2 me	2 ma	2 ma
3 -	3 -	3 manu
4 refu	4 lehu	4 Ngehu
5 i	5 i	5 'i
6 tua	6 tua	6 tu'a
7 pariki	7 tapeo	7 soNo
8 raukiri	8 paku	8 kiNgi
9 kinia	9 takina	9 i te me'a Ngaa
10 manava	10 manava	10 tina'e
11 lasi	11 eefa	11 hu'ai
12 manu	12 manuman	12 manu
13 uti	13 usia	13 u'u
14 (po-)uri	14 kila	14 'uNgi
15 toto	15 toto	15 toto
16 maaNiaNi	16 maNiaNi	16 aNi
17 ivi	17 ivi	17 ibi
18 maanava	18 -	18 manaba
19 kaa	19 ka	19 beNga
20 tamarikiriki	20 memea	20 tama'iti'iti
21 (kau-)ao	21 maluao	21 'ao
22 makariri	22 makalili	22 makeke
23 poi / oko	23 lemai	23 a'u
24 -	24 pau	24 tauNa
25 tuu	25 ele	25 tua
26 aso	26 laNi	26 'ao
27 mate	27 mate	27 mate
28 kerī	28 keli	28 keNgi
29 kerekere	29 paeku	29 keNgekeNge
30 kuri	30 kulii	30 tokitoki
31 inu	31 inu	31 binu
32 masa	32 maNoa	32 mamala
33 paku	33 -	33 paluya
34 puefu	34 -	34 keNgekeNge
35 tariNa	35 taliNa	35 taNgiNa
36 kere	36 tuaone	36 keNge
37 kai	37 kai	37 kai
38 (foi-)fue / fuaī	38 fatu	38 hua
39 (kafi-)mata	39 mata	39 mata
40 too	40 too	40 too
41 mao	41 hmāo	41 he'eyahi
42 Nako	42 nainu	42 Nako
43 (ta-)mana	43 tamana	43 tamana
44 matakū	44 mtaku	44 matakū
45 furu	45 fulu	45 huNgu
46 molaakea/sokofia	46 -	46 ni
47 faitau / fiatu	47 kumi	47 taa
48 afi	48 keu	48 ahi
49 ika	49 ika	49 kaui
50 rima	50 lima	50 Ngima

SIKAIANA
(S.H. Elbert; 190)

1 katoa
2 ma
3 manu
4 lehu
5 i
6 tua
7 haakinokino
8 kili
9 mai te aa
10 manava
11 naaniu
12 manu
13 nunu
14 uli
15 haeko
16 aniani
17 ivi
18 maahia
19 ku kaa
20 tama likiliki
21 lehuna
22 maalikitau
23 hale mai
24 pau
25 kini
26 aho
27 mate
28 keli
29 kekenatolo
30 kulii
31 unu
32 pakupaku
33 matapuu
34 lehuu
35 kau talina
36 kelekele
37 kai
38 tama moa
39 kalemata
40 too iho
41 mmao
42 momona
43 tamana
44 matakū
45 pala
46 toetoe
47 heatu
48 ahi
49 ika
50 lima

TAKUU
(S.H. Elbert, I.
Howard; 194)

1 fakkaatoa
2 ma
3 manu
4 nahu
5 i
6 kanatua
7 hakallika
8 kiri
9 i (te vana)
10 manava
11 lasi
12 manu
13 utia
14 uri
15 totoo
16 aniani
17 ivi
18 maanava
19 kkaa
20 tamariki
21 aoa
22 (sau-)makalli
23 kau
24 tau
25 tuu uka
26 aso / ao
27 kumate
28 kerī
29 kerekere
30 poi
31 unu
32 pakupaku
33 punu
34 kerekere
35 kautarina
36 kerekere
37 kai
38 hua
39 karamata
40 too
41 mmao
42 momona
43 tamana
44 matakū
45 huruhuru
46 moisi
47 patua
48 ahi
49 ika
50 lima

ONTONG JAVA
(S.H. Elbert; 191)

1 ha'akoa
2 ma
3 poi
4 lehu
5 i
6 keNikua
7 sa'iNo
8 'ili
9 ikiNimea
10 maNava
11 lahi
12 maNu
13 uu
14 pala
15 koko
16 makani
17 ivi
18 maaNava
19 vela
20 kamali'i
21 puleulehu
22 maalili
23 haa mai
24 pau
25 kuu
26 aho
27 make
28 'eli
29 'e'ele
30 poi
31 uNu
32 paupa'u
33 -
34 maNuNu
35 akaliNa
36 kele'ele
37 'ai
38 hua
39 'alemaka
40 iho
41 mao
42 suNu
43 kamaNa
44 maka'u
45 palaa
46 moisi
47 vuhu
48 ahi
49 i'a
50 lima

KAPINGAMARANGI
(Elbert 1948; 191.
plus items (*) from
V. Carroll list)

NUKUORO
(V. Carroll; 195)

MAE
(Capell 1962b, Ray
1919-20, Nevermann
1953; 139)

1 hu(a)kato	1 alodahi	1 bini
2 mo	2 ma	2 ma
3 -	3 manu	3 -
4 rehu	4 lehu	4 -
5 i	5 i	5 i
6 thua	6 dua	6 sima tua
7 huaitu	7 boubou	7 sati
8 kiri (rakau)	8 gili	8 -
9 itima	9 hidiNa	9 (aa-)na tafito
10 tinae	10 tinae	10 -
11 tamana	11 lanui	11 lasi
12 manu	12 manulele	12 manu
13 khati	13 kadi	13 -
14 ruuri	14 uliuli	14 uri
15 toto	15 dodo	15 toto
16 aNiaNi	16 ili	16 -
17 iivi	17 ivi	17 sui
18 manawa / toki*	18 manava	18 -
19 were	19 vela	19 -
20 tama	20 gauligi	20 tama
21 kororaNi	21 gili laNi	21 borowa
22 makariri	22 magalili	22 makariri
23 hani moi	23 humai	23 numai
24 tau	24 dau	24 -
25 tuu	25 ssele	25 serea
26 raaNi	26 laaNi	26 aso / rani
27 mate	27 magau	27 mate
28 keru	28 geli	28 keria
29 tokoria	29 geregere	29 -
30 paana	30 gaadu	30 kuri
31 inu	31 unu	31 vinu
32 maaNo	32 mmasa	32 maro
33 mariri	33 madagabubu	33 -
34 rehua* / popopo*	34 mama	34 -
35 tariNa	35 daliNa	35 tariNa
36 kerekere	36 gelegele	36 kere
37 miami / kai*	37 gai	37 keina
38 Noko	38 Nago	38 fua
39 koromata	39 ganomada	39 mata sisira
40 too	40 too	40 -
41 mokoaa	41 mmao	41 mamau
42 kilisi	42 gilisi	42 -
43 thamana	43 tamana	43 tamana
44 matakū	44 madagu	44 matakū
45 huru	45 hulu manu	45 bala
46 hokotoru/hokohi*	46 momo	46 -
47 hakatau/heepaki*	47 hebagi	47 tuia
48 ahi	48 ahi	48 afi
49 ika	49 mamu	49 ika
50 rima	50 lima	50 rima

MELE-FILA (Capell 1942, Turner 1861; <u>143</u>)	WEST FUTUNA (Capell 1958, Turner 1861, Ray 1919-20; <u>143</u>)	WEST UVEA (Leverd 1917a, 1922 Ray 1919-20; <u>144</u>)
1 tope	1 oši	1 -
2 No	2 ma	2 maa
3 -	3 -	3 -
4 refu	4 namuhlaNa	4 lefu
5 i	5 i	5 gi
6 pua	6 -	6 tua
7 saa	7 saa	7 Naeo / gaeo
8 kiri	8 -	8 -
9 tno lake Nane	9 pe	9 -
10 sinae	10 činae	10 tinae
11 tapeana/poulaka	11 sore	11 (e-)fa
12 manu	12 manu	12 manu(-lele)
13 kaʔia	13 hmaNu	13 uutia
14 paku	14 u(u)ri(-i)	14 uli
15 toto	15 toto	15 toto
16 -	16 -	16 -
17 ivi	17 ivi	17 ivi
18 nomuna	18 mapusaki	18 -
19 -	19 -	19 -
20 tama	20 tama	20 tamaiviki
21 tai te raNi/sau	21 poa	21 maiao
22 makariri	22 m(u/a)kaliNi	22 makalili
23 fano / ro mai	23 (h-)mai	23 (nu) mai
24 -	24 -	24 taua
25 teia	25 -	25 tutia
26 ao	26 ao / au	26 ao
27 mate	27 mate	27 mate
28 keria	28 vere	28 aku / keleki
29 -	29 -	29 -
30 kori	30 ku(u)ri	30 kuli
31 unu	31 inu	31 -
32 matu	32 -	32 -
33 -	33 -	33 -
34 -	34 -	34 -
35 teriNa	35 (ta-)riNa	35 taliNa
36 kere	36 (ta-)kere	36 kele
37 keina	37 (ko-)kai	37 kai
38 atolu	38 fafakamanu	38 -
39 maata	39 foi mata	39 mata
40 melo	40 to / (h-)takakea	40 -
41 mau / mamao	41 papai	41 timamao
42 -	42 -	42 -
43 tama-(+ PN affix)	43 tama-(+ PN affix)	43 tamana/thrithra
44 matakū	44 (ma-)ta(k/ʔ)u	44 helohelo
45 -	45 furumanu	45 fulukoto
46 -	46 (e-)fiaana	46 -
47 (fi-)ʔipa	47 (h-)toa	47 fefetai
48 afi	48 afi	48 afi
49 ika	49 ika	49 ika
50 rima	50 rima	50 lima

HAWAII	SAMOA	TONGA
51 lana	51 oopeapea	51 teetee
52 kahe	52 tafe	52 tafe
53 pua	53 fuNaa laa'au	53 matala
54 lele	54 lele	54 puna
55 'ohu	55 puao	55 kakapu
56 waawae	56 vae	56 va'e
57 haa	57 faa	57 faa
58 -	58 liu 'aisa	58 -
59 hua	59 fua laa'au	59 fua
60 haa'awi	60 'au mai	60 foaki
61 maika'i	61 lelei	61 lelei
62 mau'u	62 mutia	62 musie
63 uliuli	63 lanu lau'ava	63 lanu mata
64 loko	64 Na'au	64 Naakau
65 lauoho	65 lauulu	65 lou'ulu
66 lima	66 lima	66 nima
67 ia	67 ia	67 ia
68 po'o	68 ulu	68 'ulu
69 lohe	69 fa'aloNo	69 faanoNo
70 pu'uwai	70 fatu	70 mafu
71 kaumaha	71 mamafa	71 mamafa
72 nei	72 'inei	72 heni
73 kaa	73 taa	73 tuki
74 ho'opa'a	74 'u'u	74 pukepuke
75 peehea	75 fa'apeefea	75 feefee
76 hahai	76 tutuli	76 tuli
77 kaane	77 taane	77 ohoana
78 au	78 a'u	78 au
79 -	79 'aisa	79 -
80 inaa	80 'aafai	80 kapau
81 i loko	81 totonu	81 iloto
82 pepehi a make	82 fasioti	82 tamate'i
83 'ike	83 iloa	83 'ilo
84 loko	84 vai tuu loto	84 ano
85 'aka	85 'ata	85 kata
86 lau	86 lau	86 lau
87 hema	87 aNavale	87 hema
88 waawae	88 vae	88 va'e
89 moe	89 ta'oto	89 tokoto
90 ola	90 ola	90 mo'ui
91 ake	91 ate	91 'ate
92 loloa	92 'umi	92 looloa
93 'uku	93 'utu	93 kutu
94 kaane	94 taane	94 taNata
95 nui	95 tele	95 lahi
96 'i'o	96 'a'ano	96 kano
97 makuahine	97 tinaa	97 fa'e
98 mauna	98 mauNa	98 mo'uNa
99 waha	99 Nutu	99 Nutu
100 inoa	100 iNoa	100 hiNoa

UVEA	FUTUNA	ELLICE
51 ma'anu	51 tauopeope	51 laNa
52 tafe	52 tafe	52 -
53 fisi	53 see	53 pua
54 lele	54 lele	54 eva
55 kakapu	55 kokofu	55 -
56 va'e	56 va'e	56 vae
57 fa	57 fa	57 fa
58 -	58 -	58 -
59 fua	59 fua	59 fua
60 foaki	60 soli	60 tuku
61 malie / lelei	61 malie	61 lelei
62 vao	62 vao	62 -
63 mauui	63 -	63 -
64 Nakau	64 vaavaa	64 tinae
65 'ulu	65 fulu	65 laulu
66 nima	66 lima	66 lima
67 ia	67 ia	67 ia
68 'ulu	68 'ulu	68 ulu
69 loNo	69 loNo	69 loNo
70 loto	70 fatu manava	70 loto
71 mamafa	71 mamafa	71 mafa
72 heni	72 (k-)ilenei	72 nei
73 ta	73 ta	73 ta
74 to'o	74 to'o	74 ave / tao
75 feafeai	75 fefeaki	75 pefea
76 fana'i	76 fana	76 tuli
77 ohoana	77 avaNa	77 avaNa
78 'a'u / au	78 au	78 au
79 -	79 tiloata	79 -
80 ka	80 ka	80 me
81 'i	81 i (loto)	81 i (loto)
82 tamate'i	82 tamate te mate	82 tamate
83 poto	83 ilo(-iloa)	83 iloa
84 ano	84 -	84 -
85 kata	85 kata	85 kata
86 lau	86 lau	86 lau
87 hema	87 sema	87 -
88 va'e	88 va'e	88 vae
89 fala'i	89 masefu	89 moe
90 ola	90 mauli	90 ola
91 ate	91 ate	91 -
92 loaloa	92 loa	92 loa
93 kutu	93 kutu	93 -
94 taNata	94 taNata	94 taNata
95 tokolahi	95 Naese / Naatee	95 (touko-)uke
96 kano	96 kanofi	96 umiti
97 fa'e	97 tinana	97 matua
98 mouNa	98 ma'uNa	98 -
99 Nutu	99 Nutu	99 Nutu
100 hiNoa	100 iNoa	100 iNoa

TIKOPIA	PILENI	RENNELL
51 maanu	51 maanu	51 tahea
52 puke	52 tele	52 miNgomiNgo
53 manoNi / see	53 iimea	53 laka me'a
54 fakaneva	54 lele	54 NgeNge
55 nefu	55 nehu	55 sau
56 vae	56 vae	56 ba'e
57 faa	57 faa	57 haa
58 -	58 -	58 -
59 fua	59 fua	59 hua
60 sori	60 au mai	60 au mai
61 laui	61 laavoi	61 Ngaoi
62 mauku	62 -	62 mouku
63 -	63 uiuiui	63 usiusi
64 Natau ate	64 Naakau	64 uso
65 rauuru	65 laulu	65 Ngau'uNgu
66 rima	66 lima	66 Ngima
67 ia	67 ia	67 ia
68 (poko-)uru	68 pohoulu	68 'uNgu
69 roNo	69 loNo	69 hakaNgonNo
70 fatimanava	70 fatu makalili	70 hinaNgo
71 mafa	71 maha	71 mamaha
72 tenei	72 muanei	72 tenei
73 taa	73 lava	73 taa
74 sau	74 toa	74 tau
75 fe-/faka-fea	75 fokafea	75 (ko-)hea
76 turi / fana manu	76 -	76 'aNgu'aNgu
77 matua	77 avaNa	77 matu'a
78 kuao / arau	78 aiau	78 ko au
79 -	79 -	79 -
80 pe(-a)	80 ke	80 na'e
81 i / ia	81 i	81 (i-) Ngoto
82 taamakutu	82 teia	82 taa
83 iroa	83 iloa	83 na'a
84 roto	84 loka	84 Ngano
85 kata	85 kata	85 kata
86 rau	86 laumea	86 Ngau
87 sema	87 tovale	87 sema
88 vae	88 vae	88 ba'e
89 teka	89 takoto	89 moe
90 ora	90 mouli	90 ma'uNgi
91 raurautiare	91 ate	91 ate
92 roa	92 loa	92 Ngoa
93 kutu	93 kutu	93 kutu
94 taNata	94 taNata	94 taNata
95 raua	95 pele	95 'eha
96 kanofi	96 io	96 kano
97 (ti-)nana	97 tinana	97 tinana
98 mauNa	98 mauNa	98 oNgo
99 Nutu	99 Nutu	99 Nutu
100 iNoa	100 iNoa	100 iNoa

SIKAIANA	TAKUU	ONTONG JAVA
51 tahetahea	51 tahea	51 kahea
52 tahe	52 tahe	52 kahe
53 see	53 kautei	53 auke
54 lele	54 lele / llee	54 lele / lee
55 nehu	55 kohu	55 Nehu
56 tapuvae	56 (tapu-)vae	56 vae / kapuai
57 haa	57 faa	57 haa
58 -	58 -	58 -
59 hua	59 hua (-raakau)	59 hua
60 kaumai	60 kaumai	60 'au mai
61 laoi	61 taukareka	61 kauale'a
62 veve	62 vvee	62 veve
63 uui	63 moana uri	63 uli
64 kautae	64 vava	64 vaavaa
65 laulu	65 rauru	65 laulu
66 lima	66 rima	66 lima
67 aia	67 aia	67 kama laa / (aia?)
68 pohoulu	68 posouru	68 pohoulu
69 lono	69 lono	69 loNo
70 atepili	70 hatumanava	70 hakumaNava
71 mmaha	71 maha	71 maha
72 nei	72 (i-)kinei	72 Nei
73 taa	73 patua	73 vuhu
74 taohi	74 taohi	74 kaohi
75 peehea	75 pehee / pehea	75 pehee
76 see	76 tataru	76 kalualu
77 avana	77 aavana	77 avaNa
78 nau	78 aanau	78 aNau
79 -	79 -	79 -
80 poki	80 kiimee	80 pe lo'u
81 loto	81 i loto	81 i loko
82 taia	82 taia	82 kaa
83 iloa	83 iloa	83 iloa
84 -	84 -	84 -
85 kata	85 katakata	85 'aka
86 lau	86 lau	86 lau
87 vale	87 mauui	87 selaua
88 vae	88 vae	88 vae
89 hakasina	89 moe	89 moe
90 ola	90 ora	90 ola
91 ate	91 ate	91 ake
92 loloa	92 (fua-)roroa	92 lolua
93 kutu	93 kutu	93 'uku
94 tanata	94 tanata	94 kaNe
95 taamaki	95 tamaki	95 kama'i
96 io	96 puukanohi	96 puNohi
97 tinana	97 tin(a)na	97 kiiNaa
98 mouna	98 mouna	98 mouNa
99 pukua	99 pukua / laanutu	99 pu'ua
100 male	100 inoa	100 iNoa

KAPINGAMARANGI	NUKUORO	MAE
51 tehee / raNa*	51 llaNa	51 -
52 miti	52 sali	52 tafe
53 akhai	53 huala	53 see
54 rere / khapa*	54 lele	54 rere
55 -	55 -	55 -
56 (papa-)wae	56 gubuvae	56 vae
57 haa	57 haa	57 faa
58 -	58 -	58 -
59 kore / hua*	59 huakai	59 fua
60 waNa / ka mai*	60 ga mai	60 soria / fua
61 huamaria	61 danua	61 sumarie
62 keiNa thoro	62 heli	62 -
63 konokiri / thea*	63 nuui	63 -
64 nakau / keika*	64 dae	64 Nakau
65 Nahuru	65 NaNaulu	65 fereuru
66 (papa-)rima	66 guburima	66 rima
67 ia	67 ia	67 ia
68 ripoko	68 biho	68 tubulaki
69 (haka-)roNo(-no)	69 laNona	69 raNoona / fafona
70 hatu manawa	70 hadu manava	70 roto
71 taamaha	71 daemaha	71 mamafa
72 kinei	72 kinei	72 irenei
73 taa / hakamaua*	73 hagaili	73 paki
74 taahi	74 poo	74 futia
75 (pee-/te*-)hee	75 dehe	75 fakafe
76 waruwaru	76 -	76 kolikoli
77 roto (taane)	77 bodu	77 -
78 au	78 au	78 ku / ko o
79 -	79 haisi	79 -
80 phetimaa	80 no	80 ta
81 i (roto)	81 i	81 i
82 taariki(te mate)	82 hagamakau	82 teia
83 iro	83 ilo	83 iroa
84 moana	84 -	84 -
85 katakata	85 gadagada	85 kata
85 rau	86 lau	86 raurau
87 tauihara	87 masui	87 -
88 wae	88 vae	88 vae
89 moe	89 baani	89 moe / Noro
90 mouri	90 mouli	90 mauri
91 ate	91 ade	91 -
92 rooroo / roa*	92 loloa	92 levaleva
93 kutu	93 gudu	93 kutu
94 taane	94 daane	94 taNata
95 roko	95 lagolago	95 -
96 kone (-ika)	96 kano	96 kanofi
97 tinana	97 tinana	97 tinana
98 konotu	98 mouNa	98 mauNa
99 Nutu	99 Nudu	99 Nutu
100 iNoo	100 iNo	100 iNoa

MELE-FILA	WEST FUTUNA	WEST UVEA
51 -	51 (h-)manu	51 manu
52 sara	52 tafe	52 maligi
53 fuma	53 se	53 hee / se
54 rere	54 rere	54 lele
55 -	55 -	55 -
56 vae	56 vae	56 vae
57 faa	57 faa	57 faa
58 -	58 -	58 -
59 fua	59 fua / hua	59 fua / fuee
60 vaNe	60 tuf(w)a	60 soli(-kufa)
61 merie	61 rufie	61 malie
62 mokouku	62 -	62 -
63 -	63 -	63 -
64 sinae	64 vava	64 taikau / teaika
65 rouru	65 fufuru	65 laulu
66 rima	66 rima	66 rima
67 a eia	67 eiə	67 iaia
68 kele / tukunoa	68 uru	68 ulu
69 roNona	69 roNo(-na)	69 loNona / moNa
70 -	70 roto	70 fatu manava
71 maafa	71 mafi	71 -
72 kene(-i)	72 iku(-nei)	72 tenei
73 visia	73 ta / (h-)tuki	73 taia
74 kaa(-moa)	74 kamoā / (h-)puru	74 -
75 -	75 -	75 nafea
76 topoŋia	76 -	76 -
77 -	77 nu(nw)ane	77 avana / habana
78 avau	78 avau	78 gude / (n-)ogu
79 -	79 -	79 -
80 -	80 pe	80 -
81 i	81 i	81 i loto
82 pakora	82 ta / (sa-)tia	82 iniini / liNi
83 taea	83 iro(-a)	83 egina
84 -	84 -	84 -
85 kata	85 (h-)kata	85 kata
86 rau	86 rau	86 lau
87 musui	87 masui	87 (fasi-)sema
88 vae	88 vae	88 kavaNa
89 -	89 moe	89 -
90 mauri	90 mauri	90 maouli
91 ate	91 ate	91 ate
92 totoe	92 (h-)palo	92 loa
93 -	93 kutu	93 kutu / falukelilu
94 taNata	94 taNata / tane	94 taNata / fenua
95 -	95 nalupai	95 uke
96 -	96 nohkano	96 io
97 ŋina-(+ PN affix)	97 čina(-na) / nana	97 tinana / nene
98 mauNa / fuu	98 ora	98 -
99 Nutu	99 fafa	99 Nutu
100 iNoa	100 iNoa	100 iNoa

HAWAII	SAMOA	TONGA
101 haaiki	101 vaaitiiti	101 faasi'i
102 'aa'i	102 lata	102 ofi
103 kokohe	103 ua	103 kia
104 hou	104 fou	104 fo'ou
105 poo	105 poo	105 poo
106 ihu	106 isu	106 ihu
107 'a'ole	107 lee	107 'ikai
108 o'o	108 matua	108 motu'a
109 kahī	109 tasi	109 taha
110 kekahi	110 isi	110 tahakehe
111 kanaka	111 taNata	111 taNata
112 paa'ani	112 ta'alo	112 va'iNa
113 huki	113 futi	113 fusi
114 pahu	114 tuulei	114 teke
115 ua	115 timu	115 'uha
116 'ula	116 muumuu	116 kulokula
117 pono	117 sa'o	117 tonu
118 'akau	118 taumatau	118 mata'u
119 kahawai	119 vai tafe	119 vai tafe
120 alanui	120 auala	120 hala
121 a'a	121 a'a	121 aka
122 kaula	122 maea	122 maea
123 popopo	123 pala	123 kovi
124 'aanai	124 mili	124 olo
125 pa'akai	125 maasima	125 maasima
126 one	126 oneone	126 'one'one
127 'oolelo	127 fai	127 lea
128 helu	128 valu	128 vaku
129 kai	129 sami	129 tahi
130 'ike	130 va'ai	130 sio
131 anoano	131 fatu	131 teNa
132 humuhumu	132 su'i	132 tuitui
133 'oi	133 ma'ai	133 maasila
134 pookole	134 pu'upu'u	134 nounou
135 mele	135 pese	135 hiva
136 noho	136 nofo	136 nofo
137 'ili	137 pa'u	137 kili
138 lani	138 laNi	138 laNi
139 moe	139 moe	139 mohe
140 li'ili'i	140 laititi	140 si'isi'i
141 honi	141 soNisoNi	141 nanamu
142 au-(ahi) / uahi	142 asu	142 kohu
143 molemole	143 molemole	143 molemole
144 mo'o	144 Nata	144 Nata
145 hau	145 kiona / 'aisa	145 -
146 kekahi	146 ni	146 ni'ihī
147 kuha	147 feanu	147 'a'anu
148 waahi	148 vaaelua	148 mavaiua
149 'uwi	149 'o'omi	149 sisina
150 hou	150 tui	150 tui

UVEA	FUTUNA	ELLICE
101 lausi'i	101 lauikiiki	101 -
102 (fe-/vaa-)ofi	102 (fe-)ofi	102 pili
103 u'a	103 u'a	103 ua
104 fo'ou	104 fo'ou	104 fou
105 po	105 po	105 po
106 ihu	106 isu	106 isu
107 aua / molemo	107 lea(-se)	107 se
108 matua	108 matua	108 maatua
109 tahi	109 tasi	109 tasi
110 kehe	110 kese	110 sua
111 hoNa	111 nea	111 tama / koNa
112 -	112 maanoNi	112 tafao
113 fusi	113 futi	113 futi
114 (t-)eke	114 teke	114 tuku
115 'ua	115 u'a	115 ua
116 kula	116 soasoata	116 kula
117 tonu	117 (tu'u-)tonu	117 tonu
118 mata'u	118 atamai	118 -
119 liuaa	119 liua	119 -
120 ala	120 ala	120 ala
121 aka	121 aka	121 tafiti
122 maea	122 maea	122 maea
123 popo	123 namuku	123 -
124 mili	124 nuku	124 -
125 pa'atai	125 paatai	125 -
126 one	126 one	126 oneone
127 tala	127 muna	127 muna
128 (fe-)vaku(-fi)	128 aku(-fi)	128 sali
129 tai	129 tai	129 tai
130 sio / vakai	130 tio / mamata	130 lavea
131 pulapula	131 pulapula	131 -
132 tui	132 tui	132 tui
133 masila	133 -	133 -
134 nou / kukupu	134 mo'u / toetoe	134 -
135 hua	135 sua	135 pese / siva
136 nofo	136 nofo	136 nofo
137 kili	137 kili	137 kili
138 laNi	138 laNi	138 laNi
139 (mau-)moe	139 moe	139 moe
140 si'i / liliki	140 'iki / liki	140 likiliki
141 namu	141 sosoNi	141 -
142 ahu	142 'afu	142 -
143 hika	143 sikasika	143 -
144 Nata	144 Nata	144 -
145 -	145 -	145 -
146 he / (ni-)ihi	146 se / iki	146 ni / ne
147 puhu	147 a'anu(-si)	147 -
148 vae / vahe	148 vae / vasi	148 tufa
149 sisina	149 kukumi	149 -
150 huki	150 toki'i	150 velo

TIKOPIA	PILENI	RENNELL
101 komokomo	101 -	101 -
102 rafi(-taki)	102 lavethaki	102 hetaiaki
103 uua	103 ua	103 u'a
104 fou	104 fou	104 ho'ou
105 poo	105 po	105 poo
106 isu	106 iuu	106 isu
107 (si-)se	107 siai	107 he'e
108 tue	108 mathua	108 matu'a
109 tasi	109 tai	109 tasi
110 taake	110 aii	110 teNгаа
111 taNata	111 tai	111 peNгаа
112 takaro	112 tafao	112 putatai
113 futi	113 takina	113 huhuti
114 paki	114 -	114 usu
115 ua	115 ua	115 'ua
116 mero	116 mea	116 uNгаа
117 tonu	117 sika	117 ma'oNgi
118 matau	118 toilo	118 maui
119 tufu / vaipuke	119 vaitele	119 bai mimiNго
120 ara	120 aala	120 aNгаа
121 (vai-/faki-)aka	121 aka	121 aka
122 maea / kafa	122 maea	122 tauNгаа
123 popo	123 hmaofa	123 popo
124 soro / kinai	124 oloolo	124 soNго
125 taitai	125 -	125 -
126 one	126 tuaone	126 'one
127 muna	127 talatala	127 hakaheNgeu
128 -	128 lakusia	128 -
129 tai	129 thaupe	129 tai
130 ono	130 kite	130 ina
131 -	131 fatu	131 hatu
132 sisina	132 atoato	132 lapui
133 koi	133 -	133 kakae
134 potolaki	134 potopoto	134 potopoto
135 pese	135 -	135 tauNгуа
136 nofo	136 noho	136 noho
137 kiri	137 na paku	137 kiNgi
138 vairaNi	138 laNi	138 NгаNi
139 moe	139 moe	139 moe
140 riki / fikilaki	140 likiliki	140 mi'i
141 soNi / suku	141 namu	141 soNi
142 auafi / usu	142 kohu	142 'au
143 kikira	143 lemolemo	143 maNгаNgi
144 -	144 Nata	144 Nata
145 -	145 -	145 -
146 etasi-rake	146 aii	146 teNгаа
147 pupusi	147 ivale	147 Na'esu
148 tutufa	148 -	148 haha'a
149 kukumi	149 tau	149 natunatu
150 -	150 -	150 tuki

SIKAIANA	TAKUU	ONTONG JAVA
101 kopiti	101 ekao	101 so'ao
102 taupili	102 taupiri	102 kaapili
103 ua	103 ua	103 ua
104 hou	104 hou	104 hou
105 poo	105 poo	105 poo
106 kaiusu	106 kaiisu	106 isu
107 hee	107 see	107 see
108 maatua	108 matua	108 makua
109 tahi	109 tasi	109 kahi
110 tahi laa	110 telaa	110 keelaa
111 tama	111 tama	111 kama
112 taahao	112 tahao	112 kahao
113 solo	113 hutimai	113 uhu
114 tuulei	114 usuatu / soroki	114 kule'i
115 ua	115 ua	115 ua
116 ula	116 mmea	116 mea
117 tonu	117 tonu	117 koNu
118 atamai	118 fakammaatau	118 laua
119 -	119 -	119 -
120 ala	120 ara	120 makeala
121 patiaka	121 patiaka	121 pakia'a
122 maea	122 uka / kafa	122 maea
123 popo	123 popo	123 pala
124 amosi	124 ttoro	124 mulu
125 -	125 -	125 -
126 kelekele	126 kelekele	126 'ele
127 talatala	127 taratara	127 kapa
128 lakulaku	128 araara	128 laula'u
129 tai	129 tai	129 kai
130 kite	130 kite	130 'ike
131 hatu	131 hua	131 hua
132 tuitui	132 tui	132 kui
133 kaa	133 kaa	133 'aa
134 potopoto	134 potopoto	134 popoko
135 pese	135 hua	135 huhua
136 noho	136 noho	136 Noho
137 kili	137 kiri	137 'ili
138 lani	138 lani	138 vaelaNi
139 moe	139 moe	139 moe
140 likiliki	140 punaamea	140 solili'i
141 sunu	141 sunu	141 suNu
142 au	142 au	142 au / ahu
143 -	143 mania	143 -
144 -	144 laponu	144 'aka
145 -	145 -	145 -
146 siaa	146 araa / ni	146 alaa
147 saavale	147 saavare	147 saavali
148 mahaa	148 vae / fafa	148 hahaa
149 hakapuu	149 kumi	149 haNiki
150 sookai	150 suki	150 ko'i

KAPINGAMARANGI	NUKUORO	MAE
101 huukha	101 gasogaso	101 -
102 hoho	102 baa mai	102 fafe tai
103 ua	103 ua	103 ua
104 hoou	104 hoou	104 fou
105 poo	105 boo	105 po
106 uuhi	106 usu	106 isu
107 tee / hakare*	107 de / te	107 see
108 matua	108 (matu-)matua	108 matua
109 tahi	109 dahi	109 tasi
110 thei / hua ke*	110 ge	110 -
111 taNata	111 daNada	111 taNata
112 tataakara	112 hagadahao	112 bisini
113 hutu / tata*	113 dada	113 -
114 tuku / hono*	114 usu	114 -
115 ua	115 pala de laNi	115 -
116 hmee	116 mmea	116 mea
117 tonu / humaria*	117 heohi	117 totonu
118 tautonu	118 madau	118 -
119 monowai*	119 -	119 -
120 ara	120 haiava	120 ara
121 aka	121 aga	121 tafito
122 hari	122 uka / daula	122 vava
123 pirau / popo*	123 bobo	123 -
124 muru / miri*	124 mili	124 -
125 (nia) tai	125 dai	125 -
126 kerekere	126 gelegele	126 one
127 hai / hakatapa*	127 hai	127 muna
128 roti	128 laladi	128 -
129 tai	129 tai / moana	129 tai / mwana
130 hmata / kitee*	130 gide	130 kutea
131 kore	131 gole	131 -
132 tui	132 dui	132 -
133 ka	133 kaNi	133 -
134 potopoto	134 bodobodo	134 -
135 hua / taahiri*	135 dahili	135 roNo
136 noho	136 noho	136 nofo
137 kiri	137 kili	137 kiri
138 raaNi	138 laNi	138 raNi
139 khi / moe*	139 seni	139 moe
140 turii	140 dama me / masei	140 titi
141 hoNi / tuNua*	141 duNa	141 -
142 huiahi	142 useahi	142 asu
143 maraari	143 malali	143 -
144 kihaa*	144 labodo	144 Nata
145 -	145 -	145 -
146 hunu	146 hanu	146 isi
147 pui / haaware*	147 saavali	147 nusi
148 toe / haahi*	148 haNa	148 vaea
149 hakapui / kumi*	149 kumi	149 -
150 tuaki / taaro*	150 velo	150 -

MELE-FILA	WEST FUTUNA	WEST UVEA
101 -	101 -	101 lauliki
102 tata	102 tata	102 taiaki/tautafaki
103 poopoo	103 kaupena ua	103 uua
104 fou	104 fau	104 fou
105 po	105 puNi	105 poo
106 usu	106 isu	106 isu
107 sae	107 ŝikai	107 he
108 matua	108 mahtua	108 matua
109 tasi	109 tasi	109 tahi
110 (ke-)ke	110 teke	110 -
111 taNata / tma	111 taNata / fakai	111 taNata / fenua
112 mese	112 (fe-)takaro(-Na)	112 -
113 paŝia	113 -	113 -
114 -	114 -	114 -
115 ua	115 ua	115 ua
116 mea / kalukalu	116 (h-)mea	116 melo / toto
117 -	117 -	117 -
118 -	118 -	118 (fasi-)matau
119 wai sara	119 vaitafe	119 -
120 ara	120 retu	120 idieN / ala
121 -	121 koNa kai	121 aka / ulu fai
122 -	122 taura / ua	122 umaea/kolo/noa
123 -	123 -	123 -
124 -	124 furu	124 -
125 mara	125 kurkuru tai	125 -
126 None	126 one	126 one
127 tukua	127 tukua / visau	127 munagi
128 -	128 -	128 alalia
129 tai	129 tai	129 ta(h)i / moana
130 sireia	130 safe / sirasira	130 -
131 -	131 fatu(-nea)	131 -
132 tuia	132 suki	132 tui
133 -	133 -	133 -
134 -	134 -	134 totoe
135 -	135 Noro	135 mako
136 nofo	136 puku	136 noifo / hno
137 kiri	137 kiri	137 kili
138 laNi / matova	138 raNi	138 laNi
139 moe	139 moiroa	139 moe
140 leleka/akalaka	140 sisi / rikriki	140 iviki / weneliki
141 -	141 hnamu	141 -
142 kaŝia	142 (a-)usafi	142 auafi
143 -	143 -	143 -
144 Nata	144 NNaata/taNaro	144 une / hu / fae
145 -	145 -	145 -
146 -	146 (e-)faru	146 -
147 taanue	147 savari	147 anusi
148 -	148 vaea	148 faga
149 -	149 -	149 -
150 -	150 -	150 piki

MELE-FILA	WEST FUTUNA	WEST UVEA
101 -	101 -	101 lauliki
102 tata	102 tata	102 taiaki/tautafaki
103 poopoo	103 kaupena ua	103 uua
104 fou	104 fau	104 fou
105 po	105 puNi	105 poo
106 usu	106 isu	106 isu
107 sae	107 šikai	107 he
108 matua	108 mahtua	108 matua
109 tasi	109 tasi	109 tahi
110 (ke-)ke	110 teke	110 -
111 taNata / tma	111 taNata / fakai	111 taNata / fenua
112 mese	112 (fe-)takaro(-Na)	112 -
113 paŷia	113 -	113 -
114 -	114 -	114 -
115 ua	115 ua	115 ua
116 mea / kalukalu	116 (h-)mea	116 melo / toto
117 -	117 -	117 -
118 -	118 -	118 (fasi-)matau
119 wai sara	119 vaitafe	119 -
120 ara	120 retu	120 idieN / ala
121 -	121 koNa kai	121 aka / ulu fai
122 -	122 taura / ua	122 umaea/kolo/noa
123 -	123 -	123 -
124 -	124 furu	124 -
125 mara	125 kurkuru tai	125 -
126 None	126 one	126 one
127 tukua	127 tukua / visau	127 munagi
128 -	128 -	128 alalia
129 tai	129 tai	129 ta(h)i / moana
130 sireia	130 safe / sirasira	130 -
131 -	131 fatu(-nea)	131 -
132 tuia	132 suki	132 tui
133 -	133 -	133 -
134 -	134 -	134 totoe
135 -	135 Noro	135 mako
136 nofo	136 puku	136 noifo / hno
137 kiri	137 kiri	137 kili
138 laNi / matova	138 raNi	138 laNi
139 moe	139 moiroa	139 moe
140 leleka/akalaka	140 sisi / rikriki	140 iviki / weneliki
141 -	141 hmamu	141 -
142 kaŷia	142 (a-)usafi	142 auafi
143 -	143 -	143 -
144 Nata	144 NNaata/taNaro	144 une / hu / fae
145 -	145 -	145 -
146 -	146 (e-)faru	146 -
147 taanue	147 savari	147 anusi
148 -	148 vaea	148 faga
149 -	149 -	149 -
150 -	150 -	150 piki

HAWAII	SAMOA	TONGA
151 kuu	151 tuu	151 tu'u
152 hookuu	152 fetuu	152 fetu'u
153 laa 'au	153 laa 'au	153 va'a kau
154 poohaku	154 ma'a	154 maka
155 pololei	155 sa'o	155 haNatonu
156 omo	156 mimiti	156 misi
157 laa	157 laa	157 la'a
158 pehu	158 fula	158 pupula
159 'au	159 'a'au	159 kakau
160 huelo	160 si'usi'u	160 iku
161 keelaa	161 lenaa	161 ena
162 laila	162 'oo	162 ena
163 laakou	163 laatou	163 kinautolu
164 maanoanoa	164 maafiafia	164 matolu
165 lahilahi	165 maanifinifi	165 manifi
166 mana'o	166 maafaufau	166 fakakaukau
167 keia	167 le(e)nei	167 eni
168 'oe	168 'oe	168 koe
169 kolu	169 tolu	169 tolu
170 nou	170 toNi	170 lili
171 naaki'i	171 nonoa	171 nono'o
172 alelo	172 laulaufaiva	172 'elelo
173 niho	173 nifo	173 nifo
174 laa'au	174 laa'au	174 'akau
175 huli	175 liliu	175 takai
176 lua	176 lua	176 ua
177 lua'i	177 pua'i	177 lua
178 hele	178 savali	178 'alu
179 mahana / wela	179 maafanafana	179 maafana
180 holo	180 fufulu	180 fufulu
181 wai	181 vai	181 vai
182 kaakou	182 taatou	182 kitautolu
183 pulu	183 susuu	183 viku
184 aha	184 aa	184 haa
185 aahea	185 afea	185 'afe
186 ihea	186 fea	186 fee
187 ke'oke'o	187 pa'epa'e	187 hinehina
188 ai	188 ai	188 hai
189 laulaa	189 vaatele	189 laulahi
190 wahine	190 aavaa	190 ohoana
191 makani	191 mataNi	191 mataNi
192 'eeheu	192 'apa'au	192 kapakau
193 kaawe	193 sooloi	193 holo
194 me	194 ma	194 moo
195 wahine	195 fafine	195 fefine
196 nahele	196 toNaavao	196 vao
197 ko'e	197 (')anufe	197 kelemutu
198 'oukou	198 'outou	198 kimoutolu
199 makahiki	199 tausea	199 ta'u
200 melemele	200 samasama	200 eNaeNa

UVEA	FUTUNA	ELLICE
151 tu'u	151 tu'u	151 -
152 fetu'u	152 fetu'u	152 -
153 toko	153 tokotoko	153 lakau
154 maka	154 fatu	154 fatu
155 tonu	155 sako	155 tonu
156 mihi / misi	156 miti	156 -
157 la'a	157 la'a	157 la
158 fakafutaNia	158 fakafuta(-Nia)	158 fula
159 kakau	159 kakau	159 kaukau
160 hiku	160 siku	160 -
161 (a/ko) ena	161 (a/ko) na	161 tela
162 hena	162 i lena	162 la
163 natou	163 latou	163 latou
164 matolu	164 matolu	164 -
165 manifi	165 manifi	165 -
166 mahalo	166 sakana	166 manatu
167 (a/ko-)eni	167 (a/ko-)nei	167 tenei
168 koi	168 koe	168 koe
169 tolu	169 tolu	169 tolu
170 laku	170 laku	170 pai
171 lii	171 lii	171 tau
172 alelo	172 alelo	172 alelo
173 nifo	173 nifo	173 nifo
174 'akau	174 la'akau	174 lakau
175 fuli	175 (ma-)fuli	175 saNa
176 lua	176 lua	176 lua
177 lua	177 lulua / luaki	177 lua
178 laka / haa'ele	178 'ano	178 sasale
179 ma(a)fana /vela	179 vela /mafana	179 vvela
180 fulu / fo	180 fufulu / fano	180 -
181 vai	181 vai	181 vai
182 tatou	182 tatou	182 tatou
183 pala	183 susu	183 siu
184 ko (te) a	184 (ko le) a / e	184 (se/te) a
185 afea	185 fakaa	185 afea
186 (k-)ifea	186 (k-)ifea	186 ko/te-fea
187 tea	187 tea	187 sina
188 ko ai	188 ko ai	188 (ko) ai
189 laulahi	189 laulasi	189 -
190 ohoana	190 avaNa	190 avaNa
191 mataNi	191 mataNi	191 mataNi
192 kapakau	192 kapakau	192 -
193 holo	193 solo	193 ssolo
194 mo	194 mo	194 i
195 fafine	195 fafine	195 fafine
196 vao	196 vao	196 -
197 kelemutu	197 kelmutu	197 -
198 koutou	198 ko(u)tou	198 koutou
199 ta'u	199 fetu'u	199 tausaNa
200 he'a / mea	200 mea	200 -

TIKOPIA	PILENI	RENNELL
151 tuu	151 tu	151 tu'u
152 fetuu	152 fetuu	152 hetu'u
153 foirakau	153 lakau	153 Nga'akau
154 fatu	154 faatu	154 hatu
155 tonu / tori	155 sika	155 tinoNgaoi
156 mimiti	156 kemi	156 miti
157 ra	157 te vela	157 Nga'a
158 kukufa / neneke	158 fula	158 huhuNga
159 kau	159 kau	159 kakau
160 sukuSuku	160 napole	160 siku
161 tera	161 tela	161 teNga
162 ena	162 mua laa	162 Ngaa
163 ratou	163 latou	163 kiNgatou
164 matoru	164 matolu	164 matoNgu
165 maanifinifi	165 maanifi	165 manihi
166 maa / natu	166 manatu	166 teNgeu'a
167 tenei	167 nei	167 nei
168 kee / koke	168 akoe	168 koe
169 toru	169 tolu	169 toNgu
170 pei / pepe	170 sili	170 tupe
171 noa / rapini	171 fakafaulia	171 nono'a
172 alelo	172 alelo	172 aNgeNgo
173 nifo	173 niho	173 niho
174 rakau	174 lakau	174 Nga'akau
175 aNaaNa / timu	175 fuli	175 huNgi
176 rua	176 lua	176 Ngua
177 rua	177 lua	177 Ngua
178 taafao	178 hanohano	178 sehu
179 vera	179 mafana	179 bebeNga
180 fano / nupui	180 fui	180 huhu'i
181 vai	181 vai	181 bai
182 taatou	182 tatou	182 kitatou
183 sisiu	183 siu	183 suu
184 a	184 aa	184 aa
185 ako	185 -	185 makaaha
186 (i-)fea	186 ifea	186 tehea
187 tea	187 tea	187 susuNgu
188 ai	188 ko ai	188 ai
189 mafora	189 laueha	189 Ngau'eha
190 no(a)fine	190 nofine	190 uNguuNgu
191 mataNi	191 mataNi	191 oko
192 kapakau	192 kapakau	192 kapakau
193 furu	193 fulufulu	193 soNgo
194 me / ma	194 ma	194 ma
195 fafine / nofine	195 fafine	195 hahine
196 uruvao/rotovaea	196 vao	196 mouku
197 -	197 paipe	197 ane
198 ko(u)tu	198 koutou	198 koutou
199 tau	199 Natae	199 yapu
200 fero	200 felo / kena	200 heNgoheNgo

SIKAIANA	TAKUU	ONTONG JAVA
151 tuu	151 tuu	151 kuu
152 hetuu	152 fetuu	152 hekuu
153 laakau	153 raakau	153 la'au
154 hatu	154 fatu	154 haku
155 tonu	155 tonu	155 koNu
156 umiumi	156 umiumi	156 mikii
157 laa	157 raa	157 laa
158 lana	158 fura	158 hula
159 kaukau	159 kau	159 'au
160 moisuki	160 (mo-)suki	160 mosu'i
161 teelaa	161 teelaa	161 kelaa
162 ikilaa	162 ikilaa	162 i laa
163 laatou	163 raatou	163 lakou
164 maatolu	164 matoru	164 makolu
165 maanihi	165 manifi	165 -
166 hakateletele	166 maanatu	166 haakaloko
167 nei	167 nei	167 Nei
168 koe	168 (a) koe	168 a'oe
169 tolu	169 tolu	169 kolu
170 pehi	170 peesia	170 kaua
171 nno	171 sai / noa	171 Noa
172 alelo	172 alelo	172 alelo
173 niho	173 nifo	173 Niho
174 laakau	174 raakau	174 la'au
175 huli	175 fuli	175 huli
176 lua	176 lua	176 lua
177 lua	177 lualua	177 lua
178 hahaele	178 (sa-)sare	178 haele
179 vela	179 vvela	179 vela
180 solo	180 fuifui	180 solo
181 vai	181 vai	181 vai
182 taatou	182 ta(a)tou	182 kaakou
183 siu	183 para	183 suu
184 aa	184 aa	184 aa
185 mokuaahea	185 saeta fea	185 vauhee
186 ihea	186 (k-)iifea	186 ihee
187 maa	187 makkini	187 ma'iNi
188 koai	188 (ko) ai	188 ai
189 lahalahala	189 llaha	189 laha
190 avana	190 avana	190 avaNa
191 matani	191 matani	191 makaNi
192 kapakau	192 kapakau	192 (a-)pa'au
193 havapakupaku	193 soro	193 solo
194 ma	194 ma	194 ma
195 hahine	195 ffine	195 hiNe
196 lotoao	196 vao	196 pupu
197 -	197 mounu	197 -
198 koutou	198 ko(u)tou	198 'oukou
199 -	199 setau	199 hekau
200 helo	200 felo	200 helo

KAPINGAMARANGI	NUKUORO	MAE
151 tuu	151 duu	151 tu
152 hetuu	152 heduu	152 fetu
153 rakau	153 bido ragau	153 -
154 hatu	154 hadu	154 maka
155 huutonu	155 soe	155 totonu
156 uu	156 mmidi	156 -
157 raa	157 laa	157 raa
158 (haka-)hura	158 hua	158 -
159 khau	159 kau	159 -
160 huku	160 ssugi	160 -
161 te(-e) ra	161 -la	161 ra
162 kinae / iko ro*	162 ki la	162 iNa / iNane
163 kinatou	163 giladeu	163 ratou
164 maatoru	164 maadolu	164 -
165 rahirahi	165 daballahī	165 -
166 poroo/hakapau*	166 manadu	166 fakaturia
167 tenei	167 -nei	167 nii
168 koe	168 goe	168 koe
169 toru	169 dolu	169 toru
170 kiri / hutu*	170 maga	170 pesia
171 hiri / noo*	171 nnoa	171 -
172 horore	172 alelo	172 arero
173 niha	173 niho	173 nifo
174 raakau / tomo*	174 manusomo	174 raakau
175 huri	175 hhagi	175 tafiro/vilisia
176 rua	176 lua	176 rua
177 ruarua	177 hagalueia	177 -
178 hee / haere	178 sese	178 saere
179 wereNiNa/mahana*	179 mahana	179 vevera
180 kaukau	180 gaugau / hui	180 fafano/kaukau
181 wai	181 vai	181 vai
182 kitatou	182 gidateu	182 tatuo
183 thiu	183 ssui	183 -
184 (mati-)aha	184 (ni-/se-/e-)aha	184 aa
185 makahe	185 ahe	185 -
186 he	186 he	186 ife(-e)
187 khena	187 tea	187 tea
188 ko ai	188 go ai	188 ai / ko i
189 raharaha	189 lahalaha	189 -
190 roto (ahina)	190 bodu	190 finematua
191 mataNi	191 madaNi	191 mataNi
192 pakhau	192 bakau	192 bakakau
193 hononaina/omo	193 ssolo	193 -
194 mo / taria*	194 madali / i daha	194 ki / sikoti
195 ahina	195 hine	195 fafine
196 keiNa	196 vao	196 vao
197 patupatu	197 daNaloe	197 -
198 kootou	198 kodou	198 kotou
199 tapuhurumarama	199 Nadau	199 tau
200 roupuke	200 ganoaNo	200 -

MELE-FILA	WEST FUTUNA	WEST UVEA
151 tuu	151 tu	151 tuu
152 masui	152 fatu	152 fetu
153 Jiko	153 ra(-kau)	153 tokotoko
154 fatu	154 faatu	154 fatu
155 -	155 totonu	155 sako
156 susu	156 -	156 -
157 rea	157 ra	157 laa
158 -	158 -	158 fufula
159 -	159 (h-)kau	159 kaukau
160 -	160 -	160 -
161 Nara	161 tera	161 ia la
162 -	162 ikora	162 tela
163 ratou	163 (a-)k(i/e)re(-a)	163 gilatou
164 maturu	164 -	164 matolu
165 manifinifi	165 -	165 -
166 mantua	166 ñimentua	166 mekunia
167 Nane(-i)	167 tenei	167 ia nei
168 a koe	168 akoi	168 iakoe / oge
169 toru	169 toru	169 tolu
170 -	170 tafurusia	170 -
171 palsakaina	171 takaia	171 savea
172 limena	172 rero	172 fa(N/k)alelo
173 nifu	173 nifo	173 nifo
174 rakau	174 ra(-kau)	174 (mala) lakau
175 riuā	175 -	175 -
176 rua	176 rua	176 lua
177 rua	177 -	177 -
178 -	178 fano	178 hano
179 kava	179 mafana / hvera	179 vevela
180 kaukau	180 -	180 -
181 wai	181 vai	181 (ma-)tai
182 tatou	182 akitea	182 gitatou
183 -	183 -	183 -
184 afa	184 tafa	184 hea
185 afia	185 a(f)ia	185 -
186 ifea / Na	186 wafe / ii	186 (g-)ifea
187 teeteēa / te	187 keNo	187 sina
188 ko ai	188 akai	188 ko ai
189 -	189 -	189 -
190 fine	190 (no-)fune	190 avana
191 mataNi	191 mtaNi	191 mataNi
192 -	192 -	192 pakakau
193 -	193 furu	193 soloia
194 -	194 i	194 maa
195 fine	195 fine	195 fafine
196 uta / malasi	196 Narayau	196 vao
197 -	197 iro	197 -
198 koutou	198 akaua	198 goutou
199 tau	199 tau	199 -
200 maloloa	200 ferfero	200 memea / popouli

(A. Schütz; standard orthography)

1 kece	51 nawa	101 qiqoo	151 tuu
2 kei	52 droodroo	102 vooleka	152 kalokalo
3 manumanu	53 see-ni-kau	103 domo	153 kau
4 dravu-sei	54 vuka	104 vou	154 vatu
5 a / mai	55 kabukabu	105 bogi	155 dodonu
6 daku	56 yava	106 ucu	156 domi
7 caa	57 vaa	107 sega	157 mata-ni-siga
8 kuli	58 cevata	108 makawa	158 vuce
9 baleta	59 vua	109 dua	159 qalo
10 kete	60 soli	110 tani	160 bui
11 levu	61 vinaka	111 tamata	161 oqori
12 manumanuvuka	62 coo	112 qito	162 keru
13 kati	63 karakarawa	113 dree	163 ira / iratou
14 loaloa	64 waawaa	114 bili	164 vaavaku
15 draa	65 vuti	115 uca	165 maamare
16 liwa	66 liga	116 damudamu	166 nanuma
17 sui	67 koya	117 dodonu	167 oqoo
18 cegu	68 ulu	118 matau	168 ko
19 kama	69 rogo	119 uciwai	169 tolu
20 gone	70 uto	120 sala	170 viri
21 oo	71 biibii	121 waka	171 buki
22 batabataa	72 kee	122 dali	172 yame
23 lako mai	73 vacu	123 vuca	173 bati
24 willi	74 taura	124 masi	174 kau
25 sele	75 vakacava	125 maasima	175 gole
26 siga	76 vakasasaa	126 nuku	176 rua
27 mate	77 wati	127 kaya	177 lua
28 keli	78 au	128 mila	178 taubale
29 duka	79 -	129 wasawasa	179 tunutunu
30 kolii	80 ke(-vakaa)	130 rai	180 sava
31 gunu	81 e / mai	131 sore	181 wai
32 mamaca	82 vakamatea	132 cula	182 keda/kedatou
33 mucu	83 kilaa	133 gata	183 suasua
34 kuvu	84 drano	134 lekaleka	184 cava
35 daliga	85 dredre	135 sere	185 naica
36 qele	86 drau	136 dabe	186 vei
37 kana	87 mawii	137 kuli	187 vulavula
38 yaloka	88 yava	138 lomaalagi	188 cei
39 mata	89 davo	139 moce	189 raba
40 lutu	90 bula	140 lailai	190 wati
41 yawa	91 yate	141 boi	191 cagi
42 uro	92 balavu	142 kubou	192 taba
43 tama	93 kutu	143 dadara	193 qusi / qua
44 rere	94 tagane	144 gata	194 vata
45 vuti	95 vuqa	145 uca cevata	195 yalewa
46 lailai	96 lewe	146 soo	196 veikau
47 cevacu	97 tina	147 kasivi	197 cakacaka
48 bukawaqa	98 delana	148 se / vida	198 kemu-ni/-dou
49 ika	99 gusu	149 busoka	199 yabaki
50 lima	100 yaca	150 suaka	200 dromodromo

A P P E N D I X I I :

K I N S H I P S Y S T E M S

The following abbreviations are used:

GF	Grandfather
GM	Grandmother
X-	Sibling, same sex as ego
XO	Sibling, same sex, older than ego
XY	Sibling, same sex, younger " "
O-	Sibling, opposite sex from ego
C	Child
ZS	Sister's son of male ego
GC	Grandchild
P-	Parent
-L	affinal
-S	same sex as ego
-M	Male (speaking)
-F	Female (speaking)

The form of citation is that of the source.

HAWAII
(Handy and Pukui 1958)

GF kupuna
GM kupuna
FFB makuakaane
FZ makuahine
MMZ makuahine
MB makuakaane
XO kaiku'ana
XY kaikaina
OM kaikunaane
OF kaikuahine
S keiki
D kaikamahine
ZS keiki
GC mo'opuna
H kaane
W wahine
PLM huunoona
PLF huunoona
XLS kaane / wahine
OLM kaiko'eke, kaane-
OLM kaiko'eke, wahine-
CL huunoona

FIJI
(Quain 1948: 247)
(with 3rd pers.sing. suffix)

GF tubu-na
GM tubu-na
FFB tama-na
FZ tina-na
MMZ tina-na
MB tubu-na
XO tuaka-na
XY taci-na
OM gane-na
OF gane-na
S luve-na
D luve-na
ZS vugo-na
GC vugo-na
H wati-na
W wati-na
PLM vugo-na
PLF vugo-na
XLS tavale-na
OLM tavale-na
OLM tavale-na
CL vugo-na

TONGA
(Gifford 1929: 28-9)

GF kui
GM kui
FFB tamai
FZ mehekitaNa
MMZ fae
MB tuasina (fae taNata)
XO taokete
XY tehina
OM tuoNaane
OF tuofefine
S foha
D ofefine tama
ZS ilamotu
GC mokupuna
H ohoana
W ohoana
PLM tamai
PLF fae
XLS maa / matapule
OLM ohoana
OLM ohoana
CL (as children)

UVEA
(Burrows 1937)

GF kui
GM kui
FFB tamai
FZ mahiki-taNa
MMZ fae
MB fae taNata
XO taokete
XY tehina
OM tuaNaane
OF tuafafine
S foha M / tama F
D tama M / ta'ahine F
ZS as S
GC mokopuna
H ohoana
W ohoana
PLM -
PLF -
XLS holotua
OLM maa
OLM maa
CL -

SAMOA
(Mead 1930: 127-30)

GF tamaa
GM tinaa
FFB tamaa
FZ ilamutu
MMZ tinaa
MB -
XO uso / tua'aa
XY tei
OM tuaNane
OF tuafafine
S atali'i
D afafine
ZS -
GC tama / as S, D
H tane
W avaa
PLM as P
PLF as P
XLS -
OLM -
OLF -
CL -

TOKELAU
(Macgregor 1937: 45-7)

GF tupuna
GM tupuna
FFB tamana
FZ matua
MMZ matua
MB tuatina
XO taina (- kimua)
XY taina (- kimuli)
OM tuaNane
OF tuafafine
S ataliki
D afafine
ZS ilamutu
GC makupuna
H avaNa
W avaNa
PLM descriptive
PLF "
XLS "
OLM "
OLF "
CL "

ELLICE
(Kennedy 1931: 303)

GF tupuna
GM tupuna
FFB tamana
FZ matua
MMZ matua
MB tuatina
XO taina
XY taina
OM tuaNane
OF tuaNane
S tama
D tama
ZS ilamutu
GC mokupuna
H avaNa
W avaNa
PLM as P
PLF as P
XLS ma (these terms may
OLM loko not quite fit
OLF loko these domains)
CL -

FUTUNA
(Burrows 1936: 74)

GF tupuna
GM tupuna
FFB tamana
FZ masaki(-taNe)
MMZ tsinana
MB tu'a tsinana
XO taina
XY taina
OM tuaNa'ane
OF tuaNa'ane
S vosa
D ta'ine
ZS ilamutu
GC makopuna
H avaNa
W avaNa
PLM as P
PLF as P
XLS ma'a
OLM avaNa (?)
OLF avaNa (?)
CL -

TIKOPIA
(Firth 1936: 248-53)

GF tupuna
GM tupuna
FFB (ta-)mana
FZ masikitinaNa
MMZ (ti-)nana
MB tuatina
XO taina
XY taina
OM kave
OF kave
S tama
D tamafine
ZS iramutu
GC makopuna
H matua
W nofine
PLM (ta-)mana foNovai
PLF (ti-)nana foNovai
XLS ma
OLM taina
OLF taina
CL -

RENNELL
(Birket-Smith 1956)
(Hogbin 1931b)

GF tupuna
GM tupuna
FFB tamana
FZ tinana
MMZ tinana
MB tuatina
XO taukete
XY taina
OM tuNga'ani
OF tuahine
S hosa
D tama'ahini
ZS iNgamutu
GC makupuna
H matua
W NguNgu
PLM as P
PLF as P
XLS ma
OLM hanau
OLF hanau
CL as C

ONTONG JAVA
(Hogbin 1931a)

GF kipuNa
GM kipuNa
FFB kamaNa
FZ kiNa
MMZ kiNa
MB lamoku
X haNau (M)
X kaiNa (F)
OM 'ave
OF 'ave
S kama
D kama
ZS lamoku
GC mopuNa
H avaNa
W avaNa
PLM hiNauNa
PLF hiNauNa
XLS ma
OLM kaiNa
OLF haNau
CL hiNauNa

TAKUU
(I. Howard)

GF tipuna
GM tipuna
FFB tamana
FZ tinna
MMZ tinna
MB ilaamotu
XO taina
XY taina
OM kave
OF kave
S tama
D tama
ZS ilaamotu
GC mokupuna
H avana
W avana
PLM
PLF all affinals
XLS with the exception
OLM of BW (tinna) are
OLF finauna or ma,
CL probably OL and XLS
respectively.

KAPINGAMARANGI
(Emory 1965: 111-13)

GF tamana matua
GM tinana matua
FFB tamana
FZ tinana
MMZ tinana
MB tamana
XO tuahina
XY tuahina
OM tuahina
OF tuahina
S tama
D tama
ZS tama
GC tamatama
H roto
W roto
PLM eitu
PLF eitu
XLS tau
OLM roto
OLF roto
CL tau

NUKUORO
(Emory ibid.; V. Carroll)

GF tupuna
GM tupuna
FFB tamana
FZ tinana
MMZ tinana
MB tamana
XO teina
XY teina
OM teina
OF teina
S tama
D tama
ZS tama
GC huapotu
H potu
W potu
PLM saulapa
PLF saulapa
XLS ma
OLM ma
OLF ma
CL -

WEST FUTUNA
(Capell 1958)

GF tupuna
GM tupuna
FFB tamana
FZ šinahavai
MMZ šinana
MB tošinana
XO soa
XY soa
OM kave
OF kave
S tam(-a)
D tam(-a)
ZS raimutu
GC tam(p)upuna
H nuane
W nofune
PLM tošinana
PLF šinavai
XLS safe M, ma F
OLM safe
OLF ma
CL fuNona / raimutu

ANIWA
(Guiart 1961: 39-40)
(pronominal affixes omitted)

GF pua
GM tupunome
FFB tata
FZ kawē tata
MMZ mama
MB kaka
XO sò taurumatua
XY sò t'esisi
OM kawē
OF kawē
S tariki
D fine
ZS raymutu
GC tambupuyu
H neli
W toyotoyo / fine
PLM (of W) taman ò fafine
PLF mahaway
XLS safe M, ma F
OLM safe (with some
OLF ma exceptions)
CL raymutu

A P P E N D I X I I I :

T R A I T L I S T A N D D I S T R I B U T I O N

The abbreviations used in this appendix for the locations involved are the same as those used in the text with one exception: FA will be used in place of WF-An.

SOURCES:

- NUKUORO: Kubary 1900
- KAPINGAMARANGI:. . . Buck 1950, Emory 1965
- TAKUU: I. Howard
- ONTONG JAVA: Damm 1935, Hogbin 1931a, 1934, Sarfert
and Damm 1929, Lazarus and Beasley 1937
- RENNELL: Birket-Smith 1956
- TIKOPIA: Firth 1936, 1939, Rivers 1914
- WEST FUTUNA-ANIWA: . Humphreys 1926, Nevermann 1953, Paton
1898
- TONGA: Buck n.d., Gifford 1929, McKern n.d.
- SAMOA: Buck 1930, Mead 1930
- FUTUNA:.. Burrows 1936
- UVEA:.. Burrows 1937, Phillips 1953
- ELLICE:.. Hedley 1897, Kennedy 1930, Koch 1961
- TRUK:.. Bollig 1927, John Fischer 1957,
Goodenough 1951, LeBar n.d.
- PONAPE:.. John Fischer 1957, Hambruch and Eilers
1936, Riesenbergn.d.
- FIJI:.. Quain 1948, Sahlins 1962, Basil
Thompson 1908, Laura Thompson 1938,
1940, Tonganivalu 1914, 1917
- BUKA STRAITS:.. . . Blackwood 1935
- EROMANGA:.. . . . Humphreys 1926, Robinson 1902, Speiser
1923
- CANOES Haddon and Hornell 1936-8

TRAITS AND DISTRIBUTION:

1. Cross-cousin marriage (symmetrical or asymmetrical)
permitted and relatively common: To, Re, FA,
F1 (No missing).
2. Presence of dog: To, Uv, Fu, Sm, Tr, Po, FA, BS, F1.
3. Presence of pig: To, Uv, Fu, Sm, Tr, Er, FA, BS, F1.

4. Presence of fowl: All but El, Tr, Ka, Ti, Re, Fu, Uv.
5. Kava ceremony: Sm, To, Fu, Uv, Ti, Po, FA, Er, Fi.
6. Betel chewing: Ti, Re, BS.
7. Presence of true imu: All but Er, No.
8. Cooking on hot stones, but with no covering: Sm, To, Ka, No, Re, FA, Tk, Er, Fi.
9. Presence of separate cookhouse: All but OJ, FA, Er, BS.
10. Presence of earplugs or distention of earlobes: To, Fu, Tr, Po, Ti, Re, Er, BS.
11. Manufacture and use of tapa clothing (from wauke, Ficus or Artocarpus): All but Tr, El, Tk, No, OJ, BS.
12. Presence of carrying bags or baskets with straps or handles (either netted from cord or plaited): Po, Re, BS, Fi, No.
13. Bleaching of hair with lime: Sm, To, Fu, Uv, El, Ti, BS, Fi.
14. Tattooing covering extensive portions of the torso (not merely arms, legs or chest): Sm, To, Uv, El, Po, OJ, Fi.
15. Superincision (but not circumcision): Sm, To, Ti, Re, Fu, Uv, FA, Er, BS, Fi (No missing).
16. Rectangular houses more common than round, oval, or rectangular with rounded ends: All but Sm, To, No, FA, Fi.
17. Rectangular houses with rounded ends most common: Sm, Fu, To, Uv, Fi.
18. Ridgepole of house supported by kingposts on tie beams: Sm, To, Tr, Fi, Fu, Uv, No.
19. Ridgepole supported by median posts: Sm, El, Po, OJ, Tk, Ti, Re, BS.
20. Ridgepole supported by rafters alone: To, El, Ka, Re, FA, Er.
21. Sides of house separately thatched or plaited and distinct from roof: All but El, Re, FA, Er, No.

22. Sides of house partially or wholly made up of moveable wind screens: Sm, To, Uv, Fu, Ti, Ka.
23. Presence of quadrangular stone adzes (versus lenticular, round, oval, or none): To, Uv, Sm, Fu, F1.
24. Presence of shell (Tridachna) adzes: All but Fu, Uv, BS (Ti, Er missing).
25. Use of arrows as weapons (versus hunting, fishing only): To, Ti, Re, FA, Er, BS, F1, Po (Tk missing).
26. Presence of multiple-point spears (excluding fishing and sting-ray-bundle points): FA, Er, F1 (Tk missing).
27. Presence of "star-head" clubs (i.e., with radial series of knobs or points around head of wood or stone): To, Uv, Re, FA, Er.
28. Presence of darts (between 1 and 2 m in length): Sm, Fu, To, Uv, El, No, Tr, F1, Re.
29. Presence of wooden food bowls: All but BS, Er (FA missing).
30. Presence of plaited mats (of Pandanus, Cocos, etc.): All but BS, Er (FA missing).
31. Presence of pump drill: Sm, El, Tr, Ka (Fu, Uv, No missing).
32. Presence of loom: Tr, Po, No, Ka, OJ, Tk.
33. Presence of stone or wooden food pounders: To, El, Tr, Po, Ka, No, OJ, Tk, F1.
34. Presence of small (under 10 cm) one-piece turtle or shell fishhooks: To, El, Tr, Po, Ka, No, Tk, OJ, Re, FA.
35. Presence of two-piece hooks of bone, shell, or wood (excluding shark and Ruvettus hooks): Sm, El, OJ, F1 (Tk missing).
36. Presence of bonito trolling hooks: All but Re, FA, Er (F1, Tk missing).
37. Presence of shark hooks (of wood, with separate point): To, El, Ka, No, OJ, Ti, Re (Fu missing).

38. Presence of typical Ruvettus hook: El, OJ, (Fu, No missing).
39. Octopus lure of cowrie shell, shell-covered stone, or stone alone: Sm, To, Fi, Uv (No missing).
40. Night fishing for flying fish with torches and nets: All but Sm, To, Uv, Tk, Er, BS, Fi.
41. Use of twig or basketry fish traps: Sm, To, Uv, Tr, Po, Ka, OJ, BS, Fi (No missing).
42. Use of fish weirs of stones or palm fronds: All but Fu, Tk, Er, BS (No missing).
43. Use of fish poison: All but El, Tk, Ka (No, FA missing).
44. Presence of double- as well as single-hulled canoes: Sm, To, Uv, El, Tr, Fi.
45. Yard slung from mast ("Oceanic Lateen" sail): El, OJ, Ti, FA, Fi, Tr, Tk.
46. Yard set in crotch of mast ("Proto-Oceanic" sail): To, Sm, Uv.
47. Two outrigger booms near center of float: Tr, Po, No.
48. Two booms near ends of float: To, Re, FA, Er.
49. Three booms: Sm, To, El, Tk, OJ, Ti, Re, FA, Er, Fi.
50. Four or more booms: Sm, Fu, Uv, OJ, Ti.
51. Direct attachment of booms to float: Er.
52. Right-angled or forked-stick boom used: El, Er.
53. Lashed or drilled stick connectives between booms and floats: All but El, Er.
54. Connecting stanchions across booms: All but Sm, To, Re, FA, Er, No.
55. Platform on booms: Tr, No, Ka, El, OJ.
56. Plank or plank-dugout canoes vs. dugouts only: All but Po, No, Fu, Re, Er.
57. Boom attachment with gunwhale poles: Uv, Re, Ti, Ka.
58. Thwarts present: Sm, To, Tr, Ka, OJ, Tk, Ti, Re.

B I B L I O G R A P H Y

ABBREVIATIONS:

- AA: American Anthropologist, Menasha.
 AL: Anthropological Linguistics.
 BMB: Bernice P. Bishop Museum Bulletin, Honolulu.
 BMSP: Bishop Museum Special Publication, Honolulu.
 CA: Current Anthropology, Utrecht.
 ESE: Ergebnisse der Südsee-Expedition, Hamburg.
 IJAL: International Journal of American Linguistics, Baltimore.
 JPS: Journal of the Polynesian Society, New Plymouth.
 MPIE: Man's Place in the Island Ecosystem: A Symposium. (F.R. Fosberg, ed.). Honolulu, 1963.
 PSM: Polynesian Society Memoir, New Plymouth.
 SAOA: Studies in the Anthropology of Oceania and Asia (C.S. Coon, ed.). Peabody Museum Papers, Vol. 20, Cambridge, 1943.
 SWJ: Southwestern Journal of Anthropology, Albuquerque.
 ZE: Zeitschrift für Ethnologie, Berlin.

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