

THE KON-TIKI MUSEUM
INSTITUTE FOR PACIFIC ARCHAEOLOGY
AND CULTURAL HISTORY

MIGRATIONS AND EXCHANGE
IN A HISTORICAL
PERSPECTIVE

NO BARRIERS SEMINAR PAPERS

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Migrations and Exchange in a Historical Perspective

Papers presented at the 3rd No Barriers Seminar, May 25, 2000

Preface

Paul Wallin¹, Ingjerd Hoëm² and Knut Nordby³

The winners of the No Barriers Grant for the year 2000 were selected from amongst a number of highly qualified applicants. This year, the people chosen were social anthropologists Dr. Jonathan A. Friedman, Professor at the Department of Social Anthropology, University of Lund, Sweden, and Dr. Edvard Hviding, Professor at the Department of Social Anthropology, University of Bergen, Norway, for their joint project "Islands Connected: Making Pacific Worlds" (Fig. 1). The purpose of the project is to study regional, social and political structures in Oceania through a multi-disciplinary approach that links inter-island exchange, migration and the local organisation of Pacific Island societies on a time frame ranging from an archaeological past to the present day globalisation of Oceania. The project is presented as a pilot project based on extensive research experience, involving international, multi-disciplinary advances in research and building expertise in a north-south collaboration through partnerships and dialogue.

While the project aims for empirical originality and theoretical innovation, the proposed comparative approach will also promote the involvement of ethnographic studies, both past and present, conducted in different parts of Oceania. Oceania is a region in which cultural diversity, intercultural exchange and one-way, two-way and circular migration form the backdrop for social life and political relations, and is thus a vantage point of global relevance.

Furthermore, the project aims to convey to a wider audience those deeply meaningful examples of the absence of "barriers" to communication and mobility that Oceanic cultural history, from the remote past to the near future, embodies. Envisaged results include the establishment of an active network of researchers and institutions in Europe, Oceania and beyond, a conference in Fiji and a subsequent book drawing up a research agenda, as well as a website promoting further research dialogue.

As usual, the No Barriers Winners were invited to our No Barriers Seminar, (Fig. 2) this year called: Migrations and Exchange in a Historical Perspective. Other researchers invited this year included Dr. Göran Burenhult, (Gotland University College, Sweden), Dr. Erica

Hagelberg (University of Otago, New Zealand), Dr Donald Ryan (Pacific Lutheran University, USA), and Dr. Thor Heyerdahl (KTM). The seminar was chaired by Dr. Ingjerd Hoëm, Dr. Helene Martinsson-Wallin and Dr. Paul Wallin (all from KTM). The title of the No Barriers Seminar refers to a multi-disciplinary research project instigated by the Institute for Pacific Archaeology and Cultural History at the Kon-Tiki Museum, in January 1999. The first stage of the research project will be completed by 2003, and is being carried out by a team of archaeologists, linguists and anthropologists. Our objective in this first period is to establish a basis for comparison between the different disciplines' data and approaches to the relationship between migration, exchange and social organisation. The Institute's combined field research has resulted in data that exhibits considerable time-depth. To this we wish to add information about contemporary conceptions of the past and of cultural identity. In the light of this project, this years No Barriers winners seemed particularly appropriate, adding to our knowledge of what makes Pacific worlds.



Fig. 1 Thor Heyerdahl, Edvard Hviding, Jonathan Friedman and Terje Thon (Telenor) at the No Barriers Grant ceremony in the Kon-Tiki Museum.



Fig. 2 Edvard Hviding at the No Barriers Seminar.

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Islands Connected: Making Pacific Worlds (Project presentation)¹

Jonathan Friedman² and Edvard Hviding³

Introduction

The project presented here proposes to research regional social and political structures in Oceania through a multi-disciplinary approach that links analyses of exchange systems, migration patterns and the local organization of Pacific Island societies on an overall background of long-term history – from an archaeological past to the present globalization of Oceania. We present it as a pilot project with an overall ambition to establish the methodological and analytical parameters of this kind of comparative study and exemplify its approach and usefulness, as well as to accomplish the inception of this study effort through the collaborative involvement of researchers and institutions in Europe, the United States and Oceania, in anthropology, archaeology, history, geography and other fields in the social sciences and humanities (including the emerging multidisciplinary field of Pacific Islands Studies at regional institutions). Among the short-term results we envisage as arising from the initial phase of the project (2000-2002), as covered in part by the No Barriers Grant, are the establishment of a core network of researchers and institutions in and beyond Oceania, a conference (at the University of the South Pacific, Fiji) and an ensuing book defining issues and parameters and drawing up a research agenda, and a Web site promoting further dialogue and development of research-based knowledge.

It is our argument that closer regional studies of Oceania along the lines we propose hold the promise of globally comparative lessons for addressing urgent problems in world development. Oceania provides the empirical vantage point of a region in which cultural diversity, intercultural exchanges and phenomena of one-way, two-way and circular migration are themselves constitutive of social life and political relations. There is not, nor has there been, much isolation among the far-flung islands and archipelagos of Oceania. Our project aims to highlight and convey to a wider audience those deeply meaningful examples of “absence of barriers” that Oceanic cultural history, from remote past to near future, embodies.

Islands Connected/Sea of Islands

In “Our Sea of Islands”, an influential article published some years ago Tongan anthropologist Epeli Hau’ofa, professor of sociology at the University of the South

Pacific in Fiji and simultaneously a creative writer of strong standing, argued that Western social scientists had seriously misunderstood the Pacific (Hau’ofa 1993a, 1994). They – as well as the politically empowered – envisioned this greatest of oceans, he argued, in terms of “islands in a far sea”, isolated points that have separate and comparable existences – and that in the context of world political economy have a wretched existence of dependency on the exporters of development aid and trade goods. But he argues they were mistaken, for the Pacific is not a collection of far-flung islands in the sea, but a larger regional whole – a “sea of islands”. One of the graphic illustrations he uses is the modern map of Exclusive Economic Zones, showing the Southern Pacific, in particular, as a rather densely occupied place in maritime geopolitical terms. Hau’ofa’s argument proceeded to delineate a notion of culturally specific forms of movement in which “home” was not located in a specific place, but included the entire (Oceanic) space within which peoples could move; an argument that echoes long-term migration patterns, cultural history as well as present-day lifeworlds. He used himself as a relevant example of a modern-day person whose home in the singular is, simply, Oceania on the whole:

“As someone who was born and raised in different parts of our island region as well as the Pacific rim, who speaks or has spoken at least half a dozen Pacific languages, whose work entails constant travel to our different island groups, who has spent all but a few years of his professional life working for the largest and most spread-out of our regional institutions, who teaches, researches, and writes specifically on Pacific societies and cultures and their historical developments, I can say without hesitation or any sense of artificiality that Oceania is my home” (Hau’ofa 1993b:133).

In the same vein, though exemplifying a rather different life course in the Sea of Islands, he mentioned how:

“At the Honolulu Airport, while waiting for my flight back to Fiji, I met an old friend, a Tongan who is twice my size and lives in Berkeley, California. He is not an educated man. He works on people’s yards, trimming hedges and trees, and laying driveways and footpaths. But every three months or so he flies to Fiji, buys eight to ten thousand dollars worth of kava, takes it on the plane flying him back to California, and sells it from his home. He has never heard of dependency, and if he were told of it, it would hold no real meaning to him. He told me in Honolulu that he was bringing a cooler full of T-shirts, some for the students at the University with whom he often stays when he comes to Suva, and the rest for his relatives in Tonga, where he

¹ This paper is based on the presentations given by the authors in Oslo in May 2000 on the occasion of their reception of the No Barriers Grant 2000. The authors wish to thank Dr. Paul Wallin and the staff of the Kon-Tiki Museum, Institute for Pacific Archaeology and Cultural History, for inspiring discussion and a congenial atmosphere.

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goes for a week or so while his kava is gathered, pounded and bagged here [in Fiji]. He would later fill the cooler with seafoods to take back home to California, where he has two sons he wants to put through college. On one of his trips he helped me renovate a house that I had just bought. We like him because he is a good story teller and is generous with his money and time. Bust mostly because he is one of us" (Hau'ofa 1993a:15).

Ancient Oceanic patterns of exchange and travel and other connections, including the formation of socially proper individual identities, thus emerge in their variously transformed parallels in the context of a multitude of airline routes that crisscross today's Oceania, in a density absolutely disproportionate with the size of the island nation states in terms of population. Even the smallest Pacific nations have their own airlines proudly flying the respective flag in overseas destinations.

In an expanded sense Hau'ofa's "Sea of Islands" perspective would imply, for outsiders, a new understanding of relations to place, to land as (no longer) opposed to sea (see also Hau'ofa 1998; for a detailed ethnographic example of sea-oriented identity [in coastal Melanesia], see Hviding 1996). Such a lack of sea-land opposition – or rather, such a conceptualized, lived and experienced integration of sea and land – is indeed characteristic of relationships between people and place throughout the Oceanic regions conventionally defined as Melanesia, Polynesia and Micronesia. Examples of integrated land-and-sea territories held as ancestral estate by descent groups include the Hawaiian *ahupua'a* (e.g., Kame'eleihiwa 1990; Sahlins 1958) – now a focus of cultural revitalization, the Yapese *tabinau* (e.g., Lingenfelter 1975; Schneider 1984), and the *puava* of the Western Solomon Islands (Hviding 1996).

The notion of sea of islands is important because it implies a shift of focus in the understanding of lived worlds. But it also creates a cultural unity that may not in fact exist, which would see in several thousand years of migration and exchange – from the Lapita era to modern labour (and non-labour) migration – the same basic scheme of strategies, culturally specific for Polynesians if not for other Oceanic peoples. Hau'ofa's view has also been criticized by scholars from the region, variously for celebrating a bygone past and for applauding the rather unique opportunities exploited by a modern-day select elite. In a debate piece entitled "Balancing the book: how the other half lives", Fijian geographer Joeli Veitayaki (1993:116) argues that Hau'ofa's "Sea of Islands" perspective is "... mostly superficial and unrealistic, certainly severed from the situation in the Pacific ... Epeli is romanticising the past and has offered no real solution to how we should look at the disadvantaged position of Pacific island countries". Rather than celebrating the migratory nature of Oceanic peoples and the creativity of present-day Oceanic diaspora around the Sea of Islands, Veitayaki flatly states that "Our people should be discouraged from migrating elsewhere. Although

these emigrants remit to their relatives staying on at home, their contribution to the development of their countries is minimal" (Veitayaki 1993:116).

Our own perspective of "islands connected" as pursued by this project is not that provided by Hau'ofa although there is significant overlap, not least concerning the importance of shifting the overall perspective from island level to a regional and even global scale. While there may indeed be cultural structures in the long run that promote and maintain the practice of such regional existences and even regional individual lifeworlds, there remains a great deal to be done in order to understand their specificity. For example, it is not at all clear that earlier migrations and colonizations as well as the establishment of multidirectional trade and population movement can account for contemporary colonial and postcolonial migrations and trade. At issue are difficult questions of continuity, disruption and transformation. Our proposal here, then, is to unpack the latent possibilities of a regional/global perspective – in general historical and more specific ethnographic terms – in order to provide a better model or models of such processes in Oceania. We wish to expand discussion of the notion that islands and archipelagos of the Pacific are connected in many different ways, at different stages in history, and that their connections also range far (and increasingly farther) beyond the Pacific Ocean.

To return to the original discussion, we might reframe it as follows: Oceania's "Sea of Islands" is not simply about epi-phenomena of sorts – the constitution of worlds that include many islands and island societies and the formation of regional identities – but also, and from a certain perspective more fundamentally, about the nature of these societies as such and about the varied range of relationships between and among these islands, connected in this way or the other also to worlds beyond. In the obsolete "islands in the sea" framework, the islands (or even parts of islands) were not only separate units, but separate and self-contained wholes that could be understood as organic unities as such and as one-time demonstration examples for a "laboratory" approach to comparative ethnology. From the "sea of islands" perspective, the very question of where – at what level of social reality – what kinds of wholes might be said to exist has to be seriously rethought.

From a regional point of view, individual societies are separate polities (in Oceania often transcending simple linguistic and spatial boundaries) that are themselves generated in larger fields of interaction, and that in more than a few Oceanic cases transcend single islands or archipelagos. Knowledge of wider worlds has been a rule and not an exception in Oceanic cosmologies – although, as pointed out by Kirch (2000), not necessarily of egalitarian distribution within any given island society. Such knowledge, obtained, confirmed and further developed through social encounters with people from beyond the horizon (either through visits by them or visits to them), has also fostered patterns of a preparedness for the unexpected. Pacific Islanders' apparent lack of amazement at meeting with early European

visitors is a case in point, and has been reported in log-books and represented in images resulting from journeys of discovery and trade, such as Dutch discoverer Abel Tasman's encounters with Tongans in 1643 (e.g., Sharp 1968) or Scottish trading captain Andrew Cheyne's most pragmatic dealings with New Georgians in 1844 (Shineberg 1971:293-314). It could be useful here to recall that well-known example provided by the Polynesian navigator-priest Tupaia, whom Captain Cook met in Tahiti on his first voyage there in 1771 (Barrow 1860) and whose known world, navigation-wise and culturally speaking, turned out to include "... every major group in Polynesia except Hawaii and New Zealand, ... [extending] for 2,600 [nautical] miles from the Marquesas in the east to Rotuma and Fiji in the west, equivalent to the span of the Atlantic" (Lewis 1972:17n). In the context of the well-documented and rather general Oceanic pattern of wide-ranging navigational knowledge coupled with superb maritime technology, the seas of Oceania are conducive to interisland contact rather than the opposite; they are, in the well-known words of navigation scholar David Lewis, "... highways rather than barriers" (Lewis 1972:15), as illustrated by a map of reconstructed zones of wide contact in prehistoric Oceania.

To sum up at this stage: fundamental questions about the relation between identifiable worlds and social organization in Oceania, on local and successively higher levels, need to be rethought. An initial approach for comparative research on processes constitutive of relations in the Sea of Islands might begin by categorizing some of the kinds of issues involved in interisland connections near and far:

1. The relation between organizational practices at the levels of kin group, polity, and region;
2. The relation between local social organization, inter-island exchange and forms of migration;
3. The relation between past, present and future in terms both of patterns in long-term trajectories from archaeological past to present-day globalization, and of the historical specificities of certain periods, local developments and momentous events.

Local/regional/global

A global systemic approach in anthropology takes it to be axiomatic that local places are constituted historically in terms of much larger-scale relationships, while at the same time there are identifiable local continuities not of solely exogenous nature. Global-oriented approaches have been applied and discussed in a number of works concerning the Pacific. In recent, regionally-comparative historical work by leading Oceania scholars Patrick Kirch (1997) Matthew Spriggs (1997) and Nicholas Thomas (1989, 1991), global-oriented approaches have been used analytically as well as examined critically. The analysis of the relation between local social organization and larger regional systems undertaken by one of us for Oceania (Friedman 1981, 1982) largely followed on earlier work of this kind in Africa (Ekholm Friedman 1977; Ekholm Friedman & Friedman 1980).

Important questions of continuity have not been clearly developed in regional analysis, nor in anthropology in general. The issue of cultural continuities in long-term regional and global history, taken up recently by Sahlins (1994a, 1994b) and by others is a question that can be appraised and developed in the approach we propose. For example, recent work by one of us has explored Oceanic inter-island relations, regional systems and intercultural encounters (also between Pacific Islanders and "global" agents") in past and present, from the empirical vantage point of expansionist-oriented, maritime societies in Melanesia (Hviding 1998, nd). A recent monograph on the New Georgia Group of Solomon Islands (Hviding & Bayliss-Smith 2000) demonstrates how assumedly "Polynesian" structures of ranked prestige-good polities based on large-scale irrigated agriculture are in fact also constitutive of important regional connections in the Melanesian "heartland", thus confounding simplistic evolutionary schemes and contributing to the further dissolution of the colonially constituted, in many senses arbitrary, division between Polynesia and Melanesia.

For the present project, existing ethnographic and historical research done on inter-island networks and connections in selected smaller regions (like the Massim of New Guinea), as well as on the larger, conventionally defined regions of the Pacific, is crucial material for further synthesis. In the process of working out the research programme we intend to do a number of selected empirical analyses – synthesising own field materials with other sources of information – from Melanesia and Western and Eastern Polynesia, focussing on long-term local/regional/global relations and their dynamics. What we aim to address is not merely the relations between *units* so to speak, but the processes involved in their very constitution and transformation and their mutual interdependencies of many kinds.

The Pacific Islands are conventionally grouped according to the broad geographical/ethnological regions of Melanesia, Polynesia and Micronesia. While the framework of the present project aims explicitly at analyses transcending any such boundaries, in favour of pan-Oceanic perspectives, we also acknowledge the fact that the region-wise classification of the Pacific has its own reality, not only among scholars but also, and perhaps more significantly today, among the inhabitants and governments of the Island Pacific. In this sense the classification, and the Melanesia/ Polynesia division in particular, is also constitutive of important present-day political structures on international levels (such as the Melanesian Spearhead Group), and has to be taken duly into regard in regional analysis.

Research agenda

While developing a theoretical framework for expanded analyses of these and other issues in island connections is the ultimate ambition, the proposed project in no way aims to proceed from a top-down, birds' eye view of Oceania. Thus the work we propose is solidly grounded in localized ethnography from selected parts of the

Pacific. We have both been carrying out fieldwork-based research on Polynesia and Melanesia since the early 1980s. Our respective research agendas have concentrated on topics of key significance for the present project, such as the ethnography and history of maritime societies and polities, regional systems past and present, colonial and post-colonial existences, and the globalization of the region as represented also by distinct forms of modernities (e.g., Friedman 1994; Hviding 1996; Friedman & Carrier 1996; Hviding & Bayliss-Smith 2000). In this long-term work each of us has not just stayed within own discipline, but has engaged with materials, models and colleagues in other fields including comparative lessons to be learnt from other parts of the world.

For the present project we aim to expand on this ethnographically grounded yet also multidisciplinary work, including the engagement of networks of colleagues some of which are among Oceania's most prominent indigenous scholars and whose perspectives tend to challenge and complement those of "metropolitan" anthropology. In particular, we wish to seek partnerships with scholars who have already given notable contributions to developing connection-oriented views of Oceania's past, present and future. This is also a development from our role as co-organizers of the 1996 Copenhagen conference of the European Society for Oceanists, *Pacific Peoples in the Pacific Century*, at which Epeli Hau'ofa, Marshall Sahlins and other distinguished keynote speakers debated innovative perspectives on regional identities and historical transformations of Oceanic inter-island relations.

The project's proposed research agenda includes themes which are related by long term historical concerns and contemporary issues of a most pressing nature (cf. Denmark, Friedman, Gils & Modelski 2000). There are several levels or scales upon which we hope to focus. The broadest scale concerns the fairly well established existence of large-scale regional systems in the history of the Pacific which appear to be from the earliest Lapita era; complex socially organized systems including local (in varying degrees hierarchical) polities linked by elaborate long distance trade. These regional systems seem to have dynamic historical trajectories, as expressed in the linguistic and archaeological evidence from prehistory. The diverse but connected histories of the ethnological (and present-day political) regions of Melanesia, Polynesia and Micronesia are areas in which we hope to bring together research and researchers – in an attempt to consolidate material on early times as well as relating it to the later prehistoric and historic periods; including the various larger-scale relations between East and Southeast Asian expansions in the Pacific and the later Western Expansions (culminating in Asian capitalist re-expansions in the post-colonial era).

To address such challenges, the connection between anthropology and archaeology may need strengthening again, even though Pacific research has been an exemplar for this kind of co-operation. One area that is very important here would imply a return to the question of the "gift" in the structuration of exchange and more

complex market relations. Recent work on gift-based systems (e.g., Godelier 1998) provides extensive analyses of ethnographic and historical materials, and provide central orientations for the proposed project in linking the cultural specificity of exchange systems to their material effects. Some of the questions that might be relevant at this level of comparative anthropological/archaeological/historical research are:

- The relation between kinds of exchange practices and the structures of the social orders that we often identify as "societies" within such larger systems.
- The formation of spatial orientations and the relation between such orientation and the structuring of cosmologies and ontologies.
- Typically Oceanic dynamics of inside/outside, local/foreign, female/male, land/sea, etc., as these principles of structuring relate to processes of hierarchization, equalization, identity formation and so forth.
- The way in which various Pacific systems were engaged in, and engaged, the advent of Europeans.
- The patterns of continuity and strategies of survival in Pacific regional systems during colonial times and in the contemporary globalization of the region.

There is a clear analytical link here to Epeli Hau'ofa's work (1993a, 1994) concerning the question of cultural continuity versus discontinuity, and a need for expansion of the analysis into addressing the more complex relations between social forms of migration and their underlying political and economic dynamics. At the very concrete, contemporary level, the recent revival of long distance Polynesian voyaging (assisted by Micronesian navigators who never gave up their profession) as part of regional cultural identity formation – seen most recently in the celebrated journey of the Hawaiian sailing canoe *Hokule'a* to Easter Island via French Polynesia – is clearly an expression of a "sea of islands" identity – as evidenced in testimony from those involved in the numerous expeditions of the *Hokule'a* and its sister craft; expeditions which aim at retracing the ancient paths of Oceanic migrations.

Further, the expanding material on what is usually called *diaspora formation*, concerning the relation between distant but related communities and the nature of the relations established among members of dispersed communities, needs to be better understood. Kin obligations, investment relations, mutual aid and identity maintenance on more or less pan-Oceanic scales are important contemporary issues that can be addressed in relation to overall questions of cultural specificity and historical continuity. Similarly, the issue of new nationalisms and independence movements which stress locality and territory must be discussed in relation to the regional orientations of movement and migration.

Important questions relates to how much of such migratory movement has made use of, or been understood in terms of, Western metaphors, and how much can be understood in terms of indigenous categories

(whether Pacific-wide or more locally specific). In terms of indigenous categories there may indeed be no real contradiction between local identification and regional orientation – contrary to what is often asserted in academic discussion. For Oceania at least, the very opposition between the local and the regional in academic discourse could well be a misconstrual of the way in which indigenous categories and experience are organized.

Finally, a note on the very recent, and notable, efflorescence of the World Wide Web in Oceania. In global terms, Web sites like the Hawai'i-based *Pacific Islands Report* efficiently counteract the marginalized status of the region as a source of daily news. In more intra-Oceanic, even highly local, terms, various Web sites provide hubs of communication for widely scattered populations, tightening relations among diaspora groups and between diaspora and "home". Web sites indeed appear to be appropriate contemporary vehicles for Pacific Island connections. It is for this reason the research agenda proposed project includes the building-up of a dedicated Web site. It is of crucial importance for the project to develop discussion beyond the confines of academia, and we wish to create a well-functioning WWW forum embodying the essence of open-ended, expandable Oceanic connectivity. There will be a discussion group, a message board, a data base and links to many other relevant sites. Proceedings of the planned conference will also be found there through electronic publication parallel with the proposed book.

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When migration failed – On Christmas Island and other “Mystery Islands” in the Pacific

Paul Wallin¹ and Helene Martinsson-Wallin²

Introduction

There are two well-known Christmas Islands in the world, however the one referred to here is situated circa 1° N of the equator, in the middle of the Pacific Ocean (Fig. 1) (the other one is to be found in the Indian Ocean). When Captain James Cook discovered Christmas Island (Fig. 2) on Christmas Day in 1777 it was uninhabited. A French priest, who leased the island and turned it into a coconut plantation in 1913, found some prehistoric remains (Rougier 1914, 1917). His discoveries formed the basis of the archaeological survey conducted by the American archaeologist Kenneth P. Emory in 1924 (Emory 1934).

In order to obtain a time frame and to investigate the possible cultural affinity of the prehistoric remains reported by Rougier and Emory, archaeological excava-

tions were carried out on the island during three weeks in the autumn of 1999. Its natural history was also investigated through geological and botanical observations and sampling. This project was carried out by researchers from The Kon-Tiki Museum (Dr. Paul Wallin and Dr. Helene Martinsson-Wallin) in collaboration with researchers from the Australian National University (Prof. Atholl Anderson and Prof. Geoffrey Hope). For more details about this field survey see: (Anderson et al. 2000).

Surveys of the earlier known sites found by Rougier and Emory, followed by subsequent excavations and radiocarbon dating of located settlements, including oven areas (Fig. 3), possible house foundations, and ceremonial sites (Fig. 4) (resembling the East Polynesian *marae*). The investigation revealed that the island had previously been populated between circa 1200-1600 AD. Some *Tridacna* shell adzes and tools were also found as surface finds (Fig. 5 & 6). A basalt core and some flakes underwent petrochemical analysis by Barry Fankhauser (The Australian National University) and, together with the ceremonial sites' construction, they indicated a cultural affinity between this settlement and the East Polynesian region, possibly Hawaii and/or the region to the south-east of Christmas Island (Anderson et al. 2000).

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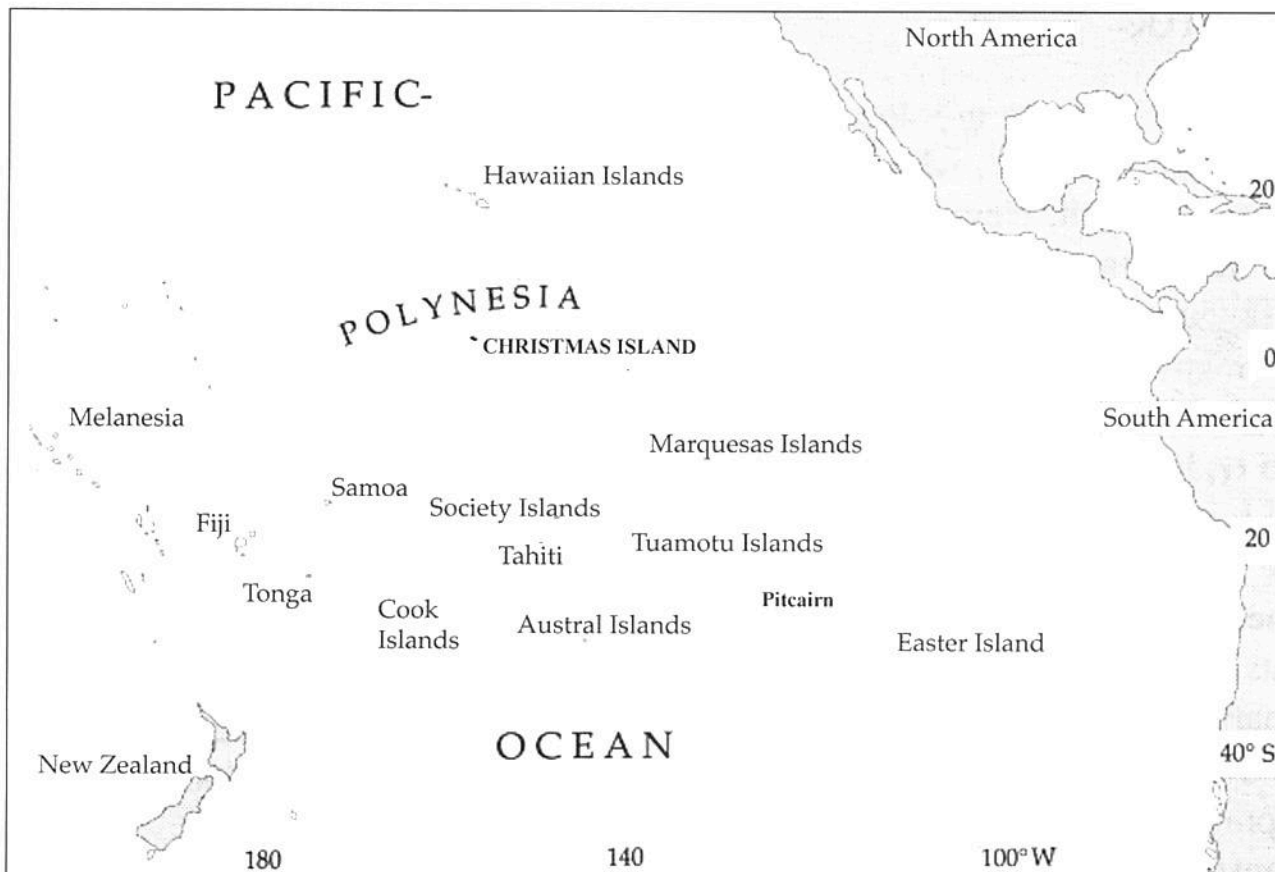


Fig. 1 Map showing the location of Christmas Island in the Pacific Ocean.

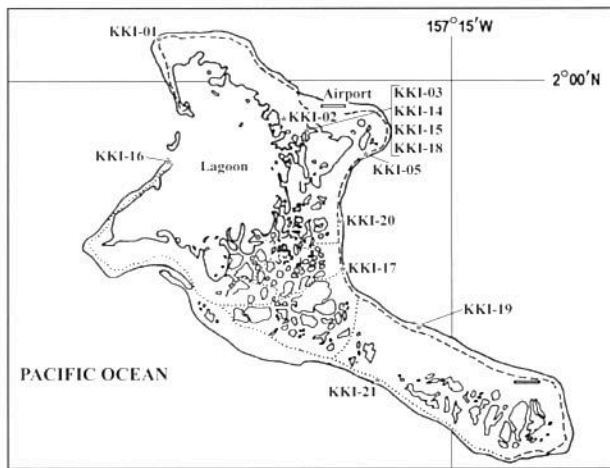


Fig. 2 Map of Christmas Island.



Fig. 3 Oven area.



Fig. 4 Christmas Island Wildlife Officer Mr. M. Bukaireiti inspecting a ceremonial site.



Fig. 5 Preform of a *Tridacna* shell adze, length: 14 cm.



Fig. 6 A retouched *Tridacna* shell knife, length: 6 cm.

The “mystery islands” of the Pacific

Christmas Island, together with other islands that experienced depopulation in prehistoric times, have often been referred to as the “mystery islands” of the Pacific (Bellwood 1978, Kirch 1988). Questions that arise concerning these islands include; what is the time frame for their settlement and who were the settlers? Why and when did their populations disappear? And, finally, are there indications of several external contacts or did the inhabitants live in isolation until the populations finally disappeared?

Discussion on island size, resources and location

About 25 islands in East Polynesia were uninhabited at the time they were discovered by Europeans (Fig. 7). Some of them are very small, like Suvarrow, Necker and Nihoa, which have areas of less than 1 sq. km, or Howland, Palmerston, Pitcairn and Washington, which are no more than 5 to 10 sq. km in size. The rest of the islands are between 30 and 40 sq. km. One exception is Christmas Island, which, with an area of 321 sq. km, constitutes the world’s largest atoll.

Some, like Raoul, Norfolk, Nihoa, Necker and Pitcairn, are volcanic islands that lack fringing reefs and therefore have limited seafood resources. Instead, at least as far as Nihoa and Necker are concerned, they have a wealth of seabird life. Several of the atolls with rich seafood resources due to their coral reefs were, on the other hand, short of freshwater and good soils. However, some of the islands had good water resources, such as, for example, Washington, which had a freshwater lake and quite good soil. Pitcairn also had soil fertile enough to be able to maintain a growing population (as the mutineers proved).

Another category of island that should be mentioned here is the small coral islands that did not support a permanent population and which are located in close proximity to larger settled islands. Examples of such islands include Tetiaroa near Tahiti, Takutea near Aitu (S. Cooks) and Nassau near Pukapuka. These islands were mainly visited for exploitative purposes (Bellwood 1987:110).

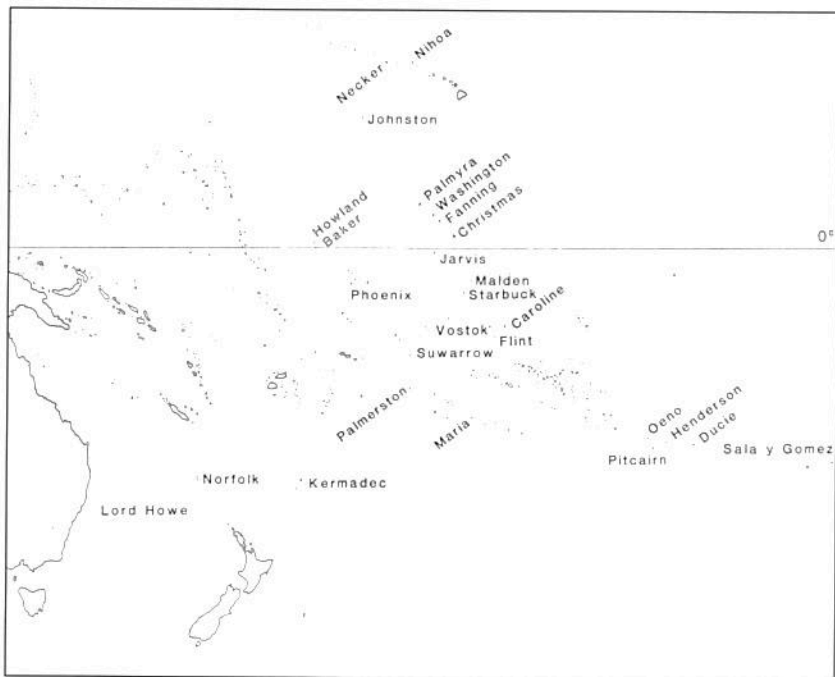


Fig. 7. The "Mystery Islands" of the Pacific (after Irwin 1992).

One island group usually not included in the "mystery islands" discussion is the Galapagos Islands, which may have been used by South American Indians in pre-historic times. This is indicated by finds of pre-Spanish potsherds, flint, obsidian and chalk artefacts, as well as an Inca clay flute (Heyerdahl and Skjølsvold 1956 reprinted in 1990, Heyerdahl 2000). Over the years, these findings have been somewhat overlooked by the scientific community, probably because the material was mixed with later European materials (Terrell 1986). New archaeological excavations of some of the located cultural layers may provide some clues to the question about whether South American Indians ever visited this island group. Some of the cultural layers on the Galapagos Islands were described by the excavators in the following way: "...the soil was almost 50 cm deep and strongly mixed with charcoal" and "The soil was about 15-20 cm deep and consisted of humic sand mixed with ash and charcoal. As usual it was disturbed" (Heyerdahl and Skjølsvold 1990:27, 29). New radiocarbon dating investigations of these layers could give indications to the question of if the pre-Spanish ceramics found are indicative of pre-historic visits/habitations by South American Indians.

One common trait of all the "mystery islands" is that, compared with islands that remained occupied, they are all situated in quite isolated locations and therefore less accessible from neighbouring islands. Thus, when the extensive voyages of various Polynesian groups became less important (probably around 1500 AD), these islands were affected first (Irwin 1992).

Why and at what time were the "mystery islands" first settled?

These islands may have been involved in different voyaging strategies. One scenario is that they were some kind of "stepping stones" in the initial settlement strategy. Polynesians found them when searching for new

islands to settle, and used them during this process. Another scenario is that they were used as some sort of satellite islands to larger islands or as resource islands in interaction/exchange networks. The islands of Nihoa and Necker (with their ceremonial structures) may also indicate that they had quite specific religious functions.

This indicates two different possibilities about when the islands were settled. During initial settlement of the East Polynesian region or during later exploratory voyages by Polynesians already settled on larger, main islands. The first scenario may be applied to the south-eastern Pacific group of islands including Mangareva, Henderson and Pitcairn (Henderson is now thought to have an initial settlement dated to about 800-900 AD). Other islands such as Christmas Island (and the other Line Islands), and Nihoa and Necker were probably involved in later explorations and therefore have later initial dates of around 1200-1400 AD. A similar scenario may be seen in the south-western Pacific where New Zealand seems to be the primary centre of the regional dispersal to the surrounding islands of the Chatam, Kermadec and Norfolk Islands during roughly the same time period, around 1200-1500 AD (Anderson 2000:77).

What caused the depopulation?

Several factors have been mentioned in connection with the disappearance of the human populations of the "mystery islands". To start with, they probably all had small founding populations and this of course becomes a problem if their development faces unexpected internal or external pressures. One obvious problem would of course be if, for example, one generation primarily, or only, produced male offspring. Other factors are environmental disasters of various kinds, such as hurricanes, tsunamis, rainfall patterns and various diseases (Weisler 1996:627, Boecklen and Simberloff 1986). In our opinion, one or more of these factors may be of importance

during the final stage of depopulation. However, as far as the disappearance of human settlements on the south-eastern Polynesian islands of Henderson and Pitcairn are concerned, we would strongly suggest that (based on Weisler's research 1996: 615-629) the most important factor behind the depopulation was the fact that the earlier interaction between the islands of Mangareva, Henderson, Pitcairn and Marquesas to the north (Green 2000) ended sometime around 1500 AD.

This interaction may have ended, and caused the disappearance of human settlements on Henderson and Pitcairn, caused by environmental degradation on Mangareva, the main island in this sphere of interaction. The more restricted resources may have caused warfare and competition within the population of Mangareva. This new situation on the main island of this sphere of interaction probably had a negative influence on the long-distance voyages to Henderson and Pitcairn (Weisler 1996:626). Thus, these remote islands became isolated and more sensitive to environmental changes etc., and human settlements finally disappeared in around 1650 AD.

Christmas Island may have been in a similar situation, and probably involved in some kind of sphere of interaction or contact, at least with the other neighbouring Line Islands. Christmas Island is a very large island situated outside the cyclone zone, so there is only one obvious environmental danger, the interruption of the fresh water supplies. Fresh water was visible at the prehistoric sites at the lagoon's edge at about a depth of one meter, however it may sink to a depth of several meters during bad times. Thus, perhaps a small change in climate or low rainfall for a few years may have been enough to extinguish the population of this isolated island (Anderson et al. 2000:288). Since the interaction with other islands probably ceased at c. AD 1500, the island was never resettled and therefore human settlements had disappeared by the time the first Europeans discovered it.

What do the "mystery islands" tell us?

According to the above discussion, the "mystery islands" may provide us with information about prehistoric interaction systems. They may also have been of importance in the expansion of human settlement during the settlement of Polynesia. In some cases they may have become significant during a period of secondary expansion from more powerful centres, which were in need of good raw materials for their internal power struggles.

These islands clearly tell us that isolation and poor resources easily leads to the extinction of a population. They also show us that it was possible to survive under such conditions, as long as the island was part of, and involved in, a sphere of interaction that involved some raw materials and possibly marriage partners (Weisler 1996).

Today's picture of the prehistory of Christmas Island is still too fragmented to draw any far reaching conclusions from, but we can be reasonably certain that the initial settlers arrived around 12-1300 AD and that the island was depopulated around 1600 AD. We also know that the early settlers arrived from somewhere in East

Polynesia, probably Hawaii and/or Society/Northern Cook Islands. Whether or not the island population lived in isolation or had continuous contact with the "old homeland", or neighbouring islands, can not be ascertained given the present state of our investigations. However, the scenario described above, known from other "mystery islands", may also provide the answer to what may have happened on Christmas Island.

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The origins and evolution of the principal human lineages in the Pacific determined by analysis of mitochondrial DNA.

Erika Hagelberg¹

Molecular genetic data are being used with increased frequency to shed light on human evolutionary history and on the patterns of migration of peoples in different parts of the world. As part of a project funded by the Kon-Tiki Museum, we analyzed genetic information (mitochondrial DNA, or mtDNA) in present-day people of different geographical regions in Asia and the Pacific. The results show that the people of the Pacific fall into three major mtDNA groups or lineages, one corresponding to the recent Polynesian colonization of the eastern Pacific, and the remaining two to the Pleistocene settlement of Papua New Guinea and island Melanesia. Detailed analyses of genetic variation within the Melanesian archipelago of Vanuatu and in the coastal and off-shore parts of eastern New Guinea suggests that the Polynesians have undergone a recent expansion and recolonized substantial areas of coastal and island Melanesia.

Introduction

Since the discovery of the blood groups at the beginning of the twentieth century, scientists have used differences in the distribution of inherited traits to help understand human history. The development of novel DNA analysis techniques in the last two decades has increased enormously the amount of genetic data available for population studies. The DNA of most people is almost identical (all of us belong to the same large human family), but some of our DNA has changes in the sequence of the bases (the building blocks of the DNA) which might be specific to our family, tribe, ethnic group, or place of origin of our distant ancestors. These changes in the DNA can be used as "genetic markers".

One particular type of DNA, called mitochondrial DNA (mtDNA), has stimulated much research and yielded important information on the origins and migrations of the peoples in different parts of the world. In contrast to the vast bulk of human DNA, found in chromosomes within the cell nucleus, mtDNA is in small cell organelles called the mitochondria, involved in the energy metabolism of the cell (essentially, they are the power plants of living cells). The most notable feature of mtDNA is its maternal mode of inheritance. Although paternal mitochondria are certainly incorporated into the egg during fertilization, they are targeted for rapid destruction to ensure uniparental inheritance. The consequence of this is that children receive the mtDNA from

their mother only, although they inherit nuclear chromosomal DNA from both parents. This is analogous to the way in which family surnames are inherited through the paternal line. Both sons and daughters inherit a father's surname but generally only the sons pass it on to their children. [Author's note: The solely maternal pattern of human mtDNA inheritance has recently been challenged by a small number of scientists, including the present author. This question is the subject of considerable debate and has not been resolved. However, any paternal contribution would probably be small and for most intents and purposes we can assume a maternal mode of inheritance]

The variation between DNA sequences of different individuals can be used to explore the evolutionary history of human populations (see Wallace 1995 for review). MtDNA exhibits relatively low levels of variation in human populations when compared to the variation found in other hominoid species. This has led to the conclusion that human populations have evolved from a recent common ancestor (Cann *et al.* 1987; Vigilant *et al.* 1991). In genes, as in languages, high levels of diversity are taken to be a sign of antiquity. Despite the comparatively high levels of homogeneity in human mtDNA, some human groups frequently exhibit mtDNA changes which are characteristic of that group. The sharing of some of these motifs by different human groups might suggest a common evolutionary history. An example of such a marker is the so-called 9 base pair (9-bp) deletion, a harmless mutation which occurred by chance sometime back in human history. It consists of the loss of one of two adjacent copies of a sequence of 9 bases in the mtDNA in many individuals of Asia and the New World (Wrischnik *et al.* 1987). Studies have shown that the 9-bp deletion is present in almost every Asian population at frequencies ranging from about 5 to 40% of the people sampled. The deletion is very common in Polynesia, reaching a frequency of 100% in some islands. The deletion is also abundant (70%) in the Pacific coast of South America. This suggests that Polynesians and some Amerinds share a common ancestry, a not very surprising observation if we consider that both peoples have an ultimate origin in Asia. The high frequency of the deletion in parts of South America is an intriguing observation which merits further investigation.

Despite the apparent usefulness of the 9-bp deletion as a genetic marker, it should be noted that a single marker is not sufficient to clarify the relationship between peoples of different geographical origins. Markers might disappear in certain populations or their frequency might increase dramatically in some geographical regions through genetic drift or founder effects. In addition, markers can be present in populations for many different reasons. For example, the 9-bp deletion, originally thought to be specific of people of Asian origin, is also present at moderately high frequencies in some parts of sub-Saharan Africa, in population groups apparently unrelated to peoples of Asia. Although it has been suggested that the marker occurred independently, simply by chance, in unrelated human groups, it might be

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speculated that the presence of the marker in seemingly unrelated human groups is due to ancient genetic affinities between the different peoples.

More information on the phylogenetic (family) relationships of individuals carrying the 9-bp deletion can be obtained by looking at other mtDNA markers, particularly those in the so-called hypervariable region of the mitochondrial genome. This piece of DNA, which measures about 1,100 base pairs in length, is the most variable portion in human mtDNA. For the sake of convenience, the hypervariable region is divided into two portions, hypervariable regions I (HVR I) and hypervariable region II (HVR II). There are currently several thousand individual HVR I sequences of different populations in DNA computer databases, which are an excellent reference point for new human mtDNA studies.

In the course of a project funded by the Kon-Tiki Museum, we generated mtDNA information of the hypervariable region of several hundred individuals of Asia and the western Pacific. We typically sequenced approximately 350 base pairs of the HVR I region, from about position 16050 to about 16400 of the human mitochondrial genome. The sequences were aligned and compared with the human mtDNA reference sequence (Anderson *et al.* 1981). We identified several mtDNA variants that characterize three major Pacific founding lineages.

The three principal Pacific lineages

i) The Polynesian mitochondrial DNA lineage

Following the discovery of the 9-bp deletion in peoples of Asian origin, including Amerinds, it was shown that the mutation was either fixed (found at frequencies of 100%) or virtually fixed in many Polynesian islands (Hertzberg *et al.* 1989). Shortly thereafter, the deletion was shown to be associated with specific base substitutions in the HVR I region of both prehistoric and present day Pacific islanders (Hagelberg & Clegg 1993; Hagelberg *et al.* 1994; Lum *et al.* 1994; Melton *et al.* 1995; Redd *et al.* 1995; Sykes *et al.* 1995; Hagelberg 1997; Murray-McIntosh *et al.* 1998), and Malagasy (Soodyall *et al.* 1995). This suite of base substitutions has become commonly known as the Polynesian motif. It consists of four base substitutions compared to the reference mtDNA sequence (Anderson *et al.* 1981), at positions 16189, 16217, 16247, and 16261. The wide distribution of the Polynesian motif, and the low levels of diversity between people with the motif, suggest that it is the result of a recent and rapid expansion of people into Polynesia. A mitochondrial DNA type ancestral to the Polynesian motif is present in China (16189 and 16217), and a more derived type (similar to the Polynesian motif, but lacking the substitution at 16247) is found at fairly high frequencies in Taiwan aboriginals. We have observed a similar close genetic connection between Chinese, Taiwanese and Polynesians in another genetic system, the HLA system. In this case, we showed that people of these three populations had a high frequency of one particular allele, HLA-DPB1 allele 501. We concluded that the Polynesian expansion can be traced ultimately to the

demographic expansion that started in southern China about 8,000 years ago, and was later associated with the spread of Austronesian-speaking peoples from Taiwan and through island Southeast Asia, and finally out into the Pacific (Hagelberg *et al.* 1999b). This hypothesis of Pacific settlement is usually referred to as the "Express train to Polynesia" hypothesis (Diamond 1988), and is the one favoured by many archaeologists and linguists (Bellwood 1989; Bellwood 1995).

The most striking feature of the Polynesian motif is its apparent youth. This author is highly sceptical of the dates used by geneticists to calibrate the age of mtDNA lineages and refrains from using the generally accepted values for the expansion of the different lineages. However, the very low levels of diversity between the mtDNAs of people belonging to the Polynesian mtDNA lineage, and their wide geographical distribution (we have detected the full Polynesian motif in people of Madagascar, coastal New Guinea, the Trobriand Islands, Vanuatu, as well as throughout Polynesia, including in prehistoric Easter Islanders) argues for a rather recent (perhaps less than 500 years ago?) and sudden spread of highly mobile and numerically powerful Polynesian people into parts of the Pacific, such as Vanuatu and the Trobriand Islands, formerly inhabited by people belonging to different mtDNA lineages.

ii) The principal Papuan lineage, and the "island Melanesian" motif

The second but oldest-looking mtDNA lineage in New Guinea and the western Pacific bears a striking resemblance to some of the human mtDNA lineages observed in sub-Saharan Africa. It exhibits very high levels of variation, but is generally characterized by mtDNA substitutions at positions 16129, 16144, 16148, 16223, 16241, 16265 (a relatively rare change, called a transversion), 16311, 16343 and 16362, among others. We have suggested that this lineage is extremely old and it is also widespread in island Southeast Asia, New Guinea and island Melanesia. We have observed a mtDNA type that is derived from this ancient lineage. It appears to be young and we have only observed in certain islands of the Melanesian archipelago of Vanuatu. It is characterized by substitutions at 16129, 16148, 16223 and 16362 and exhibits very low diversity. We have named this motif the "island Melanesian motif" (Hagelberg *et al.* 1999a).

iii) Another major Papuan lineage, related to a very ancient Asian marker

The third lineage we have identified in the Pacific also appears to be very ancient and widely spread in New Guinea and island Melanesia. This lineage is characterized by mtDNA substitutions at positions 162176, 16266 and 16357. An interesting feature of this lineage is the presence of a substitution at position 16357. This substitution seems to be rare worldwide, and is generally confined to Asian individuals (although it is found at very low frequency in all locations, probably due to admixture). We were struck by the relatively high frequency

(about 25%) of the 16357 substitution in our sample of New Guinea highlanders, and even more when we discovered that the substitution is present at even higher frequency (50%) in the negrito peoples of the Andaman Islands (Hagelberg, unpublished observations). As mentioned above, the sharing of a marker by people in two geographical locations might be due to the independent occurrence of a mutation in two populations, or it might be due to a shared genetic heritage. In this case, we suggest that PNG highlanders and Andamanese trace their origin back to the first human settlers of Asia, later supplanted in most of Asia by numerically superior agriculturalist people.

Discussion

Molecular genetic analysis of present-day peoples of the Pacific has shown that these peoples are the descendants of three principal founding lineages, or groups, characterized by specific mitochondrial DNA markers. The first group corresponds to the recent Polynesian expansion in to the eastern Pacific, and is related to an ancestral population in Taiwan and China. The pattern of distribution of the Polynesian group suggests a recent expansion of Austronesian language speakers in the Pacific throughout island Melanesia, coastal New Guinea and as far east as Indonesia and Madagascar. The remaining two Pacific groups are substantially older than the Polynesian group and are derived from the Pleistocene settlement of the western Pacific. The genetic motifs exhibited by the Pleistocene lineages suggest the existence of an ancient connection between African and Austro-Melanesian populations. The ages of these two Papuan lineages have been postulated to be approximately 122,000 years and 80,000 years respectively (Stoneking *et al.* 1990; Redd & Stoneking 1999). However, this author questions the antiquity of these dates. Phylogenetic analysis of sequences belonging to the two ancient Papuan lineages indicated that, although both lineages seem to have very deep roots in the phylogenetic trees, the individuals belonging to each of the lineages form rather tight clusters (Hagelberg *et al.* 1999a; 1999b). We suggest that the patterns observed can be explained by an ancient settlement of Sahul by a comparatively low number of people, followed by a demographic expansion in the last few thousand years, possibly due to the intensification of horticulture in the New Guinea highlands (Bayliss-Smith 1996). We have shown that our major Papuan mtDNA lineage belongs to a major world mtDNA lineage called by geneticists haplogroup M. This major human lineage is distributed from east Africa, through India to east Asia, and is thought to be a genetic indicator of an early exit of modern human out of Africa through eastern Africa and India (Quintana-Murci *et al.* 1999). We have observed the lineage in aboriginal individuals from Taiwan, Indonesia, PNG and island Melanesia. On the basis of these observations, we can hypothesize that the main human group in Oceania is derived from a major early exit of people out of Africa.

In contrast, the Polynesian lineage in the Pacific is very young. Not only did it expand into Polynesia recent-

ly (within the past two millennia) but it traces back to a comparatively recent expansion of Neolithic people in mainland and Southeast Asia. In addition, we see clear evidence of a very recent expansion (perhaps just 500 years ago) of Polynesians towards the west, to recolonize parts of island and coastal Melanesia. The patterns of distribution of mtDNA types in the Pacific suggest that there has been considerable "back-migration" of people from Polynesia to island Melanesia and coastal New Guinea (and as far as east Indonesia and Madagascar). We have detected the Polynesian mtDNA motif at very high frequencies (70-80%) in the Trobriand Islands and in the Roro people in the southeast coast of New Guinea. We will shortly undertake DNA analyses on skeletal remains from the Trobriand Islands (see G. Burenhult, this volume) to help understand the temporal patterns of the settlement of these islands.

Conclusions

The work has recently taken us into new and unexpected directions: We have postulated an intriguing connection between Oceanic peoples, the negritos of the Andaman Islands and sub-Saharan African populations. We have detected ancient human lineages far into the Pacific, probably as far east as Fiji, indicating that the Polynesians were not the first to reach the central Pacific and did not introduce the Lapita culture into the Pacific, but were recent newcomers. The Polynesians seem to have replaced the previous inhabitants of some parts of island Melanesia and coastal New Guinea in recent times. Although there is little doubt that Polynesians stem from Asia (probably via Taiwan), the timing and the route of the settlement of the Pacific remain unclear. Where did the Polynesians sojourn until their recent expansion? Thor Heyerdahl believes that the Polynesians settled the Pacific Northwest of the Americas and later spread south and west into the Pacific. Unfortunately, we do not have direct genetic evidence of this hypothesis. In any event, it is unlikely that one or even several genetic studies will be able to answer this question. Nevertheless, by the gradual accumulation of evidence from different disciplines and the testing of new hypotheses we might hope to find answers to some of these questions. The author would like to acknowledge the efforts of the Kon-Tiki Museum and the No Barriers initiative in the breaking down of barriers and stimulation of collaboration between researchers from different academic fields.

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The Trobriand Islanders – Original Settlers or Later Migrants?

Göran Burenhult¹

In November 1998, Gotland University College, Visby, Sweden, started a new archaeological research project on the Trobriand Islands, Papua New Guinea, and during August–November 1999 sixteen Swedish archaeologists and osteologists carried out excavations and osteological analyses at new-found sites on the northern part of Kiriwina Island. The aim of the project is to study the introduction and subsequent cultural development of the Trobriand culture. Central questions at issue include the time of initial colonization of the area; the existence or non-existence of long-term cultural continuity in the islands as revealed by the archaeological record; the identification of possible hiatuses in the cultural development which may be associated with e.g. the influx of intrusive populations (as revealed by ongoing genetic studies of the skeletal material). In the initial stage, radiocarbon dates (AMS) and post mortem DNA-analyses on skeletal remains will form a crucial fundament for the planning of the forthcoming investigations. This paper is a short summary of the preliminary results.

Background

The Trobriand Islands form part of the Melanesian archipelago, and politically they belong to Papua New Guinea. The unique and colourful culture of the Trobrianders, including their famous system of ceremonial exchange, the *Kula* ring, was studied extensively by Bronislaw Malinowski in the early 20th century (Malinowski 1922, 1929, 1935). However, nothing is known about the earliest occupation of the islands. Nor do we know why the Trobriand Islanders differ markedly from most other Melanesian populations with respect to their social organization, cultural set-up, physical characteristics and genetics, instead bearing some resemblance to Polynesian populations further east (e.g. Hagelberg *et al* 1999). The Trobriand Islanders have been subject to intense anthropological studies, but apart from a partial excavation of one of the megalithic tombs on the island of Kiriwina in the 1940's, no stratigraphic archaeological excavations have been carried out on the islands. However, extensive surface collections of potsherds have been made and analysed in the 1970's, both on Kiriwina, Vakuta and Kuyawa, and some burial caves have been mapped. Also, surface collections of potsherds have been made on the nearby Amphletts and Goodenough Islands (Egloff 1977, 1978, 1979). We do not know if the megalithic tradition in the Trobriands (represented by e.g. the Otuyam tomb on central Kiriwina), was carried by ancestors of today's population or by an earlier and culturally different group of people (Austen 1940).

Present-day Trobrianders have no cultural relation to the megalithic structures on their islands, an unusual situation for Melanesia, where the megalithic traditions in most places are still very much part of the present cultures or, at least, well remembered and ethnographically documented.

Much controversy still surrounds the arrival of the Austronesian language family, which presently dominates most parts of the Pacific. The traditional view holds that Austronesian-speaking peoples entered the archipelago from Southeast Asia around 3000 BC, but there is no evidence for such a large-scale migration into Melanesia in the archaeological record. The evidence for this scenario is mainly linguistic, but not even the linguists agree. It is possible, instead, that people have been moving in successively during a very long period of time, and many archaeologists believe that local evolution accounts for much of the cultural development in the area. The Lapita culture, for example, has traditionally been considered to be associated with migrating Austronesians from Southeast Asia, but, following intensified archaeological work in the area, it has also been suggested that this in fact developed in the Bismarcks, as a result of intense exchange networks, from where it spread into the Pacific. Several archaeologists today claim that the Polynesian culture, an extension of the Lapita, originated in eastern Melanesia, not East/Southeast Asia (Green 1973, 1974, 1976, 1978, 1979a, 1979b, 1981, 1982, 1985, 1991a, 1991b, 1993; Irwin 1973, 1978, 1980, 1981a, 1981b, 1983, 1985, 1990, 1991, 1992, 1993; Bellwood 1979, 1980, 1985, 1988, 1989, 1991, 1996; White 1979; White & O'Connell 1982; Allen 1984; Spriggs 1984, 1990, 1991, 1992, 1997, 1999; Guise 1985; Terrell 1986, 1989; Kirch 1987, 1988, 1990; Kirch & Hunt 1988; Hill & Serjeantson 1989; Hunt 1989, 1993; Irwin *et al* 1990; Allen & Gosden 1991; Gosden 1991, 1992; Spriggs *et al* 1993; Cavalli-Sforza *et al* 1994; Anderson 1994; Bellwood *et al* 1995).

Methodology

An area on northern Kiriwina around the villages of Mwatawa and Labai was selected for investigation. Numerous stray finds of polished stone adzes and axes of various types and sizes in the surrounding gardens, combined with phosphate surveys, promised to facilitate the localization and identification of earlier settlements in this area. This area also contains a number of caves with burial remains. The area around the villages of Mwatawa and Labai may also be of some interest with regard to the local oral tradition, which holds that the first Trobriand woman was born out of one of the nearby caves and that Labai is considered to be the oldest village in the Trobriand Islands. As a part of the 1999 investigations, also the oral traditions of Labai and Mwatawa, with respect to prehistoric sites and burial caves, were recorded in detail (Andersson 2000).

Two of the burial caves were selected for a detailed study, *Selai Cave* and *Budou Cave*. The interior of the caves themselves has been provisionally mapped, and burial depositions registered. The archaeological investi-

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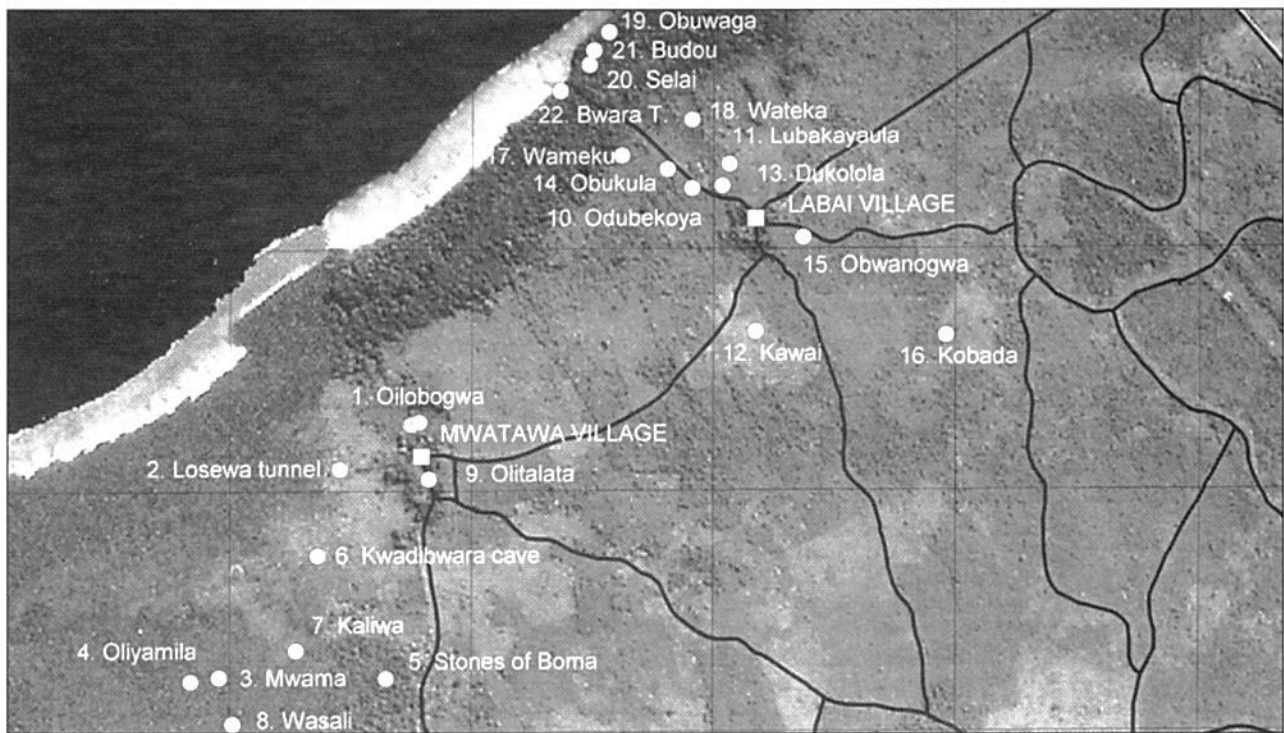


Fig. 1 Aerial photograph showing the Labai and Mwatawa areas on north-western Kiriwina, Trobriand Islands, with located sites marked (MapInfo GIS). Grid squares = 1 sq. km. Aerial photograph 16,000 feet Aerial Survey of the Trobriand Islands, 1973, Sortie 31, Run 7.

gation includes a documentation of the position of all bones within the depositions with the aim of making possible a reconstruction of e.g. deposition and reburial traditions. Documentation methodology includes drawing and photography, using both conventional and digital cameras, and the methodology used in the caves will be equal to conventional stratigraphic excavation during open air conditions. Bone samples were also collected from a third cave in Labai, *Obuwaga Cave*. As the bone depositions in this cave show clear signs of recent disturbances, and most bones obviously are displaced, no detailed analyses were carried out. A rock-shelter burial overlooking the sea was found and investigated at Labai Beach, *Bwara Tudava*.

The osteological analyses comprise the determination of death age, sex and length; the determination of the minimum number of individuals (MNI); and a study of possible diseases or other pathological changes including dental paleopathology, injuries, congenital abnormalities, discrete traits, stress or activity markers such as activity-induced pathology, as well as possible cut-marks or defleshing marks. Also, paleodemographic issues will be addressed. Most analyses have been conducted outside the entrances to the caves, and the bones have been put back in original position after the investigation. Samples for radiocarbon dating (AMS), stable isotope analyses (diet reconstruction), trace element analyses, and post mortem DNA analyses were collected, commonly a small part of a tooth is used for these purposes.

A total of 23 prehistoric sites have so far been located in the Labai and Mwatawa areas by means of stray finds of e.g. axes/adzes and pottery, and phosphate surveys were used in order to determine the extension of the

defined activity areas (fig. 1). Test excavations were carried out in order to determine the depth and character of the stratification. All located sites have been mapped using both traditional mapping methods and GPS (Global Positioning System). The surveys include a topographic landscape analysis using aerial photography and ordnance survey maps, as well as the detailed mapping produced within the project. Local site grids and excavation plans have, together with the mapping data, been compiled in MapInfo GIS program for the final analyses and presentations (Lilja, Lindqvist & Olsson 2000). Two sites were chosen for larger excavations, *Odubekoya* in Labai and *Oilobogwa* in Mwatawa.

The MFS surveys

The extensive field surveys and preliminary mapping, including phosphate surveys, as well as a comprehensive registration of stray finds, was carried out as an MFS survey (Minor Field Study) in October-December 1998 by two students from Gotland University College. The MFS program was financed by the Swedish International Development Authority (SIDA).

The MFS field project consisted of three major parts. The first part of the project was a registration of the numerous stray finds in the area, e.g. the artefacts found by the villagers in the gardens and other areas surrounding the villages. After the field-survey of stray finds, maps showing the distribution of findings were produced. GPS was used for the mapping. Thirdly, phosphate surveys were conducted on located settlements in order to determine their extension. The phosphate surveys were carried out by using the spot-test method (Österholm & Österholm 1997).

The investigations of August–November 1999

Based on the results from the MFS surveys, a team of sixteen archaeologist and osteologists from Gotland University College, Visby, the Archaeoosteological Research Laboratory, Stockholm University and the Department of Archaeology, Stockholm University, made a series of test excavations of stone age settlements identified around the villages of Labai and Mwatawa on northern Kiriwina under the direction of Maria Davidsson. Also, a preliminary osteological study of the human bone material found in two of the burial caves in the Labai area, Selai and Budou, was carried out. One of the located settlements in Labai, Odubekoya, revealed a well preserved burial ground, and so far five graves containing at least eighteen individuals have been excavated. The bone material is very well preserved, in the burial caves as well as in the settlements and burial ground, due to the calcareous environment, and a series of samples have been collected for C14 dating and also for post mortem DNA and stable isotope analyses. Also, rich quantities of charcoal from the excavated settlements will allow for additional radiocarbon dates. Rich quantities of pot-sherds and stone artefacts, including obsidian, have been recorded.

Selai Cave

The entrance to Selai Cave is located 10.62 metres above the sea level, and the lowest part 3.75 metres above the sea level. The total depth so far explored is about 50 metres. Eight halls have been investigated, named Hall A–H, and altogether twenty-two depositions of human bones have been recorded, containing males, females and children. A number of the *crania* were trepanated (fig. 2). No grave-goods accompanied the buried individuals (Venturi 2000).

A striking feature in Selai Cave is that most of the bones are covered in calcitic speleothems, in some cases in the form of stalagmites (fig. 3). Samples from this speleothem growth have been collected for uranium dating and stable isotope analyses (Lundblad 2000). The fact that the human bones and *crania* are often completely “cemented” onto the rock, and consequently not possible to move without causing damage, is an important taphonomic indication that their position has not been disturbed in modern times. This makes the bone depositions in Selai Cave especially important in the forthcoming studies of the burial traditions.

Radiocarbon date from Selai Cave:

Ua-15487 (Sample 1/99, dens, ID 60001) 315±55 BP / c. AD 1570 CAL.

Budou Cave

The entrance to Budou Cave is located 12 metres above the sea level, and the lowest parts are situated below the present sea level. The total depth so far explored is about 60 metres. Five halls have been investigated, named Hall A–E. An assemblage of fresh-water at the bottom of the cave constitutes a separate section of the cave, Hall B. Altogether, twenty-one depositions of human bones have

been recorded, containing males, females and children. A number of the *crania* were trepanated (fig. 4). Several of the depositions have been placed in large sea-shells (*Tridacna gigas*) (fig. 5). No grave-goods accompanied the buried individuals (Venturi 2000).

Obuwaga Caves 1 and 2

The Obuwaga cave is fairly easily accessible and situated close to Labai village, and frequent visits to the cave in recent times have displaced the bone depositions. Photographic documentation from 1984 shows that the dep-



Fig. 2 Fragment of cranium with trepanation and star-shaped cut-marks from Budou cave. Photo: Göran Burenhult.



Fig. 3 *Crania* from Selai cave, covered in speleothem growth. Deposition G:1. Photo: Göran Burenhult.



Fig. 4 Deposition C:3 in Budou cave. The cranium is trepanated. Photo: Maria Davidsson.



Fig. 5 Deposition A:1 in Budou cave. The bones have been deposited in a large shell, *Tridacna gigas*. Photo: Göran Burenhult.



Fig. 6 Potsherds from Obuwaga cave. Photo: Göran Burenhult.



Fig. 7 Hole 1, square X-5 Y-2, at the Odubekoya burial ground, possibly used for the planting of prestige jam, *kuvi*.



Fig. 8 Detail of Individual 6 in Grave 2 at the Odubekoya burial ground. Photo: Maria Davidsson.

ositions of human bones appeared then to be more or less intact. Also two large ornamented clay vessels, containing human bones, were almost intact (Burenhult 1986:332; Venturi 2000). During the investigation in 1999, both pots were found broken into pieces. Samples of pottery and bone were collected for analyses (fig. 6).

Radiocarbon date from Obuwaga Cave 1:
Ua-15985 (Sample 2/99, dens, ID 60002) 445±75 BP /
c. AD 1450 CAL.

Bwara Tudava Rock Shelter, Labai

At Labai Beach, overlooking the sea, a rock shelter burial was located about six metres above the beach, containing bones from several individuals. Three pointed limesticks made of human bones (*radius*) were associated with the burials. Samples were taken for radiocarbon dating and DNA analyses.

Radiocarbon date from Bwara Tudava Rock Shelter: Ua-15990 (Sample 10/99, dens, ID 60010) 200±85 BP / c. AD 1650-1850 CAL.

Oilbogwa Site, Mwatawa

The Oilbogwa site is situated north-west of Mwatawa village (fig. 1). Twenty-seven square metres were excavated. Most excavated sections proved to be very thin, providing a total depth from topsoil to limestone rock of about 20-30 centimetres (Larsson & Svensson 2000). Nine post-holes were documented in the excavated areas. The find material consists of pottery, tools and flakes of lithics and charcoal. The excavations at Oilbogwa revealed approximately six kilograms of pottery, about

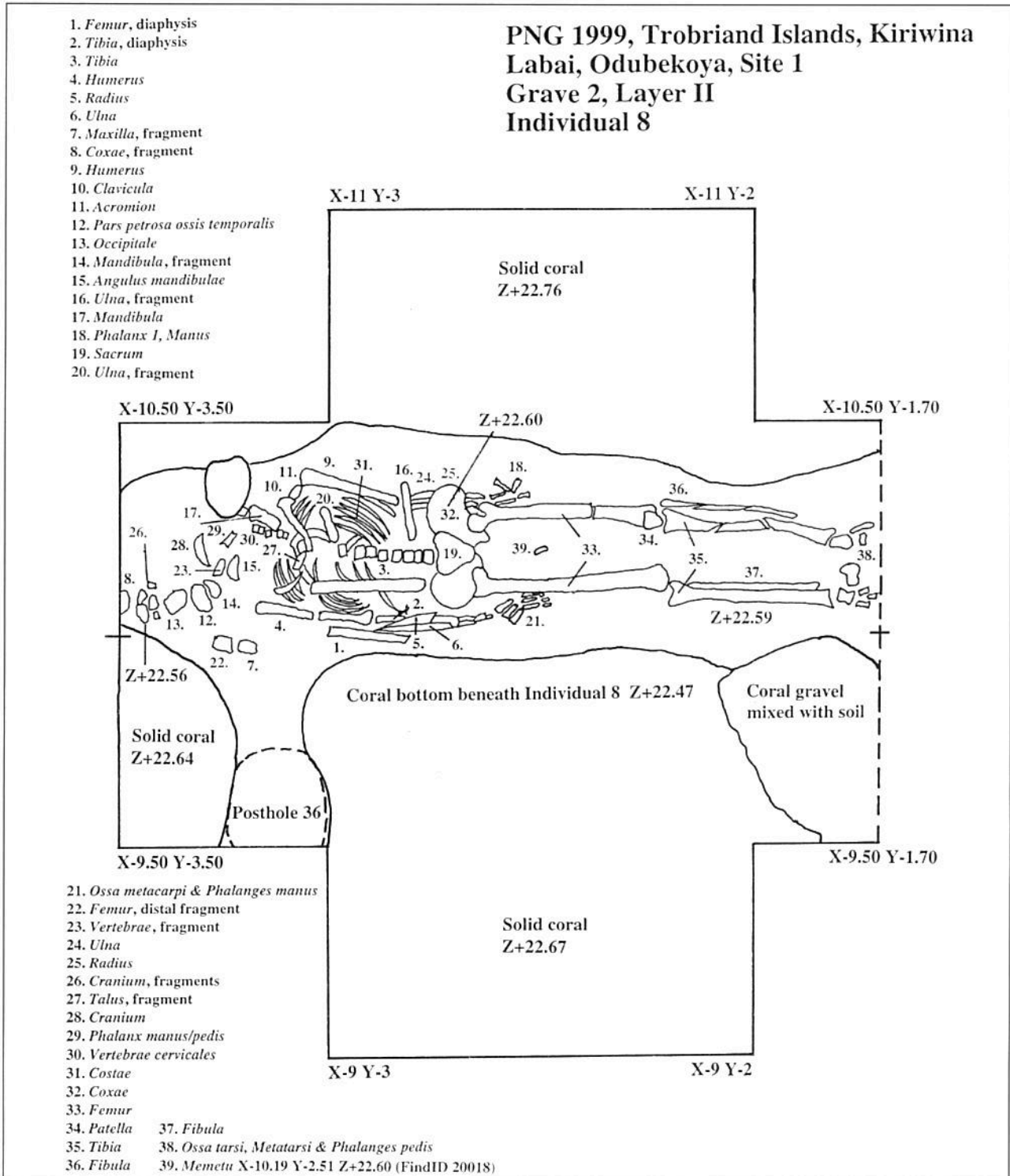


Fig. 9 Example of the osteological documentation at the Odubekoya burial ground, Grave 2, Individual 8. Drawing by Ann-Charlotte Larsson and Susanne Svensson.

21% of these were decorated (Gustafsson, Lindström, Malm & Winter 2000). Among the lithic material, a large number of obsidian flakes were recorded (Fernstål, Hjulström & Sterner 2000). Dated charcoal samples are most likely associated with recent gardening.

Radiocarbon dates from Oilbogwa:

Ua-15988 (Sample 8/99, charcoal, ID 60008) 134±1 BP / c. AD 1740-1930 CAL.

Ua-15989 (Sample 9/99, charcoal, ID 60009) 105±70 BP / c. AD 1740-1930 CAL.

Odubekoya Site, Labai

The Odubekoya site is situated on a hill north-west of Labai village (fig.1). Thirty-six square metres were excavated. As at Oilbogwa, the total depth of the stratigraphy was 20-30 centimetres (Larsson & Svensson 2000). Ten deep holes in the solid coral rock were documented, all with a diameter of 30-40 centimetres, and a depth of as much as 2,5 metres. The holes may have been dug for planting prestige yam (*kivi*) (fig. 7).

During the excavation of Odubekoya five burial depositions were found, containing at least seventeen individuals, males, females and children (figs 8-9). None of the crania were trepanated. Various grave-goods accompanied the skeletons in most of the graves, including obsidian (*memetu*), magical stones (*bina-bina*), axes/adzes (*utukema*) and pottery. The excavations at Odubekoya revealed approximately fifteen kilograms of pottery, about 28% of these were decorated (Gustafsson, Lindström, Malm & Winter 2000) (fig. 10). Test pits out-

side the main excavation area were excavated with the aim to demarcate the site, and the settlement and burial ground can be provisionally estimated at sixty-one by forty-five metres, or c. 2.745 square metres (Larsson & Svensson 2000).

Radiocarbon dates from the Odubekoya burial ground:

Ua-15467 (Grave 1, Sample 4/99, *dens*, ID 60004) 930±80 BP / c. AD 1100 CAL.

Ua-15468 (Grave 2 / Individual 5, Sample 5/99, *dens*, ID 60005) 1100±70 BP / c. AD 950 CAL.

Ua-15986 (Grave 3, Sample 6/99, *dens*, ID 60006) 755±70 BP / c. AD 1250 CAL.

Ua-15987 (Grave 5, Sample 7/99, *dens*, ID 60007) 1045±80 BP / c. AD 1000 CAL.

Preliminary Conclusions

The archaeological and osteological investigations in 1999 have revealed a series of data that may indicate significant cultural change on the Trobriand Islands between AD 1250 and AD 1450. This applies to both bone deposition traditions, the manipulation of the bones, ceremonial features, and grave goods. The radiocarbon dates so far available from the Odubekoya burial ground show that the individuals were interred between c. AD 950 and AD 1250, while dated samples from individuals in two of the burial caves center around c. AD 1500. Also, the inhumations at Odubekoya are final interments with skeletons in anatomical positions, as opposed to the cave burials, the bone depositions of which can be shown to be secondary burials, e.g displaying defleshing marks, with the bones in non-anatomical positions. Furthermore, a large number of the crania in the caves have been trepanated, while none of the individuals so far excavated at Odubekoya display this feature (Venturi 2000).

Looking at the pottery associated with the burials at Odubekoya, and the sherds documented in the Obuwaga burial cave, again distinct differences can be shown. A detailed presentation and analysis of the ceramics will be presented elsewhere. It is reasonable to believe that the megalithic tradition developed on the Trobriand Islands during this intermediate period (Austen 1940). Such a date would correspond well to the appearance and subsequent development of most other megalithic traditions in the Pacific area (Emory 1970; Wallin 1993; Martinsson-Wallin 1994; Green & Pawley 1998; Weisler 1998a, 1998b; Green 2000).

If the cultural change suggested here between AD 1250 and AD 1450 is the result of a continuous local development, or an appearance of new people, cannot be archaeologically determined without further excavations. However, the results from recent mitochondrial DNA, HLA and Y-chromosome polymorphism analyses on today's Trobriand population have indicated strong Polynesian markers (Hagelberg *et al* 1999). The mtDNA data are highly suggestive of a recent migration of Polynesian maternal lineages to the Trobriand islands, and the results argue for a considerable back migration from Polynesia to island Melanesia and coastal New Guinea

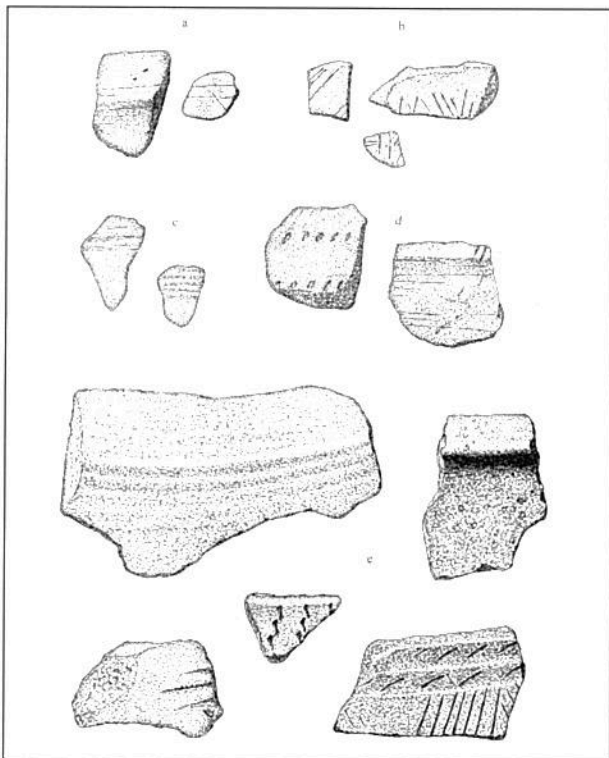


Fig. 10 Examples of pottery associated with the burials at the Odubekoya burial ground. a) Grave 3; b) Grave 3; c) Grave 2; d) Grave 2; e) Grave 2. After Gustafsson, Lindström, Malm and Winter 2000. Drawings by Sven Österholm.

in recent times (Hagelberg et al 1999:149-50). The forthcoming DNA-analyses of the human bones from the Odubekoya burial ground and the burial caves may prove to be of great importance in this context.

The Trobriand archaeological project is carried out in collaboration with the Department of Archaeology, University of Sydney, Australia (Dr. J. Peter White); the Department of Anthropology and Sociology, University of Papua New Guinea (Dr. Ilinus digim'Rina, Head of Anthropology and Sociology); the National Museum of Papua New Guinea, Port Moresby, PNG (Dr. Soroi Marepo Eoe, Director; and Nick Araho, Chief Curator); Institute for Behavioural Studies, Max-Planck-Gesellschaft, Andechs, Germany (Professor Wulf Schiefelhövel); Ångström Laboratory, 14C-Lab, University of Uppsala (Professor Göran Possnert); Department of Biochemistry, University of Otago, New Zealand (Dr. Erika Hagelberg and Murray Cox, Research Assistant); and Department of Physical Geography, Stockholm University, Sweden (Associate Professor Karin Holmgren and Katarina Lundblad, Research Assistant). The 1999 excavations have been part-financed by the Stern magazine.

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Historical perspectives of prehistoric seafaring in the Pacific

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Over the last century, there has been considerable controversy in the field of archaeology over the idea of pre-Columbian oceanic voyaging, migrations and cultural diffusion. Thor Heyerdahl's 1947 Kon-Tiki expedition, however, confronted mainstream scientific thought by dramatically demonstrating that a South American presence in the Pacific was physically possible (Heyerdahl 1950, 1952). Heyerdahl has long been a major advocate of the case for prehistoric seafaring despite considerable opposition (Ryan 1998). While objection to such notions seem to be slowly crumbling around the Pacific rim, resistance persists in the area of Polynesian archaeology. This paper will address these issues in terms of the past, present and future.

Ever since the Western world first encountered the inhabitants of the beautiful islands of Polynesia, the questions have been asked: who are these people? From where did they come, and when, why and how (Heyerdahl 1952, pp.4-8, Howard 1967)? These questions became known as "the Polynesian problem" and I would like to pose an additional inquiry: does the so-called Polynesian problem exist today? In trying to answer this question, let's just briefly review a bit of the history of speculation and research on this subject.

The early Western explorers of the Pacific noted a range of similarities amongst the Polynesian people, especially in terms of language and material culture, that suggested that there might be a common homeland for the widely spread inhabitants of the Eastern Pacific islands. The physical features of the Islanders themselves added a bit of confusion, as they seemed to not quite exactly fit the racial categories running through the minds of the European observers. Consequently, a wide range of homelands were proposed including Malaysia and elsewhere in Southeast Asia, Melanesia, India, Europe, Africa, Arabia, Mesopotamia and various migratory combinations thereof. Still others tried to explain the Polynesians by invoking the Lost Tribes of Israel or by arguing that the islands and their people were survivors of a Pacific continent that has sunk beneath the waves. Although many of these ideas might appear to us today as silly, one can't help but be impressed by the intense interest and degree of confusion in attempting to discover the origins of the Polynesians.

Gradually, as research from the Pacific trickled in, more sober theories were offered. One of the more respected scholars of the first half of the 20th century, for example, Sir Peter Buck, proposed a migration of people to Polynesia from Malaysia via Micronesia (Buck 1938). Despite the incredibly wide range of opinions, only a

handful of people looked to the east, to the Americas, as a possible link or answer to the problem including Ellis (1827) and Zuniga (1803). In 1941, Norwegian scholar Thor Heyerdahl proposed a distinctly American solution to the Polynesian problem. In an article published in 1941 in a journal called *International Science*, he proposed that the Polynesians did indeed have origins in the west, in Southeast Asia, but made their way to the Pacific islands by nature's way: the winds and currents carrying these people from their Asian homeland, but first by way of the Pacific Northwest Coast, and then throughout Polynesia via Hawaii. The theory addressed problems regarding the difficulties of seafaring directly from west to east, and also helped to explain the startling similarities in culture found between the Northwest coast cultures and those in the eastern Pacific. Heyerdahl also argued that there was a South American presence in Polynesia whose possible early influence can be demonstrated by some of the unusual cultural features found on Easter Island and elsewhere.

The South American connection was readily dismissed by many scholars, especially on seafaring grounds, until Heyerdahl dramatically demonstrated with the Kon-Tiki expedition that the sea craft available to the Peruvians was perfectly adequate to easily transport people and cargo to Polynesia. Although the expedition opened the eyes of many, the sceptics remained in force, even after the publication in 1952 of Heyerdahl's masterful scholarly justification of the Kon-Tiki expedition entitled *American Indians in the Pacific*. While some eyes may have been opened, many minds remained closed, and the west still remains the dominant direction for explaining the coming of people to Polynesia. It should be mentioned that the Kon-Tiki voyage has been repeated successfully many times on both log rafts and reed ships thus demonstrating that the original experiment was no mere fluke.

In the 1950's and 60's, serious archaeological work increased in Polynesia, Thor Heyerdahl's expedition to Easter Island being a pioneer in this regard (Heyerdahl and Ferdon 1961, 1965). The advent of radiocarbon dating gave a boost to the subject as did the recognition that there were indeed stratified archaeological sites to be found in the Pacific. A milestone of sorts occurred in 1960 at the 10th Pacific Congress during which a resolution was passed acknowledging the Americas as a cultural influence in the Pacific, a resolution seemingly forgotten since (Tuthill 1963 p.48, Resolution 3). Apart from issues of origins, there were also discussions of the how's and why's of island colonization. What would motivate people to sail into the vast waters of the eastern Pacific? Were discoveries of islands purely accidental or was voyaging intentional if not calculated (e.g. Sharp 1964).

In the mid-1960's, archaeologists Kenneth Emory and Yosihiko Sinoto proposed what has since been referred to as the "orthodox scenario" of Polynesian colonization. Their story begins with a seafaring people who have been given the name "Lapita", who spread from the direction of Melanesia, eventually establishing them-

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selves on Fiji, Tonga and Samoa which served as the cultural nursery for a proto-Polynesian culture. From there, seafarers headed east into the vast Pacific to settle first in the Marquesas Islands which served as a dispersal point for migrations to such places as the Society Islands, Hawaii and Easter Island. Subsequent migrations from the Society Islands resulted in the further colonization of Hawaii and the spread of the Polynesians to New Zealand (Jennings 1979). The foundations of this highly influential scenario remain today.

As Pacific prehistory has greatly expanded, the so-called orthodox scenario has been greatly refined as a relative explosion of fieldwork continues to take place (Kirch 1986). A great deal of emphasis has been placed on examining the so-called Lapita people, whose presence is identified by a trail of pottery shards, scattered across many islands in the western Pacific (Kirch 1997). Although some scholars have been so bold as to even attempt to reconstruct Lapita linguistics (Pawley and Ross 1993), there are great problems defining the origins and nature of the Lapita culture, and Polynesian prehistory in general still has plenty of questions which remain to be resolved (Green 1993, Irwin 1998, Weisler 1998).

It is easy to be impressed by the growing amount of interdisciplinary research accumulating in the Pacific. But with many still favouring a completely Western solution to the Polynesian question, the East is not usually fully considered. But why? As Thor Heyerdahl has reminded us, we must not forget that there is land on both sides of the Pacific. This ignoring of possible American roles and variables highly affects the interpretation. By eliminating the Americas as possible contributors to the Polynesian story, all of the data, no matter how anomalous, is forced to fit into a preconceived framework.

A typical example of how this sort of thinking works can be illustrated by the case of the famous stonework at Vinapu found on Easter Island which greatly resembles that found in Peru, the closest major landmass. Rather than suggesting a clean solution, that South Americans may have made the easy trip to Polynesia and influenced the Easter Islanders, at least some scholars have proposed that Polynesians sailed against the winds and currents to South America, and happened to return with Peruvian stone masons (Gill et al 1997). These sorts of scenarios seem rather forced, and not particularly necessary if one is willing to take a broader view of the situation.

Why has there been a bias among some scholars against the Americas playing a role in the prehistory of Polynesia? The answer to that question is no doubt very complex and includes such subjective human variables as envy and stubbornness. One possible answer, which has parallels elsewhere in archaeology, is the misguided notion that it is racist to suggest that other cultures, especially those which were technologically sophisticated such as the civilisations of Peru, were needed to explain sophistication in societies elsewhere. Believers in this notion, see all societies as equally capable of innovation; even so, it is a fact of life in modern as well as ancient times that peoples in contact share, borrow and modify. Might, for example, it be just as racist to deny Polynesian

people a possible part of their heritage, if such came from the Americas? Or is it not racist to deny the Peruvians their seafaring abilities? Much of this attitude against the processes of migrations and cultural diffusion has its roots in the abuse of these very ideas, especially in the 19th century, when cultural change was nearly universally explained by outside influences (Harris 1968 pp.373-392). But we find this attitude, too, in Old and New World archaeology where the idea of transoceanic contact and influence are considered heresy by many (Kehoe 1998 pp.190-207). If it weren't for the discovery of a genuine Viking site at L'Anse aux Meadows in Newfoundland, few would have acknowledged the possibility of Old World visitors to America prior to Columbus. One can also note the persistence of the notion that there was a great fear of the ocean in ancient times.

There is also a suspicion regarding the value of such scientific undertakings as the Kon-Tiki Expedition, which by most anyone's definition, can be clearly defined as an outstanding example of experimental archaeology (Coles 1979). Yet some of the critics of the Kon-Tiki Expedition, are happy advocates of similar experiments promoting the traditional scientific scenarios. Most notable have been the voyages of the Hokule'a, a fibreglass replica of a postulated version of a Hawaiian voyaging double-canoe which has travelled between the Polynesian islands with reconstructed navigational techniques (Finney 1979, 1994). Ironically, these voyages prove no more than the Kon-Tiki expedition, that to the extent that the sea craft have been accurately replicated, it is possible to travel about the Pacific.

Despite the wide range of clues that suggest a complex prehistory of the Pacific islands, including American involvement, many scholars continue to neglect the continent to the east of Polynesia. Yet the evidence for human seafaring in the Pacific from all sides is growing and impressive. Let's take a look at a few examples of the old, recent and continuing evidence:

On Flores Island in eastern Indonesia, stone tools related to *Homo erectus* have been found dating to around 800,000 – 900,000 thousand years old. To have reached such a place, *Homo erectus* would have had to cross three deep-water channels, the broadest being 19 kilometres wide (Gibbons 1998).

In Australia, there is evidence to suggest that humans arrived 40 – 60,000 years ago, and some have argued for an even earlier date. Travel to Australia from the closest land would have involved significant seafaring ability (Mulvaney and Kamminga 1999 pp.130-146).

In North America, an idea scoffed at just a few years ago is now being taken seriously. The existence of early archaeological sites in South America, and early evidence of coastal adaptation is weighing in favour of the notion that the early human migrations to the New World may have been by boat along the coast, rather than necessarily by foot via the Bering Land Bridge (Dixon 2000).

In the Channel Islands off the coast of California, the Daisy Cave site seems to indicate human occupation as far back, perhaps as 12,000 years (Erlandson et al 1996).

On the Northwest Coast of America, significant cultural parallels between Polynesia, and especially New Zealand are evident, yet few have dared to explore the possible connections and implications of such (Heyerdahl 1952 pp.71-178).

The Japanese current that runs from Asia to the Pacific Northwest readily deposits drift material on the coast of British Columbia, before turning west to Polynesia. Studies of historic drift voyages of damaged Japanese vessels have shown that people, too, may have often made the journey (Davis 1872).

In Hawaii, there are many anomalies to traditional Polynesian culture. A finely cut stone wall on Kauai is reminiscent of South American stonework (Bennett 1931 pp.105-106), and the use of fish ponds is suggestive of Japan. It has been noted that some of the biggest Hawaiian canoes were made from drift logs from the American Pacific Northwest (Anon. 1938) and when Capt. Cook arrived in these islands, some of the local people had pieces of metal, some have suggested earlier visits by the Spanish or others (Dahlgren .1916).

In South America itself, the early Spanish visitors were impressed by the large rafts bearing people and cargo which navigated freely off the coasts. Archaeological and artistic evidence demonstrates that reed ships and balsa rafts were long in use by the coastal civilizations (Heyerdahl 1952, 1968, 1996). The sweet potato, a plant of South American origin, became a Polynesian staple, and made its way around the Pacific along with other American plants (Yen 1974). Six hundred miles off the coast of Ecuador are found the Galapagos Islands where a Heyerdahl expedition found evidence of prehistoric South American visits (Heyerdahl and Skjolsvold 1956), a fact ignored by a recent major published survey of ancient Peru (Bruhns 1994). One can also note that a Peruvian informant to the Spanish provided information that can be construed as directions to Polynesia, perhaps even directly to Easter Island (Heyerdahl 1968 pp.75-91).

As can be readily seen, humans have had a very long and active relationship with the sea. Now back to the original question: Is there a Polynesian problem? Given the propensity for humans to utilize the sea, especially in the Pacific, why should some modern scholars be so reluctant to consider a variety of interesting possibilities? As long as the total picture is ignored, there will continue to be a Polynesian problem, whether it is recognized as such or not. To quote Thor Heyerdahl in *American Indians in the Pacific*: "Let it be borne in mind that, as long as there are unsolved problems in the Pacific, we should at least give an open mind to the consideration of any solution, however unimpressive it may at first seem." (p.3)

Given the theme of this symposium, *No Barriers*, I would like to suggest the following:

- that the story of humans in the Pacific is probably far more dynamic, complex and interesting than most people imagine; involving multiple migrations or other forms of contacts,

- to oversimplify the possibilities, in order to conform to a blanket scenario such as the Lapita, is to constrain research and the exploration of broader or alternative solutions to problems.

I am pleased to report that more and more scholars are opening their minds to a wider range of possibilities in explaining the human past. We can thank the likes of Thor Heyerdahl for boldly insisting that we can think outside the confines of a narrow intellectual box, and strive to look in all directions. I believe that the story of humans in the Pacific will continue to unfold in new and very interesting ways. As the previous speakers clearly demonstrated, this is truly an exciting time to be involved in Pacific research and we can look forward to many new discoveries and insights in the years to come.

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The Importance of the Kon-Tiki Legend in a Historical Perspective

Thor Heyerdahl¹

What we refer to as “the Kon-Tiki legend” in this short paper is the part of the oral history preserved throughout the Inca Empire which deals with an immigrant pre-Inca priest-king who founded the first Andean civilization and subsequently left the coast of Peru again with his followers on a voyage into the open Pacific. As with oral history among all high-cultures in the Old as well as in the New World, and also in Polynesia for that matter, the ruling hierarchy is considered to be divine, and the genealogical lines backwards therefore merge into the supreme god, which in the case of the Inca hierarchy was supposed to be the sun. The difficulty in all these early genealogies is to know how many generations backwards we can trust with some reasonable degree of security that they represent real human rulers before they merge into myths and imagination.



Stone statue from Tiahuanaco, Bolivia, depicting the Andean culture hero Con-Tiki-Viracocha.

In the case of the oral history of the Inca empire, it is important to note that the lessons taught in regular schools by the learned *amautas*, was that their own royal lines descended, not directly from the sun, but from the emigrant human sun-priest Viracocha, who came by foot from Tiahuanaco and became the progenitor of the Inca line as he passed Cuzco on his way northwards to the coast of Ecuador at Manta. It was this last descendant of the founder of the Tiahuanaco culture who worshipped the sun as his first forefather, and told the Incas to do the same.

In the Quechua language spoken by the Inca in the northern and central Andes, this venerated culture-bringer was referred to as Viracocha, which means, “Foam on the Sea”. This was simply a descriptive name as the real name of very sacred persons and places was commonly so highly respected that it was circumscribed. It probably referred the fair skin and seamanship of this migrant culture hero and Viracocha proved to become the general denomination for all white men. There were clearly more than one Viracocha ruling at Tiahuanaco, and the first who arrived from the north was not the same as the one who finally sailed into the Pacific Ocean. The fair-skinned and bearded men who followed him were called the *viracocharuna*, or *viracocha*-people.

When the Quechua Inca advanced southwards in the highland and conquered the area around Lake Titicaca with Tiahuanaco, they found that the local Aymara people also had the very same tribal memories about the departing fair-skinned and bearded sun-king as they had themselves, but in the Aymara language he was called *Tici* or *Ticci*. When they next descended to the coastal lowland they found his memories preserved in the very same way, but the Nazca and their neighbors called him *Con* or *Can*. The Quechua Indians, three generations before the arrival of the Europeans, had conquered the entire Andean area from Ecuador down to Bolivia and Chile and reinforced their own language throughout the vast empire. To satisfy all the different tribes involved, the Incas combined all the names into one, and the full name of this Andean culture hero was recorded by the Spanish chroniclers as *Con-Tiki-Viracocha*.

The historic implications of this oral history preserved by the *amautas* and known throughout the Inca Empire is well known from the written records of Pizarro’s conquest of Peru. It cannot be fully appreciated unless seen in conjunction with the conquest of Mexico by Cortez. The details of these written records are compiled and quoted with source references elsewhere (Thor Heyerdahl, 1952, *American Indians in the Pacific*) and need not be repeated in this short discussion, which will be aimed at showing the enormous consequences that the oral history of ancient America had on world history at large.

Two of the largest and strongest military powers of the entire world at the time of Columbus’ first voyage were the Aztec empire in Mexico and the Inca Empire in South America. They were left undisturbed by the Norse explorers from Iceland and Greenland, and the Basque stockfish merchant mariners from Spain, who restricted

¹ The Kon-Tiki Museum, Oslo, Norway

their activities to the more northerly latitudes before Columbus landed in Cuba and opened the road for visits to the two large empires on either side of the Panama Isthmus. It is noteworthy that on all his four trans-Atlantic expeditions from Spain, Columbus first steered southwards to the Canary Islands, before he sailed due west with the trade winds and the Canary current to the Caribbean Islands. On his first voyage in 1492, the island of Tenerife was still so vigorously defended by its aboriginal population that the Spaniards could not land, and he had to set out from the island of Gomera with his three ships. The hostile reception of the Spanish explorers in the Canary Islands stands in marked contrast to the overwhelming welcome they received on the other side of the Atlantic Ocean. It would be a great mistake to deal with the history of European discoveries westwards across the Atlantic without taking into account the first inhabited land they encountered in the open ocean on their way to America.

As a group, the Canary Islands had already been discovered by Portuguese and Spanish seafarers who traded gold and slaves from the northwest African coast; and Lanzarote and Fuerteventura had already been conquered by the Frenchman Bethencourt before the first voyage of Columbus. But the so-called Guanche population on the large island of Tenerife with its 3700 meter high volcano of Teide still kept all Europeans away with the mere use of slings and skillful stone throwing. Not until the beginning of the 16th century did the Europeans manage to conquer and subjugate the Guanche population on Tenerife.

Who were the people we call Guanche? They were undoubtedly of mixed origin. Some of them were very tall and fair-skinned with blond or reddish hair and beard, and looked extremely like the North Europeans. Although still of unknown origins, these pre-European seafarers who had settled the Canary Islands centuries before European voyages began in the Mid-Atlantic, were almost certainly related to the pre-Arab population of North Africa. The blond and fair-skinned Berbers along the Atlantic coast of Morocco shared their Caucasoid traits with the Guanche. Their reed ships, similar to those on the North coast of Africa which brought the first settlers to all the Mediterranean islands, could easily have brought families alive to the Canary Islands. The present speaker had the opportunity to test one of these reed-bundle vessels carrying eight men in the open sea off the former Phoenician port of Lixus in 1970, prior to the crossing of the entire Atlantic from Safi in Morocco to Barbados, with the papyrus ship Ra II.

The pre-European navigators who peopled all the Canary Islands prior to European arrival were certainly not mere fishermen driven unintentionally away from the coast as many scholars have proposed. Ancient fishermen normally did not bring their women aboard, and never male and female goats, dogs and pigs, or seeds for sowing agricultural fields. The Canary Islands were discovered by intentional colonists, like the Phoenicians and others who sailed out through the Gibraltar Straits to look for new land to colonize with their families and

domesticated animals onboard. Like us, on the reed-ships Ra I and Ra II, any exploring party who sailed along the Phoenician-occupied coast of Morocco would sight the upper peak of Teide on Tenerife towering over the surrounding clouds.

The origin of the Guanche is outside the scope of this paper. It suffices to state that people as fair and bearded as the Spaniards were sailing in the open ocean off the African coast in pre-European time, and with a certain degree of advanced culture. Unlike Europeans, but like certain civilizations in the ancient Middle-East, Mexico and Peru, they practiced mummification and trepanning, fought with slings, built astronomically oriented stepped pyramids for solar worship, and were ignorant of building wooden ships with ribs and hull.

The Guanches, like the Phoenicians, the Berbers, the Arabs and the Europeans were able to grow beards. But the early English chronicler George Glass recorded that the Arabs had learnt in the Canary Islands that further out in the same ocean there were men who could not grow beards. They could therefore not be distinguished from women but for their genitals, and when they breathed, smoke came out of their mouth.

The legends of the Guanche, like those of the Aztecs, Mayas and Incas, began with the reference to a great flood that destroyed all other people, but they have no mythology about fair-skinned and bearded men who landed among them and brought them the seeds of culture. The Guanches were fair-skinned and bearded men themselves. The physical appearance of the Europeans who came and wanted their land was therefore not enough to impress them to yield their own soil to the foreigners. The Spaniards were not mistaken for gods who had visited their forefathers and now came back to lay claim to their former kingdom. It is against this background for the Spanish conquest of the mighty kingdoms on the other side of the same ocean that the subsequent historic events are thought-compelling.

Wherever Columbus and his European followers landed on the islands in the Antilles they were received with respect and submission without understanding why. And when Juan de Grijalva sailed further on to Maya territory on Yucatan in 1518, he had the same amazing experience. The explanation came the following year, in 1519, when Hernando Cortez landed on the Aztec coast of Veracruz to begin his march with a handful of followers into King Montezuma's mighty empire. The little group of Spaniards were amazed to find that the vastly superior Aztec armies made no attempt to attack or resist the foreigners who were let into the large fortresses and straight up to the emperor himself.

It is enough to quote Cortez's own explanation for this friendly reception. When Cortez had his first interview with King Montezuma, the King addressed him through the interpreter Marina in the words recorded for posterity by Cortez himself in his Carta Segunda of 30th October 1520:

"Having delivered me the presents, he (Montezuma) seated himself next to me and spoke as follows: We have known for a long time, by the writings handed down by

our forefathers, that neither I nor any who inhabit this land are native of it, but foreigners who came here from remote parts. We also know that we were led here by a ruler, whose subjects we all were, who returned to his country and after a long time came here again and wished to take his people away. But they had married wives and built houses, and they would neither go with him nor recognize him as their king; therefore he went back. We have ever believed that those who were of his lineage would some time come and claim this land as his and us as his vassals. From the direction where you come, which is where the sun rises, and from what you tell me of this great lord who sent you, we believe and think it certain that he is our natural ruler, especially since you say that for a long time he has known about us. Therefore you may feel certain that we shall obey you, and shall respect you as holding the place of that great lord, and in all the land I rule you may give what orders you wish, and they shall be obeyed, and everything we have shall be put at your service. And since you are thus in your own heritage and your own house, take your ease and rest from the fatigue of the journey and the wars you have had on the way.”

The Spaniards, who came with the Bible and claimed to have discovered America, were fast to burn the majority of the vast number of history books of the people that gave them their empire as a welcome gift, and only a few of the precious Aztec codices are preserved. It is important to recollect that the Aztec and the Maya were literate people who had inherited the knowledge of script from their predecessors, the Olmecs, who carved hieroglyphics and depicted bearded men on the megalithic stele they erected on the jungle coast of the Gulf of Mexico half a millennium before the art of writing spread from the Near East to Europe.

Cortez learnt from Montezuma that he knew about the previous landing of fair-skinned and bearded men from the east from writings handed down by their forefathers. In Mexico the records about the pre-European fair-skinned and bearded men were not legends, but written history.

In writings among the Mayas of Yucatan and their neighbors, and elsewhere in art and oral history, the story of the migrant fair-skinned and bearded men continued southwards all the way through Central America to North-western South America, and everywhere there was evidence of early high-culture. Only the name of the leader of the migrating fair-skinned and bearded men varied with the languages from one tribe or nation to the other: *Itzamna Canil* and *Kukulcan* among the Mayas; *Votan* among the Tzendals; *Conday* among the Zoques; and popping up again south of Panama as *Bochica*, *Zume*, *Tume*, *Xue* and *Tamu* in the northern Andes. There is an unbroken continuity of regarding such an individual down to the entire Inca Empire with a focus on Ecuador, Peru and Bolivia.

The Spaniards had already heard about the Inca Empire from the local people in Panama, when they crossed the narrow isthmus from the Atlantic to the Pacific in 1513, six years before Cortez crossed the Gulf

from Cuba to Mexico. In 1524 Pizarro had already sailed so far down the Pacific coast of Colombia that news about the arrival of fair-skinned and bearded Viracochas reached the ruling Inca Huayna Capac who was at that time in Quito, Ecuador. The old Inca was disappointed when Pizarro returned to Panama without landing, but in 1527 Pizarro returned and sailed all the way down to Peru. It was on this voyage that Pizarro's pilot Bartholomy Ruiz captured an Inca balsa raft bound for Panama with about 30 tons of cargo and manned by 20 men and women.

As on arrival in Mexico, the Spaniards met no opposition when they anchored off Tumbez on the north coast of Peru. To the contrary, the local Inca chiefs sent out balsa rafts to help them land through the high surf with their horses and their armored men. Sparsely provided with provisions and unfamiliar with the local geography, a little group of 180 Spaniards marched inland into the mighty Inca empire where the two armies of the ruling Inca brothers, counting tens of thousands of professional army soldiers each, easily could have blocked their passage up the steep and barren valleys to the highland, and trapped them short of food and water. But we learn from the contemporary chroniclers that an envoy of Inca Atahualpa came to welcome the arriving foreigners while on their way and humbly addressed Pizarro's lieutenant De Soto as Viracocha. The old Inca Huayna Capac had died in the meantime, and his son Inca Atahualpa was on his way from Quito in Ecuador to Cuzco in Peru when messengers from the coast told him of the return of the fair-skinned and bearded men. The contemporary chronicler Sarmiento in his *History of the Incas* describes how Atahualpa received this news:

“When he was about to set out there came to him two Tallanas Indians, sent by the Curacas of Payta and Tumbez, to report to him that there had arrived by sea, which they call cocha, a people with different clothing, and with beards, and that they brought animals like large sheep. The chief of them was believed to be Viracocha, which means the god of these people, and he brought with him many Viracochas. They said this of the Governor Don Francisco Pizarro, who had arrived with 180 men and some horses which they called sheep...when this became known to Atahualpa he rejoiced greatly, believing it to be the Viracocha coming, as he had promised when he departed,...Atahualpa gave thanks that he should have come in his time...”

Anybody may have their own belief as to whether or not seafarers resembling the Spaniards had ever been seen in America prior to Columbus. But nobody can deny that the oral history of Kon-Tiki-Viracocha and the other fair-skinned and bearded men had a great impact on world history.

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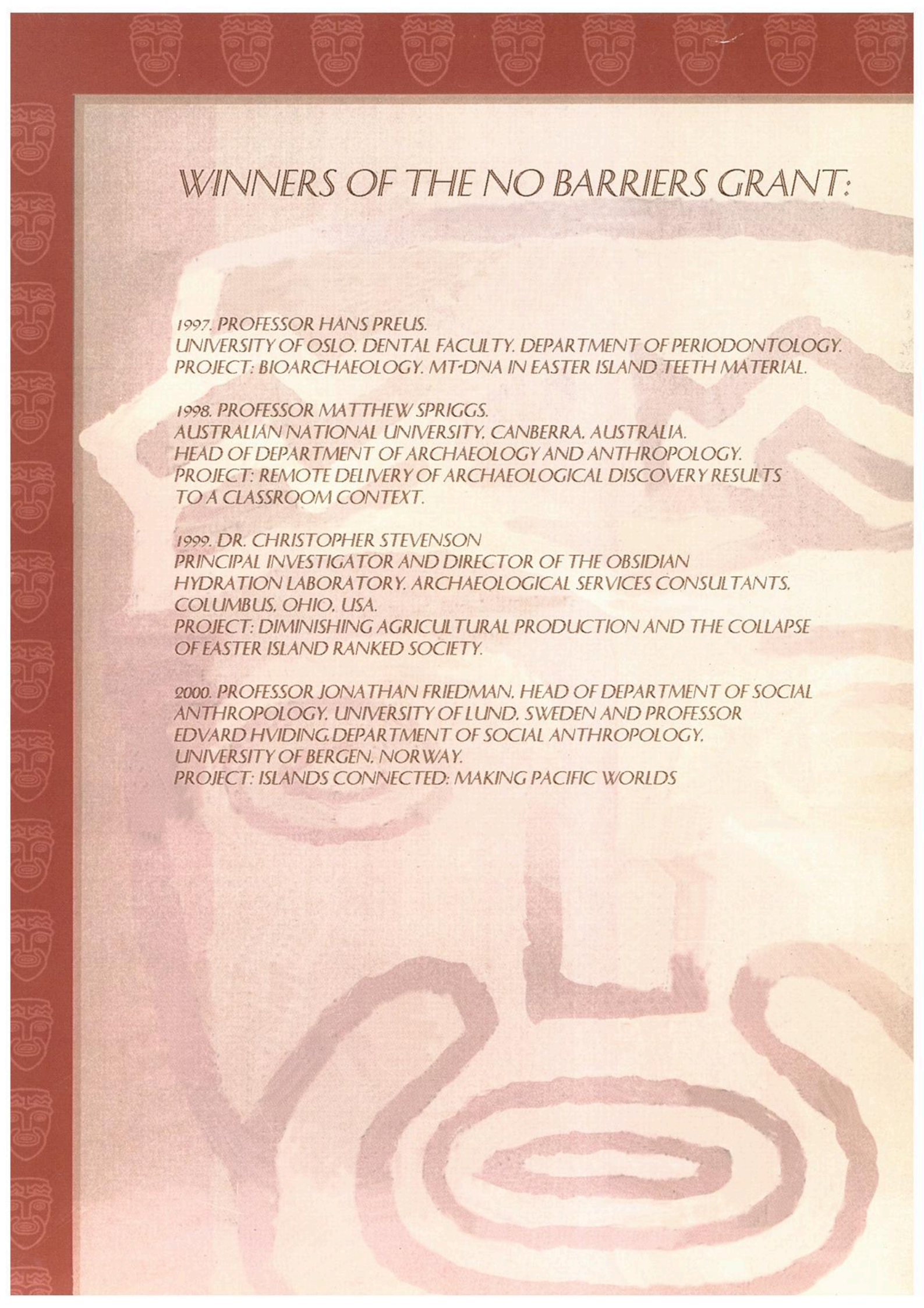
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