One continuous loop: making and meaning in the string figures of Yirrkala

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Declaration: I declare that this thesis is my own original work. Due acknowledgement has been given to all references used and other sources of information and assistance.

Aboriginal readers are advised that the following volumes contain the names and images of deceased individuals.

This research was undertaken with the approval of The Australian National University's Human Research Ethics Committee: Protocol 2008/317.

Dedication

This work is dedicated to my parents

Elizabeth and Dacre McKenzie

Acknowledgements

I first became aware of string figures and the study of them in the Pacific section of Parson's Bookshop in Auckland, from where I eventually purchased a freight of exotic and esoteric texts: *String Figures from Pukapuka*, *String Figures of the Tuamotus*, *Tikopia String Figures*—all co-authored by Honor Maude. A friend leant me his copy of Rouse Ball's *Fun with String Figures*. I had a string figure party. Then artist Barbara Campbell told me about the collection of mounted string figures in the Australian Museum, examples of which she had seen in a display in the Fisher Library at Sydney University curated by Richard Ratajczak. From then I was off—a PhD my chosen mode of transport.

The Research School of Humanities and the Arts at The Australian National University (ANU) provided a supportive framework and the space in which to do the work, the companionship of a community with shared interests, and access to people with knowledge and skills I could learn from. Special thanks to the administrative staff keeping the whole thing ticking over: Suzanne Knight, Sharon Komidar, Rosemary Shepherd, and Alan Wyburn. Early on, Kim McKenzie introduced me to constructing databases using FilemakerPro and I took David and Judith MacDougall's course 'Thinking with a Video Camera'. Across the broader University I was able to sit in on select undergraduate classes, including Wally Caruana and Luke Taylor's lecture series on Aboriginal and Torres Strait Islander Art. I joined a Postgraduate Student 'Theory Reading Group' and I convened a 'String Figure Making Workshop'. (A special thanks to Valerie Blake, who besides me, was its one and only stalwart member.) Later, I participated in the 'Thesis Writing Workshop' at the ANU Research School of Humanities and the Arts run by Paul Pickering and then Alastair MacLachlan.

While this thesis is my own work, it is the product of a myriad of collaborative encounters and working relationships. My greatest debt is to my supervisors, who provided a context and the necessary freedom in which to develop this project—they facilitated my introduction to Yolngu culture and community and they read drafts over the long haul. I thank them with warmth and respect. I drew substantially on the work and specialist knowledge of all three. With particular thanks to Louise Hamby for her model of engagement with her co-workers in the field, to Howard Morphy for understanding what I was trying to do (and always drawing me back to see the 'bigger picture'), and to Frances Morphy for her close and sympathetic reading of the narrative. Thanks to Lan Tran for being the human face of the administration of my candidature.

This project was undertaken with the Australian Museum in Sydney and Buku-Larrnggay Mulka Art Centre in Yirrkala as, in a sense, joint partners. The primary research consisted of work with the collection of mounted string figures in the Museum and fieldwork reconnecting the collection with the Yirrkala community. I would like to especially thank Stan Florek, Robin Torrence and the Department of Cultural Collections and Community Engagement at the Australian Museum for their welcome and accommodation of my needs: supervising my weeks in 'the cage' documenting and drawing the figures, and having the collection photographed. Vanessa Finney and staff in the Australian Museum Archives were unstinting in meeting every request. I would also like to thank the staff who assisted with access to collections in various other institutions. Curators Philip Jones and Tara Collier at the South Australian Museum organised access to collections in off-site storage, and Lea Gardam and staff at the Museum Archives facilitated the provision of copies of material from the Tindale Papers. Suzy Russell at the State Library of South Australia found things for me in the Mountford Papers (which I wouldn't have been able to find myself), and Lindy Allen at Museum Victoria suggested things in the Thomson Collection and Papers that I wouldn't have thought of looking for. The material relating to the Arnhem Land Expedition in the McCarthy Papers at AIATSIS was a major source. For the pleasant time spent in the library and their assistance in accessing this and other resources from the invaluable collections held by AIATSIS I would like to thank Eleanor Galvin, Barry Cunliffe and Rita Metzenrath, and the staff in the Pictures Collection.

The Art Centre in Yirrkala was my base in the field. I extend my thanks to the Art Centre coordinators for their advice and assistance, in particular to Will Stubbs who has been constant in his support and enthusiasm for the project, to Andrew and Dianne Blake, Kade McDonald and Annie Studd. My heartfelt thanks to all those in the Yirrkala and Galiwin'ku communities who participated in the research, for their generosity in sharing their culture with me: there are too many to name individually—most are identified throughout the later chapters of the thesis, but some are not. I would like to pay particular tribute to the women I worked with most closely, introduced in Appendix B as the 'Field Cast': Dhundhunga Mununggur and Duṉḏiwuy Mununggur, Mulkun Wirrpanda and Djakala Mununggurr, Nyangungu and Nonggirrnga Marawili and their respective daughters Djarpirr and Marrnyula Mununggurr, Dipililnga Bukuḻatjpi and her mother Wanymuli Dhamarraṉdji, Judy Garrawurra and Mavis Ganambarr. I hope that they as individuals and their communities as a whole, will see value in what I have made from the collaboration, and will take that as a thank you from me. (Sadly, Dhundhunga Mununggur and Wanymuli Dhamarraṉdji have passed away since my field research with them.) I would like to thank the Yunupingu sisters Barrapu ('finish now' too), Nyapayapa and Djakangu and grandaughter Frances for their 'good neighbour' policy during my first stay in Yirrkala and continued friendship and parlay over subsequent visits; Djerrk'ngu for taking me on as one more 'daughter'—adding to the 'thousands' she already has; and Ranydjupi for providing a deliciously laconic foil.

I want to thank Heather Burness for her collaboration in developing the process of making prints from the string figures and her work editioning the 2010 series. Her expertise and craftsmanship were essential to the success of this project.

I would like to acknowledge the assistance of a number of 'miscellaneous' individuals. When I was starting out to learn how to make string figures Mark Sherman from the International String Figure Association sent me 'how to' videos. Judy McKinty, Melbourne-based childhood play researcher, shared her knowledge and experience of methods of recording string figure making in the field. Martin Thomas assisted in accessing the 1948 Mountford film footage. Ethnobotanist Glenn Wightman and ornithologist Denise Goodfellow were generous in dealing with my questions.

In preparing the thesis for submission I was assisted by copyeditor Beth Battrick. Merryn Gates formatted the illustrations (with me looking over her shoulder—a big thank you), and Andrea McCuaig translated my 'Technique Trees' in Adobe

Illustrator. Tracy Harwood formatted the final document. I was tutored and assisted with logging and capturing and editing my video footage—and the format conversion of excerpts of other people's—by Katie Hayne, Junrun Lei and Andrew Howard, and especially Pip Deveson, at the Digital Humanities Hub. (Thanks Pip.)

My PhD candidature was supported financially by an ANU University Research Scholarship, and a redundancy package from Latrobe University. I am grateful for both. An Australian Museum Postgraduate Award, and a Northern Territory History Grant topped up core research funding supplied by ANU. This was used on trips to work with the collection in Sydney, and research trips to Adelaide and Melbourne, as well as fieldwork trips to Yirrkala. Essential to the outcomes of this project I received a substantial grant from AIATSIS that allowed me to return to the field, spending time in Yirrkala and on Elcho Island, in 2012. I would like to record my appreciation of this support.

Finally, I would like to thank family and friends for their endurance and faith—those who put me up (when in Sydney or Melbourne), and those who just put up with me. Some special mentions: Dad, who did both; Rod and Helen Lewis for a regular bed in Sydney; Jane Shepherd for all-hours service as territories Field Support Officer and Nurse-on-call; Jay 'the dog' for being very understanding of prolonged absences and my sister Emily for all around, sharing the load.

Abstract

At some point in their history most cultures probably made string figures (otherwise known as cat's cradles): patterns or designs constructed on the hands with a single continuous loop of string. First noted by European travellers in Australia and New Zealand, in the later nineteenth century anthropologists began to collect string figure repertoire from various indigenous peoples around the world. In the Australian Museum in Sydney there are 192 string figures mounted on card collected in Yirrkala in north-east Arnhem Land by Frederick D. McCarthy in 1948: the largest museum collection of its kind (i.e. of mounted string figures collected from one place at one time), and one of the last such collections made. It is accompanied by photographic documentation of Ngarrawu Mununggur—McCarthy's principal collaborator—making the figures, and a record of the instructions for making them.

As objects—both strange and beautiful—the mounted figures declare their status as hybrid artefacts of cross-cultural encounter and exchange. The result of a collaboration between McCarthy and his Yolngu informants, they would not exist without the contribution of both parties—the 'science' of Western anthropology on the one hand and Indigenous culture on the other. 'Why' was this collection made? and 'What' is it a collection of? are the central questions addressed by this study. What could be its significance now and into the future, for the Yirrkala community and a wider Australian public?

To answer these questions I investigate the dual strands of the collection's lineage—the place of string figures in the history of anthropology and their place in Yolngu culture, past and present. The particulars of this story provide new insight into the foundations of anthropology as a discipline. They also provide new understandings of Yolngu cosmology and aesthetics. Combining an analysis of the historical record with findings from my contemporary fieldwork, I explore the relationship between making and meaning in the repertoire, and describe and document Yirrkala string figure style. Of primary importance in this research was the reconnection of the museum collection with its source community in Yirrkala. This project demonstrates the potential activated through this process. The

regeneration of the practice of string figure making in the Yirrkala community through reconnection with the collection, as mediated by the research process, has in a reciprocal dialogic fashion, generated new layers of significance for the collection.

Table of contents

Volume 1

Volume 2

Volume 3

Technical preface—How to read this thesis

In this thesis I write about the methods of making string figures, which risks confronting the lay reader with a wall of impenetrable detail. I have attempted to present the 'technical' information required to understand my argument, in stages, as the chapters unfold, and to illustrate these points through images including video. The technical discussion is concentrated in Chapter 6 analysing the Yirrkala repertoire, and in Chapter 7 on my fieldwork. These chapters are supported by the technical analysis presented in Appendix A.

The introduction to Appendix A deals with factors that impact on the interpretation of the collection (additional to those discussed in the main body of the thesis), and should be consulted as background to my documentation of the figures that follows. Accompanying some sections in Appendix A there is explanation of McCarthy's record of the figures or my interpretation of it, additional to my discussion in the text of the thesis (see Sections 6, 7 and 8).

In this preface I present notes on the concepts and terms I use to discuss the string figures. As preparation for reading the thesis, I also recommend viewing the original film footage of string figure making in Yirrkala from 1948 (Video 1—1948 Film); and the introductory technical demonstration tape (Video 2—Technique 1). This illustrates the different *Openings* I will be referring to, and two common manoeuvres used in the repertoire: the *Navajo Movement* and the *Caroline Extension*.

In this thesis, text, images and video work in association to support each other, which makes demands on the process of 'reading'. References to illustrative material in the appendices will indicate the relevant section. For example, Figure 1 of Section 3 of Appendix A is indicated by AA§3 Fig. 1. There is no separate list of illustrations, as in this circumstance it would not, I believe, assist the reader. Documentation of the sources of illustrations is included in the captions. In Chapter 7 and in the discussion of 'Yirrkala String Figure Style' in Chapter 10, I recommend reviewing the video material before reading the text—so as to have it 'in mind'.

Notes on analytical and technical terms

1) General terms

In some places in the text I use the terms 'pattern', 'design' and 'figure' in their generic sense, in which they function somewhat interchangeably. In my technical discussion of the Yirrkala string figures, to make sense of the distinctions that inform McCarthy's records, I define them in the following ways:

Pattern: refers to the graphic schema of a design or figure (i.e. a 2-diamond or a 3-diamond pattern).

Design: as the same pattern can be made using different forms of construction, I am calling this the 'design' (i.e. in the repertoire there are two basic methods of making the 2-diamond pattern that result in two designs with different structures).

Figure: further to this, there can be variation in the method of making a particular design, and the same design can have multiple identities (i.e. the figures in the *Two Conch Shells* subset). A 'figure' as such is defined as a particular configuration of design, method and title or subject. This is in response to McCarthy's practice of using any variation within these three elements to define a figure as a unique individual identity.

2) Terminology for specifying groups of figures

In my analysis of the Yirrkala repertoire I use the following terms to specify groups of figures:

Set: a group of figures with the same basic pattern i.e. the 2-diamond set.

Subset: a group of figures of the same basic design, which form part of a larger group or set of figures of the same basic pattern—for example, the *Two Vulvas* subset and the *Two Conch Shells* subset in the 2-diamond set

Suite: a group of figures of the same basic design that are not part of a larger set—for example, *Mokuy* suite and *Goanna 1* suite.

The title of one of the figures in the grouping is used to identify the subset or suite as a whole.

3) Terms (and their symbols) used in the instructions for making

<u>*Openings*</u>

First Position—(see Fig. 3.8) (see Video 2—Technique 1)

Opening A—(see Fig. 3.8) (see Video 2—Technique 1)

Opening B—(see Fig. 3.15) (see Video 2—Technique 1)

Opening C—(see Fig. 3.16) (see Video 2—Technique 1)

<u>*Hands and fingers*</u>

R—right

L—left

1—thumb

2—index

3—middle

4—ring

5—little

<u>*Strings*</u>

loop—as in '2 loop', the loop of string around the index finger

n (near)—the string on the near (closest to the maker) side of a loop

f (far)—the string on the far (farthest away from the maker) side of a loop

> In *Opening A*, for example (see Fig. 3.8), R2n and R2f specify the two strings looped on the right hand index finger, the one closest to, and the one farthest away from the maker, respectively (our view in this instance).

upper and lower—where there are two loops on the one digit

pick up—use the nail side of the finger to retrieve the string

hook up—use the fingerprint side of the finger to retrieve the string

Most movements in the Yirrkala repertoire are executed by both left and right hands simultaneously: for example, instructions such as '2 picks up 1f' directs the index finger to pick up the far thumb string, on both hands.

4) Movements

In my analysis of the Yirrkala repertoire I identify a number of commonly used or characteristic movements or movement sequences (procedures, operations, manipulations, manoeuvres).

The most common of these, the *Navajo Movement* and the *Caroline Extension*, are described in Chapter 3 (see Figs. 3.14 and 3.17) (see Video 2—Technique 1).

In Chapters 6, 7 and 10 I describe a number of movements identified using the following terms. The colour-coded *Movements Legend* is used to identify these common procedures and the different openings in the technique trees in Appendix A.

I have supplied a length of cord with the thesis, to invite the reader to engage in making string figures themselves. Getting a feel for what is involved will help with understanding.

Glossary of Yolngu Matha terms

'Yolngu Matha', meaning Yolngu language, is a cover term for the closely related and mutually intelligible languages spoken by the Yolngu people of north-east Arnhem Land. These languages are clan based and individuals may speak a number of different languages, depending on their clan affiliations and the context. In this thesis I have used the standard orthography for Yolngu Matha words, and personal and place names, with spellings based primarily on entries in the Yolngu Matha Dictionary (YMD) published by Shepherdson College and Charles Darwin University.

To distinguish Yolngu Matha nouns/names of things, I have used the Yolngu Matha font for these words, but (for simplicity) have kept all personal and place names in a standard English font and so have not used the 'tail n' symbol. (i.e. Yolngu, not Yolŋu).

I have given preference to the use of English language terms for the subjects/names of the string figures in order to reduce detail.

Note: In quotations from other authors, I have left the spelling of Yolngu Matha words as in the original. This includes McCarthy's variant spellings of Yirrkala, for example.

All Yolngu Matha terms are explained in the text. This is a list of the more commonly used terms.

balwurr—string used for everyday purposes, made from the bast of the kurrajong tree

bäpi—snake

bäpurru—denotes a clan as an eternal, spiritual entity

baru—saltwater crocodile

bathi—bag, basket

bir'yun—brilliance or brightness (lit. to scintillate) biyay—goanna

bon̲ba—butterfly

bulka/burrkun—possum fur string

dakul—axe

damala—white-breasted sea eagle (other name ngakngak)

d̲aŋgultji—brolga

dapal—caterpillar

d̲awu—string used for ceremonial purposes, made from the bast of the banyan tree

D̲hapi—initiation/circumcision ceremony

dhuyu—sacred

djanda—goanna

djet̲—osprey (according to YMD, the young of the white-breasted sea eagle)

djitama—yam, 'cheeky yam': *Dioscorea bulbifera*

Djungguwan—multi-purpose ceremony (Dhuwa moiety Wäwilak sisters cycle)

djuwany—ceremonial poles

gälkal—ant

ganguri—yam, 'long yam': *Dioscorea transversa*

ganybu—fishing net

gapu—water

gara—spear

garma—any open ceremony

gongman/gungman—a woman who has a child/children

Gunapipi—sacred fertility ceremony (Dhuwa moiety Wäwilak sisters cycle)

gunyalili—boomerang/boomerang motif

lalu—parrotfish

l̲indirritj—rainbow or red-collared lorikeet

lipalipa—canoe

mad̲ayin—sacred

malka—Dhuwa feathered string ceremonial rope

män̲d̲a—octopus

märr—spiritual power

marradjiri—'public or open, outside' as opposed to 'restricted or closed, inside'

matjka—string and things made with string, string figures, string chest girdle

mayawa—frill-necked lizard

minhala—long-necked (freshwater) tortoise

miny'tji—traditional painted designs

miyapunu—(green) turtle

mokuy—spirit

molk—ceremonial ground

muthali—duck (generic)

murruk—cockroach

ŋäpaki—European or white person

ŋarŋga—waterhole

Ngärra—sacred ceremony (Yirritja moiety)

Nguḻmark—sacred fertility ceremony (Dhuwa moiety Wäwilak sisters cycle)

raki—string

raman—string with white down feathers plied into it

raŋga—sacred objects

rupu—possum

waṉa—feathered tassels or pendants

waŋarr—ancestral realm

waṉgurra—bandicoot

weṯi—wallaby

wirrkuḻ—a young childless woman

worrutj—string with red ḻindirritj feathers plied into it

wurrwa—armband—wrapped with string

wurraṉ—diving duck, darter or snake bird

yalu—nest

yolngu—person/people; the people of north-east Arnhem Land, the Yolngu

Abbreviations

AASEAL	American–Australian Scientific Expedition to Arnhem Land
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
ANRC	Australian National Research Council
ANZAAS	Australian and New Zealand Association for the Advancement of Science
ANU	The Australian National University
ASNSW	Anthropological Society of New South Wales
BAR	Board for Anthropological Research (Adelaide)
BISFA	Bulletin of the International String Figure Association (from 1994)
BSFA	Bulletin of the String Figures Association (1980–93)
NGS	National Geographic Society
YMD	Yolngu Matha Dictionary

Introduction

The last few decades have seen the building of an ethical, cultural and intellectual imperative: to bring museum collections of Indigenous material culture out of storage, to reconnect those collections with their source communities, and to reassess and reinterpret them.[1] As part of this process, new research on the makers and making of collections has been undertaken.[2] The *Encounters* exhibition currently showing at the National Museum of Australia in Canberra is a notable product of this cultural moment.[3] Objects from the collection of the British Museum, many for the first time, have 'returned' to Australia. The exhibition documents both the original circumstances of the collection of these objects, and the process of and responses to their reconnection with source communities. In that exhibition there are two mounted string figures collected by Alfred Court Haddon in the Torres Strait in 1888–89 (Fig. a). This fortuitous circumstance serves to introduce my study of 'The String Figures of Yirrkala': 192 mounted string figures on card in the Australian Museum's collections in Sydney, accompanied by photographic documentation and records of the instructions for making them.

The collection was made in 1948 by the Museum's Curator of Anthropology Frederick D. McCarthy, while on secondment to the American–Australian Scientific Expedition to Arnhem Land. McCarthy considered the collection one of the most significant anthropological achievements of the Expedition. Nevertheless, after preparation of his paper on the string figures for the Expedition *Records*, the mounted figures were abandoned unregistered in the Museum's stores.[4] Found in

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[1] Gough, Julie, and Jennie Gorringe. *Tayenebe: Tasmanian Aboriginal Women's Fibre Work*. Hobart: Tasmanian Museum and Art Gallery, 2009. The Tayenebe project is an outstanding example of this process.

[2] Peterson, Nicolas, Lindy Allen, and Louise Hamby. 'Introduction'. *In The Makers and Making of Indigenous Australian Museum Collections*, edited by Nicholas Peterson, Lindy Allen, and Louise Hamby. Carlton, Vic.: Melbourne University Press, 2008. Jones, Philip. *Ochre and Rust: Artefacts and Encounters on Australian Frontiers*. Kent Town, South Australia: Wakefield Press, 2007.

[3] *Encounters: Revealing Stories of Aboriginal and Torres Strait Islander Objects from the British Museum* in Canberra (17/11/2015–28/03/2016) and its sister exhibition in London *Indigenous Australia: Enduring Civilisation* (23/04/2015–02/08/2015), are the product of a collaboration between the British Museum, the National Museum of Australia and The Australian National University.

[4] McCarthy, Frederick D. 'The String Figures of Yirrkalla'. In *Records of the American and Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 2: Anthropology and Nutrition. Parkville, Vic.: Melbourne University Press, 1960: 415–511.

two boxes under a set of stairs by Curator Stan Florek in 1988, they were accessioned into the Museum's collection and subsequently received conservation treatment. Florek published a description of the collection with an inventory of the figures in 1993.[5]

String figures are patterns or designs constructed with a single continuous loop of string, 'by co-ordinated movements of the fingers of both hands, assisted by the teeth, neck, elbows, knees and toes when necessary'.[6] The designs are usually displayed on the hands, sometimes using other body parts as supports. Usually executed by a single person, some require two or more participants. String figures are understood in mathematical typology as 'unknots'. They always undo, come apart, unravel. The fun of string figure making is that you always begin and end with the same inert physical material: the loop of string. The string figures' ontological 'place of being' is in the animation of the string—its transformation through manipulation and movement.

The preferred types of objects collected by anthropologists at the time of the Arnhem Land Expedition were ones customarily made and used by the people being studied. For the Western collector, they were ideally a kind of 'found object'. This is most obviously not the case here. The mounted string figures are the product of the act of collection itself. They are the result of a collaboration between McCarthy and his Yolngu informants, and would not exist without the contribution of both parties—the 'science' of Western anthropology on the one hand and Indigenous culture on the other. Made with industrially manufactured string rather than traditional bush string, the mounted figures have no pretence of being authentic artefacts of 'primitive man'. As objects—both strange and beautiful—they declare their status as hybrid artefacts of cross-cultural encounter and exchange.

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[5] Florek, Stan. 'F. D. McCarthy's String Figures from Yirrkala: A Museum Perspective'. *Records of the Australian Museum,* Supplement 17, 1993: 117–24.
[6] McCarthy, F. D. 'String figures of Australia'. *The Australian Museum Magazine*, 12 (9), 1958: 279–83; 279.

As a record of their own making and an index of their implied use, all material culture objects have a dialogic relationship with the intangible culture of the larger social world from which they came. However valuable in themselves, they attain their meaning as the material trace of something else—a (larger) cultural world, a civilisation, an event in time, a skill set, a communicative act, a social exchange.[7] The string figures of Yirrkala are particularly poignant in this respect. Their common bilateral symmetry implies the body of a person (specifically in this case, McCarthy's main collaborator Ngarrawu Mununggurr). Their different patterns—the loops, crossings and twists of the string—inscribe movement, inferring the process of their making. The extent of the repertoire—the serried array of difference between designs—implies a system of meaning and a body of knowledge.

'Why' was this collection made? and 'What' is it a collection of? are the central research questions addressed by this thesis. What was its significance then, and what could be its significance now and into the future, for the Yirrkala community and a wider Australian public? In order to answer these questions I investigate the dual strands of its lineage—the place of string figures in the history of anthropology and their place in Yolngu culture, past and present.

Structure and argument

The Yolngu occupy an area of north-east Arnhem Land, part of the Arnhem Land Aboriginal Reserve (see Maps 1 and 3). There are four main population centres in Yolngu country, including Milingimbi on Milingimbi Island and Galiwin'ku on Elcho Island. On the mainland are Gapuwiyak and finally Yirrkala, which was the site of the Arnhem Land Expedition's second base camp. In Chapter 4 I give an account of the circumstances of the Arnhem Land Expedition, the process of making the collection of string figures at Yirrkala and the writing up of McCarthy's paper on them for the *Records*. This forms the 'eye' of the thesis, and was the conceptual starting point for my research.

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[7] Pearce, Susan. *Museums, Objects and Collections: A Cultural Study*. Leicester and London: Leicester University Press, 1992. Carrier, David. *Museum Skepticism: A History of the Display of Art in Public Galleries*. Durham and London: Duke University Press, 2006.

In the chapters leading up to this I situate the making and meaning of the collection in terms of the history of Western anthropology beginning with the broad international context. Anthropology developed as a professional discipline in the period 1880–1920 through a close alignment between the university and the museum. In Chapter 1, principally through the figure of Alfred Court Haddon, I define the precepts of the Museum Tradition of anthropology. I use this term pointedly in distinction to the possible alternative of (the tradition of) 'Museum Anthropology', with polemical intent. I wish to avoid the associations carried by the latter term of the general vocational or 'area' designation of a sub-branch of the discipline. In this period, the 'Museum Tradition' *was* the discipline of anthropology. To properly assess the collections made then and later, under its influence, in Australia and elsewhere—to view these collections 'in context'—it is necessary to understand its working principles. Rather than just a period in the development of anthropology—a period that has passed—I argue that the legacy of its collections, and the contemporary re-engagement with that legacy, continue that 'tradition'.

In Chapter 2, I look at the Museum Tradition in Australia—refracted through an account of McCarthy's career from 1920, when he started work at the Australian Museum, up until the Arnhem Land Expedition in 1948. In Australia, as a product of the process of professionalisation occurring here later than in the Anglophone centres of Britain and the USA, a disciplinary fissure developed between the museum and the study of material culture, and the University, the study of social anthropology and the new 'professionals'. Chapters 1 and 2 are a rereading of already established histories. The history of the early anthropological study of string figures in Chapter 3 presents this story as a coherent critical narrative for the first time. It begins with the collection Haddon made on his first trip to the Torres Strait that was deposited in the British Museum—and now is on display in the *Encounters* exhibition.

Haddon was instrumental in the development of the study of string figures. Recording the instructions for making figures became the preferred way of making collections, and the descriptive language Haddon devised with W. H. R. Rivers was influential in encouraging collecting in the field. This involved the collector learning how to make the figures themselves, rendering distinctions between the 'professional' scientist and the 'amateur' enthusiast difficult to draw. As I argue, this field method prefigured the classical paradigm of participant observation that defined the modern anthropological project.

McCarthy however, did not learn how to make the string figures, but recorded the instructions by observation alone. This, I argue, is one of the major sources of the problems with McCarthy's record. In the conclusion to Chapter 4, I analyse the errors in his instructions, and the reasons for the duplication of figures in his published catalogue of the repertoire. The recording of methods of making as a way of collecting string figure designs—merely the act of writing them down—tended to define them as unvarying formula executed by rote (or 'muscle memory'): a set sequence of steps, beginning with a particular opening, leading to a final outcome. McCarthy's estimate of the value of the Yirrkala collection was based on the number of different figures he had collected: 'a record number of string figures from one group of natives … the most complete study of string-figures yet made in one area in Australia'.[8] I argue that rather than being the record of a repertoire of individual figures as McCarthy conceived of it, the collection documents a succession of string figure 'events'.

In Chapter 5 while chronicling a second wave of interest in string figure studies post-1970, I introduce the work of two pre-eminent string figure scholars Honor Maude and Mark Sherman. Inspired by the problems with McCarthy's records, they collaborated on a 'Major Revision' of the instructions for the Yirrkala figures published in 1995. Through my analysis of the collection in Chapter 6, with the addition of data from my contemporary fieldwork in Chapter 7, I show that Yirrkala string figure making was and is an emergent multivalent system for meaning making/making meaning, demonstrating a dynamic and flexible approach to technique.

[8] McCarthy, Frederick D. 'Diary 5. Yirkalla Diary No. 2 and Oenpelli', 12 November 1948. Papers of Frederick D. McCarthy: MS3513/14/5. Australian Institute of Aboriginal and Torres Strait Islander Studies (hereafter AIATSIS).

In Chapters 8 and 9, through reference to the historical ethnographic record combined with observations from my contemporary fieldwork, I explore the significance of string and string figure making to Yolngu. Following up McCarthy's record of a matjka-wuma (string figure) version of the Wäwilak sisters myth, I draw out the connection in Yolngu culture between string figures and the practice of dancing with strings in ceremony. In the final Chapter 10, I conclude my analysis of the collection with a description of the characteristic movement style of Yirrkala string figure making; and document my findings about the uses and function of string figures within Yolngu society.

Methodology

Undertaken in the 'Interdisciplinary Cross-Cultural Research Program' at The Australian National University, this thesis applies approaches drawn from different discipline areas: historical and archival research, semiotic analysis, art historical stylistic analysis, and anthropological fieldwork.

In my fieldwork with the contemporary community at Yirrkala I found that string figure making was no longer an everyday practice that could be observed in the normal course of things. A number of the older women agreed to work with me 'remembering' the string figures. I also engaged the women in a collaborative print-making project in order to create interest in the subject of string figures, and through their insertion into the established value economy to give them a contemporary relevance, and increased profile (Fig. b). I recorded the interactions of the women in workshop/interview sessions on video, providing a valuable source for analysis. Video material is included as illustration in the later chapters in the thesis. It is the primary medium through which I describe 'Yirrkala String Figure Style' in Chapter 10. Largely for reasons of space (word length) I have not included a full narrative of my fieldwork experience. In Appendix B I document those aspects that I refer to in the text of the thesis.

From the earliest records, it is noted that string figures were understood by their creators as representations of things in the world. In the literature on string figures, despite the sometimes challenging nature of this claim, the representational mode involved has persistently been taken to be some form of naturalistic mimetic realism.[9] This presumption has never been examined in any thorough-going way. While this is understandable to a degree in relation to the early history of the study, I have not found any examples of contemporary theoretical understandings of the mechanisms of representation applied to the study of string figures as a communicative visual medium—as might employ insights from textual theory, reader-response theory, or semiotics for example. This is largely because the interests and expertise of those who have worked in this field have tended to lie elsewhere.[10]

In this thesis I undertake a semiotic analysis of the Yirrkala repertoire. In this analysis of 'how' string figures 'make meaning' I consider the semiotic potential of technique as well as form (pattern or design). In Appendix A, I present a technical analysis of the collection, concentrating on the mesh designs. I show that a significant quorum of designs in the Yirrkala repertoire are made by one of two distinct methods first identified by Honor Maude: one associated with a pan-Oceanic technique culture, the other associated with a Western Pacific technique culture. To present this analysis I have adapted data visualisation methods developed by Mark Sherman. The 'technique trees' are important not just for the purposes of presentation, but they functioned as a tool in the analysis itself. Like others before me, I found in order to research and write about string figures, it is necessary to learn to make them yourself. I had to learn how to make the figures in the repertoire in order to understand them and their relationships to one another. I had to think through the medium itself.

Sources

My principle source was the collection—the mounted figures, the photographs of Ngarrawu making the figures, and McCarthy's record of the instructions. In the

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[9] See Chapter 3, in particular the discussion of 'Realism and Representation' in which I focus on Kathleen Haddon's 1930 publication *Artists in String*.

[10] Mark Sherman's interest in this question in his commentary on the relationship between 'Kwakiutl Culture and String Figures' is a rare exception. He makes the observation that some figures are named after 'a shared situation, event, or feeling suggested by the physical properties of [making] the pattern'. Sherman, Mark A. 'Appendix A. Kwakiutl Culture and String Figures.' In Averkieva, Julia, and Mark A. Sherman. *Kwakiutl String Figures*. Anthropological Papers of the American Museum of Natural History 71. Seattle and London, New York: University of Washington Press and American Museum of Natural History, 1992: 137–50; 140–142.

first half of the thesis, focused on the history of anthropology and the place of string figures in it, I have relied on other archival manuscript sources, as well as historical and contemporary literature. In the later chapters, as well as searching published ethnographic texts for the snippets of information they contain, I have used material culture objects as evidence in exploring the place of string and string figures in Yolngu culture, alongside alternative sources of documentation, primarily the oral and visual histories recorded by Ian Dunlop in the Yirrkala Film Project. A major source of information has been the Yolngu that have worked with me on this project: from people I interviewed just once (Rev. Djiṉiyiṉi Gondarra) to the women in Yirrkala that I worked with over a number of years. The late Yolngu scholar Dr Joseph Neparrnga Gumbula, a Gupapuyngu elder from Milingimbi, spoke with me a number of times at intervals during the course of my research. He was a particularly generous and eloquent interlocutor.

Originality and value of the research

The majority of collections of Indigenous material culture made under the aegis of the Museum Tradition of anthropology remain undisturbed. Irrelevant to contemporary anthropological interests over the intervening years, they sit on shelves in the storehouse of the museum. The collection and study of string figures in particular has simply been forgotten: the subject itself deemed a children's game, the study, at best, a quaint remnant of the discipline in its infancy.

The rereading of the history of anthropology through the study of string figures offers a new perspective on its disciplinary foundation. The research on the role of string and string figures in Yolngu culture contributes significant original material to a growing body of literature on Indigenous fibre arts in Australia. Re-engaging with this collection honours the work of those who made it, both Balanda (white people) and Yolngu, by making sense of their effort. I mean this in two ways. I have made 'sense' of the collection by placing it in context, in terms of the history of Western anthropology and as far as is possible, the history and fabric of Yolngu culture. But also, the very fact of my engagement with the collection, and that of the Yolngu women I have worked with, has made 'sense' of the collection in another way—through realising its legacy and activating its contemporary potential.

Chapter 1
The Museum Tradition of anthropology

Introduction

When the 1948 American–Australian Scientific Expedition to Arnhem Land was all but over and the party was taking stock in Darwin, Howell Walker, the National Geographic Society writer-photographer, asked each participant to respond to two questions: 'What did they consider the most significant contribution to their field that the Expedition had made possible?'; and 'What would their respective home institutions consider the most valuable work done by the Expedition?'[1]

Frederick McCarthy, one of three ethnographic researchers on the Expedition (alongside Frank Setzler from the Smithsonian and Charles Mountford, the Expedition leader), not surprisingly stated that the 'collection of specimens' of material culture and natural history would be most valued by his institution, the Australian Museum.[2] As the most significant contribution to the field of anthropology, he gave equal standing to the archaeological survey he carried out in collaboration with Setzler and the collection of string figures he made at Yirrkala: 'This is the most complete study of string-figures yet made in one area in Australia, and increases the total to ~~four~~ three times as many [as] previously known in the whole of the continent'.[3] According to McCarthy's later estimate it constituted one-fifth of all 'known' string figures in the world at the time.[4] Martin Probert's very useful survey of museum holdings of string figure material suggests that it is the

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[1] McCarthy, Frederick D. 'Diary 5, Yirkalla Diary No. 2 and Oenpelli', 1948. Papers of Frederick D. McCarthy: MS3513/14/5. AIATSIS. The questions from Walker and McCarthy's response—both typewritten on separate sheets of paper—are pasted into McCarthy's diary opposite the entry for 12 November.

[2] The work of the other scientists on the Expedition contained elements of ethnographic research to varying degrees, nutritionist Margaret McCarthur's study of indigenous food-gathering practices and diet, in particular. Unlike the three men listed she was not concerned with making collections of objects, however. The overlap between the interests of these three men had a significant impact on the political dynamics of the Expedition as discussed in Chapter 4.

[3] McCarthy, 'Diary 5', 12 November 1948.

[4] McCarthy, Frederick D. 'The String Figures of Yirrkalla'. In *Records of the American and Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 2: Anthropology and Nutrition. Parkville, Vic.: Melbourne University Press, 1960: 415–511; 422.

largest museum collection of its kind, that is, of mounted string figures collected from one place at one time.[5]

In assessing the significance of this collection, it is important to understand how it was seen within its original context. Why did McCarthy regard this collection as one of the outstanding anthropological achievements of the Expedition? Why did he consider it more important than the material culture collections—the bark paintings, for example? Whereas that collection has received significant attention over past years, and continues to be celebrated, the collection of string figures quietly disappeared from view.[6]

In order to answer these questions it is necessary to understand the context that informed McCarthy's approach to his work as a museum anthropologist in Australia in the 1930s and 1940s. This involves locating his career within the broad international context of the development of anthropology as a discipline, while at the same time taking account of the specific regional circumstances of its institutionalisation in Australia. In this chapter I look at the role of the Museum Tradition in the establishment of anthropology as a disciplinary practice in Britain and the USA. In Chapter 2, I recount the narrative of McCarthy's personal development, and address the local factors influencing the establishment of anthropology as a profession in Australia.

The professionalisation of anthropology in Britain and the USA in the late nineteenth and early twentieth centuries went hand in hand with its establishment as an academic discipline that supplied training and qualifications. The development of anthropology as a body of ideas at this time and its teaching in the universities was closely linked with the making and display of museum collections.

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[5] Probert, Martin. 'Museums and Other Institutions with String Figure Artefacts—an inventory of string figures mounted on card, string figures on film, string figure photographs, and recordings of string figure songs'. Last updated August 2010. http://website.lineone.net/~m.p/sf/archives.html.

[6] See Neale, Margo. 'Charles Mountford and the "Bastard Barks"'. In *Brought to Light: Australian Art 1850-1965: From the Queensland Art Gallery Collection*, edited by Lynne Seear and Julie Ewington. Brisbane: Queensland Art Gallery, 1998: 210–17. May, Sally K. *Collecting Cultures: Myth, Politics, and Collaboration in the 1948 Arnhem Land Expedition*. Plymouth UK: AltaMira Press, 2010. In 1956 a portion of the collection of bark paintings amassed on the Arnhem Land Expedition were dispersed to the State Galleries, forming in many cases the foundation of their collections of Aboriginal art. Bark paintings collected on the Expedition featured in the exhibition *Old Masters: Australia's Great Bark Artists*, at the National Museum of Australia in 2014.

The establishment of museum collections at Oxford (1884) and Cambridge (1884), and at Harvard (as early as 1866) among other North American universities, pre-empted and, it can be argued, precipitated the acceptance of anthropology as an academic discipline.[7] These museum collections were used as teaching instruments as well as sites of research. They also created profile and status for the nascent profession through the public display of its wares. Material culture collections played a primary role in anthropological thinking, as a means of providing evidence for and demonstrating the tenets of evolutionary and diffusionist hypotheses. The museum was a place 'where anthropology was *produced*', through the arrangement and display of objects.[8]

The accepted history of anthropology plots a progressive trajectory of succeeding schools of thought or theoretical paradigms, focused on national stories. In Britain evolutionism is succeeded by diffusionism which is succeeded by functionalism or social anthropology, the foundational model for the modern discipline. In the USA evolutionism is challenged by the various strains of Boasian cultural anthropology.[9] These dominant meta-narratives, I argue, have obscured the history of the 'Museum Tradition' of anthropology that continued, inflected by perhaps but not fundamentally altered through these successive theoretical shifts, and found in common across these national boundaries. A resurgence of interest in material culture studies since the 1980s has seen important work done on many

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[7] Chapman, William R. '"Like a Game of Dominoes": Augustus Pitt Rivers and the Typological Museum Idea'. In *Museum Economics and the Community*, edited by Susan Pearce. London and Atlantic Highlands, NJ: The Athlone Press, 1991: 135–76; 135. Chapman suggests that it was through the acceptance of the Pitt Rivers collection by Oxford, 'that anthropology first attained a secure foothold in the universities' in Britain.

[8] Watson, Rubie. *Opening the Museum: The Peabody Museum of Archaeology and Ethnology*. Occasional Papers. Vol. 1. Cambridge, Mass.: Peabody Museums of Archaeology and Ethnology, Harvard University, 2001: 1–16; 8. My italics. For further information on the foundational years of these museums see Gosden, Chris and Frances Larson (with Alison Petch). *Knowing Things: Exploring the Collections at the Pitt Rivers Museum, 1884–1945*. Oxford: Oxford University Press, 2007. Gosden, Chris, Frances Larson and Alison Petch. 'Origins and Survivals: Tylor, Balfour and the Pitt Rivers Museum and their Role within Anthropology in Oxford 1883–1905. In Rivière, Peter, ed. *A History of Oxford Anthropology*. New York: Berghahn Books, 2007. Elliott, Mark and Nicholas Thomas eds. *Gifts and Discoveries: the Museum of Archaeology and Anthropology, Cambridge*. London: Scala, 2011. Hinsley, Curtis M. 'From Shell-Heaps to Stelae: Early Anthropology at the Peabody'. In *Objects and Others: Essays on Museums and Material Culture*, edited by George W. Stocking, Jnr. Madison, Wisconsin: The University of Wisconsin Press, 1985: 49–74.

[9] See essays by Henricka Kuklick on 'The British Tradition' and Regna Darnell's 'North American Traditions in Anthropology: The Historiographic Baseline'. In *A New History of Anthropology*, edited by Henricka Kuklick. Blackwell Publishing, 2008: 52–79 and 35–51.

significant figures in that tradition and the collections they helped to create and cared for, but this has not upset the dominance of this historiographical template.

I am treating the establishment of the Museum Tradition as the period from 1880 to 1920, when museums were closely allied with universities in the process of the professionalisation of anthropology as a disciplinary practice, in the trans-Atlantic Anglo-American context.[10] To begin this chapter, taking Alfred Court Haddon as a primary exemplar of the Museum Tradition in Britain—McCarthy's natural line of familial inheritance—I look at how the development of the 'museum method' underwrote shifts in theoretical alliance. I discuss the concept of the 'museum as storehouse', the 'systematic approach to collecting', and 'filling-in the map' as methodological tropes taken from the natural sciences and applied to the anthropological project.

In the next section I pursue my argument regarding the place of the Museum Tradition in the historiography of the period in Britain through an examination of the work of Henrika Kuklick and George Stocking. I then look at the treatment of the Museum Tradition in North America through the work of Regna Darnell, whose writing has purposefully attended to continuities underpinning the shifts and ruptures in that national story, with a particular focus on the era of the 'Boasian Revolution'. This links to the work McCarthy undertook for his Diploma Thesis at the University of Sydney, inspired by the 'age and area' or geographical distribution theory developed by Carl Wissler (a student of Boas), and brought to Australia by D. S. Davidson—a line of inheritance representing McCarthy's selective patrimony.

[10] This dating generally accords with William Sturtevant's Museum-University Period (1890–1920), growing out of the earlier Museum Period (1840–90). Sturtevant's periodisation follows that implied by Collier & Tschopik. Both Peterson et al. (2008: 10) and Jacknis (1996: 75), labelling the period 1880–1920 the 'museum age', cite Sturtevant as their source. Sturtevant, William C. 'Does Anthropology Need Museums?' *Proceedings of the Biological Society of Washington* 82, 1969: 619–50; 621–25. Collier, Donald, and Harry Tschopik, Jr. 'The Role of Museums in American Anthropology'. *American Anthropologist* 56 (5), Part I, 1954: 768–79.

Alfred Court Haddon and the 'museum method'

> Somewhere about 1878, either just before or after I had taken my degree, I came across, I cannot remember how, an illustrated account of an evolutionary series by Lane-Fox, of which my zoological, embryological, and palaeontological studies at once enabled me to appreciate the importance.[11]
>
> A. C. Haddon, 'The Method of Pitt-Rivers', 1907

Augustus H. Pitt Rivers (1827–1900) was the first to attempt to apply scientific principles to the ordering of material culture specimens. Ethnology (and with it archaeology) had always had a home in the museum, alongside zoology, palaeontology, botany and geology. It began, as did these other disciplinary fields, with the collecting of curiosities, but was delayed in achieving the same scientific status. As Pitt Rivers explained:

> Unlike natural history specimens, which have for years past been selected with a view to variety, affinity, and sequence, these ethnological *curiosities …* not being supposed capable of any scientific interpretation, they have not been obtained in sufficient number or variety to render classification possible.[12]

The objects in Pitt Rivers' collection were not selected for their outstanding qualities—their individual uniqueness as curiosities, their beauty or rarity—but rather because they were 'ordinary and typical'.[13] The Pitt Rivers collection went on display to the public in its permanent home at Oxford University from 1887. The objects in the collection were presented in series to demonstrate the evolutionary development of an artefact type—ordered according to 'the principle of continuity', progressing in graduated incremental steps, 'from the simple to the complex, and from the homogeneous to the heterogeneous.'[14] Specimens were separated into 'distinct classes' according to object type, for example spears, bows,

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[11] Haddon, Alfred C. 'The Method of Pitt-Rivers'. [Review.] *Folklore* 18 (2), 1907: 217–20; 219–20. The specific use of the term 'the museum method of anthropology' is attributed to Boas in an essay of 1907. See Jacknis, Ira. 'Franz Boas and Exhibits: On the Limitations of the Museum Method of Anthropology.' In *Objects and Others: Essays on Museums and Material Culture*, edited by George W. Stocking, Jr. History of Anthropology 3. Madison, Wisconsin and London: The University of Wisconsin Press, 1985: 75–111; 108.

[12] Pitt Rivers, Augustus H. 'On the Principles of Classification Adopted in the Arrangement of His Anthropological Collection, Now Exhibited in the Bethnal Green Museum'. *Journal of the Anthropological Institute of Great Britain and Ireland* 4, 1875: 293–308; 294.

[13] Pitt Rivers, 'On the Principles of Classification', 1875: 294.

[14] Pitt Rivers quoted in Chapman, William R. 'Arranging Ethnology: A. H. L. F. Pitt Rivers and the Typological Tradition'. In *Objects and Others: Essays on Museums and Material Culture*, edited by George W. Stocking, Jr. History of Anthropology 3. Madison, Wisconsin and London: The University of Wisconsin Press, 1985: 15–48; 20. Pitt Rivers, 'On the Principles of Classification', 1875: 294.

clubs. Within each class, subclasses based on specific geographic locations might be identified. Within and indeed between these classes or categories, 'wherever a connection of ideas can be traced', the specimens were arranged in order 'according to their affinities'.[15] These 'affinities' were largely formal or more properly morphological: as Pitt Rivers put it, 'like fits onto like'.[16] It is important to note that the objects in the collection were not just ordered for display on the basis of 'a connection of form', but during its development, were actually selected on this basis: 'missing links' when found were added to series to establish the steps in the 'chain'(Fig. 1.1).[17]

Pitt Rivers' system of classification and ordering was borrowed directly from the natural sciences: he applied the idea of taxonomic divisions to the classification of objects in his collection, and in their ordering and arrangement and his explanations of this, appropriated the principles of evolutionary biology:

> Human ideas, as represented by the various products of human industry, are capable of classification into genera, species, and varieties, in the same manner as the products of the vegetable and animal kingdoms, and in their development from the homogenous to the heterogeneous they obey the same laws.[18]

William Chapman argues that for Pitt Rivers human artefacts were, as the product of the 'facts of evolution', 'the great law of nature', in effect naturally given.[19] According to Chapman's reading Pitt Rivers gave no role to human agency: forms developed 'by a process of "unconscious selection"', each having 'a "history of its own", independent of the intentions of its makers'; 'the ideal of "invention" itself was suspect'.[20]

For Pitt Rivers, as Chapman has written, the lessons of his arrangements were self-evident: 'objects could not lie: they were determinate, undeniable "facts" that, when put together, conveyed a sense of truth.'[21] In his inaugural address at Oxford

[15] Pitt Rivers, 'On the Principles of Classification', 1875: 294–95.
[16] Pitt Rivers, 'On the Principles of Classification', 1875: 294–95, 307–08.
[17] Pitt Rivers, 'On the Principles of Classification', 1875: 294, 302.
[18] Pitt Rivers, 'On the Principles of Classification', 1875: 307.
[19] Pitt Rivers (1891) quoted in Chapman, '"Like a Game of Dominoes"', 1991: 137. Pitt Rivers quoted in Chapman, 'Arranging Ethnology', 1985: 20. See also Pitt Rivers, 'On the Principles of Classification', 1875: 304.
[20] Chapman, 'Arranging Ethnology', 1985: 31. Chapman, '"Like a Game of Dominoes"', 1991: 148.
[21] Chapman, '"Like a Game of Dominoes"', 1991: 138.

University, perhaps in reference to the Pitt Rivers collection (although it was not yet in place), E. B. (Edward Burnett) Tylor emphasised his conviction that 'to trace the development of civilization and the laws by which it is governed, nothing is so valuable as the possession of material objects'.[22] The transparent 'evidentiary' strength of the material object was elaborated by other anthropologists in this period. For example in an address to the British Association for the Advancement of Science of 1894, William Henry Flower (Director of Natural History at the British Museum) championed the importance for 'anthropological science' of collections of 'tangible objects': as 'one of the most potent means of registering facts and making them available for future study and reference'; a 'method of fixing the evidence on which our knowledge … is based'.[23]

The generation that developed anthropology as an academic discipline came largely from biological science backgrounds, principally zoology and medicine. The museum had been a training ground in their original discipline areas and they transferred much of the approach taken in those fields to the study of human society and its productions.[24] Alfred Court Haddon (1855–1940) is a primary exemplar of the Museum Tradition in anthropology as it developed in Britain, constituting McCarthy's natural source of familial inheritance. Haddon was instrumental in the institutionalisation of anthropology within the university sector in Britain. Not only did he actively promote the use of museum collections for teaching and research, but his approach to the task of anthropology as a whole was based on the museum method. He is of particular relevance to this thesis for his role as the major progenitor of string figure studies, as discussed in Chapter 3. The model of a museum-based anthropology clearly met with in the ideas and work of Haddon can be seen to be influential, not only on McCarthy's attitudes and

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[22] Tylor (1883) quoted in Van Keuren, David K. 'Cabinets and Culture: Victorian Anthropology and the Museum Context'. *Journal of the History of Behavioral Sciences* 25, 1989: 26–39; 26 and see 37, n. 3.
[23] Flower, William H. 'Address To Section H', British Association for the Advancement of Science, 1894. Quoted in Van Keuren, 'Cabinets and Culture', 1989: 26–27.
[24] For example see the account of Henry Balfour's approach to anthropology in Larson, Frances. 'Anthropology as Comparative Anatomy? Reflecting on the Study of Material Culture During the Late 1800s and the Late 1900s'. *Journal of Material Culture* 12 (1), 2007: 89–112. Balfour, the first curator of the Pitt Rivers museum, was a contemporary of Haddon's and also a scientist by training. His approach and working practices as outlined by Larson offer a clear parallel with Haddon's.

general approach—how he thought about the disciplinary project he was involved in—but in terms of the specific type of questions he sought answers to. It was an inheritance, and an aspiration, that informed the development of his practice as a museum professional.

Haddon, a zoologist by training, a specialist in the comparative anatomy of marine organisms, 'converted' to anthropology following a field trip to the Torres Strait in 1888–89. While the transfer of his allegiance from one field to the other occurred over a period of time—it was more than a decade before he was able to swap his position as Professor of Zoology at the Royal College of Science, Dublin, for the position of Lecturer in Ethnology in Cambridge—his conversion was in some ways fairly immediate.[25] While he had gone to the Torres Strait to study coral reefs, once in the field, he was struck by the changing life of the islanders, and convinced of the need to 'collect ethnographic "facts" before they vanished'. As described by James Urry, 'with the skill of an experienced natural scientist Haddon recorded "customs", collected word lists and stories and made notes on aspects of the islanders' lives.'[26] He also collected artefacts, which were on display at the British Museum within two months of his return.[27]

Haddon's first position after graduating was as a curator at the Zoological Museum in Cambridge. As his biographer A. Hingston Quiggin describes: 'He flung himself into the work of the Museum with his usual enthusiasm, rearranging, determining and exhibiting the Invertebrata.'[28] Throughout his career he kept returning to the museum. Sandra Rouse argues that in the period between Tylor's evolutionary theory and the triumph of social anthropology, the achievements of British anthropology 'were considerable in terms of institutional and methodological

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[25] Rouse, Sandra Louise. 'Ethnology, Ethnobiography and Institution: A. C. Haddon and Anthropology at Cambridge 1880–1926'. PhD Thesis. Cambridge: University of Cambridge, 1996: 42. Haddon resigned from the Chair of Zoology in Dublin in 1901, after being established as Lecturer in Ethnology at Cambridge the previous year.

[26] Urry, James. 'From Zoology to Ethnology: A. C. Haddon's Conversion to Anthropology'. In *Before Social Anthropology: Essays on the History of British Anthropology*. Harwood Academic Publishers, 1993: 61–82; 64. For Haddon's plans for the expedition see Rouse, 'Ethnology, Ethnobiography and Institution', 1996: 60–61.

[27] Rouse, 'Ethnology, Ethnobiography and Institution', 1996: 84, n. 56.

[28] Quiggin, A. Hingston. *Haddon the Head Hunter: A Short Sketch of the Life of A. C. Haddon*. Cambridge: Cambridge University Press, 1942: 53.

developments'. She places Haddon as the 'dominant social actor' in these developments, at the centre of changes that privileged practice over theory.[29]

James Urry's 'From Zoology to Ethnology: A. C. Haddon's Conversion to Anthropology' originally published in 1982 was the first substantive analysis of the relationship between Haddon's anthropological work and his foundational training in zoology. Urry argues that the emphasis placed on the figures of Radcliffe-Brown and Malinowski as pioneers of British social anthropology has overshadowed the contribution made by the previous generation. In particular, rather than Malinowski having 'invented' fieldwork, he points out how Haddon and his colleagues, based on their experience in the natural sciences, established intensive fieldwork as an essential part of the training of the next generation of anthropologists. And rather than Radcliffe-Brown establishing 'the first sound theoretical base for the subject', he argues that Haddon and his generation broke with the division between 'armchair' theorists at home, and the amateur collectors in the field they relied on for their data, and again drawing on natural science methods, integrated research with interpretation.[30]

Museum as 'storehouse'

The process of knowledge-building for the biological sciences was the model for Haddon's methodological approach to the human science of anthropology. For Haddon, the museum as 'storehouse', was the model of scientific knowledge. It was a physical and literal model, as well as a metaphorical one. Zoologists collected specimens in the field, separating them from their natural context or environment and assigning them a place in an abstract order within the museum. While examining many specimens before writing an official species description for publication, a single type specimen was nominated as a reference. All specimens

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[29] Rouse, 'Ethnology, Ethnobiography and Institution', 1996: 1–9.
[30] Urry, 'From Zoology to Ethnology', 1993: 78–79. Both Stocking and Kuklick concur with this view of Haddon's importance. Stocking, Jr., George W. 'The Ethnographer's Magic: Fieldwork in British Anthropology from Tylor to Malinowski'. In *Observers Observed: Essays on Ethnographic Fieldwork*, edited by George W. Stocking, Jr. History of Anthropology 1. Madison, Wisconsin: The University of Wisconsin Press, 1983: 70–120; 80–85. Stocking, Jr., George W. *After Tylor: British Social Anthropology 1888-1951*. London: Athlone, 1996: 114–15. Kuklick, Henrika. *The Savage Within: The Social History of British Anthropology, 1885-1945*. Cambridge University Press, 1991: 133–42. Kuklick, Henrika. 'Islands in the Pacific: Darwinian Biogeography and British Anthropology'. *American Ethnologist* 23 (3), 1996: 611–38.

were housed in the museum, where they were publicly available for examination by other scholars. The museum was where research was carried out and could be verified, it was where knowledge was stored and built upon. In 1897 Haddon wrote how the serious researcher seeking to 'advance knowledge', formerly 'satisfied if they could see one or two specimens' of plants or animals or anthropological artefacts, have 'learnt it is necessary to have long series':

> The old order belonged to the period when the fixity of species was an article of faith. To-day the naturalist is more interested in varieties and intermediate forms. Formerly the naturalist delighted in clearly cut classifications; now he revels in tracing the infinite gradations of nature and in endeavouring to learn their significance. The same applies to the anthropologist; those, for example, who study the decorative art of savage peoples or of pre-historic times have to … get a sufficiently long series to enable them to trace the origin and distribution of certain designs.[31]

As Urry describes, Haddon 'aimed to collect as much information and as many material objects as possible.' He treated textual records of things encountered in the field (events and practices) in a similar way to material objects, as 'facts' to be collected: 'separated from their context and the flow of native life and arranged in logical patterns like so many specimens: pressed down, dried out or bottled in formalin.'[32] Correctly classified and organised, this information could be stored away, preserved for future reference, just like zoological specimens. This was deemed a largely practical task, devoid of theoretical complications. These facts (text and objects) as 'specimens' were seen as pieces of pure knowledge, which could be used to address varied theoretical questions.

> The aim was to build up an ethnographic storehouse of both artefacts and ethnographic description. Through the process of collecting, classification, storage and publication the essential 'wholeness' of other cultures could be preserved and 'fixed' for future reference.[33]

Haddon did not treat objects as self-explanatory, and evidentiary in themselves, however—as in the logic of Pit Rivers' evolutionary typological sequences. On his

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[31] Haddon, Alfred C. 'Professor Flinders Petrie's Scheme of an Ethnological Store-House'. *Science* 6 (146), 1897: 565–67; 566.
[32] Urry, James. '"Facts" to Argument. Structure and Function in the History of Ethnographic Writing in the British Tradition, 1890–1940.' In *Before Social Anthropology: Essays on the History of British Anthropology*. Harwood Academic Publishers, 1993: 41–60; 47.
[33] Urry, '"Facts" to Argument,' 1993: 47.

first expedition to the Torres Strait, in just the second week of his stay, after visiting some of the western islands, Haddon considered he had already a valuable collection of material culture objects. He wrote: 'But I value the information I have gathered concerning the things as being of more value. There is no merit in mere collecting.' As with his biological specimens Haddon recorded the date and location of collection, and further sought to document the objects by recording what they meant to the people themselves. On this occasion he returned to his base on Thursday Island with Maino, 'the chief of Too-ta [Warrior Island]' in tow: 'keeping him for a day or two in order that I may learn the names & uses of the various specimens I have collected & gain some knowledge of the habits of the people.'[34] As Rouse notes, this approach to finding out the meaning, use and value of objects from the perspective of native 'informants', was influential in the development of fieldwork as an anthropological methodology.[35]

A 'systematic approach' to collecting, and 'filling-in the map'

Again, drawing from the model of the biological sciences, Haddon took a 'systematic approach' to collecting in the field. In organising his 1885 expedition to report on the marine fauna of the south-west of Ireland, with the aim of providing descriptions of 'all known living species of the region', he allocated individuals different responsibilities:

> Joseph Wright (Forminfera), Dr. Malcomson (Ostracoda & Copepoda) & Jos. Marsh (not a naturalist, but who may be of use financially) will join solely for the deeper water … All from Belfast. The Dublin contingent will consist of H. W. Jacob … a pleasant quiet man who will take the remaining Crustacea) G. Y. Dixon (a young barrister … very fond of marine zoology, who will pay especial attention to the Actiniae) and myself—(Medusae, Siphonophora, Ctenophora, etc. Vermes, etc.)[36]

Following this same procedure in organising the Cambridge Anthropological Expedition to the Torres Strait in 1898, he distributed the responsibility for the collection of data—by corollary a description of all known living 'species' of

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[34] Haddon, Alfred C. 'Journal': 24. Envelope 1029. Haddon Papers. Cambridge University Library. Quoted in Rouse, 'Ethnology, Ethnobiography and Institution', 1996: 68–9. Maino is recorded here as the Chief of Tudu (Warrior Island). In 1914 Haddon met Maino again on Iama (Yam Island), also in the Central group. Haddon, Kathleen. 'An English Girl in New Guinea', unpublished typescript, n.d.: 4–10. Box 322 OA2/16/18. University of Cambridge Museum of Archaeology and Anthropology Archive.
[35] Rouse, 'Ethnology, Ethnobiography and Institution', 1996: 65.
[36] Haddon, Alfred C. to D'arcy Wentworth Thompson, 10 July 1885. St. Andrews University Library. Quoted in Rouse, 'Ethnology, Ethnobiography and Institution', 1996: 49–50.

ethnographic fact found in the region—through convening a multi-disciplinary team.[37] As Urry says, the reports of the Cambridge Expedition, as 'a multi-volume ethnography' were similar in format and style to the reports of natural science expeditions. Individual experts 'wrote up' their findings as succinctly and as clearly as possible, collectively making 'a comprehensive and hopefully definitive study.'[38]

The model for field research was the survey: facts on all topics were to be collected, and the information was to be as comprehensive and detailed as possible. This blanket approach was deemed 'systematic' in contrast with the random habits of earlier gentlemen collectors and 'incidental' anthropologists (explorers, government officials, missionaries, settlers), whose reports were subject to the vagaries of chance encounter and personal interest. Attention was to be applied consciously and uniformly across all subject areas.

In Haddon's report on his 1888–89 Torres Strait expedition the information he had collected was organised under the categories proposed in *Notes and Queries on Anthropology*, to which he added a further series of topics.[39] Written in 'a very direct and non-analytical style', each item or practice was named and described under the relevant subheading (such as, for example, games and amusements, war, morals)—with no attempt made at synthesis.[40] According to Rouse, Haddon had a 'relentless curiosity and near mania for collecting and categorising data'.[41] His early work on the comparative anatomy of marine organisms had been focused on

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[37] For a list of the Expedition members and their duties see Herle, Anita. 'Objects, Agency and Museums: Continuing Dialogues between Torres Strait and Cambridge'. In *Pacific Art. Persistence, Change and Meaning*, edited by Anita Herle, Nick Stanley, Karen Stevenson, and Robert L. Welsch, Honolulu: University of Hawaii Press, 2002: 231–49; 233.
[38] Urry, '"Facts" to Argument,' 1993: 47–48.
[39] *Notes and Queries on Anthropology* was a fieldwork guide published by the British Association for the Advancement of Science. Its purpose was 'to promote accurate anthropological observation on the part of travellers, and to enable those who are not anthropologists themselves to supply the information which is wanted for the scientific study of anthropology at home.' The first edition published in 1874, which Haddon would have referred to on this occasion, was authored under the direction of a committee that included Pitt Rivers, Tylor, Galton, Lubbock and Bedoe. A Committee of Section H, British Association for the Advancement of Science. *Notes and Queries on Anthropology*. 5th ed. London: The Royal Anthropological Institute, 1929: vii–ix. Sillitoe, Paul. 'The Role of Section H at the British Association for the Advancement of Science in the History of Anthropology.' *Durham Anthropology Journal* 13 (2), 2005: 1–17 (PDF version); 2–3.
[40] Rouse, 'Ethnology, Ethnobiography and Institution', 1996: 82–83, 82 n. 50; 60. As Rouse notes, on the trip Haddon did not have a copy of *Notes and Queries* with him, but only a 'questionnaire for travellers' given to him by Frazer and a set of questions Westermarck had asked him to follow up.
[41] Rouse, 'Ethnology, Ethnobiography and Institution', 1996: 63.

refining the taxonomic system, as he believed their study could not be advanced until there was a sound system of classification in place.[42]

Sitting alongside the 'blanket approach', 'systematic' research had another meaning for Haddon: relating to the systematic conceptual organisation of information. In this formulation (more recognisable to us as belonging to 'scientific method') a 'fact' is constituted in dialectical relation with a classificatory ordering system—its position in the system being what imbues that 'fact' with substance and meaning. The gathering of facts is part of the scientific process of building the classification system into which those facts are ordered, which in turn determines what further facts, and in particular what sort of facts, need to be gathered (in a cyclical fashion).

First published in 1874, *Notes and Queries on Anthropology* underwent five major revisions. (New editions were published in 1892, 1899, 1912, 1929 and 1951.) The changes made 'to the scientific scheme of classification' in the handbook over the six editions were so extensive, that as Paul Sillitoe states, 'the first bears little resemblance to the last'.[43] Haddon himself was Chairman of the General Committee that worked on the fifth edition, published in 1929. In the 'Preface' it stated: 'As far as possible theoretical matters have been avoided … The immediate duty of an observer is to observe, and the mingling of theories with ascertained facts should be rigorously avoided.'[44] For Haddon, as Urry writes, 'careful observation and the sorting out of basic "facts" into ordered systems took priority over the expression of grand theories.'[45] The 'systematic approach' was seen as a scientific methodology. After publication of 'The Ethnography of the Western Tribe of Torres Straits' in 1890, James G. Frazer wrote to congratulate Haddon on 'the splendid results' of his research:

> This paper, with your paper in 'Folk-lore', form a most valuable contribution to anthropology. Indeed they are priceless, since the information they contain, if it had not been collected by you would probably have entirely perished … Work like yours will be remembered with gratitude long after

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[42] Fleure, H. J. 'Alfred Cort Haddon 1855–1940'. *Obituary Notices of Fellows of the Royal Society* 3 (9), 1941: 448–65; 451.
[43] *Notes and Queries on Anthropology*, 5th ed., 1929: vii. Sillitoe, 'The Role of Section H', 2005: 3.
[44] *Notes and Queries on Anthropology*, 5th ed., 1929: viii–ix.
[45] Urry, 'From Zoology to Ethnology', 1993: 63.

> the theories of the present day (mine included) are forgotten or remembered only to be despised as obsolete and inadequate.[46]

As opposed to the global scale of theoretical 'armchair' narratives, the nature of 'practical' field research meant that it was necessarily a circumscribed (regionally scaled or smaller) project. It became part of a larger whole through aggregation. The limited areal survey was one part of the bigger overall project: to fill the ethnographic map—'like some giant ethnological jigsaw … full of missing pieces due to lack of evidence.'[47] Stocking has written about how after the Torres Strait expedition, the focus of Haddon's thinking narrowed in scale. Advocating for continued research in Melanesia, he called for both 'extensive surveys' of the region as 'a fairly well-marked biological province', to be complemented by 'intensive studies of restricted areas'—which, as Stocking argues became the 'emblematic slogan' for the next generation of anthropologists who entered the field as lone researchers.[48]

Haddon's method in the manner of the natural scientist was empirical and inductive. Analysis, interpretation, and any generalisations that might build into theory—through correlation and comparison of data—were built upon the particular. Questions of the geographical distribution of culture were obvious to the natural historian accustomed to plotting the geographical distribution of species, as questions of development over time were second nature to the evolutionary biologist. Haddon, like the majority of his generation, was an evolutionist—but as Urry explains it, the assumption of evolution was an overall generalisation, whereas Haddon was interested in the particular:

> Many contemporary anthropologists were interested in origins and the stages of evolution, but Haddon was more concerned with the processes of evolution. … Rather than constructing grand evolutionary models, Haddon became increasingly concerned with explaining localised variations. … For

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[46] Frazer, James G. to Alfred C. Haddon, 18 July 1890. Envelope 3. Haddon Papers. Cambridge University Library. Quoted in Roldan, Arturo Alvarez. 'Looking at Anthropology from a Biological Point of View: A. C. Haddon's Metaphors on Anthropology'. *History of the Human Sciences* 5 (4), 1992: 21–32; 22. This is very similar to comments Frazer made in a letter to Spencer (13 July 1898). See Morphy, Howard. 'The Original Australians and the Evolution of Anthropology'. In *Australia in Oxford*, edited by Howard Morphy and Elizabeth Edwards. Oxford: Pitt Rivers Museum, University of Oxford, 1988: 48–61; 60.
[47] Urry, '"Facts" to Argument,' 1993: 48.
[48] Stocking, *After Tylor*, 1996: 114–15.

> Haddon this entailed utilising the facts to examine how cultures, like natural organisms, had adapted to local conditions.[49]

In his later work looking at the development of cultures in Melanesia, Haddon considered a variety of factors: the environmental influences of geography, tradition and adaptation, and historical change through contact and migration of peoples.[50] At the scale that Haddon worked, despite his acceptance of the larger evolutionary frame, his concern with tracing development over time and through space, as Morphy and Perkins have argued, 'was connected to the general problematics of art history'—the development of the culture of different groups of people, and the relationships between them.[51]

Anthropological succession and the Museum Tradition in Britain

In A New History of Anthropology published in 2008, Henrika Kuklick outlines a generally agreed upon succession of schools of thought in 'The British Tradition': 19th century evolutionism was replaced by diffusionism, which in turn was replaced by functionalism. She nominates Grafton Elliot Smith and W. J. Perry as the leaders of the diffusionist school (the height of its influence being 1910–25). While acknowledging that their 'extreme' out-of-Egypt beliefs had few 'fervent adherents', she nevertheless installs them as representative ciphers of this movement of ideas or interests. Two events, which were celebrated at the time, are given as markers of epochal change in the story of this hereditary lineage. The first was W. H. R. Rivers' announcement of his 'conversion' from evolutionism to diffusionism in his presidential address to Section H of the British Association for the Advancement of Science in 1911. At the other end of the line of succession was the public debate between Elliot Smith (representing the incumbent diffusionism) and Malinowski (representing functionalism as the new pretender) 'over the relative merits' of each approach.[52] Kuklick uses Haddon and Rivers as examples of

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[49] Urry, 'From Zoology to Ethnology', 1993: 78–79. Urry, '"Facts" to Argument', 1993: 48.
[50] Urry, '"Facts" to Argument', 1993: 48. Kuklick, 'The British Tradition', 2008: 68.
[51] Morphy, Howard, and Morgan Perkins. 'The Anthropology of Art: A Reflection on Its History and Contemporary Practice'. In *The Anthropology of Art: A Reader*, edited by Howard Morphy and Morgan Perkins. Blackwell Publishing, 2006: 1–32; 5.
[52] As Stocking has pointed out: 'At the time British anthropology was excited by the confrontation'. Stocking Jr., George W. 'Paradigmatic Traditions in the History of Anthropology'. In *Companion to the History of Modern Science*, edited by Robert C. Olby, et al. London and New York: Routledge, 1990: 712–27; 721.

leading anthropologists who shared Smith and Perry's 'fundamental concern' with migration and other forms of culture contact, while at the same time distancing them from the latter's extreme position: Haddon did not identify himself as a diffusionist, and while Rivers did, his diffusionism was 'nuanced'. 'In fact', Kuklick writes, 'River's argument resembled Haddon's: a diffusionist model explained variation obtaining within an area.'[53]

Other sources, notably Glyn Daniel, critical of the excesses or extravagance of the 'extremist school of militant diffusionists', has termed Elliot Smith's conviction that 'civilisation had been invented once and once only, and that was in the valley of the Nile', from where it spread, as 'hyperdiffusionism'.[54] There is merit in the use of this nomenclature to differentiate the 'grand theory' or schema of Smith and Perry from ordinary or garden variety diffusionism: more moderate, and more sensible according to Daniel, and most importantly more common or widespread, as an understanding informing research practice. Haddon, for example, critical of theorising from too little data, found Elliot Smith's more extreme claims 'offensive'.[55]

In his writing Stocking has used contesting 'paradigms' to structure his analysis. He positions Radcliffe-Brown's functionalism as a major reorientation, introducing a synchronic paradigm into anthropological enquiry for the first time. He contrasts this with the alternating dominance up to 1900 of two separate and distinct diachronic paradigms, which in different ways both looked at processes of change through time: a progressive developmental paradigm which, in the latter half of the nineteenth century, took the form of 'classical evolutionism', and a migrational or diffusionary paradigm, which he associates with the 'ethnological tradition' of

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[53] Kuklick, 'The British Tradition', 2008: 68–70. This chapter is based on her earlier longer study *The Savage Within* (1991).
[54] Daniel, Glyn. *A Short History of Archaeology*. London: Thames and Hudson, 1981: 113–15. See also Trigger, Bruce. *Time and Traditions: Essays in Archaeological Interpretation*. Edinburgh: Edinburgh University Press, 1978: 66, 135.
[55] Kuklick, 'The British Tradition', 2008: 69. In mummified bodies from the Torres Strait that Elliot Smith examined at the Macleay Museum in Sydney in 1914 he found evidence for the spread of 'heliolithic' Egyptian culture eastward. Up to this point—as in his book of 1911 *The Ancient Egyptians and Their Influence on the Civilization of Europe*—he had identified its spread westward only. See Elkin, A. P. 'Elliot Smith and the Diffusion of Culture'. In *Grafton Elliot Smith: The Man and His Work*, edited by A. P. Elkin and N. W. G. Macintosh. Sydney: Sydney University Press, 1974: 139–59; 139–45.

the early nineteenth century, and which reasserted itself in the diffusionist thinking of the early twentieth century.[56]

In his influential 1990 article ‘Paradigmatic Traditions in the History of Anthropology’ Stocking traces the migrational or diffusionary paradigm—a ‘characteristically degenerative’ story—to biblical tradition: humankind from a single point of origin (in space, time and number), differentiating through the ‘confusion’ of language, geographical separation and spread, over the course of a specific historical (biblical) past. In contrast the evolutionist developmental paradigm he traces to sources in Graeco-Roman tradition: ‘rather than losing divinely given knowledge as they moved through space in time, human groups acquired knowledge gradually … step by step’.[57]

Both diffusionary and evolutionist hypotheses were aligned with the presumption of man’s monogenesis, or single origin. And ‘both paradigms compared forms coexisting in the present in order to reconstruct the past.’[58] While human differentiation was a straightforward corollary of diffusion (the result of different environmental and historical circumstances acting on the same ‘human clay’), evolutionists explained current human variety and diversity as the results of differential rates of development along the same evolutionary path (a theory known as ‘unilineal evolutionism’). By the same token, similarities in the attributes of populations separated in space and time were guaranteed ‘independent inventions’ by the presumption of the ‘psychic unity’ of mankind: the logic being

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[56] Stocking, Jr., George W. ‘Radcliffe-Brown and British Social Anthropology’. In *Functionalism Historicized: Essays on British Social Anthropology*, edited by George W. Stocking, Jr. Madison, Wisconsin and London: University of Wisconsin Press, 1984: 131–91; 135–38. Stocking acknowledges that his use of the term ‘paradigm’ ‘departs significantly’ from the original use of the term by historian of science Thomas Kuhn. In my understanding Kuhn uses the term to describe successive and incommensurate ‘revolutions’ in ways of thinking about a problem or a field. Stocking described his meaning of ‘paradigm’ here as ‘a nicely resonant term for recurrent alternative frameworks of anthropological speculation’. In 1990 he revised this definition in more forceful terms: ‘paradigmatic in the sense of providing a more or less coherent a priori framework of assumption defining both relevant problems and the data and methods for their solution.’ See Stocking, ‘Paradigmatic Traditions in the History of Anthropology’, 1990: 714.

[57] Stocking, ‘Paradigmatic Traditions in the History of Anthropology’, 1990: 713–15.

[58] Stocking, ‘Radcliffe-Brown and British Social Anthropology’, 1984: 136.

that 'presented with a given set of circumstances, any population would respond similarly'.[59]

However, Stocking acknowledges slippage between the two frameworks in the practice of certain individuals, as does Kuklick in her description of Rivers' 'nuanced' diffusionism. In an earlier paper of 1974 Stocking outlined concerns with a hard and fast separation of evolutionary and diffusionist thought. He discusses the work of American historians Goldenweiser and Lowie who, while responsible for defining the orientation of 'old school' or 'classical' unilineal evolutionism, nevertheless allowed exponents individual variance. He quotes Goldenweiser's concession that 'in his better moments, the evolutionist was, of course, aware of the presence of cultural diffusion'.[60] As Lowie identified, even in the late nineteenth century when they were supposedly at loggerheads, there were times when and places where, 'evolution … lay down amicably beside diffusion'.[61]

Evolutionism and diffusionism are not fundamentally antithetical or mutually exclusive. And neither of these two 'paradigms' is inherently incompatible with the synchronic functionalism of social anthropology, either. The historian Marvin Harris maintains that the opposition of evolutionary and diffusionist thought is a false antinomy, both logically and as a reading of the historical facts. The idea that evolutionists denied the importance of diffusion was, he argues, a 'myth' constructed by diffusionists from the British School and the American followers of Boas (like Goldenweiser and Lowie). E. B. Tylor, Britain's most eminent evolutionist, accepted diffusion through borrowing and migration, both as an abstract principle and with regard to special cases, notwithstanding his basic belief that mankind progressed in uniform evolutionary stages.[62] Haddon, for example, credited Tylor, in a lecture he gave in 1879 'On the Geographical Distribution of Games', with initiating the idea that string figures could, through the application of

[59] Stocking, 'Paradigmatic Traditions in the History of Anthropology', 1990: 713–15.
[60] Stocking, Jr., George W. 'Some Problems in the Understanding of Nineteenth Century Cultural Evolutionism'. In *Readings in the History of Anthropology*, edited by Regna Darnell. New York, Evanston, San Francisco, London: Harper & Row, 1974: 407–25; 409.
[61] Daniel, *A Short History of Archaeology*, 1981: 114.
[62] Harris, Marvin. *The Rise of Anthropological Theory: A History of Theories of Culture*. London: Routledge and Kegan Paul, 1969: 173–76.

the comparative method, be used to track culture contact.[63] As Kuklick notes, Tylor was responsible for the axiom: 'the more sophisticated an innovation, the greater likelihood it originated in diffusion.'[64] In this lecture Tylor argued that games 'peculiar or complex enough to bar the supposition of their having sprung up independently', could be used as 'proofs of connection'. Notably, Tylor postulated a migration pattern for 'string games' from a centre of origin in South-East Asia 'westward into Europe, and eastward and southward through Polynesia and into Australia'.[65]

The role and significance of the Museum Tradition in anthropology is obscured by the emphasis on lines of succession and paradigmatic divisions based on differences in theoretical orientation—the 'grand theory' that structures the dominant narratives in histories of the discipline. The Museum Tradition can be seen to continue along with, inflected but not fundamentally altered by, the reorientations of successive theoretical models during this period, from evolutionist to diffusionist and including the transition to social anthropology in Britain and its American 'cultural anthropology' equivalent. For example, fieldworkers sent out as part of the Australian National Research Council (ANRC) program administered by Radcliffe-Brown in the 1920s and through the 1930s continued to collect material culture artefacts. Even if this was a programmatic activity—'part of the comprehensiveness of the functionalist approach' as suggested by Nicolas Peterson et al.—some, like Ursula McConnell and the Berndts, saw it as an important part of their work.[66] While focused on cultural and social behaviour, an interest in material culture was originally contained within the holistic approach of ethnographically-oriented 'classical' participant observation fieldwork methodology. It is notable that many of the major figures in the British

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[63] Haddon, A. C. 'Introduction.' In Jayne, Caroline Furness. *String Figures and How to Make Them*. Reprint edition. (First published as *String Figures. A Study of Cat's-Cradle in Many Lands*. New York: Charles Scribner's Sons, 1906). New York: Dover, 1962: xi–xxiii; xx.

[64] Kuklick, 'The British Tradition', 2008: 55.

[65] Tylor, Edward. B. 'Remarks on the Geographical Distribution of Games'. (Paper delivered at the Royal Institution, 14 March 1879.) *Journal of the Anthropological Institute of Great Britain and Ireland* 9, 1880: 23–30; 24, 26. Cat's cradles had been reported in Borneo by Alfred Wallace in 1869.

[66] Peterson, Nicolas, Lindy Allen, and Louise Hamby. 'Introduction'. In *The Makers and Making of Indigenous Australian Museum Collections*, edited by Nicholas Peterson, Lindy Allen, and Louise Hamby. Carlton, Vic.: Melbourne University Press, 2008: 11.

School collected string figures as part of their initial fieldwork experience: Radcliffe-Brown himself, Raymond Firth, and Evans-Pritchard.

The Museum Tradition in North America

The purpose of Regna Darnell's writing on American anthropology has been to 'attend to the continuities' rather than repeat the well-known ruptures of theoretical revolutions and paradigmatic shifts, which have 'precluded the telling of other stories' in the construction of its history.[67] She has, in particular, brought a focus to continuities between the methodological practices of the evolutionist-inspired American Bureau of Ethnology and the Boasian 'culture history' school of anthropologists. Aside from the theoretical disputation between the two parties, Darnell argues, they both maintained a similar foundational regard for detailed empirical data, assiduously collected, rigorously documented, accumulated and aggregated, sorted and stored: the same set of principles that characterised the development of the Museum Tradition in Britain as I have outlined.[68]

A clear statement of the terms of Boas' argument with the evolutionist paradigm is found in an exchange with Otis T. Mason, of the United States National Museum (Smithsonian Institution) in *Science* in 1887.[69] The overt subject of their dispute was the arrangement of museum displays: against Mason's arrangement of objects in typological series based on form/function, Boas prosecuted the argument for display according to tribal groupings. Mason saw the argument as being one of degree—the 'degree of prominence' given in any arrangement to a set of generally recognised 'classific concepts', that included 'geographic area and environment', and historical 'evolution or elaboration'. For Boas it was more fundamental. At

[67] For example see Darnell, Regna. *And Along Came Boas: Continuity and Revolution in Americanist Anthropology*. Amsterdam and Philadelphia: John Benjamins Publishing Company, 1998. Darnell, Regna. *Invisible Genealogies: A History of Americanist Anthropology*. Lincoln & London: University of Nebraska Press, 2001.
[68] Darnell, *And Along Came Boas*, 1998: 'Preface', xi-xii.
[69] Boas, Franz. 'The Occurrence of Similar Inventions in Areas Widely Apart'. *Science* 9 (224), 1887: 485–86. Mason, O. T. 'The Occurrence of Similar Inventions in Areas Widely Apart'. *Science* 9 (226), 1887: 534–35. Boas, Franz. 'Museums of Ethnology and Their Classification'. *Science* 9 (228), 1887: 587–89. For a discussion of this episode see Hinsley, Curtis M. *The Smithsonian and the American Indian: Making a Moral Anthropology in Victorian America*. Washington, D.C. and London: Smithsonian Institution Press, 1981: 98–100.

issue was the question of how best to understand ethnographic or anthropological phenomena, and therefore the method by which they should be categorised.

Boas maintained that the only way to understand the meaning of any individual phenomenon was in the context of the culture to which it belonged, treated as a whole. He criticised Mason's equation of affinity between objects with likenesses of their outer form. Opposing the axiom 'like causes produce like effects' (the rationale for the doctrine of independent invention), he countered that 'unlike causes can produce like effects'. Boas maintained that the significance of any phenomenon was culturally relative: 'the outward appearance of two phenomena may be identical, yet their immanent qualities may be altogether different.' Boas' innovation was to treat cultures as organic wholes, with their own internal systems of meaning, or realities. For him the important lesson of ethnological collections was confirmation of 'the fact … that our ideas and conceptions are true only so far as our civilisation goes'. He condemned Mason's evolutionist classificatory system—based on analogy with nature (dividing phenomena into 'family, genera, species') and argued through implication (fitting facts into an *a priori* schema)—as a product of our own culture, unrelated to the phenomena it was meant to explain.

Boas maintained that intensive investigations of specific culture histories enquiring into the mechanisms of 'transmission, adaptation and invention' had to precede conclusions about general laws of cultural development.[70] Against the determinism of unilinear evolutionary sequences, the emphasis of much early work of the Boasian school was on documenting the existence of diffusion.[71] Giving rise to the phrase Boasian 'historical particularism', the methodology Boas promoted involved detailed empirical data gathering including historical accounts privileging 'the native point of view'. As Darnell and others have argued, in pursuing their agenda Boas and his followers did not spurn the work of their predecessors, but rather continued the ethnological mapping of Native American cultures begun through the collaborative research program of the Bureau of

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[70] Boas, Franz. *A Lecture Delivered at Columbia University in the Series on Science, Philosophy and Art*. New York: Columbia University Press, 1908: 24. Quoted in Darnell, *And Along Came Boas*, 1998: 278.
[71] Darnell, *And Along Came Boas*, 1998: 286.

American Ethnology under John Wesley Powell.[72] Darnell writes that Boas built on this methodology: 'the fieldwork, the mapping exercises, the increasingly rigorous standards for research and reporting'.[73] According to Marvin Harris the Boasian 'culture area' concept—that identified common features among different groups of people as a 'culture complex' related to geographically bounded environmental conditions—grew directly from this earlier work.[74] As Kroeber wrote, the culture area concept was 'a community product of nearly the whole school of American anthropologists'.[75]

The Boasian approach to fieldwork dictated the 'careful and slow detailed study of local phenomena' and involved investigation across many fields to understand a culture as a whole—from 'the biological geographical and psychological points of view'—resulting in specialised descriptive ethnologies.[76] Boas trained his followers to collect detailed information about material culture, language, and social behaviour. Darnell argues there was a positive, 'avoidance of broad scale theoretical synthesis in favour of describing the clear subject matter of anthropology.'[77] As Marvin Harris sees it, generalisations were difficult to harness due to Boas' 'sense of inductive purity'. Lots of facts were produced—he describes 'the precise quality of Boas' devotion to facts' as 'unprecedented'—but conclusions of a generalising kind always required more: the filling in of the still remaining blank spaces on the ethnological map.[78] The collection of material culture artefacts

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[72] See Chapter VI: 'Toward an Anthropological Survey: The Early Years of the BAE, 1879–1893', in Hinsley, *The Smithsonian and the American Indian*, 1981: 145–89. Isaac and Bell support this point of view. They suggest that the inability of the Smithsonian to confer academic degrees, has meant that its role in the development of American anthropology (through the work of the BAE and the National Museum) 'has often been ignored'. Isaac, Gwyneira and Bell, Joshua A. 'Smithsonian Institution'. In *Theory in Social and Cultural Anthropology*, edited by R. J. McGee and R. L. Warms. London: Sage, 2013: 781–85.

[73] Darnell, *And Along Came Boas*, 1998: 48. See also Mark, Joan. *Four Anthropologists: An American Science in Its Early Years*. New York: Science History Publications, 1980: 48.

[74] Harris, *The Rise of Anthropological Theory*, 1969: 374.

[75] Kroeber, Alfred. 'The Culture-area and Age-area Concepts of Clark Wissler'. In *Methods in Social Science*, edited by S. Rice. Chicago: Chicago University Press, 1931: 248–65; 250. Quoted in Harris, *The Rise of Anthropological Theory*, 1969: 374.

[76] Boas, Franz. 'The History of Anthropology'. *Science* 17, 1904: 513–24; 516. Quoted in Darnell, *And Along Came Boas*, 1998: 278. Boas, *A Lecture Delivered at Columbia University*, 1908: 5, 8. Quoted in Darnell, *And Along Came Boas*, 1998: 275.

[77] Darnell, *And Along Came Boas*, 1998: 276. See Chapter 14 'Articulating the Boasian Paradigm', 271–97; 273–79.

[78] Harris, *The Rise of Anthropological Theory*, 1969: 250, 257. See Chapter 9 'Historical Particularism: Boas', 250–89; 250–58.

was central to the Boasian project, and art in particular was of great personal interest to Boas himself. Boas shared Haddon's conception of the museum as storehouse: 'the only means of bringing together and of preserving intact large series of material which for all time to come must form the basis of scientific inductions'.[79]

Conclusion

Museums played a central role in the process of professionalisation of the discipline of anthropology in North America, as in Britain, and in other European centres also. Professional structures in Britain and America were mirrored in Europe, and with some distinctive differences ideas cross-pollinated between European, British and American centres.[80] In this chapter I have limited my discussion to the trans-Atlantic context, and honed my focus in upon the figures of Haddon and Boas in order to provide a clear outline of the constitutive components of the 'Museum Tradition' that influenced McCarthy: the museum as 'storehouse', a systematic approach to collecting and filling in the map.

In the 1920s, continuing through into the 1930s in the American case, as Collier and Tschopik write:

> Museums … were the centers of anthropological teaching; or rather, museum curators formed the core of university teaching staffs. The major university departments drew heavily on the staffs of their anthropological museums or established a working relation with a nearby large museum. Most of the important teachers were museum men or former museum men: Putnum, Boas, Kroeber, Lowie, Wissler, Starr, Sullivan, Dixon, Hrdlicka, to name but a few.[81]

And their students, as 'professionally trained' anthropologists, began to occupy 'the curatorial positions in museums, that were formally held by interested amateurs'.[82] As I discuss in the next chapter, the process of professionalization in

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[79] Boas, Franz. 'Some Principles of Museum Administration'. *Science* 25 (650), 1907: 921–33; 929. Quoted in Jacknis, 'Franz Boas and Exhibits', 1985: 88.
[80] Other major colonial powers such as Germany and France were certainly as active in collecting the world at this time. Penny, H. Glenn. *Objects of Culture: Ethnology and Ethnographic Museums in Imperial Germany*. Chapel Hill: University of North Carolina Press, 2002. Conklin, Alice L. *In the Museum of Man: Race, Anthropology, and Empire in France, 1850–1950.* Ithaca, New York: Cornell University Press, 2013.
[81] Collier and Tschopik, 'The Role of Museums in American Anthropology', 1954: 771.
[82] Collier and Tschopik, 'The Role of Museums in American Anthropology', 1954: 769.

Australia largely leap-frogged over this phase. McCarthy, as a museum-based professional, one among very few, constituted a survival from another place at another time.

In both Britain and North America the central role of the museum began to wane with the development and growing influence of social anthropology.[83] As Collier and Tschopik wrote in 1954:

> Most social and cultural anthropologists have become less and less concerned with historical problems and descriptive ethnography, and have, generally speaking, lost interest in material culture and technology.[84]

The Museum Tradition persisted, but it became marginal to the mainstream of anthropological endeavour. The large-scale questions about the origin and development of culture that it had addressed were deemed no longer relevant. The study of material culture gave way to the textual analysis of 'social facts'. A diachronic framework gave way to synchronic analysis. The stuff of contemporary disputation took the limelight. The museum was left behind. The universities began to stand alone.

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[83] For an analysis of this period see Stocking, George W. Jnr. 'Philanthropoids and Vanishing Cultures: Rockefeller Funding and the End of the Museum Era in Anglo-American Anthropology.' In Stocking ed. *Objects and Others*, 1985: 112–45.
[84] Collier and Tschopik, 'The Role of Museums in American Anthropology', 1954: 772–73.

Chapter 2
Frederick D. McCarthy and a job at the Australian Museum

Introduction

The process of the professionalisation of anthropology was delayed in Australia. Training in the discipline only became available after the establishment of the University of Sydney Chair in 1926. Its first incumbent, Alfred Radcliffe-Brown, was a key exponent of British Functionalism. The early partnership between the museum and the university that had nurtured the development of anthropology in the Anglophone centres did not develop here. The establishment of anthropology as a professional pursuit coincided with the rise of social anthropology as a new paradigm in which the study of material culture no longer had a central role. By the time McCarthy undertook his training in the early–mid-1930s, the field of material culture 'had become a secondary, inferior and peripheral study,' isolating the practice of museum anthropology.[1]

In this chapter I chronicle the early phases of McCarthy's career, and look at the development of his professional practice from 1935 up until the Arnhem Land Expedition in 1948. In Australia during the 1930s and 1940s, a fissure developed between the museum and the university mirroring a distinction, made with increasing force during the period, between 'amateurs' and 'professionals'. The politics of this disciplinary fissure is important to understanding the context in which McCarthy matured as an anthropologist, and the circumstances of the Arnhem Land Expedition.

A job at the Australian Museum

In March 1920, at age 14, Frederick (Fred) McCarthy (1905–97) began work as a junior clerk or assistant in the Library at the Australian Museum.[2] From that point

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[1] McCarthy, Frederick D. 'Anthropology in the Museums of Australia'. In *Anthropology in Australia: Essays to Honour 50 Years of Mankind*, edited by Grant McCall. Sydney: Anthropological Society of New South Wales, 1982: 22–46; 27.

[2] The facts of McCarthy's life story are based on biographical accounts given in articles by Khan (1993), Mulvaney (1993), Attenbrow and Khan (1994), Attenbrow (2008), McCarthy's own account (1984) and obituaries written by Mulvaney (1997) and Mcbryde (1998). In these, some details are at variance. I have, where possible, used archival sources to confirm dates and the sequence of events.

his formal education continued in parallel to a working life that inspired, shaped and facilitated its progress. While working in the Library, McCarthy completed his schooling at night, and went on to study a number of subjects at the University of Sydney part-time.[3] After being at the Museum for ten years, in the latter half of 1930 his time was divided between the Library and working in the Department of Birds and Reptiles. As noted by Kate Khan, this experience added 'the skills of taxonomy to those of cataloguing he had learned in the Library'. 'This fundamental training in organising information', as she says, 'remained with him throughout his career'.[4] In 1932 his development, in both the professional and academic spheres, shifted into alignment. He enrolled in a Diploma of Anthropology at Sydney University, and in March that year he was appointed to the Department of Ethnology at the Museum as assistant to the curator W. W. (William Walford) Thorpe (1879–1932).[5] On his appointment, McCarthy was made a 'Scientific Cadet', the beginning level of a professional career path following an apprenticeship model.[6] His apprenticeship was, however, short-lived. Already ailing at the time of McCarthy's appointment, Thorpe took sick leave from the middle of June, and died at the beginning of September.[7] In early 1933 Elsie Bramell, an anthropology graduate from Sydney University was appointed to replace Thorpe and work alongside McCarthy in the department.[8] Nominally working under the supervision of the Museum Director, McCarthy was proud of

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[3] Student Record Card for Frederick D. McCarthy. G3/210. University of Sydney Archives. In 1928 and 1929 respectively he completed first year courses in Zoology and Geology. During 1931 McCarthy completed the first year of the Diploma of Public Administration, comprising subjects in Economics and Commercial and Industrial Law.

[4] Khan, Kate. 'Frederick David McCarthy: An Appreciation'. *Records of the Australian Museum* Supplement 17, 1993: 1–5; 1. Khan says McCarthy worked in the Department of Birds and Reptiles for 18 months, meaning that he would have started about October of 1930. As McCarthy remembers it, while he started in the Department of Birds and Reptiles on a half-time basis, his commitment increased until 'finally I became its full-time assistant.' McCarthy, Frederick D. 'A Coat of Paint'. *Australian Aboriginal Studies* (2), 1984: 72–81; 72.

[5] McCarthy, 'A Coat of Paint', 1984: 72. Student Record Card for Frederick D. McCarthy. G3/210. University of Sydney Archives.

[6] Australian Museum Board of Trustees Meeting Minutes (hereafter AMBT), 8 July 1932: 3. On the cadetship system at the Museum, see: Strahan, Ronald. *Rare and Curious Specimens: An Illustrated History of the Australian Museum 1827–1979*. Sydney: The Australian Museum, 1979: 51–54, 70–71.

[7] AMBT, 12 August 1932: 6. Anonymous, 'The Late W. W. Thorpe'. *Mankind* 1 (6), 1932: 133–34; 133.

[8] Then enrolled in an MA in Anthropology, Bramell was a fellow student of McCarthy's, and they later married.

the claim that he and Bramell were the first university-trained anthropologists appointed to a museum in Australia.[9]

The Chair of Anthropology at the University of Sydney had been established under a practical agenda: its primary purpose was to provide training for government administrators and cadets in the Department of Home and Territories working in Papua and New Guinea, and others, like missionaries, working with Indigenous people in Australia and the Pacific. The training of research workers was next in importance, with the needs of the disinterested undergraduate last on the list.[10] When Alfred Radcliffe-Brown (1881–1955) arrived to take up the Professorship in the second semester of 1926, he established a sequence of two courses in anthropology at second- and third-year levels of the undergraduate BA degree, an MA degree and a Diploma.[11] By the time McCarthy enrolled in 1932 Radcliffe-Brown had left, and Raymond Firth (1901–2002) was acting Professor.[12] At the end of that year Firth too moved on and A. P. (Adolphus Peter) Elkin (1891–1979) took over as Lecturer-in-Charge, and at the end of 1933 was appointed to the Chair. The general approach and subject matter covered in Anthropology I and II changed little over the reign of consecutive heads in the bumpy establishment phase of the Department. As Firth wrote in 1932:

> The courses of instruction were comprised chiefly, according to the emphatic wish of all parties interested in the project from the outset, in social anthropology … the principles of social structure with special attention to kinship grouping, law and government among native communities, their economic organization, moral and religious institutions,

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[9] McCarthy, 'Anthropology in the Museums of Australia', 1982: 23–24. At the time of his appointment to the Ethnology Department in 1932, McCarthy had only just begun his studies. Bramell, rather than McCarthy, was in fact the first trained anthropologist to be appointed to a museum position in Australia. She began her Anthropology studies under Radcliffe-Brown in 1930, the third year of her undergraduate degree, and continued with them while undertaking a Diploma of Education in 1931. She was awarded distinctions in both Anthropology I and II. (Bramell's record card in the University Archives has no information recorded. This information was garnered from the annual Sydney University Calendar.)

[10] Dallen, Robert A. *The University of Sydney: Its History and Progress*. 3rd. ed. Sydney: Angus & Robertson, 1938: 29. For the history of the establishment of the Chair of Anthropology at the University of Sydney, see Gray, Geoffrey. *A Cautious Silence: The Politics of Australian Anthropology*. Canberra: Aboriginal Studies Press, 2007: 6–13. Cheater, Christine. 'Argonauts of the Pacific: A Social History of Anglo-Australian Anthropology (1850-1950)'. PhD Thesis, University of New South Wales, 1993: 195–6.

[11] Elkin, A. P. 'Anthropology in Australia: One Chapter'. *Mankind* 5 (6), 1958: 225–42; 232. A qualifying course at Sydney University at this time comprised 90 hours of lectures: three hours of lectures a week delivered over three 10-week terms. Both Anthropology I and II were offered at pass and distinction levels, which allowed for honours and continuation to higher degrees. (Sydney University Calendar.)

[12] Radcliffe-Brown resigned the Chair in 1931. Firth took charge from the middle of that year.

> primarily, of course, with reference to the Australian aborigines and the peoples of New Guinea and the other islands of Oceania.[13]

Anthropology I, which McCarthy took with Firth and Ian Hogbin, consisted of a series of descriptive lectures on the cultures of Oceania. Anthropology II, which he took with Elkin, looked at comparative social, economic, political and religious structures across cultures.[14] While material culture would have undoubtedly been included (particularly in Anthropology I), it was not a focus of attention.[15]

In 1932 McCarthy also joined the Anthropological Society of New South Wales (ASNSW). The Society was formed in 1928 after C. C. (Clifton Cappie) Towle (1891–1946)—one of a group of keen amateur stone implement collectors closely associated with the Australian Museum—returned from a trip to Adelaide where he had attended a meeting of the Anthropological Society of South Australia, and was impressed by the members 'active … search for knowledge concerning the aborigines'.[16] The suggestion to form a similar society in NSW was carried forward by Thorpe under the auspices of the Museum, from which base it drew in other interested parties.[17] Membership of the Society in its early years incorporated three basic strands of 'interested workers': a 'museum connected group' with interests in prehistory and material culture; physical anthropologists with links to the Anatomy Department at Sydney University; and social anthropologists associated with the new Department of Anthropology.[18] The make-up of the

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[13] Firth, Raymond. 'Anthropology in Australia 1926–1932—and after'. *Oceania* 3 (1), 1932: 1–12; 2.
[14] Sydney University Calendar, 1931: 238. Elkin, 'Anthropology in Australia: One Chapter', 1958: 238.
[15] Shepherd, C. L. 'F. D. McCarthy: An Outline of the Professional and Intellectual Context of His Work at the Australian Museum'. BA Honours Thesis, Australian National University, 1982: 37. Elsie Bramell in a personal communication with the author (Shepherd), said that Hogbin and Firth (whom McCarthy had in Anthropology I) and Camilla Wedgewood had all included material culture in their lectures. The collections made by ANRC researchers were stored in the Department at the University of Sydney. Elkin wrote, in the 1940s, that a selection of these were kept on 'regular display … and available to students,' and there were other 'special displays … made.' Elkin, A. P. 'Art in Arnhem Land—A Notice'. *Oceania* 20, 1949–50: 80–82, 81. These comments were made as context for the exhibition of Arnhem Land material collected by the Berndts in 1946–47 at the David Jones Gallery in Sydney in 1949.
[16] Towle, C. C. 'The Anthropological Society of New South Wales: the founding of the Society', 1928. Typescript. Towle Papers: MLMSS 3580. Box MLK 2241. State Library of NSW (hereafter SLNSW). McCarthy, F. D. 'New Light on the Lapstone Creek Excavation'. *Australian Archaeology* (8), 1978: 49–60; 50.
[17] Kennedy, Keith. 'Anthropology in New South Wales'. *Mankind* 1 (1), 1931: 5–6.
[18] Towle wrote to A. S. Kenyon in late November 1928 reporting there were 36 Foundation Members of the Society, with more members awaiting election: 'We are endeavouring, as far as possible, to limit the membership to those who are interested workers in some branch of the subject.' Towle, C. C. to A. S. Kenyon, 30 November 1928. Kenyon Papers: MS12173. Box 2773. Aboriginal Letters Folder. State Library of Victoria (hereafter SLV). The term 'museum connected groups' is used by Grant McCall to

Society was reflected in the selection of the first three Presidents (in order): Radcliffe-Brown (Professor of Anthropology), A. N. Burkitt (Professor of Anatomy), and Charles Anderson (Director of the Australian Museum).

It was the shared interests of the Museum and the non-professional collectors that formed the nucleus of the Society and dominated its flavour in its early years, as is reflected in the pages of the Society's magazine *Mankind* (first published in March 1931).[19] The magazine provides a fulsome record of this group's activities: accounts of individual collecting forays and collaborative group projects such as the excavation of a rock shelter at Lake Burrill in September 1931, and frequent excursions to view rock art sites.[20] At this formative time in his career McCarthy's interests in material culture were supported and mentored through the activities of this group, and its individual members, most particularly C. C. Towle. McCarthy went on numerous field trips with Towle, and recalled spending 'many enjoyable evenings poring over stone implements at his home.'[21] Towle would have provided an introduction to the analysis and classification of stone tools, an area in which McCarthy was to make a major contribution.

Commenting later in his career on the history of anthropology in museums in Australia, McCarthy lampooned the mixed bag of specialists who had been curator of the ethnology collection at the Australian Museum before him: 'a carpenter from 1829–31, followed by pardoned convicts (one a taxidermist) … then by zoologists till the 1890s when a palaeontologist assumed control, and finally by a former labourer-attendant from 1906–1932' (i.e. his predecessor Thorpe).[22] McCarthy was making the larger point that ethnology had been treated with disregard within

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describe bodies like the Anthropological Society of New South Wales (ASNSW) through which amateurs contributed to anthropological research at this time. McCall, Grant. 'Anthropology in Australia: Introductory Remarks'. In *Anthropology in Australia: Essays to Honour 50 Years of Mankind*, edited by Grant McCall. Sydney: Anthropological Society of New South Wales, 1982: 1–21; 15.

[19] As McCarthy reminisced in 1984: 'The greatest activity in the Society [at that time in the early 1930s] was by a group of amateur stone implement collectors living in Sydney…. Most of their collections were generously given to the Museum.' McCarthy, 'A Coat of Paint', 1984: 73.

[20] See Thorpe, W. W. 'A Rock Shelter at Lake Burrill, N. S. Wales'. *Mankind* 1 (3), 1931, 53–55.

[21] McCarthy, 'New Light on the Lapstone Creek Excavation', 1978: 50.

[22] McCarthy, 'Anthropology in the Museums of Australia', 1982: 23.

museums in Australia: with no dedicated staff appointed to curate collections until after the turn of the twentieth century. However, the terms in which his complaint

is couched, indicting the lack of expertise brought to bear on the subject, is disingenuous to the extent that anthropology only developed as a discrete specialisation in the later part of the nineteenth century. In museums in Australia as elsewhere, the area was made the responsibility of staff with backgrounds in the other sciences because no professional experts in the field existed. As Annette Hamilton has pointed out, none of the people who actually practiced as anthropologists in Australia at that time 'were in any sense "trained" as anthropologists'.[23]

McCarthy acknowledged that important contributions to the ethnology collections of Australian museums had been made by a number of Museum Directors, all with backgrounds in other sciences: in Adelaide, Sir Edward Stirling, zoologist, Director of the South Australian Museum from 1889–1913; in Melbourne, Sir Baldwin Spencer, also trained as a zoologist and Professor of Botany at the University of Melbourne, Director of the National Museum of Victoria from 1899–1928; and in Sydney, Robert Etheridge Jnr, a palaeontologist, Director of the Australian Museum 1895–1920. It was not until the appointment of Etheridge that the Australian Museum began to focus on collecting Australian Aboriginal material. Etheridge was himself involved in archaeological excavations and the question of the antiquity of Aboriginal habitation. In 1902, he formed the Ethnological Committee of New South Wales committed to the aim of acquisition of Aboriginal artefacts from NSW for the Australian Museum.[24] In 1905 he purchased for the museum W. E. Roth's collection of North Queensland material—in McCarthy's estimate, 'one of the most

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[23] Hamilton, Annette. 'Anthropology in Australia: Some Notes and a Few Queries'. In *Anthropology in Australia: Essays to Honour 50 Years of Mankind*, edited by Grant McCall. Sydney: Anthropological Society of New South Wales, 1982: 91–106; 93.
[24] Specht, J. R. 'Anthropology'. In *Rare and Curious Specimens: An Illustrated History of the Australian Museum 1827-1979*, edited by Ronald Strahan. Sydney: The Australian Museum, 1979; 141–50; 143–145. Du Cros, Hilary. 'Skeletons in the Closet: A History of the Prehistoric Archaeology of N.S.W. (c. 1890-1940)'. BA Honours Thesis, University of Sydney, 1983: 11-15.

complete collections of aboriginal artefacts ever gathered together from one area'.[25] McCarthy cited Etheridge and Roth as the inspiration for his own work.[26]

Thorpe, McCarthy's immediate predecessor, had little formal education of any sort. He received his training in ethnology within the Museum, as Etheridge's assistant, and when a separate Department of Ethnology was finally created in 1906, was made its head.[27] McCarthy wryly joked that Thorpe 'did not believe in catalogues because he knew where every specimen was stored', adding 'but no one else did.'[28] At that time items admitted to the collection were recorded in a registration book, but there was no comprehensive index of what was in the collection and where it was: there was a partial catalogue of the Australian collection only.[29] With Thorpe's death, the task of putting the collection into 'some sort of systematic order', was left in McCarthy's hands.[30] As Isabel McBryde has put it, the 'extensive, significant but as yet uncatalogued collections … [were] … a daunting inheritance.'[31] On Bramell's appointment, McCarthy writes, they started immediately on this 'essential' work: 'We began with the Australian aboriginal material, handling every specimen'.[32]

Diffusionist theory and McCarthy's 1935 thesis: 'On the causes of local variation'

If the British School was McCarthy's natural inheritance, his selected patrimony was American. To complete his Diploma studies at Sydney University he wrote a

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[25] Khan, Kate. 'Dr. W. E. Roth and the Australian Museum'. *Magazine of the Royal Australian Historical Society*, August, 1993: 8–9; 8.
[26] McCarthy, 'A Coat of Paint', 1984: 81. As part of the Ethnological Committee's activities Etheridge specified the components of a 'remarkably thorough' field recording scheme to guide prospective collectors. Etheridge's own scientific reports were a model for McCarthy. Specht, 'Anthropology', 1979: 144. Shepherd, 'F.D. McCarthy: An Outline of the Professional and Intellectual Context', 1982: 17.
[27] Thorpe joined the staff of the Museum in 1899 as a labourer or 'outdoor attendant', and then successively acted as night watchman and gallery attendant, until in 1901 at the age of 22 he was appointed to assist Etheridge in his ethnological research. Strahan, Ronald. 'A Scientific Staff 1874–1894'. In *Rare and Curious Specimens: An Illustrated History of the Australian Museum 1827-1979*, edited by Ronald Strahan. Sydney: The Australian Museum, 1979: 37–59; 50–51. Australian Museum Annual Review (hereafter AMAR) 1900: 22. AMAR 1901: 24.
[28] McCarthy, 'A Coat of Paint', 1984: 72.
[29] McCarthy, Frederick. D. Curriculum Vitae accompanying 'Special Grade Appeal', 1960: 3. Typescript. AMS423. McCarthy Personnel File (Box 3). Australian Museum Archives.
[30] Khan, 'Frederick David McCarthy: An Appreciation', 1993: 1.
[31] McBryde, Isabel. 'Frederick David McCarthy 13 August 1905–18 November 1997'. *Australian Aboriginal Studies* (1), 1998: 51–55; 52.
[32] McCarthy, 'A Coat of Paint', 1984: 72.

dissertation on patterning in the composition of material culture in Eastern Australia, with primary reference to the collections of the Australian Museum, and also the Museum of Victoria and the South Australian Museum.[33] McCarthy's focus was on accounting for areas of 'local variation', within continental Australia treated as a single 'culture area' or 'culture complex'. In describing his project he used the ideas and language of Boasian anthropology. In particular he was influenced by the work of D. S. Davidson (1900–52), a follower of the 'age and area' or geographical distribution theory developed by Clark Wissler (1870–1947), a student of Boas' at Columbia University, and his assistant in the Department of Ethnology at the American Museum from 1902.[34] 'Age and area' theory was an extension of Wissler's development of the 'culture area' concept as an internally dynamic region where innovation takes place and diffusion occurs between social groups within its margins. In brief, this theory presumed as its working hypothesis that a trait, all things being equal, would diffuse at a constant rate in all directions, making it possible through plotting the distribution of that trait to reconstruct its historical progress from a geographical point of origin—a concept Davidson likened to cultural stratigraphy.[35]

Davidson had studied at the University of Pennsylvania, under Frank Speck (1881–1950), also a student of Boas' at Columbia at around the same time as Wissler. In 1928 Davidson completed his PhD on 'The Chronological Aspects of Certain Australian Social Institutions: As Inferred from Geographical Distribution', in which he applied 'age and area' theory to the available data on social organisation.[36] He visited Australia in 1930–31 and again in 1938–40, examining private and museum collections and undertaking fieldwork.[37] In the 1930s he

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[33] McCarthy, Frederick D. 'The Material Culture of Eastern Australia: A Study of Factors Entering into Its Composition'. Diploma of Anthropology Thesis. Sydney: University of Sydney, 1935: 95. Papers of Frederick D. McCarthy: MS3513/17. AIATSIS.
[34] Freed, Stanley A., and Ruth S. Freed. *Clark Wissler 1870–1947: A Biographical Memoir*. Washington D. C.: National Academy of Sciences, 1992. After Boas resigned in 1905 Wissler became Curator of Ethnology, staying in that position for the remainder of his career.
[35] Davidson, D. S. *The Chronological Aspects of Certain Australian Social Institutions: As Inferred from Geographical Distribution*. Philadelphia: University of Pennsylvania, 1928: 138. Quoted in Radcliffe-Brown, A. R. 'The Diffusion of Culture in Australia'. [Review.] *Oceania* 1 (3), 1930: 366–70; 369.
[36] Davidson, *The Chronological Aspects of Certain Australian Social Institutions*, 1928.
[37] Davidson spent time in Australia in 1930–31 under the auspices of the American Philosophical Society, and almost two years in 1938–40 as a fellow of the U.S. Social Science Research Council. Hallowell, A.

began to publish a series of articles on aspects of Australian material culture: 'Australian netting and basketry techniques' (1933), 'Australian spear traits and their derivations' (1934), 'Chronology of Australian watercraft' (1935). This was the work that most interested McCarthy. He referred to it at some length in his thesis, and later wrote a review of this series of articles for *Mankind*.[38]

At this time it was not known how long people had inhabited the Australian continent—estimates varying from possibly only a few hundred up to a thousand years at most espoused by some, and extending to many thousands of years (10,000–15,000) in the opinion of others. The prevailing view was that Australian Aboriginal material culture was simple and basic—'extremely uniform and homogenous'; 'the same, but with slight variations, over the whole continent'.[39] On this basis, Pitt Rivers concluded that the Australian Aborigines were in terms of development 'lowest among the existing races of the world': their weapons 'assimilate most closely to natural forms … their curves are the curves of the branches out of which they were constructed'.[40] Twentieth-century Australian anthropologists, in countering this prejudicial view, emphasised the sophistication of the social organisation of Aboriginal societies (kinship and religious systems), while uncritically accepting the assessment of their material culture. For example, in his 1953 essay 'The Dreaming', W. E. H. Stanner emphasised the intricate complexity of Aboriginal social organisation through its 'striking contrast' with the 'comparative simplicity … which rules … [in] … the department' of material culture.[41]

Irving, and Erna Gunther. 'Daniel Sutherland Davidson, 1900–1952'. [Obituary.] *American Anthropologist* 56 (5), Part 1, 1954: 873–76; 873.

38 McCarthy, Frederick D. 'The Geographical Distribution Theory and Australian Material Culture'. [Review.] *Mankind* 2 (1), 1936: 12–16.

39 Urry, James. 'From Zoology to Ethnology: A. C. Haddon's Conversion to Anthropology'. In *Before Social Anthropology: Essays on the History of British Anthropology*. Harwood Academic Publishers, 1993: 72. Urry is summarising Haddon's views as given in *Evolution of Art: As Illustrated by the Life Histories of Designs*. London: Walter Scott, 1895: 324. Pitt Rivers, Augustus H. 'On the Principles of Classification Adopted in the Arrangement of His Anthropological Collection, Now Exhibited in the Bethnal Green Museum'. *Journal of the Anthropological Institute of Great Britain and Ireland* 4, 1875: 301–2.

40 Pitt Rivers, 'On the Principles of Classification', 1875: 301.

41 Stanner, W. E. H. 'The Dreaming' (1953). In *The Dreaming and Other Essays*. 2nd ed. Melbourne: Black Inc. Agenda, 2010: 57–72; 66.

The focus of material culture research in Australia had been on the archaeology of stone tools. In Europe, stone tool typologies were used to tell a story of progressive cultural development through time: Palaeolithic tools characteristically made using a chipping or flaking technique were replaced by Neolithic tools that were characteristically ground or polished.[42] Within these two categories finer classifications of stages in development were discerned. Based on fieldwork in Central Australia, where implements typical of both periods 'are met with side by side', Baldwin Spencer had formed the opinion that rather than being an index of culture stage, implement type in Australia was simply determined by the type of stone available in any location: 'If only flint or quartzite can be obtained … then the weapons are of the chipped or flaked kind; if stone such as diorite is available, then weapons are ground, or if both kinds of stone can be procured, then we meet with both kinds of implements'.[43] Others generalised from this point—as McCarthy complained—in essence attributing the whole of the variation in all forms of material culture in Australia to the local availability of materials.[44] Spencer's theory had been developed before any secure evidence of culture history in Australia had been produced through the stratigraphic finds of Tindale and Hale at Devon Downs in 1929 (published 1930). The argument of 'The Materialists' as McCarthy later dubbed the followers of Spencer, tended to deny Aboriginal culture any historical depth, or outside influences.[45] McCarthy's thesis was aimed at revising this understanding.

Focusing on specific material culture 'traits', as individual isolated phenomenon, McCarthy sought to define the causes and track the distribution of 'local

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[42] This division was made by John Lubbock in 1865. See Chapman, William R. 'Arranging Ethnology: A. H. L. F. Pitt Rivers and the Typological Tradition'. In *Objects and Others: Essays on Museums and Material Culture*, edited by George W. Stocking, Jr. History of Anthropology 3. Madison, Wisconsin and London: The University of Wisconsin Press, 1985: 27.
[43] Spencer, W. B. *Guide to the Australian Ethnographical Collection in the National Museum of Victoria*. (First published 1901.) 3rd ed. Melbourne: Museum of Victoria, 1922: 78–79. Quoted in Mulvaney, D. J. 'Research into the Prehistory of Victoria: A Criticism and a Report on a Field Survey' (1957). In *Prehistory and Heritage: The Writings of John Mulvaney*. Occasional Papers in Prehistory 17. Canberra: Department of Prehistory, ANU, 1990: 151–59; 152. For a more nuanced analysis of Spencer's ideas and their influence see Mulvaney, D. J. 'Classification and Typology in Australia; the First 340 Years'. In *Stone Tools as Cultural Markers: Change, Evolution and Complexity*, edited by R. V. S. Wright. Canberra and New Jersey: AIAS and Humanities Press, 1977: 263–68: 264, 267.
[44] McCarthy, Frederick D. 'Aboriginal Australian Material Culture: Causative Factors in Its Composition'. *Mankind* 2 (8), 1940a: 241–69; 243.
[45] McCarthy, Frederick D. 'The Prehistoric Cultures of Australia'. *Oceania* 19 (4), 1949: 305–19; 305–7.

variations'. McCarthy did not believe it was appropriate to divide Australian Aboriginal culture into distinct culture areas or culture complexes on the American model, as these terms referred to 'areas sharply separated by traits which have their origin within the boundaries of the area or complex'.[46] Australian material culture was fundamentally homogeneous. The same traits—in this instance object types—were common across the whole of the continent. Variation occurred in some 'secondary characters' as the result of their development in different areas. In accounting for these regional differences—or as he put it, the causes of local variation—McCarthy recognised the influence of environment in terms of available raw materials and selective adaptations to environment (i.e. not using materials when they were available), elaboration (the development of locally unique forms of a widespread trait), invention (the contribution made by individual craftsmen), and local forms of substitution of one thing for another. He gave most emphasis to cultural diffusion effected both directly and indirectly through the impact of trade, including sources of outside influence.[47]

McCarthy went on to develop his arguments, expanding them to a continental scale analysis for a series of articles published in *Oceania* in 1939 and *Mankind* in 1940. 'In Australia, from north to south, north-eastward to south-westward, north-west to south-east, there is a succession of techniques separated spatially only by the length of time each has been diffusing, a process which has produced a striking dissimilarity in the material culture of neighbouring and widely separated areas.'[48] McCarthy produced a map tentatively defining 11 regional areas of 'local variation' (Fig. 2.1). As well as mapping internal trade routes McCarthy looked at the influence of introduced traits entering from the north. Here, making the target of his argument explicit, he quotes Spencer's claim that: 'The Australian aborigine has developed all the cultures necessary to his well-being, considering his wants and

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[46] McCarthy, 'The Material Culture of Eastern Australia', 1935: 95.
[47] McCarthy, 'The Material Culture of Eastern Australia.' 1935: 13–27. Chapter 2: 'Causes of Local Variations'. In the copy of the thesis available at AIATSIS the original Chapter 3: 'Trade' has been replaced by the articles he developed from it for publication in *Oceania* in 1939.
[48] McCarthy, 'Aboriginal Australian Material Culture', 1940a: 250.

the material available, unaided from any other source.'[49] While diffusion from Papua and New Guinea through the Torres Strait into Australia via Cape York was then well established (and had been demonstrated using geographical distribution theory by Davidson), McCarthy identified the Arnhem Land coast as another point of entry for traits from the north: Papua, Makassar (Celebes) and Timor.[50] McCarthy was an advocate of W. H. R. Rivers' theory that Australia was probably visited by successive 'small bands of immigrant people arriving by chance at various points of the north Australian coastline', and that there were therefore 'a number of centres from which traits could diffuse'.[51] In 1937–38 McCarthy went on a nine-month study tour to Indonesia (the Dutch East Indies) and Malaysia, mainly to learn about archaeological excavation techniques but also studying museum collections and the connections of that area with Australia. He spent the majority of his time in South Sulawesi (Celebes) in which the port of Makassar is located.

McCarthy's analysis was a breath of fresh air; it recognised the creativity of human agency and the play of social dynamics in adaptations to environment and the spread of ideas and objects. As he wrote:

> The material culture of the aborigines has not remained static. … The aborigines have experimented with many aspects of their culture, and in the adaptation to their environment have brought into play a great deal of ingenuity, resource and skill.[52]

His analysis gave Aboriginal culture a substantive dimension—a varied development over time and space; and saw it as connected to outside influences, as opposed to being isolated and cut off. On the other hand, the approach he had adopted was not uncontroversial. It was above all, speculative. As Radcliffe-Brown suggested in a critique of the publication of Davidson's PhD thesis, the arguments

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[49] Spencer, W. B. in A.S. Kenyon, D.J. Mahoney and S.F. Mann. *Report of the Meeting of the Australasian Association for the Advancement of Science*, 17: 1924: 465. Quoted in McCarthy, 'Aboriginal Australian Material Culture', 1940a: 243.
[50] McCarthy, 'Aboriginal Australian Material Culture', 1940a: 243, 258 ff. McCarthy, Frederick D. 'Aboriginal Australian Material Culture: Causative Factors in Its Composition (cont.)'. *Mankind* 2 (9), 1940b: 294–320.
[51] McCarthy, Frederick D. 'Dr. Davidson and Distribution'. [Letter to Ed.] *Mankind* 2 (3), 1937: 71. In his 1935 thesis McCarthy had considered the different theories regarding the diffusion of culture into Australia presented by Graebner, Rivers and Davidson. McCarthy, 'The Material Culture of Eastern Australia.' 1935: 123–29. Chapter 7: 'Theories Concerning the Material Culture of Eastern Australia'.
[52] McCarthy, 'Aboriginal Australian Material Culture', 1940a: 242.

'establish plausibilities at the best rather than probabilities, and this is inherent in the method.'[53]

The extent of McCarthy's argument regarding the influence of outside sources in some instances consisted largely of the collation of lists of parallel traits. The robustness of the method, assessed on its own terms, depended on the strength of the data available, as McCarthy stated: 'detailed and complete data, and a strict interpretation of the evidence are required.'[54] When it came to his own work plotting external influences on the development of Australian Aboriginal culture, he argued that there were problems that would not be 'satisfactorily settled' until 'a complete distributional analysis has been made of all traits in Australia and neighbouring cultures'.[55] The method, while speculative, depended on facts, and more facts—distributional data this time, the map again. The treatment of culture as divisible into individual traits, and the view of diffusion as an abstract force, was criticised by many as 'mechanical'; even Boas and Kroeber, despite being colleagues of Wissler, saw it as rigidly so.[56] It offended the idea of cultures as integrated cohesive wholes. As Radcliffe-Brown put it: 'interaction of cultures is very inadequately described or conceived under the term "diffusion of culture traits"'.[57]

The method had great appeal to McCarthy however. It was the equivalent of archaeological stratigraphic technique for the study of material culture collected from living peoples in the present. The question of origins and development, 'independent invention versus diffusion', continued to be of central concern to him throughout his career. In 1974 McCarthy lamented the truncation due to his early death of Davidson's 'distributional study plan for the whole of Aboriginal culture.'[58] When he became Director of the Australian Institute for Aboriginal

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[53] Radcliffe-Brown, 'The Diffusion of Culture in Australia', 1930: 367.
[54] McCarthy, 'The Geographical Distribution Theory', 1936: 12.
[55] McCarthy, 'Aboriginal Australian Material Culture', 1940a: 258.
[56] Darnell, Regna. *And Along Came Boas: Continuity and Revolution in Americanist Anthropology*. Amsterdam and Philadelphia: John Benjamins Publishing Company, 1998: 284–85.
[57] Radcliffe-Brown, 'The Diffusion of Culture in Australia', 1930: 370.
[58] McCarthy, Frederick D. 'Relationships between Australian Aboriginal Material Culture, and Southeast Asia and Melanesia'. *In Grafton Elliot Smith: The Man and His Work*, edited by A. P. Elkin and N. W. G. Macintosh. Sydney: Sydney University Press, 1974: 210–26; 213.

Studies in 1964 McCarthy prepared a plan for regional research in which ‘gaps in our knowledge would be thoroughly studied’, resulting in a series of publications. The proposal was turned down, presumably by the Institute’s governing Council, in favour of research students or their universities selecting their own topics. Looking back on his career in 1984 he saw ‘this regional approach’ as still ‘viable’, with much work yet to be done in the field of material culture: ‘including continent-wide studies’ of various object types and ‘a catalogue of all Aboriginal material culture in existence.’[59] He still held on to the dream of being able to fill-in the map in a ‘detailed and complete’ way.[60]

McCarthy’s development as a museum anthropologist 1935–48

Of his contemporaries, McCarthy considered himself closest professionally to Davidson.[61] Looking back at the end of his career, he recognised their shared project: to detail ‘the composition and development of Aboriginal culture and economy’ assessing ‘the balance of locally invented and introduced traits.’[62] Davidson continued publishing on aspects of Aboriginal material culture up until his early death in 1954—some 23 papers in all.[63] McCarthy flippantly attributes Davidson’s output as the reason ‘I left the field to him’.[64] After completing his thesis, McCarthy’s attention moved away from the broader realm of material culture to concentrate on the typology of stone tools and the recording of rock art.

Ethnographic fieldwork as McCarthy understood it at this time involved working with Aboriginal people who lived a traditional lifestyle—this was, as he wrote in his thesis, ‘unfortunately … impossible for the greater part of Eastern Australia.’[65] There were no funds available to support museum research field trips further

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[59] McCarthy, ‘A Coat of Paint’, 1984: 79–81.
[60] McCarthy, ‘The Geographical Distribution Theory’, 1936: 12.
[61] McCarthy and Davidson appear not to have met in person—visitors to the Anthropology Department were customarily listed in the Museum’s Annual Reports through the 1930s. However they did have a personal correspondence. Davidson was gratified by McCarthy’s 1936 review of his work, and their relationship probably dates from then. There are two letters from Davidson to McCarthy in his correspondence post the Arnhem Land Expedition, which suggest an earlier relationship. McCarthy Papers: MLMSS 3188 ADD-ON 1350. Box H2313. SLNSW.
[62] McCarthy, ‘A Coat of Paint’, 1984: 79. For further analysis of the relationship between the work of Davidson and McCarthy see Konecny, Tania. ‘Ethnographic Artefacts: The Iceberg’s Tip’. *Records of the Australian Museum* Supplement 17, 1993: 45–53.
[63] McCarthy, ‘Anthropology in the Museums of Australia’, 1982: 30.
[64] McCarthy, ‘A Coat of Paint’, 1984: 79.
[65] McCarthy, ‘The Material Culture of Eastern Australia’, 1935: 10.

afield, either from the Australian Museum itself, or other sources. Travel for study of collections in other State museums was also not feasible for the same reason, and published catalogues of collections that could be used as reference sources were a rarity.[66] McCarthy lamented that little of what data had been recorded about material culture 'from first-hand observations among the natives' had been published—he specifically mentioned the 'mass of information' recorded by ANRC field researchers, Adelaide University and the South Australian Museum. Without a literature to draw on, the research McCarthy envisioned was severely hampered. He emphasised: 'Too much stress cannot be laid upon the importance of publishing every shred of evidence available on the ethnography of any part of Australia.' McCarthy conceived of research as a cumulative and necessarily collaborative project: depending firstly on the publication of 'detailed local studies', from which 'continental surveys' of individual 'appliances and methods' could be constructed, on which 'interpretative studies on the composition and relationships of Australian material culture as a whole', could then be based.[67]

McCarthy periodically made statements on the relationship between anthropology and the museum, in which he outlined his professional concerns as a museum worker. In these he clearly adumbrates the major themes of the Museum Tradition as I have discussed them: the 'museum as storehouse', a 'systematic approach to collecting' and 'filling-in the map':

> Mere collecting, obviously is not enough. Systematic collecting embraces the most trivial and unimportant things as well as those of outstanding cultural, technical or artistic value. Such articles as raw material and manufacturing stages to illustrate processes should be collected. Models should be obtained of houses, canoes, hunting and fishing traps, and other large apparatus. The names of the raw materials and finished objects should be recorded, and whether they are made locally or obtained by trade should be ascertained. The social and cultural significance and meaning of all specimens should be recorded with them, photographs and diagrams should be made to illustrate

[66] McCarthy, Frederick D. 'The Role of Australian Museums in Anthropology'. *Mankind* 5 (6), 1958: 262–67; 266. McCarthy believed that the publication of catalogues of collections was imperative to furthering the scientific and educational functions of the museum as 'storehouse'. The only published catalogue of an Australian museum collection at this time (1935–1948) was *Spencer's Guide to the Australian Ethnological Collection in the National Museum of Victoria* (first published in 1901, last revised 1922).
[67] McCarthy, Frederick D. 'Anthropology in Australian Museums'. *Oceania* 17 (1), 1946: 26–37; 27–28.

> the function of a specimen. Films of ceremonies and processes are now part of the modern technique of collecting.[68]

The above excerpt describes a 'systematic approach' to collecting in relation to the intensive 'local study': anything and everything to be documented in a 'detailed and complete' way. He also uses the term 'systematic' in relation to extensive survey studies in which the sense of the term alters slightly, due to the change in scale—now referring to a 'systematic approach' to 'filling-in the map'. McCarthy argued that due to the size of the task—both in regard to continental Australia, and nearby regions—the cash–strapped State museums should pool their resources to carry out a coordinated 'systematic plan of research' that avoided 'overlapping and duplication of effort'.[69] Through the 1930s to the 1950s, as he complained, such a cooperative exercise was not possible: they remained 'too State-minded and parochial'—'Each museum has gone it's [sic] own way'.[70]

McCarthy understood the primary function of museums to be 'to collect, preserve and describe specimens', as a basic resource for scientific research.[71] As he emphasised in his 1958 statement on the role of museums in anthropology:

> Collections in themselves form a unit of scientific value … They are the primary reason for the existence of museums whose obligations to make them as complete as possible, to preserve, display and carry out research on them must never be forgotten.[72]

McCarthy saw the museum as the repository of a national heritage, rightfully the property of the people. He disapproved of any items leaving the country; either through sale from private collections, or by permitting overseas researchers to take their specimens back home. He feared it would leave holes in the record (blank spaces on the map): some of these items were not represented in Australian museum collections, and were becoming increasingly difficult to source as the spread of influence of the modern world was 'rapidly breaking down the old

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[68] McCarthy, 'Anthropology in Australian Museums', 1946: 33.
[69] McCarthy, 'Anthropology in the Museums of Australia', 1982: 25. McCarthy, Frederick D. 'Some Comments on the Progress of Archaeology in Australia: An Appeal for Co-Operation'. *Mankind* 5 (11), 1962: 479–84; 480.
[70] McCarthy, 'The Role of Australian Museums in Anthropology', 1958: 265. McCarthy, 'Anthropology in the Museums of Australia', 1982: 25. See also McCarthy, 'Anthropology in Australian Museums', 1946: 32. McCarthy, 'A Coat of Paint', 1984: 81.
[71] McCarthy, 'A Coat of Paint', 1984: 72.
[72] McCarthy, 'The Role of Australian Museums in Anthropology', 1958: 263.

customs of the natives'.[73] In the 1930s and 1940s McCarthy saw the pressing need to make collections 'before it is too late. When they are gone, no more will ever be made'.[74] 'Type collections' (as he called them) should, he argued, be kept in Australian museums, 'giving students access to the specimens in Australia itself.'[75]

Research on stone tools and rock art

For those 'lacklustre decades' of the Depression followed by World War II, McCarthy was limited in the work he could do, and out of necessity concentrated his attention on the collections within the Museum.[76] A major achievement during this period was the handbook of implement classification he co-wrote with Elsie Bramell. Work on *The Stone Implements of Australia*, published in 1946, began a decade earlier with the cataloguing of the Australian Museum's collection, on which it was based.[77] McCarthy circulated a first draft for 'suggestions and criticism' at the beginning of 1937, to Towle in Sydney, D. A. Casey in Melbourne, and Norman Tindale in Adelaide.[78] The advice of H. V. V. Noone—a British typologist who had settled in Sydney—was essential to the completion of the final work, and he is credited as a co-author.[79]

The aim of the handbook was to establish a standard system for the typological classification of Australian stone tools—'a universally accepted classification'—as the basis for further work.[80] As well as setting out a fixed nomenclature for implement types, it provided a glossary of terms (for standardising descriptions and enabling effective cross-reference), and comments on procedure.[81] As McCarthy wrote, the initiative for this idea came from his museum experience: 'Conscious of the fact that a basic line of research in museums was to name and

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[73] McCarthy, Frederick D. 'Aboriginal Relics and Their Preservation'. *Mankind* 2 (5), 1938: 120–26; 123.
[74] McCarthy, 'Anthropology in Australian Museums', 1946: 36.
[75] McCarthy, 'Aboriginal Relics and Their Preservation', 1938: 124.
[76] Mulvaney, D. J. 'Sesqui-Centenary to Bicentenary: Reflections on a Museologist'. *Records of the Australian Museum* Supplement 17, 1993: 17–24; 17–18.
[77] McCarthy, Frederick D, Elsie Bramell, and H. V. V. Noone. *The Stone Implements of Australia*. Sydney: Australian Museum, 1946: 7. In the acknowledgements Joseph Shellshear is credited with suggesting the work.
[78] McCarthy, Frederick D. to C. C. Towle, 5 February 1937. Towle Papers: MLMSS 3580. Box MLK2240. SLNSW.
[79] McCarthy, 'A Coat of Paint', 1984: 74.
[80] McCarthy to Towle, 5 February 1937. Towle Papers.
[81] McCarthy et al., *The Stone Implements of Australia*, 1946: 1–7 'Introduction', 79–82.

classify animals, minerals and fossils, my experience with stone implements had shown me how such a practice could make a vital contribution in Australian prehistory.'[82] Their schema took into account processes of making, raw materials used, function, form and size, and Aboriginal name as an indicator of tradition. Writing in 1993 John Mulvaney considered that it had achieved its goal. It was and remained, he said, 'the most systematic and best documented handbook on implement classification on a continental scale' which despite advances in analysis and competing frameworks, 'most subsequent researchers consult' as a reference baseline.[83]

An important new influence entered McCarthy's professional orbit in late 1935. Joseph L. Shellshear (1885–1958), formerly Professor of Anatomy at Hong Kong University, had recently retired and returned to Sydney. He had an interest in physical anthropology and in archaeology and was an experienced fieldworker with a good knowledge of stratigraphic excavation techniques—a novelty in Australia. In April 1936 he was appointed to a five-year term as Honorary Archaeologist at the Australian Museum.[84] During 1936 Shellshear, McCarthy and Bramell undertook a series of 'archaeological reconnaisances' of prehistory sites in the greater Sydney area—mapping the locations of rock-shelters, middens, rock engravings and paintings. These surveys identified sites for later 'detailed examination'.[85] In the early 1940s McCarthy organised a group of Anthropological Society members to make detailed recordings of undocumented rock art sites.[86] McCarthy was concerned about the effects of vandalism on these sites, recording them in the shadow of their possible loss, while advocating for protective legislation. McCarthy introduced professional methods and standards of documentation: 'the use of the grid frame, measurement of the grooves and pits, study of the superimpositions of techniques and motifs, and numerical analysis of

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[82] McCarthy, 'A Coat of Paint', 1984: 73–74.
[83] Mulvaney, 'Sesqui-Centenary to Bicentenary', 1993: 18–19.
[84] AMBT, 3 April 1936: 2.
[85] McCarthy, 'A Coat of Paint', 1984: 74. AMAR 1935/1936: 7 AMAR 1936/1937: 8. Shellshear, Professor Joseph L. 'An Appeal for the Preservation of Prehistoric Remains in Australia'. *The Australian Museum Magazine*, 20 February 1937: 169–75. This activity continued through 1939–45 after McCarthy returned from Indonesia.
[86] McCarthy, 'A Coat of Paint', 1984: 77. This work built on Campbell's 1899 monograph on the rock art of the Sydney-Hawkesbury area.

the subjects.'[87] From 1941 he published a series of articles in *Mankind* documenting these records of rock engravings in the Sydney area and later from this work produced 'a classification of techniques, styles and motifs' as a guide to field recording—another example of McCarthy's 'systematic' and 'systematising' approach.[88]

Neither the scope nor reach of McCarthy's interest in Aboriginal art was limited to scientific reports on research. He also wrote more popular articles for mainstream publications: *Art in Australia* (1939), *Wildlife* (1945), and *Australasian Photo-Review* (1945) for example, as well as for the *Australian Museum Magazine.* In 1938 he mounted the important *Australian Aboriginal Decorative Art* exhibition at the Museum.[89] It was organised in terms of broad regional areas, with attention focused on the most distinctive local forms; for example, the carved trees of NSW in eastern Australia, shields in north-eastern Queensland, twined baskets in Arnhem Land. Examples of the pigments and utensils used were also included in the display.[90] This was followed in 1941 by a very different exhibition, exploring Aboriginal art as a source of inspiration for contemporary white/European Australian artists and designers, *Australian Aboriginal Art and Its Application* at the David Jones Gallery in Sydney.[91]

Museum displays of material culture

From 1933 under the control of McCarthy and Bramell, the Museum's ethnographic displays were continually rearranged, extended and improved, both in the Aboriginal Gallery on the first floor, and in the two lower galleries representing cultures of the broader Pacific. These lower galleries were

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[87] McCarthy, 'A Coat of Paint', 1984: 77. McCarthy, 'Anthropology in the Museums of Australia', 1982: 31.

[88] For a listing of the series of articles McCarthy published in *Mankind*, 'Records of rock engravings in the Sydney district', see Khan, Kate. 'Frederick David McCarthy: A Bibliography'. *Records of the Australian Museum* Supplement 17, 1993: 7–15; 8–9. McCarthy, Frederick D. 'Recording Art on Rock Surfaces'. In *Australian Archaeology: A Guide to Field Techniques*, edited by D. J. Mulvaney. Canberra: Australian Institute of Aboriginal Studies, 1968: 125–56.

[89] McCarthy, Frederick D. *Australian Aboriginal Decorative Art*. Sydney: Australian Museum, 1938.

[90] AMAR 1937/1938: 9.

[91] See Miller, Steve. 'Designs on Aboriginal Culture'. In *Modern Times: The Untold Story of Modernism in Australia*, edited by Ann Stephen, Philip Goad, and Andrew McNamara. Carlton, Vic.: Miegunyah Press, 2008: 30–35.

rearranged according to geographic area.[92] The Museum's Annual Reports and Board of Trustees Minutes provide the main source of information on the development of the Aboriginal Gallery. In 1936 the stone implements exhibit was rearranged 'to show distribution of types and affinities with other cultures'. In 1937 McCarthy reported that 'the display of Australian boomerangs, clubs and hafted instruments' had been rearranged and that plans had been made for the 'complete revision' of spear throwers etc. in the table case displays.[93] It seems that the objects remained grouped according to type, but were reorganised to focus on the variation within that type and its distribution.[94]

McCarthy was concerned to situate the objects on display as part of a larger social context, for which he utilised photography. In 1933 he added photographs of 'daily life' to the exhibits, and in 1935 the table cases were rearranged with photographs illustrating more particularly 'the uses of the objects displayed.'[95] A model of stone fish traps at Brewarrina was commissioned in 1934, and in 1938 there was a proposal made for a life-size 'Aboriginal Habitat Group' depicting a scene in a rock shelter, but this did not come to fruition due to cost.[96] In 1940 for 'interest and variety' he added more photographs and distribution charts to the exhibits.[97]

At the beginning of 1935 in a report to the Museum Board on the ethnographic collections, McCarthy lamented a lack of 'the most colourful and attractive material made and used by the aborigines in various parts of Australia'. He had just visited the South Australian Museum, whose collection of 'ceremonial material alone' filled 'eight very large cases': 'the display was a revelation to me … the amount of this material in our own collection would not adequately fill one case.' He

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[92] Complementing the already established New Guinea Hall, representation of other cultures in the 'Melanesian Hall' was expanded to include Polynesia and Micronesia (with separate displays of component cultures)—to construct 'a comprehensive display of the material culture of Oceania'. (AMAR 1932/33: 7.) In 1940 this scheme was rethought. Pacific culture was treated as a whole with exhibits focused on separate elements: 'prehistoric objects, canoe types, the making of bark cloth, and stone implements'. (AMAR 1939/40: 6.)

[93] AMAR 1935/36: 7. AMAR 1936/37: 8.

[94] There is no evidence to support Lampert's claim that the Aboriginal galleries were rearranged in a similar manner to the Pacific galleries, 'in accordance with … [the "culture areas"] idea'. Lampert, R. J. 'The Development of the Aboriginal Gallery at the Australian Museum'. *COMA: Newsletter of the Conference of Museum Anthropologists* 18, 1986: 10–18; 14.

[95] AMBT, 14 July 1933: 4. AMBT, 8 Sept 1933: 4. AMAR 1934/35: 9.

[96] AMBT, 9 Mar 1934: 3. AMAR 1937/38: 9. AMAR 1938/39: 9.

[97] AMAR 1939/40: 6.

designated five regions the Museum should concentrate on to address the collection's deficiencies: Melville and Bathurst Islands, Groote Eylandt, Central Australia, Arnhem Land and Cape York.[98] McCarthy was envious of the opportunities the South Australian Museum had to make such collections, due to their greater proximity to areas in which Aboriginal people remained living relatively traditional lifestyles.

Although Sydney University had benefited greatly from Australian National Research Council (ANRC) funding, McCarthy felt that the work of social anthropologists coming out of the Department was given preference over that of museum anthropologists, such as himself.[99] As well as advising greater use of residents in these areas, such as the missionary T. T. Webb in Arnhem Land who was already conscripted to collect for the Museum, he suggested displaying material collected by ANRC researchers as another way around the problem. After consultation with Elkin the ANRC agreed that it would be of 'mutual benefit' to have a selection of 'specimens' on temporary display, 'in a special case', at the Museum.[100] By the middle of the year the first of these displays was in place: it included 'a Tikopian outrigger canoe, a Melville Island grave-post and a grave-post and bark paintings from Arnhem Land.'[101] These had been collected by Raymond Firth, C. W. Hart and W. L. Warner respectively.[102]

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[98] McCarthy, F. D. 'Australian Museum Ethnographical Collection—Report arising out of Mr. McCarthy's recent visit to Melbourne, Adelaide and Broken Hill', 13 February 1935. Typescript. AMS10 93/35. Australian Museum Archives.

[99] McCarthy, 'A Coat of Paint', 1984: 72. At the first meeting of the committee to disperse the Rockefeller funds held in 1926, there were four Sydney representatives including Radcliffe-Brown in the Chair, Spencer from Melbourne and Frederic Wood Jones from Adelaide. Wood Jones reported in a letter to A. S. Kenyon that on Spencer's motion they had given grants for cultural investigations involving living people only. 'Archaeology was entirely ruled out … since, on Spencer's dictum, culture goes first, race second, archaeology last. Sydney got practically all the money. But there you are.' Wood Jones, Frederic to A. S. Kenyon, 25 October 1926. Kenyon Papers: MS12173. Box 2773. Prehistory Folder. SLV. On the longer history of Rockefeller funding through the ANRC and the South Australian Board for Anthropological Research see Mulvaney, D. J. 'Australasian Anthropology and ANZAAS: "Strictly Scientific and Critical"'. In *The Commonwealth of Science: ANZAAS and the Scientific Enterprise in Australasia 1888–1988*, edited by Roy MacLeod. Melbourne: Oxford University Press, 1988: 196–221; 209–12.

[100] Elkin, A. P. to Dr. C. Anderson, Director of the Australian Museum, 12 April 1935. Letter filed with McCarthy's report on the 'Australian Museum Ethnographical Collection', 1935. AMS10 93/35. Australian Museum Archives.

[101] AMAR 1934/35: 9.

[102] Elkin, A. P. 'Art in Arnhem Land—A Notice'. *Oceania* 20, 1949: 80–82, 80.

Amateurs and professionals: a disciplinary fissure

As stated earlier McCarthy had been introduced to the typology of stone tools through the group of non-professional Sydney collectors forming the core of the ASNSW in its early years. As Val Attenbrow has argued, McCarthy's association with Sydney's 'amateur' collectors was 'very advantageous' to him.[103] They provided information about possible sites for exploration, knowledge and experience of collecting and local typologies, enthusiasm for the work—a milieu. By contrast, as Towle observed, the social anthropologists connected with the Department at Sydney University, 'indifferent to the subject of stone culture … cannot discriminate between a flake and a piece of road metal.'[104] Contrary to the impression given by Mulvaney and Griffiths of the competitive rivalry among Victorian 'amateur' collectors, the members of the NSW Society were collaborative in their pursuits.[105] Collecting was an activity they undertook in the local Sydney area and hinterland at weekends, travelling further afield on annual holidays, often in partnership with each other or in groups. They shared information and debated the interpretation of their finds.

Notwithstanding this general ethos (strongest during Thorpe's time) there were divisions within their ranks. Towle, in correspondence with A. S. Kenyon, made a distinction between the 'mere collector' (generally 'quite incapable of interpreting his "finds"') and 'the student': who was 'systematic' in their approach to collection and the recording of data, able to analyse and interpret, and mobilise evidence for argument.[106] At the end of 1935 Towle initiated a stratigraphic excavation at

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[103] Attenbrow, Val. 'Ethnographic and Archaeological Collections by F. D. McCarthy in the Australian Museum'. In *Makers and Making of Indigenous Australian Museum Collections*, edited by Nicolas Petersen, Lindy Allen, and Louise Hamby. Carlton, Vic.: Melbourne University Press, 2008: 472–507; 478.

[104] Towle, C. C. to A. S. Kenyon, 15 May 1930. Kenyon Papers: MS12173. Box 2773. Aboriginal Letters Folder. SLV. Quoted in Griffiths, Tom. *Hunters and Collectors: The Antiquarian Imagination in Australia*. Cambridge: Cambridge University Press, 1996: 80.

[105] Griffiths' portrait of the 'Victorian stone circle' in *Hunters and Collectors* is based substantively on the writings of John Mulvaney, and through them, his point of view. While Mulvaney is the most significant historian of archaeology in Australia, he was also a player in that history. His position in the story influences his commentary, particularly with regard to his characterisation of the 'amateur' collectors who preceded him. For a description of the collaborative relationship between one subset of members of the ASNSW—Towle, B. L. Hornshaw and McCarthy—see Nelson, Raymond C. 'The Lapstone Creek Rockshelter: The Story Continues'. *Australian Archaeology* (65), 2007: 37–43; 39.

[106] Towle, C. C. to A. S. Kenyon, 29 December 1936. Kenyon Papers: MS12173. Box 2773. Aboriginal Letters Folder. SLV. Towle and Kenyon were critical of Hornshaw, among others, in this regard. In December 1934 Towle wrote to Kenyon: 'Mr. Hornshaw, unfortunately, has not the capacity for dealing

Lapstone Creek near Emu Plains to the west of Sydney, on which he was later joined by McCarthy. Lapstone Creek is an important site in the history of Australian archaeology. Following Devon Downs, it was only the second major stratigraphic excavation undertaken in this country. Although publication of the results was delayed until 1948, it too established evidence for the existence of distinct culture sequences in Australia's past. In the mid-1930s, the dominant role of the non-professional members within the Society was usurped by university interests. 1935 was a watershed year in this transference of power.

The changes occurring in the Society are most conspicuously reflected through *Mankind*, the Society's journal. In December a 'new and greatly improved' *Mankind* was launched with Francis Bell as Editor—replacing Keith Kennedy who had co-edited the magazine with Thorpe from its beginnings. There was now an Editorial Committee (which included McCarthy) and a new Editorial Policy was announced. From this point on the magazine would 'only publish original articles of scientific value'. It was explicitly stated that the journal would no longer be open to the discussion of 'matters of purely parochial interest'.[107] A regular note that appeared in early issues of the magazine invited contributions on anything of 'interest and merit': 'articles, however brief, of experiences in the field, unusual finds, or papers on abstract subjects.'[108] The journal now addressed a different community. The policy was determinedly and pointedly exclusive:

> There are a number of men in Australia capable of writing with authority on the archaeology, material culture, physical nature and social structure of man, and it is hoped that this Journal will provide these people with an outlet for their scientific knowledge.[109]

In January Elkin, who had been elected President of the Society at the end of the previous year, gave an address on the history of anthropology in Australia to the anthropology section of the ANZAAS conference (of which he was also President).

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with the rock carvings in a scientific manner … beyond recording his discoveries, he does not seem to have given much study to the matter generally.' Kenyon wrote back (n.d.): 'I agree with you Hornshaw is not a systematisionalist.' Towle, C. C. to A. S. Kenyon, 4 December 1934. Kenyon Papers: MS12173. Box 2773. Aboriginal Letters Folder. SLV.

[107] Bell, F. L. S. 'Mankind's Editorial Policy', *Mankind* 1 (12), 1935: 3.

[108] See Anonymous, *Mankind* 1 (2), 1931: 48; and Anonymous, *Mankind* 1 (5), 1932: 120.

[109] Bell, 'Mankind's Editorial Policy', 1935: 3.

In the narrative he presented—which he continued to refine in later years—he drew a line between the work of 'amateurs … who were not trained anthropologists' and the work done following the establishment of the Department of Anthropology at Sydney.[110] While he granted that 'definite, and sometimes important, contributions to our knowledge' had been made by amateurs, the establishment of anthropology as a credible intellectual discipline, and by implication its future, was seen as wholly the preserve of the University.

In C. C. Towle's correspondence with Kenyon the term 'amateur' appears for the first time in 1936, usually in the context of describing the prejudicial attitudes of others to those Towle preferred to call 'non-professionals'. Towle would have approved of the editorial changes to *Mankind*, but even he started to feel under attack, especially after the launch of Joseph Shellshear's campaign for government legislation to protect Aboriginal sites in 1937. The story of this campaign which continued after the war, shows the forces in play. Shellshear laid the blame for the despoiling of sites on the head of the amateur—or 'private collector'—and the practice of 'bandicooting' (digging for objects as individual 'treasures'). He contrasted this with the methods of the 'trained specialists' who understood the need for mapping the total assemblage found at a site. Shellshear saw the control of the universities as the guarantee of a 'position of dignity' for the science into the future.[111]

For non-professionals such as Towle, who also saw the need for systematic collecting and the preservation of sites from despoilment (this last being an ongoing concern on the ASNSW agenda), there was a problem. The proposed legislation placed control of all future work in the hands of museum or university authorities, denying access to the non-professional researcher, except under their patronage. When a draft of the act was submitted to the NSW government in 1945 (after the hiatus of the war), it was opposed by Towle and two others. Mulvaney

[110] Elkin, A. P. 'Anthropology in Australia, Past and Present'. Report of Paper Delivered to the ANZAAS Conference in Melbourne, January 1935. *Mankind* 1 (11) 1935: 263–64. See also: A. P. Elkin, 'Anthropological Research in Australia and the Western Pacific, 1927–1937.' *Oceania* 8, 1937/1938: 306–27. A. P. Elkin, 'Anthropology in Australia, 1939'. *Oceania* 10 (1), 1939: 1–29. Elkin, 'Anthropology in Australia: One Chapter,' 1958: 225–42.
[111] Shellshear, 'An Appeal for the Preservation of Prehistoric Remains', 1937: 169–75.

has described these petitioners as 'self-interested', and their activities as 'free-enterprise'.[112] From the other side however, Towle saw the legislation as a form of monopoly 'protectionism' for 'professionals': 'they are not so much concerned about protecting the relics as they are about protecting themselves.'[113]

The distinction between 'amateur' and 'professional' in Australia in the 1930s and 1940s was a product of the process of professionalisation itself. In this transitional phase there was a division (to some extent a generational one) between those with experience working from a museum base in archaeology and material culture, and physical anthropology; and an upcoming generation with university training in social anthropology. In the first group, the majority by necessity had alternative sources of primary income; the second group was looking to secure employment in the field. Control over the benefits of professional status, as much as the shape and character of the profession's identity in Australia was at stake. The term 'amateur' was not used in a benignly descriptive way, but rather as a polemical device, activated strategically in the jostling for territory, career opportunities and access to research funding. Elkin has been described as 'the most vociferous controller' of the professional domain. One of the things he used in his arsenal was the accusation of 'amateurism'. In criticising others his charge would be they are 'not a trained anthropologist'. On the other hand he 'plugged his own team … conveniently ignoring that many of them possessed no degrees to their name either'.[114]

In Australia during this period, the fields of archaeology and anthropology were riven by a museum/university amateur/professional divide. This was expressed most conspicuously in the antipathy that developed between Adelaide and Sydney. South Australian anthropology, as Philip Jones has outlined, developed as a 'distinct local variant' through the work of the South Australian Museum under Edward Stirling (1889–1913), and later during the 1920s and 1930s through the

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[112] Mulvaney, 'Sesqui-Centenary to Bicentenary', 1993: 21.
[113] Towle, C. C. Undated typescript notes on the issue, possibly made in preparation for his letter to D. H. Drummond, Minister of Education, 28 January 1941. Towle Papers: MLMSS 3580. Box MLK2241. SLNSW.
[114] Wise, Tigger. *The Self-Made Anthropologist: A Life of A. P. Elkin*. Sydney: George Allen & Unwin, 1985: 203.

activities of the Board of Anthropological Research, attached to Adelaide University but in partnership with the Museum.[115] None of the 'Adelaide School' had university training in archaeology or anthropology. As Ronald Berndt somewhat disingenuously remembered it:

> There was often talk of antagonism between the two schools—Adelaide and Sydney. The reasons were never clear to me, except in so far as it was framed as a contrast between those who considered themselves professional anthropologists [i.e. Sydney] and those who, whatever their professional standing in other fields, were amateurs in that.[116]

As a member of the Adelaide School, Charles Mountford's ability to secure sponsorship and support for the Arnhem Land Expedition from prestigious American sources and the Australian government was a challenge to Elkin's power. He and his supporters responded by questioning Mountford's qualifications for the job, both privately, behind the scenes, and in public.[117] This rift was influential on the politics of the Expedition, and had a particularly poisonous effect on the relationship between Mountford and McCarthy. Even when relations between the two were at their lowest ebb however, McCarthy notably never resorted to the rhetoric of this debate in his criticisms of Mountford.

McCarthy's personal profile to some extent crossed the divide—he was a museum worker with a university qualification.[118] He had been trained through both pathways: learning from 'amateurs' and 'professionals' alike. The museum/university amateur/professional divide had a class dimension. The university educated 'professionals' fashioned themselves as an 'intellectual aristocracy'—heirs to the gentlemen scientists of former generations. McCarthy

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[115] See Jones, Philip. 'South Australian Anthropological History: The Board for Anthropological Research and Its Early Expeditions'. *Records of the South Australian Museum* 20, 1987: 71–92.
[116] Berndt, Ronald M. 'The Changing Face of Aboriginal Studies: Some Personal Glimpses'. In *Anthropology in Australia: Essays to Honour 50 Years of Mankind*, edited by Grant McCall. Sydney: Anthropological Society of New South Wales, 1982: 49–65; 50.
[117] May, Sally K. *Collecting Cultures: Myth, Politics, and Collaboration in the 1948 Arnhem Land Expedition*. Plymouth UK: AltaMira Press, 2010: 47–48.
[118] This however was not a degree. McCarthy had not sat a Matriculation examination, and so while he could attend courses, and sit examinations, he could not be awarded a degree by the University. The Diploma in Anthropology was designed in particular for trainee government officers, and had unique provisions making it open to 'any officer of the Public Services'. This allowed McCarthy access to a University qualification, which he would otherwise not have been able to obtain. Completing a Bachelor's degree would have required McCarthy to do a considerable amount of additional work in subjects other than Anthropology.

had worked his way up through the public service hierarchy to attain a 'professional' position—as did his colleague Norman Tindale, Curator of Anthropology at the South Australian Museum. For both, their interest in material culture as much as their background associated them with the 'amateur'—those 'museum connected' groups of 'interested workers'.

The amateur stone implement collector was a figure made to be pilloried. This has been ably done by later commentators both here and overseas, reflecting the attitudes of the 'professional' cadre of the time.[119] With the development of social anthropology, in Australia as in the international mainstream, the museum was no longer the place where anthropology was *produced*, but rather it conjured parodic images of curators with a narrow and limited set of concerns in describing and identifying artefacts, defining typologies and building chronologies—indistinguishable from the image of the 'amateur'—'poring over artefacts arranged in rows in glass cases'.[120]

Conclusion

McCarthy was committed to the systematic approach of the Museum Tradition: the classification of facts, and the building of classification systems; identifying and cataloguing specimens according to a systematic order; and 'filling-in the map.' In a thirty year career as an anthropologist at the Australian Museum, the Arnhem Land Expedition was the first of only two opportunities he had to work with living cultures in the remoter parts of Australia. He relished the prospect of being able to study 'the real nomadic life of the Australian aborigines … [at] … first-hand', above all, to see how the objects in museum collections were actually 'made and used'.[121]

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[119] Tom Griffiths' caricature of the amateur stone implement collector in his chapter on the 'Victorian stone circle' in *Hunters and Collectors* (that references the writings of John Mulvaney), follows the same lines and serves a similar polemical purpose as Brian Fagan's sketch of the British amateur 'flint collector' in his biography of Grahame Clark. Clark was one of Mulvaney's lecturers at Cambridge University in the 1950s, and was appointed to the Disney Chair during his time there. According to Mulvaney's account, Clark attacked everyone including colleagues with a degree of 'nastiness'. Doubtless, this would have included the amateurs and museum curators, for whom he had a general disdain. Griffiths, *Hunters and Collectors*, 1996: 55–85. Fagan, Brian. *Grahame Clark: An Intellectual Life of an Archaeologist*. Boulder, Colorado and Oxford: Westview Press, 2001: 7–8, 94–95. Mulvaney, John. *Digging up a Past*. Sydney: UNSW Press, 2011: 77–79.

[120] Fagan, *Grahame Clark*, 2001: 7.

[121] McCarthy, Frederick D. 'Arnhem Land Expedition. Report on Scientific Work', n.d.: 1. Typescript. AMS10/22/1948. Australian Museum Archives.

Representing the interests of the Australian Museum on the Arnhem Land Expedition part of McCarthy's job was to collect material to augment its holdings—but he had a broader agenda in mind. He was aware of the major collections of Arnhem Land material culture made to date—most particularly by Donald Thomson (now held by Museum Victoria) and W. L. Warner (the major part of which was dispersed to university collections in the US).[122] By the time he left he would have seen the Berndts' collection that had just arrived back in Sydney.[123] His stated aim was to 'fill gaps' in these existing collections.[124] In other words he was looking beyond the parochial interests of his own museum—beyond institutional, and even national boundaries—to what was needed to complete the catalogue of Arnhem Land material in museum collections considered as a whole: as always, he was filling-in the map.

In answer to Walker's question regarding the most significant contribution the Expedition had made to the field of anthropology, McCarthy elaborated on the reasons for his selection. He valued the archaeological survey because no work of this sort had been conducted in the area previously: it was an 'untouched field' and produced 'type cultures hitherto unknown'. He valued the string figures because of the comprehensive nature of the collection: 'a record number of string figures from one group of natives … the most complete study of string-figures yet made in one area in Australia.' In defence of his choices, he included an aside on why Mountford's collection of bark paintings and their interpretations did not rate as highly. His basic argument was that collections of barks already existed from this

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[122] Thomson died in 1970. What had been up until then his personal collection was transferred on loan to Museum Victoria in 1973. Field notes, diaries, drawings, photographs, film and recordings all remain the property of Thomsons' widow (Mrs Dorita Thomson), while the artefacts are owned by the University of Melbourne to which they were gifted on Thomson's death. About a third of Warner's collection remained in Australia, first in the Department of Anthropology at Sydney University, which was finally transferred to the National Museum of Australia in Canberra. The rest was split between The Peabody Museum at Harvard University and the Phoebe Hearst Museum of Anthropology at Berkeley. Allen, Lindy. 'Tons and Tons of Valuable Material: The Donald Thomson Collection'. In *The Makers and Making of Indigenous Australian Museum Collections*, edited by Nicholas Peterson, Lindy Allen, and Louise Hamby. Carlton, Vic.: Melbourne University Press, 2008: 387–418; 389–90. Hamby, Louise, 'The Reluctant Collector: Lloyd Warner'. In *Makers and Making*, 2008: 355–386; 369–74.

[123] McCarthy, Frederick D. to C. P. Mountford, 4 February 1947 (sic.). Papers of Frederick D. McCarthy: MS3513/14/8. AIATSIS. It was planned to have a viewing of the Berndt material as part of an ASNSW meeting, once the American members of the Expedition had arrived in Sydney.

[124] Jones, Cathy. 'The Toys of the American Australian Scientific Expedition to Arnhem Land Ethnographic Collection'. Diploma of Museum Studies Thesis, University of Sydney, 1987: 12. Personal communication between Fred McCarthy and the author (Jones).

area. He pointed out that Ronald and Catherine Berndt had previously 'done more detailed and prolonged work' at Yirrkala and Oenpelli (now Gunbalanya).[125] The string figures, like the archaeological survey, filled-in blanks on the map, they made original contributions to existing knowledge. The barks did not.

[125] McCarthy, Frederick D. 'Diary 5. Yirkalla Diary No. 2 and Oenpelli', 12 November 1948. Papers of Frederick D. McCarthy: MS3513/14/5. AIATSIS.

Chapter 3
'Interesting to most people': early string figure studies

Introduction

String figures, as made by indigenous peoples, were first noted by travellers in the New World from the early mid-nineteenth century.[1] The observations of these early travellers seeded two important ideas: that the string figures of 'savage peoples' were fundamentally different from the children's string game known in Europe which came to be called, in contradistinction, the 'real cat's-cradle'; and that they were intended to be representational of things in the world.[2] Two reports often cited by early commentators were from Dieffenbach's *Travels in New Zealand* of 1843, and Eyre's *Journals of Expeditions and Discovery into Central Australia* of 1845.[3] Both men remarked that while 'like' the game of 'cat's-cradle' known in Europe, the 'native' version was far more complicated. Eyre wrote: 'a European would be surprised to see the ingenuity they [Australian Aborigines] display, and the varied and singular figures which they produce. Our juvenile attempts in this way, are very meagre and uninteresting compared to them.' Dieffenbach recorded that the Maori were 'great proficients' at the game of *Maui*, named after the ancestor hero-deity from whom they had 'inherited' it. 'Intimately connected to their ancient traditions,' he wrote, 'in the different figures which the cord is made to assume … the outlines of their different varieties of houses, canoes, or figures of men and women are imagined to be represented.' Taylor, another early traveller in New Zealand, noted that while 'a game very similar to our own … the cord is made to assume many more forms, and these are said to be different scenes in their mythology.'[4]

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[1] A notable early report was made by Captain Bligh in Tahiti in 1789. Abraham, A. Johnston. *String Figures*. Algonac, Michigan: Reference Publications, 1988: 7.

[2] Haddon, A. C. 'Introduction.' In *String Figures and How to Make Them*, by Caroline Furness Jayne. (First published as *String Figures. A Study of Cat's-Cradle in Many Lands*. New York: Charles Scribner's Sons, 1906). Reprint edition. New York: Dover, 1962: xi–xxiii; xi.

[3] See Tylor, Edward B. 'Remarks on the Geographical Distribution of Games.' (Paper Delivered at the Royal Institution, 14 March 1879.) *Journal of the Anthropological Institute of Great Britain and Ireland* 9, 1880: 23–30; 26. Haddon, A. C. *The Study of Man*. London and New York: Bliss, Sands and Co. and G. P. Putnam's Sons, 1898: 224–32.

[4] Eyre, Dieffenbach and Taylor quoted in Haddon, *The Study of Man,* 1898: 228–29, 231.

The study of string figures developed concurrently with the establishment of the Museum Tradition of anthropology, in the period 1880–1920. Anthropological interest in string figures and popular enchantment developed in parallel and often hand in hand. Any distinction between the 'professional' scientist and the 'amateur' enthusiast is hard to draw; especially, if we let ourselves consider them existing within one and the same person. Alfred Court Haddon, the major force in the development and promotion of anthropological interest in string figures, is a principal case in point. As 'Nestor of string figure investigators', Haddon was both an expert and an enthusiast.[5] Rouse Ball affirmed: 'It is not too much to say that he is creator of the science, and to his enthusiasm many owe their introduction to it.'[6] For those that came directly under Haddon's influence, the study of string figures was valued as much for establishing 'friendly relations' as for any 'objective results'.[7] Haddon attributed much of his fieldwork success to his knowledge of string figures—as a medium for interacting with people and creating rapport, where shared language did not necessarily exist.[8] His daughter Kathleen Haddon attested: 'When I got out my string the natives soon decided that I was one of them.'[9] Even among 'wild head-hunting cannibals' of the Middle Fly, 'the string worked its magic.'[10] Rivers concurred on the value of string figures for the fieldworker 'in bringing him into sympathy with those who are, for the time being, his fellow-workers. Hours spent in the trivialities of cat's-cradle may be well repaid by help given in paving the way for the revelation of the secrets of religious and magical custom or belief.'[11] At home, as much as abroad, Haddon found string

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[5] Dickey, Lyle A. *String Figures from Hawaii: Including Some from New Hebrides and Gilbert Islands*. Bernice P. Bishop Museum Bulletin 54. Honolulu, Hawaii: Bernice P. Bishop Museum, 1928: 8.

[6] Ball, W.W. Rouse. *Fun With String Figures*. (First published as *An Introduction to String Figures*. Cambridge, England: W. Heffer & Sons, 1920.) Reprint edition. New York: Dover, 1971: 11.

[7] Hingston, A. '"String Figures: A Study of Cat's-Cradle in Many Lands." By Caroline Furness Jayne. With an Ethnological Introduction by A. C. Haddon. New York: Scribners, 1906.' [Review.] *Man* 6, 1906: 155–56; 156.

[8] Quiggin, A. Hingston, and E. S. Fegan. 'Alfred Cort Haddon, 1855–1940.' [Obituary.] *Man* 40, 1940: 97–100; 99–100. See also Fleure, H. J. 'Alfred Cort Haddon 1855–1940.' *Obituary Notices of Fellows of the Royal Society* 3 (9), 1941: 448–65; 456–57. Sillitoe, Paul. 'Why String Figures?'. *Cambridge Anthropology* 3 (1), 1975: 13–26; 19.

[9] Anonymous. 'They Always Carry String'. *Sydney Morning Herald*, 14 June 1956. Reprinted in *Bulletin of the International String Figure Association* 3, 1996: 177–179; 177.

[10] Haddon, Kathleen. 'Cat's Cradles'. *TO-DAY*, 30 December 1916. Reprinted in *Bulletin of the International String Figure Association* 4, 1997: 216–19; 218.

[11] Rivers, W. H. R. '"String Figures. A Study of Cat's-Cradle in Many Lands." By Caroline Furness Jayne. New York: Charles Scribner's Sons, 1906.' [Review.] *Folklore* 18 (1), 1907: 112–116; 112–13.

figures a pleasurable and useful social tool. As his biographer A. H. Quiggin has written: 'String figures were a peculiarly Haddonian contribution to Brighter Cambridge.' At departmental garden-parties, dinners at the Haddons' home, or visits to his study, 'dons and students alike fell under the spell of "Funiculomania" [string-craze]'.[12]

The 'scientific' process of collecting string figure designs is acknowledged as difficult—and in order to attempt it successfully, a practical knowledge of making them, being an 'enthusiast', is recognised as essential. Of the people who made significant contributions to the field of string figure studies, the number that were professional anthropologists was matched by those that were not. Notably, sisters, daughters, and wives of anthropologists were foremost among them: Caroline Furness Jayne, Kathleen Haddon, and Honor Maude (who described herself as 'an anthropologist "by marriage"').[13] Many of these 'enthusiasts', due to their knowledge and proficiency, were in fact the 'experts' or 'professionals' (in one sense of the term) as opposed to the anthropologists, who in this field bulked out the 'amateur' ranks.

The heyday of anthropological interest in string figures was the 1920s and 1930s. With the relevance of the study tied to the fortunes of the diffusionist project, interest petered out gradually over subsequent decades. By the 1970s it was considered 'an oddity if not something of a joke' by anthropologists and 'conjur[ing] up visions of fusty intellectuals accumulating masses of apparently useless material for some obscure academic purposes', it was irredeemably consigned to the past.[14] Summaries of the development of the field have accompanied publications of collections of figures over the years, and in the recent past profiles of influential individuals in the history of the study have been published, but no comprehensive or critically reflexive histories have been

[12] Quiggin, A. Hingston. *Haddon the Head Hunter: A Short Sketch of the Life of A. C. Haddon*. Cambridge: Cambridge University Press, 1942: 127–28.
[13] Anonymous. 'They Always Carry String'. 1956/1996: 178.
[14] Sillitoe, 'Why String Figures?', 1975: 13.

written.[15] In this chapter I outline a history of the early study of string figures as background to the making of the Yirrkala collection—the subject of Chapter 4.

The chapter is divided into four sections. In Section 1 I review the beginnings of anthropological interest in string figures as the result of Alfred C. Haddon's agency and influence. Haddon first collected eight mounted figures in the Torres Strait in 1888–89. Later, with W. H. R. Rivers he devised a descriptive method for recording the instructions for making designs, which became the standard method of collecting string figure repertoire. In 1906 Caroline Furness Jayne, who was introduced to the subject by Haddon, published an illustrated compendium of all known string figure designs collected to that date. In order to record the instructions, most collectors learned how to make the figures themselves. I analyse what this entailed through the story of Kathleen Haddon's fieldwork experience in New Guinea, travelling with her father in 1914.

In Section 2 I survey the development of the study during the 1920s and 1930s. With the publication of more collections from different peoples, there was a growing appreciation of regional stylistic differences, and the method of making designs (rather than the design itself) came to be seen as important for tracking 'culture contact'. The involvement of collectors in making figures, meant that these stylistic differences were appreciated not just as technical facts, but through their own embodied experience.

In Section 3, after looking at ideas about the social purpose and function of string figures in the indigenous societies from which they were collected, I examine the claim that string figure designs were intended as realistic representations, through a focus on Kathleen Haddon's book *Artists in String* (1930). In Section 4 I document the history of the study of string figures in Australia, concentrating on D. S. Davidson's 1941 publication *Aboriginal Australian String Figures*.[16] McCarthy

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[15] See Haddon, 'Introduction'. In Jayne, *String Figures*, 1906/1962: xi–xxiii. Sherman, Mark A. 'Preface'. In *Kwakiutl String Figures*, by Julia Averkieva and Mark A. Sherman. Seattle and London, New York: University of Washington Press and American Museum of Natural History, 1992: xiii–xvi.
[16] Davidson, D. S. *Aboriginal Australian String Figures*. (Originally published in *Proceedings of the American Philosophical Society* 84 (6), 1941: 763–901.) Reprint edition. Carlisle, Western Australia: Hesperian Press, 2006.

took Davidson's study with him on the Arnhem Land Expedition and it was his primary reference in writing up his data.

Section 1: Beginnings

> A world-wide amusement of primitive man, and … in themselves interesting to most people.[17]
>
> W. W. Rouse Ball, 1920

Acquainted with the game of cat's cradle from his own childhood, A. C. Haddon encountered string figures first-hand in the Torres Strait in 1888.[18] This encounter is part of the story of his turn toward anthropology. He collected eight mounted string figure designs that were deposited in the British Museum, along with other ethnological artefacts from the expedition (Fig. 3.1). These are the first known extant examples of mounted string figures, taken from the maker's hands and in this case sewn down on to card, as a method of recording and preserving final designs.[19] This practice has obvious precedents in methods of collecting animal and plant specimens in the biological sciences, and on this trip Haddon was still a zoologist. In the article he published on his ethnographic fieldwork in 1890 he noted, 'the game was played universally throughout the straits … by children and sometimes by adults.' Haddon listed the different subjects represented but did not illustrate any of the figures. He wrote: 'They are all intended to be realistic; in some cases the object represented is obvious, in others the imagination must be called into play, but other natives invariably recognise them, and different islanders make the same patterns'.[20]

The first publication of instructions for making figures was in a short notice by Franz Boas in 1888.[21] He illustrated the final stage of five designs collected during fieldwork amongst the Inuit of Cumberland Sound in Baffin Land in 1883–84, and gave instructions for making two of them, *Cariboo* or *Reindeer* and the

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[17] Ball, *An Introduction to String Figures*, 1920/1971: 1.
[18] Haddon, *The Study of Man*, 1898: 229–30.
[19] See Probert, Martin. 'The Torres Strait String Figures in the British Museum A. C. Haddon Collection'. *Journal of Museum Ethnography* (16), 2004: 140–56. Eastop, Dinah. 'Playing with Haddon's String Figures'. *Textile* 5 (2), 2007: 190–205.
[20] Haddon, A. C. 'The Ethnography of the Western Tribe of Torres Straits'. *Journal of the Anthropological Institute of Great Britain and Ireland* 19, 1890: 297–440; 361.
[21] Boas, Dr. F. 'The Game of Cat's Cradle'. *Archiv Fur Ethnographie* 1, 1888: 229–230.

untranslated *Ussuqdjung* (Fig. 3.2). The recording of the instructions for making the figures can be seen as according with Boas' recommended attention to detail. Boas personally learned how to make at least one of the figures he reported on, as he was able to demonstrate it to Haddon some years later.[22] In 1900, in the report of the Jesup North Pacific Expedition (which was under the Directorship of Boas), stages in the making of two figures collected from the Thompson River Salish of southern British Columbia were illustrated from drawings by Harlan I. Smith (Fig. 3.3). Smith, from the American Museum of Natural History, had evidently learned how to make these figures while on the Expedition, as, again, he later taught them to Haddon who subsequently published written instructions.[23]

When Haddon returned to the Torres Strait in 1898, he and Rivers devised a standard nomenclature and descriptive method for recording the construction techniques used in making string figures. They specified terms to designate fingers, loops, near and far strings (ulnar, radial, distal, proximal), terms for common starting positions and openings (*Position 1* and *Opening A*), and provided a standard form of language to describe characteristic manipulations or movements. Rivers and Haddon's 'A Method of Recording String Figures and Tricks' was published in *Man* in 1902, accompanied by examples of 12 figures collected on the 1898 expedition (Fig. 3.4). By establishing a systematic method of recording string figure designs—making it possible to 'describe any operation in comparatively few words'—they reduced the difficulty of gathering data, and provided a basis for its comparative study. Their object was to address 'the paucity of the available information' on string figures, and 'to induce field workers to pay attention to the subject'. At this point they were non-committal about the actual purpose of the study, the existing data being 'too slight' to indicate what its value might be.[24] On the1898 Expedition string figure designs were collected by Haddon, Rivers, MacDougall and Ray.[25] Current research confirms that no mounted figures were

[22] Haddon, A. C. 'A Few American String Figures and Tricks'. *American Anthropologist* 5 (2), 1903: 213–223; 216. This exchange probably occurred when Haddon was visiting New York in late 1901.
[23] Haddon, 'A Few American String Figures and Tricks', 1903: 217.
[24] Rivers, W. H. R., and A. C. Haddon. 'A Method of Recording String Figures and Tricks'. *Man* 2, 1902: 146–53; 146–47.
[25] Haddon, A. C. 'String Figures and Tricks'. *Reports of the Cambridge Anthropological Expedition to Torres Straits*. Vol. 4. Cambridge: Cambridge University Press, 1912: 320–341; 320, note 1.

collected, and nor were photographs taken as a means of documentation.[26] The figures were collected through recording the instructions for making them, and we can presume the Expedition members did this through learning how to make them themselves. On their return to Britain both Rivers and Ray were confident enough in their prowess to perform 'strange and complicated feats with strings' in front of the Folklore Society.[27]

Cat's-Cradle in Many Lands

The publication of Rivers and Haddon's article gave major impetus to the study of string figures. As Caroline Furness Jayne wrote: they provided 'the first plan whereby all these intricate and difficult figures may be described so that anyone can repeat them; their simple and accurate nomenclature now makes it possible to record all future discoveries.'[28] A notable early contribution inspired by the Rivers and Haddon article came as a letter to the editor of *Man* from the Rev. John Gray. 'Some Scottish String Figures' described four figures 'well known among the children of Cowgate in Edinburgh', and a fifth *The Leashing of Lochiel's Dogs* collected from the Island of Eriskay in the Outer Hebrides (Fig. 3.5).[29]

Caroline Furness Jayne (1873–1909) was introduced to string figures by Haddon when he visited Philadelphia in the summer of 1904. They met through her brother William Henry Furness, an anthropologist, colleague and friend of Haddon's. The Furness family was part of Philadelphia's independently wealthy intellectual and social elite, with close links to the University of Pennsylvania.[30] After her introduction to string figures, it seems Jayne lit immediately on the idea of writing a book about them.[31] The energy and intellect she put into the project was impressive. It was as Mark Sherman has written a 'Herculean task': clearly written instructions for nearly 100 figures coordinated with nearly 1,000

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[26] Probert, 'The Torres Strait String Figures in the British Museum', 2004: 141–142. Eastop, 'Playing with Haddon's String Figures', 2007: 199.
[27] Anonymous. 'Short Notice of the Publication of "Cat's Cradles from Many Lands". By Kathleen Haddon. Longmans, Green, & Co., 1911'. *Folklore* 22 (1), 1911: 128.
[28] Jayne, *String Figures*, 1906/1962: 2.
[29] Gray, Rev. John. 'Some Scottish String Figures'. *Man* 3, 1903: 117–18.
[30] Sherman, Mark. 'Appendix III. The Extraordinary Family of Caroline Furness Jayne' in 'A Tribute to John Lyman Cox (1866–1955)'. *Bulletin of the International String Figure Association* 10, 2003: 42–57.
[31] For an account of the initial meeting between Jayne and Haddon see Ball, *An Introduction to String Figures*, 1920/1971: 31.

illustrations were published 18 months after the first inception of the idea.[32] Jayne's *String Figures. A Study of Cat's-Cradle in Many Lands* of 1906—with an introduction by Haddon—was a landmark publication. It consolidated all the designs published to that date, as well as gathering new designs from a variety of sources. The book catalogued 97 figures, of which 71 were described for the first time. The commentaries provided by Haddon and Jayne surveyed the concerns of the developing field.

Haddon encouraged Jayne to collect figures herself from indigenous peoples at the Louisiana Purchase Exposition (St. Louis World's Fair). 'Living exhibits' of exotic races had become a standard feature of the international exposition as it developed through the latter half of the nineteenth century.[33] William J. McGee, organiser of the anthropology section at St. Louis, thought the variety of peoples represented was unprecedented: 'The world's first assemblage of the world's people.'[34] This was Jayne's collecting ground, her field site. She visited the Fair several times from August through November that year, sometimes accompanied by her brother. Jayne collected 31 new figures in all: from different ethnic groups on the Philippines Reserve, from Native Americans (Navajo, Osage, Chippewa and Apache), two figures from a 'Topek Eskimo from Alaska', one from 'Ottobang', a 'Batwa Pygmy' from the African Congo, and one from an Irish girl.[35] The largest number of figures (over half the total) were collected from Zah Tso, a Navajo schoolgirl, and her mother—noted weavers, from Gallup, New Mexico.[36] Haddon gave Jayne access to his photographs and unpublished notes for string figures he

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[32] Sherman, 'The Extraordinary Family of Caroline Furness Jayne', 2003: 42.
[33] Parezo, Nancy J., and Don D. Fowler. *Anthropology Goes to the Fair: The 1904 Louisiana Purchase Exposition*. Lincoln, Nebraska: University of Nebraska Press, 2007: 1–8.
[34] W. J. McGee, (1905). Quoted in Parezo and Fowler, *Anthropology Goes to the Fair*, 2007: 237. This phrase was itself a quotation from another source.
[35] Jayne, *String Figures*, 1906/1962. 'Ottobang' (Ota Benga), was a press favourite who became one of the celebrity personalities of the fair. He was not in fact Mbuti (Batwa) as recorded by Jayne, but Chiri-chiri (Badinga), one of five different African tribes, brought together in the Batwa Pygmy exhibit. Parezo and Fowler, *Anthropology Goes to the Fair*, 2007: 202–04. For a possibly fanciful account of the exchange between Jayne and Ota Benga, see Bradford, Phillips Verner, and Harvey Blume. *Ota Benga: The Pygmy in the Zoo*. Melbourne: Bookman Press, 1992: 116–17.
[36] Information about the Fair's indigenous participants is scant. Zah Tso is one who features in the archival record painstakingly explored by Parezo and Fowler in their excellent book *Anthropology Goes to the Fair* (2007). The Navajo were known for their textiles and Zah Tso, with her mother, demonstrated weaving at a booth set-up in the Indian School, where Jayne probably met her. Jayne mistakenly refers to Zah Tso's mother, as being her sister. Parezo and Fowler, *Anthropology Goes to the Fair*, 2007: 121–22.

had collected, the 1898 Torres Strait figures among them. A number of these designs were published for the first time in Jayne's book. Her brother William gave her 15 designs he had collected in the Caroline Islands in the north-western Pacific in 1902, using Rivers and Haddon's method (Map 2). Jayne also conscripted John Lyman Cox (1866–1955), a member of her Philadelphia social circle, to collect string figures from students at the Indian School at Hampton, Virginia.[37] He collected 17 novel figures from Klamath, Omaha and Tewa Indians.[38]

The stated aim of Jayne's book was twofold: 'to interest other students in the subject, in order that additional figures and their methods may be collected … and to reach a still larger public, that more people may share in the fascination of the games themselves.'[39] She made a number of innovations in her documentation of the figures. Her purpose was not merely to record the figures and their method of making, but to provide this information in a form that could be easily followed by people who wished to make the figures themselves. She used Rivers and Haddon's basic method, but simplified their terminology (specifically replacing the terms, ulnar and radial, proximal and distal, with near, far, lower and upper, which were clear enough in most cases, she argued).[40] Most significantly, she divided the textual descriptions of making into numbered '*movements*', which were accompanied by illustrations of the successive steps taken toward the completed pattern, *'as they are seen by the person making the figure'* (Fig. 3.6).[41] By breaking up the making of the figures into separate individual movements or steps in this way, the effect of her documentation was not only useful for instructional purposes, but gave emphasis to the potential analytic significance of the

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[37] The exact nature of the connection between Jayne and Cox is not known. Cox was a mechanical engineer working for the Midvale Steel Co. in Philadelphia, with various connections to the same social circles that Jayne moved in. It is likely that it was through her that he became a string figure enthusiast. She inscribed a first edition of the book for him with 'to my best pupil'. Sherman, Mark. 'Interview with James S. Cox' in 'A Tribute to John Lyman Cox (1866–1955)'. *Bulletin of the International String Figure Association* 10, 2003: 5–13; 10.

[38] Cox collected 17 novel figures and one called *Crow's Feet* from an Onondaga Indian Charles Doxon that was the same design as *The Leashing of Lochiel's Dogs* but made using a different method: as Jayne writes 'done by the Indians in the typical Indian way'. She includes this alternative method with her treatment of *The Leashing of Lochiel's Dogs* in her catalogue. See Jayne, *String Figures*, 1906/1962: 116–21.

[39] 'Preface' in Jayne, *String Figures*, 1906/1962: v–vi; v.

[40] Rivers however, disagreed. See Rivers, '"String Figures. A Study of Cat's-Cradle in Many Lands"', [Review], 1907.

[41] Jayne, *String Figures*, 1906/1962: 8–9. Original italics.

examination of methods of making. She identified figures with common shared movement sequences as 'variations', and other figures with a composite logic: 'made by combining movements of several figures with one or two new ones.'[42] Rather than seeing string figures as unique entities characterised in terms of different final designs, she started to see them as made up of a series of constituent movements, elaborated through a system of permutation and combination.

Jayne's book was the first publication to bring together designs from different regions. In the final chapter she provided an index listing the figures according to their geographical distribution, by country and ethnic or 'race group', but in the main body of the book they were organised according to their technical method/relatedness: 'those with a common opening and otherwise closely related … gathered in one series'. Within these series, the simplest were placed first.[43] There were a number of simple figures that were identified as having wide, possibly universal distribution (e.g. *The Leashing of Lochiel's Dogs*). Some of these were found in 'widely separated races', but the 'great majority' of figures Jayne concluded were 'peculiar to definite localities'.[44] Similarly while many movements were shared, Jayne believed that methods of making too evinced marked local 'peculiarities': 'Thus the methods of the Caroline Islands figures cannot be mistaken for those of the Navaho Indians, or the New Guinea methods for those of the other two'. She ventured that the study of the methods of making, and comparison of these methods, was 'more interesting, and of more importance, than the study of the relations between finished patterns'.[45]

At the back of the book Jayne included illustrations of designs for which instructions had not been recorded, from both published and unpublished sources. This included 74 figures collected in North Queensland by W. E. Roth, published in

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[42] Jayne, *String Figures*, 1906/1962: 8, 52–53. See for example Jayne's discussion of the series of Navajo figures she identifies as variations on 'Many Stars':

> They all start with Opening A, or a modification of it; after that, however, some go on as 'Many Stars', but end differently; others have a few new movements and then end with some from 'Many Stars', while others begin and end as 'Many Stars', but have different intermediate movements.

[43] Jayne, *String Figures*, 1906/1962: 4.
[44] Jayne, *String Figures*, 1906/1962: 3.
[45] Jayne, *String Figures*, 1906/1962: 3–4.

1902 (Fig. 3.7).[46] Stewart Culin, when Director of the Philadelphia Free Museum (later the University of Pennsylvania Museum of Archaeology and Anthropology) from 1892 to 1903, had collected a number of string figures in mounted form at Native American Indian reservations he visited, and had also collected 18 mounted figures from visiting Hawaiian sailors.[47] Jayne reproduced Culin's Hawaiian figures, and one Zuni figure in the Museum's collection which she was unable to identify among the Native American designs in her catalogue of figures. (Accompanying the entry for each figure she made reference to the relevant matching mounted artefact in Culin's collection). Along with his Caroline Islands material, her brother William passed on to Jayne a series of mounted figures from Nauru that were forwarded to him by their collector, Ernest Stephen, a long-time resident.[48] Pinned to paper, they were made with lengths of human hair string up to 16 feet long. These were also illustrated. Lastly, she included the three figures Boas had previously illustrated but not given the instructions for, and another series of 18 Inuit figures and two from the Tanana, collected for her on a recent Alaskan expedition by George B. Gordon, also on the staff at the Philadelphia Free Museum.[49]

After congratulating Jayne for a book which in enabling 'anyone to indulge in this fascinating amusement … had added a new joy to life', in his introduction to the book Haddon went on to survey the current state of knowledge regarding the distribution of string figures. He divided them into two main types: the 'Asian type'

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[46] Roth, Walter E. 'Games, Sports, and Amusements.' In *North Queensland Ethnography*, Bulletin No. 4. (Originally published by the Queensland Government, Brisbane, 1902.) In *The Queensland Aborigines*. Facsimile Edition. Vol. 2. Carlisle, Western Australia: Hesperian Press, 1984.

[47] For Culin's biography see Fane, Diana. 'The Language of Things: Stewart Culin as Collector'. In *Objects of Myth and Memory: American Art at The Brooklyn Museum*, by Diana Fane, Ira Jacknis, and Lise M. Breen. Brooklyn, New York: The Brooklyn Museum in association with University of Washington Press, 1991: 13–27. Culin, Stewart. 'Hawaiian Games'. *American Anthropologist* 1 (2), 1899: 201–47. In this article Culin published drawings of 16 of the Hawaiian designs.

[48] See Maude, Honor. *The String Figures of Nauru Island*. Occasional Papers in Asian and Pacific Studies 2. Adelaide: Libraries Board of South Australia, 1971: xxi.

> An Australian, Ernest Stephen … as a youth was left stranded on the island in 1880 by a hard hearted ship's captain. There he married an islander and settled down and it was some years before his father who had sent him on the voyage for his health, discovered where he was.

[49] Gordon had collected the methods of making these figures, but there was not time for Jayne to master them, to include them in her book. Inuit figures are recognised as being 'complicated' and among the most difficult to make from written instructions. Darsie, Richard, Ronald C. Read, and Mark Sherman. 'The Arctic String Figure Project. Part I: Gordon's Alaskan Figures.' *Bulletin of the International String Figure Association* 3, 1996: 22–50; 22.

and the 'Oceanic type'. The Asian type was the name he gave to the 'real cat's-cradle'—as known in Europe. This form of the game had also been found in Japan, Korea and China, India and South-East Asia. It has been suggested that it was brought to Europe from Japan and China by sailors engaged in the tea trade in the seventeenth and eighteenth centuries.[50] The distinction Haddon made between the Asian and Oceanic types was based in the first instance on differences in the initial opening stages of construction. The majority of Oceanic figures collected to that date started from *Position 1* or *First Position* (as Jayne termed it), followed by *Opening A*, whereas the opening sequence in cat's cradle was markedly different, resulting in strings running around the back of the hand (see Figs. 3.8 and 3.9). Further to this, he saw the two forms of the game as being played in different ways, with different objectives, and different potentials.

Cat's cradle involves two players who 'turn and turn about', 'take off' the strings from each other's hands, to produce a set sequence of figures, which can be repeated endlessly. While the figures in the sequence are named, the designs were deemed to be more patterns (in part because they repeated) whereas, in string figures proper, commonly made by a single person (with others coming to assist when necessary), the manipulations were seen as leading to a final design, representing some 'thing'.[51] Cat's cradle (the Asian type) was deemed a limited form, repetitive and mindless: 'a dull amusement … of little interest'.[52]
D. S. Davidson in 1941 described cat's cradle as 'monotonous and strictly limited': 'everywhere … performed perfunctorily and equally well by the stupid and clever'.[53] The Oceanic type, found at that time in Australia, New Guinea, Melanesia, Polynesia (including New Zealand), North America (including the Arctic), was on the other hand seen as being of considerable interest to ethnology. This was not only because of the greater complexity of these figures and evident regional

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[50] Haddon, Kathleen. *Cat's Cradles from Many Lands*. 2nd Impression. (First published 1911). London, New York, Bombay and Calcutta: Longmans, Green and Co. 1912, xv. Abraham, *String Figures*, 1988: 6–7.
[51] Rivers and Haddon, 'A Method of Recording String Figures and Tricks', 1902: 146.
[52] Ball, *An Introduction to String Figures*, 1920/1971: 9. See also Haddon, 'Introduction'. In Jayne, *String Figures*, 1906/1962: xxii.
[53] Davidson, D. S. *Aboriginal Australian String Figures*. Reprint. (Originally published in *Proceedings of the American Philosophical Society* 84 (6), 1941: 763–901). Carlisle, Western Australia: Hesperian Press, 2006: 768.

variation, suggesting the possibility of using them to track cultural diffusion, but because they appeared in many societies to hold a deeper significance (deemed superior to that of a mere amusement). Given that string figures were often accompanied by 'words or chants' and frequently represented 'persons, incidents, or objects connected with religion or mythology', this suggested to Haddon that 'we have here to do with some symbolism that has in the course of time become obscured'. 'On the other hand' he averred, 'it may merely be a pastime, and the figures and designs may be nothing more than casual illustrations of mythology, as they are of innumerable natural objects.'[54]

'Such intimate relations'—on the process of collecting string figures

> The method of collecting these figures in the field is extremely simple: you take with you two pieces of string of the right size, give one to the nearest native, squat on the ground, and go ahead.[55]
>
> Kathleen Haddon, 1916

Rivers and Haddon's article on method led to string figures—'a knowledge of a few types, and ability to record others'—becoming part of the anthropologist's tool kit, equipping them for the field.[56] An abridged version was included in the fourth edition of the standard fieldwork guide *Notes and Queries on Anthropology* published in 1912, and remained unchanged in all subsequent editions.[57] Their 'method' it should be emphasised, was a terminology or language for the writing of instructions, and was limited to that. It did not address the process of learning the figures themselves, or provide guidance on how 'learning and recording' might be combined in the field. In fact, the idea that the collector should learn the figures by learning how to make them themselves is only implied rather than stated.

In 1914 Kathleen Haddon (1888–1961), then 26 years old, accompanied her father on a two-month trip to the Torres Strait and New Guinea.[58] She acted as Haddon

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[54] Haddon, 'Introduction'. In Jayne, *String Figures*, 1906/1962: xxii.
[55] Kathleen Haddon, 'Cat's Cradles', 1916/1997: 217.
[56] Hingston, '"String Figures: A Study of Cat's-Cradle in Many Lands"', [Review], 1906: 156.
[57] Sillitoe, 'Why String Figures?', 1975: 13. I became aware of this section in *Notes and Queries* through Sillitoe's article. It first appears in the 1912 edition and remains unchanged in the 1929 and 1951 editions (this being the last).
[58] The Haddon's departed for the island of Daru in Papua from Thursday Island in the Torres Strait on 16 September 1914, and returned back to Daru travelling through the Torres Strait from 12–17 November. For a full account of their itinerary see Bell, Joshua A. '"For Scientific Purposes a Stand Camera Is Essential": Salvaging Photographic Histories in Papua'. In *Photography, Anthropology and History:*

senior's assistant and photographer, and also collected string figures. The major part of their time was spent progressing by boat along the coast of the Gulf of Papua in New Guinea, from Daru Island to Port Moresby, and travelling inland along riverways, stopping mainly for one, two or three nights at villages and mission stations on the way. At each of these stops Kathleen Haddon collected string figures or 'cat's cradles' as she called them. Her account of the trip 'An English Girl in New Guinea' provides an insight into her process. Her method of collecting involved first learning how to make the figures: hence the need for two pieces of string.

> In order to write down the new figures I had to learn each one, and this was occasionally rather trying, for toes and mouth are frequently used in manipulating the string and I found it almost impossible to keep one piece of string for my private use. The natives were usually unprovided with string and used mine as I always carried several pieces about.[59]

On one occasion later in the trip, when visiting the village nearest the mission house on the Island of Mailu where they had just arrived, Kathleen found herself without a second piece of string and so was unable to collect. She had drawn a 'little crowd of women and children' about her:

> Unfortunately I had only one piece of string and so could not learn any new figures, but I found one woman who was a great expert and we made figures turn and turn about, to the huge joy of all the rest.[60]

Malinowski was also staying on Mailu at the time, and on another day, while her father worked with him, Kathleen 'set about learning cat's cradles'. Her usual practice was to write down the instructions for a figure on the spot, once she had learned it, so that she could collect 'several at a sitting without getting them mixed'.[61] On this occasion she was presented with a figure that was so 'long and complicated' that she could not learn it in one sitting:

> After finding one or two ordinary ones I was shown a tremendously long one, the longest I had ever seen, illustrating the life of a crab. I started learning this, and when my father came along an hour later I was still at it;

Expanding the Frame, edited by Christopher Morton and Elizabeth Edwards. Farnham, Surrey and Burlington, Vermont: Ashgate, 2009: 143–69; 153–54.

[59] Haddon, Kathleen. 'An English Girl in New Guinea', unpublished typescript, n.d.: 23. Box 322 OA2/16/18. University of Cambridge Museum of Archaeology and Anthropology Archive. Kathleen Haddon's son Henry Rishbeth dates the manuscript to 1915. Rishbeth, Henry. 'Kathleen Haddon (1888-1961)'. *Bulletin of the International String Figure Association* 6, 1999: 1–9; 4.

[60] Kathleen Haddon, 'An English Girl in New Guinea', n.d.: 120.

[61] Kathleen Haddon, 'Cat's Cradles', 1916/1997: 218.

> as it was then lunch-time he wrote down what I had learned and we left the rest for another time.

She found the children at the mission where they were staying knew this particular figure, and so the next day was able to continue.

> It was very long and complicated, and there was no obvious sequence of movements. While it slightly resembled other figures at certain points, this resemblance was more of a hindrance than a help for there was always some movement in which it differed and this of course had to be remembered. I felt proud indeed when I finally mastered it and saw it safely written down.[62]

This figure had 13 different stages illustrating in sequence various characteristics of a crab. As Kathleen Haddon later mused: 'Can this be a primitive treatise on Natural History, the effort of some Papuan Aristotle?'[63]

Collections of mounted string figures—such as those made for Boas by the sea captains Mutch and Comer mentioned in the next section—could be generated by collectors who kept a distance between themselves and their informants. As developed by Rivers and Haddon, recording instructions, as the preferred method of collecting designs, ideally involved the collector learning from their informants how to make the figures themselves—a process that Jayne, almost plaintively described as requiring 'relatively so much time and such intimate relations.'[64] The process of learning by doing ensured that the operations by which a figure was made were properly understood. By reconstructing the figure, instructions could be tested and rechecked to ensure accuracy. As Raymond Firth wrote:

> I made it my practice to master each figure myself when I had recorded the movements from my informants. This was assisted by having two strings. If we did the figure together I could then imitate the movements of the informant and correct my record if this was inaccurate.[65]

Note that Firth first wrote down the instructions through observing the movements of his informant, and then learned the figure—in opposite order to Kathleen Haddon. Collecting string figures (even when not particularly long and

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[62] Kathleen Haddon, 'An English Girl in New Guinea', n.d.: 125–27. Quoted in Rishbeth, 'Kathleen Haddon (1888-1961)', 1999: 5.
[63] Haddon, Kathleen. *Artists in String. String Figures: Their Regional Distribution and Social Significance*. London: Methuen, 1930: 145.
[64] Jayne, *String Figures*, 1906/1962: 3.
[65] Firth, Raymond. 'Preface: String Figures in Tikopia Social Life'. In Firth, Raymond, and Honor Maude. *Tikopia String Figures*. Royal Institute Occasional Paper 29. London: Royal Anthropological Institute of Great Britain and Ireland, 1970: 1–6; 1.

complicated) was a demanding discipline, and not just for the collector, but for informants as well. As Kathleen Haddon warned: 'It is advisable to know a few figures beforehand, as the beginner is naturally slow and natives may not be patient teachers.'[66]

The practice of collecting string figure designs in some ways confounds the accepted distinction made between the *surface* ethnography associated with the nineteenth century survey approach to working in the field, and the *depth* of the long-term 'intensive study' as it developed into the classical paradigm of participant observation fieldwork in the twentieth century. It prefigures two central elements characterising the later approach: the shift in the location of research from 'the deck of the mission ship or verandah of the mission station' to amidst the life of the village; and the shift in the role of the researcher from inquirer to participant, and with that an engagement of their embodied subjectivity as a means to understanding.[67] Most particularly, it pre-empts contemporary developments of that paradigm, the so-called 'somatic turn', dating from the 1980s, when researchers such as Michael Jackson began to value 'imitation of practical skills'—'using one's body in the same way as others in the same environment'—as a 'methodological strategy' or 'technique' that could be used to 'mediate' anthropological insights.[68] In recent years investigations of embodied knowledge and experience have become of increasing interest to anthropological enquiry. In particular, the idea of 'thinking through things' has included engagements with 'making' as a way of understanding objects in anthropological and archaeological collections and the lives they document.[69] This has included experiments in making

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[66] Kathleen Haddon, 'Cat's Cradles', 1916/1997: 217.
[67] For a description of the understanding of standard nineteenth century practice see Rohner, Ronald P. and Evelyn C. Rohner, 'Introduction'. In *The Ethnography of Franz Boas. Letters and Diaries of Franz Boas Written on the Northwest Coast from 1886-1931*, edited by Ronald P. Rohner. Chicago and London: University of Chicago Press, 1969: xiii–xxx; xxii–xxx. For a comparative analysis of the two approaches see Stocking, Jr., George W. 'The Ethnographer's Magic: Fieldwork in British Anthropology from Tylor to Malinowski'. In *Observers Observed: Essays on Ethnographic Fieldwork*, edited by George W. Stocking, Jr. History of Anthropology 1. Madison, Wisconsin: The University of Wisconsin Press, 1983: 70–120; 80–104.
[68] Jackson, Michael. 'Knowledge of the Body'. *Man* 18 (2), 1983: 327–45. The phrase 'somatic turn' is used in Madden, Raymond. *Being Ethnographic: A Guide to the Theory and Practice of Ethnography*. Sage, 2010: 18–19.
[69] See Ingold, Tim ed. *Redrawing Anthropology: Materials, Movements, Lines*. Farnham, Surrey and Burlington, VT: Ashgate Publishing Company, 2011. Ingold, Tim. *Being Alive: Essays on Movement, Knowledge, and Description*. London and New York: Routledge, 2011. For work reconsidering the broad span of sensory engagement with material culture (as related to the museum context in particular) see

string for example, and reference to the subject (and practice) of string figure making itself.[70]

The photograph chosen for the cover of David Lawrence's book on *Gunnar Landtman in Papua* has Landtman seated on a folding chair, with a notebook on his knee, writing. A Papuan sits cross-legged in front of him (Fig. 3.10)**.** The relationship between anthropologist and informant constructed by this photograph represents a common understanding of field method before the advent of participant observation: a matter of question and response, the exchange of information going in one direction only, control over the information gathered and its interpretation being in the hands of the anthropologist, who uses it for purposes outside of the understanding of the informant—literally, as depicted here, above their head. Contrast this with the encounter described by Kathleen Haddon:

> I remember one village we visited on the Fly River … The natives did not understand English, and I knew not a word of their language, but we had one common interest. I drew my string from my pocket, squatted down and started to make figures; immediately there were shouts of joy, and although these natives had hardly ever before been visited by a white woman they lost all their shyness, and played Cat's Cradles and examined my clothes with the ease of an old acquaintance.[71]

I am not championing the Haddon's fieldwork to the detriment of Landtman's, but rather using the rhetoric of this particular image to make a general point. It should be noted that Landtman was involved in an intensive study—one of the first undertaken. He spent two years among the Kiwai Papuans from 1910–12, and he also collected string figures. By comparison the Haddons' tour of New Guinea was emphatically on the survey model, focused on a limited range of subjects—Alfred Haddon's main activity on the trip was collecting data on canoes and long houses—and in fact, at the village where the above scene took place, the party only stayed a couple of hours: 'we took a few photographs and measured some canoes, and then

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Edwards, Elizabeth, Chris Gosden and Ruth B. Phillips eds. *Sensible Objects: Colonialism, Museums and Material Culture*. Oxford and New York: Berg, 2006.

[70] See Ingold, Tim. *Making. Anthropology, Archaeology, Art and Architecture*. London and New York: Routledge, 2013. Eastop, Dinah. 'String Figures Matter: Embodied Knowledge in Action'. *Craft Research* 5 (2), 2014: 221–29.

[71] Kathleen Haddon, 'Cat's Cradles', 1916/1997: 218.

set off on our homeward journey' (down river about four miles to the coconut plantation where they were staying).[72]

There is a longer more detailed description of this episode in Kathleen Haddon's manuscript 'A Girl in New Guinea'. Kathleen had arrived at the village on her own, with the rest of the party following behind. As she wrote:

> The great advantage of this was that the native women all came out to see me instead of remaining in their houses, as is their custom when strange men arrive, so I was soon the centre of an interested crowd of men, women, and children, all smiling and shaking hands.

This was when she took the opportunity to get out her string. After this episode, described previously, her narrative continues:

> By this time we all felt thoroughly at home, and various podgy brown babies were produced for my inspection, so I tickled and patted them, a proceeding that commonly resulted in howls of terror at my white face. The natives squatted down all round, and the women fingered my skirt and examined my puttees … The men were, as usual, busy smoking, and one in an indulgent moment handed the fag-end of his cigarette to the women, each of whom took a puff and then passed it on; in the end it came down to me—I fully appreciated the honour, but I am afraid that my courage failed and I faltered some excuse. By this time the others had arrived in the dinghy and all the women fled, in fact the whole village seemed upset at the newcomers, for all the dogs congregated together, put their noses in the air, and howled like lost souls.[73]

This brief episode of ease and intimacy as described by Kathleen Haddon was made possible, it seems in part because of her gender, but it was, as she tells it, specifically triggered by her squatting down, getting out her string and making string figures. On numerous occasions she elaborated on the 'magical' effect making string figures had in 'establishing confidence and a basis for understanding':[74]

> No one who has not experienced it can realise with what rapidity one can get in touch with a tribe through this means, when other and more formal means would take ever so much longer. … It is notoriously difficult for a European to make contact with primitive peoples. And by contact we mean not mere acquaintance and observation, but the more subtle contact of mind and sympathy.[75]

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[72] Kathleen Haddon, 'An English Girl in New Guinea', n.d.: 34.
[73] Kathleen Haddon, 'An English Girl in New Guinea', n.d.: 33–34.
[74] Kathleen Haddon, *Artists in String*, 1930: 7.
[75] Kathleen Haddon, 'Cat's Cradles', 1916/1997: 219. Kathleen Haddon. *Artists in String*, 1930: 7–8.

Through making string figures, doing something that they themselves did, the people she was engaging with recognised, as Haddon put it, 'that I was one of them'.[76] It established an immediate 'intimacy' of relationship—a mutual sympathy—the sought-after goal of the participant observation method.[77]

There is a photograph of Kathleen Haddon in 1914 sitting on the ground with five policemen outside a government building in Port Moresby, learning string figures. Governor Murray had organised members of the native armed constabulary to work with her. The men chosen came from different parts of the country, so they could teach her figures she would not otherwise have seen.[78] Even in this more formal official situation, the close physical proximity and collaborative nature of the exchange—with the man to her right correcting the organisation of strings on Haddon's left hand—is evident (Fig. 3.11). This photograph of Haddon provides an alternative picture of what fieldwork could entail, to that constructed in the photograph of Landtman. Making string figures with someone, either teaching or being taught by them, involves a very different type of exchange.[79]

To start with, whether instructor or student, you are both in a sense on the same level, in that you are both doing the same thing—making a string figure. (It is not possible to learn how to make a string figure and write notes at one and the same time.) There is a shared understanding of the goal of the activity being engaged in—at least in the immediate present. In this collaborative process, the collector is not in a superior position, but is more often the clumsy supplicant. As Jayne wrote about her experience collecting the figure *Apache Door* from her informant Lena Smith: 'She was much amused at my blunders'.[80] Further to this, reciprocal exchanges are often recorded, where the collector shows off their own repertoire,

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[76] Anonymous, 'They Always Carry String', 1956/1996: 177.
[77] 'Intimate' is a term often used to describe the quality of the relationship between researcher and informants that is sought from the participant observation method. See Madden, *Being Ethnographic*, 2010: 16.
[78] Haddon, Kathleen. 'In the Gulf of New Guinea'. *Country Life*, 24 August 1929: 268–70, 269. See also, Kathleen Haddon, 'An English Girl in New Guinea', 1915: 109.
[79] Joshua Bell has argued that the study of string figures influenced Kathleen Haddon's own photographic style on this trip: that the embodied engagement with her Papuan subjects through her string figure research, and the close proximity it allowed, was expressed in the naturalistic and intimate snapshots she took with her VPK (Vest Pocket Kodak) camera. Bell, '"For Scientific Purposes a Stand Camera Is Essential"', 2009.
[80] Jayne, *String Figures*, 1906/1962: 12.

and teaches it to their informants.[81] A record of this comes again from Kathleen Haddon, earlier on the same trip of 1914, on Yam (Iama) Island in the Torres Strait:

> After learning several I showed them some from other countries, including the American Indian 'Lightning' which flashes out in a most realistic fashion. As soon as they understood what it was they were enormously pleased and I had to do it again and again, the whole house-full of people screaming with joy at each flash. At this David decided that he must learn it, which he did with surprising rapidity, and when he produced a flash of lightning it fairly brought the house down.[82]

Section 2: Development in the 1920s and 1930s

Published reports of string figures collected amongst different peoples followed publication of Rivers and Haddon's 'Method' in 1902. These reports generally adhered to a standard format. A short introduction explained the circumstances in which the collection was made and noted any social lore or practice, or mythical association of string figures in the community being studied. The major part of the report consisted of a catalogue with the instructions for making each figure and an illustration of the final design, its local name and English translation, and sometimes songs, chants or stories that accompanied it. Figures from Africa were reported in three papers all published in the one issue of *Man* in 1906. These were collected by John Parkinson from the Yoruba of West Africa, by William A. Cunnington travelling through the Great Lakes system of Central Africa, and by A. C. Haddon, on a visit to South Africa.[83] The previously mentioned Gunnar Landtman (1878–1940), a Swedish anthropologist and acolyte of Haddon's, who collected among the Kiwai Papuans (Fly River Estuary) during two years of fieldwork in 1910–12, published his findings in 1914.[84]

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[81] See Joan Mark on Frank Hamilton Cushing's notion of 'the reciprocal method'. Mark, Joan. 'Frank Hamilton Cushing (1857–1900)'. In *Four Anthropologists: An American Science in Its Early Years.* New York: Science History Publications, 1980: 98–130; 103–5.

[82] Kathleen Haddon, 'An English Girl in New Guinea', n.d.: 8. Quoted in Rishbeth, 'Kathleen Haddon (1888-1961)', 1999: 4–5.

[83] Parkinson, John. 'Yoruba String Figures'. *Journal of the Anthropological Institute of Great Britain and Ireland* 36, 1906: 132–41. Cunnington, William. 'Figures and Tricks from Central Africa'. *Journal of the Anthropological Institute of Great Britain and Ireland* 36, 1906: 121–31. Haddon, A. C. 'String Figures of South Africa'. *Journal of the Anthropological Institute of Great Britain and Ireland* 36, 1906: 142–49.

[84] Landtman, G. 'Cat's Cradles of the Kiwai Papuans, British New-Guinea'. *Anthropos,* January–April 1914: 221–32.

Another significant figure was Oxford-trained anthropologist Diamond Jenness (1886–1969). He collected string figures during fieldwork on Goodenough Island, D'Entrecasteaux Archipelago, in 1912, and published his findings in 1920.[85] He then collected from various Inuit tribes during three years spent working with the Canadian Arctic Expedition (1913–16). In 1923, while Jenness was awaiting publication of his finished report on the Inuit string figures collected on that Expedition, he separately published the appendices to his paper, one on Inuit beliefs concerning string figures, the other a distributional analysis. Over the three years of his fieldwork in the Arctic North, Jenness collected 156 figures from different ethnic/tribal Inuit groups mainly living on the Arctic Ocean: Siberian and Alaskan Inuit in the north-west, McKenzie Delta Inuit, and furthest east, the Copper Inuit of Coronation Gulf. In his distributional analysis, along with this material he referred to the small amount of previously published data, as well as two unpublished collections of mounted string figures (without instructions).[86] One of these was from Siberian Maritime Chukchee collected in 1921 by a Captain Bernard, the other was a series of 40 figures collected for Franz Boas from Cumberland Sound and west coast Hudson Bay, by Captains Mutch and Comer respectively, over 20 years previously.[87]

Dividing the study area into seven regions, Jenness tabulated where each of the string figures he had documented had been found, and what name they were known by, in each location. He only made reference to figures from other collectors that had parallels with figures in his own collection (this did, however, include approximately 60% of the mounted figures).[88] With several caveats regarding method, Jenness identified 24 figures with pan-Inuit distribution, 50 figures that appeared in two or more regions, and 69 examples found in one area only. When it

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[85] Jenness, D. 'Papuan Cat's Cradles'. *Journal of the Royal Anthropological Institute of Great Britain and Ireland* 50, 1920: 299–326.
[86] Jenness included the six mounted figures published by Kroeber (without instructions) in 1900, collected from Smith Sound by a Captain Peary again at Boas' request, and the figures collected by Gordon published in Jayne. Gordon had published the instructions for his collection in 1906, in *Transactions of the Free Museum of Science and Art*, and nine of the figures appeared in Kathleen Haddon's 1911 *Cat's Cradles from Many Lands*.
[87] Boas published the information gathered for him by Mutch and Comer in 1901, including two stories about string figures, but no figures themselves. Boas, Franz. 'The Eskimo of Baffin Land and Hudson Bay'. *Bulletin of the American Museum of Natural History* 15 (1), 1901: 1–332; 151, 161.
[88] Jenness, D. 'Eskimo String Figures'. *Journal of American Folklore* 36 (141), 1923: 281–94; 285.

was finally published in 1926, the organisation of his primary data reflected this distributional analysis. He organised the catalogue of figures in an order based initially by grouping according to opening movement. Within these groups, figures that were widely spread came first, followed by those that were more localised (moving in order from west to east which was, he concluded, the dominant direction of cultural diffusion across the study area). Diffusionist theory made the assumption that widely spread culture traits are prior in origin to later local variations. Jenness' approach to ordering his data was a way of acknowledging the 'genetic connection' between figures (i.e. their technical relatedness) and the concept of 'priority'.[89] Jenness' 1923 paper was the first attempt at a systematic diffusionist areal analysis, and was highly influential, especially in later studies of American string figure traditions.

The majority of string figure collections made during the 1920s and 1930s were from the Pacific region. Perhaps more than in other fields, in the area of string figure studies professionally trained anthropologists did not have a monopoly on research opportunities or publication at this time. In 1919 R. H. Compton (Professor of Botany, University of Cape Town) published on the collection of string figures he made when travelling in New Caledonia and the Loyalty Islands in 1914.[90] Compton was obviously an enthusiast, as to check on the presence or absence of figures other than ones he had been shown, he relates how 'I performed Cat's Cradles from my own repertory before the natives, being careful to construct them rapidly, and only once, in order to avoid introducing alien figures.'[91] Three significant studies were published under the auspices of the Bernice Bishop Museum in Honolulu. In 1925 Willowdean Chatterson Handy, the wife of Harvard-trained anthropologist E. S. C. Handy, reported on 55 figures collected in the Marquesas and Society Islands.[92] In 1927 James Hornell (1865–1949), who became

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[89] Jenness, 'Eskimo String Figures,' 1923: 284.
[90] Compton, R. H. 'String Figures from New Caledonia and the Loyalty Islands'. *Journal of the Anthropological Institute of Great Britain and Ireland* 49, 1919: 204–36.
[91] Compton, 'String Figures from New Caledonia and the Loyalty Islands', 1919: 235.
[92] Handy, Willowdean Chatterson. *String Figures from the Marquesas and Society Islands*. Bernice P. Bishop Museum Bulletin 18. Honolulu, Hawaii: Bernice P. Bishop Museum, 1925. Willowdean Handy accompanied her husband as a 'volunteer assistant' on the 15-month Bayard Dominick Marquesan Expedition of 1920–21, and again on the Bishop Museum staff expedition to the Society Islands in 1923. She authored a number of books on aspects of Marquesan culture (tattooing, handicrafts, cooking) and

well known as a collaborator of Haddon's and for his work on the ethnology of maritime cultures, reported a large series from Fiji collected in 1925, along with smaller numbers from numerous locations in western Polynesia: Tonga, Samoa, the Ellice Islands (Tuvalu), Tokelau and the Gilbert Islands (Kiribati), and Tahiti.[93] In 1928 Lyle A. Dickey (b. 1868) published 115 figures and 16 'slip tricks' he collected during his time as a Circuit Court Judge in the Hawaiian islands of Oahu, Kauai and Niihau, between 1915 and 1917.[94] In his research he had access to 34 mounted figures 'pinned to paper' that had been collected in 1888 by the Government Surveyor Joseph S. Emerson (along with their names and accompanying chants), and he also referred to the collection made by Stewart Culin (as reproduced in Jayne's book). He published methods for making all but two of Emerson's and all but three of Culin's mounted figures.

'Ethnological value'

In all of these publications the principal 'ethnological value' or 'significance' of the study of string figures was seen in terms of the diffusionist project, that is, providing 'data for determining past cultural relationships'. In these studies, the issue in question was the patterning of migration and cultural influence between different Polynesian, Micronesian and Melanesian societies (Map 2).[95] In their reports Compton, Hornell and Dickey all provided comparative tables, listing the occurrence, according to regional location, of figures similar to the ones they recorded. Compton's table of 'Geographical Affinities' compared the 25 figures he collected in New Caledonia with records from three other Melanesian sources (Roth's figures from North Queensland, Haddon's from the Torres Strait, and Landtman's from New Guinea), and the Micronesian Caroline Islands figures from Jayne's book. American, African, and figures from 'Other Localities' all had a

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that of other Pacific islands she visited. See Buck (Ti Rangi Hiroa), Peter. *An Introduction to Polynesian Anthropology*. Honolulu, Hawaii: Bernice P. Bishop Museum, 1945. http://nzetc.victoria.ac.nz/tm/scholarly/tei-BucIntr.html, accessed 21/04/12.

93 Hornell, James. *String Figures from Fiji and Western Polynesia*. Bernice P. Bishop Museum Bulletin 39. Honolulu, Hawaii: Bernice P. Bishop Museum, 1927.

94 Dickey, Lyle A. *String Figures from Hawaii: Including Some from New Hebrides and Gilbert Islands*. Bernice P. Bishop Museum Bulletin 54. Honolulu, Hawaii: Bernice P. Bishop Museum, 1928. Emerson's mounted figures are in the collection of the Bernice Bishop. For Dickey's biography see 'Men of Hawaii'. http://genealogytrails.com/hawaii/biodg.html, accessed 23/04/12.

95 See for example, Handy, *String Figures from the Marquesas and Society Islands*, 1925: 8–9; Hornell, *String Figures from Fiji and Western Polynesia*, 1927: 6–9.

column each. In Dickey's comparative table, published nine years later, there were 11 columns of regional comparisons, and four for the rest of the world, showing the way in which the database had expanded. In 1936 Honor Maude introduced *String-Figures from the Gilbert Islands* as filling 'the most notable gap now remaining' in records of Pacific Islands string figures.[96]

Johannes Andersen (1873–1962) published his monograph on *Maori String Figures* in 1927.[97] Alone of all these researchers he questioned 'the importance to be attached to the theory of the dispersal of cultures', preferring to think similarities between figures found in different locations was due to 'thought and imagination running in similar channels under similar influences'—the rationale for independent invention.[98] (See Chapter 1, pp. 53.) Andersen pointed out that the figures found 'in common' in multiple distant locations were invariably simple figures capable of being made in a variety of ways, and were therefore by implication, easily discoverable. He used as an example, *The Leashing of Lochiel's Dogs*, a figure found in numerous locations, for which a variety of different methods of construction had been recorded. In 1906 Jayne reported that this figure, first collected by the Rev. Gray on the Island of Eriskay in the Outer Hebrides, was known in some parts of Ireland as *Duck's Feet*, by Cherokee and Onondaga Indians as *Crow's Feet* (and made 'by the Indians in the typical Indian way'), and amongst the Ulungu of Africa as *Wooden Spoon*. It also closely resembled the Navajo figure *Two Hogans* collected by Haddon.[99] The figure was known among Maori as *Matamata karehu*, or 'the flat of the spade' (Figs. 3.12A and 3.12B).[100] In contrast to this, more complicated figures tended to be unique. In his opening commentary Andersen drew attention to a complicated Maori figure (with a series of stages), *Ara pikipiki a Tawhaki*, for which 'no figure at all similar has

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[96] Maude, Honor C. and Henry E. Maude. *String-Figures from the Gilbert Islands*. (Pages 1–72 was first published as a Supplement to the Journal of the Polynesian Society in three instalments, Vols. 45–47, 1936–1938. Publication of later instalments was interrupted by the outbreak of WWII. The whole of the study was published in 1958.) *Memoirs of the Polynesian Society* 13. Wellington, NZ: The Polynesian Society, 1958: 1.

[97] Andersen, Johannes C. *Maori String Figures*. Wellington, NZ: The Board of Maori Ethnological Research, 1927. This was a compilation of articles previously published as a series over a number of issues of *The New Zealand Journal of Science and Technology* from1920 to 1926.

[98] Andersen, *Maori String Figures*, 1927: 6, 8.

[99] Jayne, *String Figures*, 1906/1962: 116–21, 386–90 (for geographical distribution of the figure).

[100] Andersen, *Maori String Figures*, 1927: 73–75.

been recorded from elsewhere' (Fig. 3.13). As he emphasised, 'whilst there may be several ways of producing a simple figure, there can be very few ways of producing a complicated one.'[101]

For Andersen, the example of the same designs produced in widely separated places was evidence of a basic human commonality, while the fact they were made using different methods showed evidence of cultural variation and distinctiveness. As he wrote: while designs 'may in appearance be exactly the same, yet the means by which they were produced may be quite different. The finished artefacts reveal the ideal of the thought; the methods show how the thoughts worked to attain that ideal'.[102] This was in essence a reiteration of Boas's axiom that 'unlike causes can produce like effects'. (See Chapter 1, p. 56.) Following on from Jenness' idea about the 'genetic connection' between figures, Andersen argued that 'for ethnological comparative purposes it is necessary to know the procedure as well as the result'.[103] This principle—the importance of method for establishing connections between figures—was to become important in future string figure studies. Andersen saw the common origin of string figures in 'the general mind of man', and introduced his study as 'shewing at least as much evidence for independent evolution of ideas as for the dispersal of cultures'.[104] Andersen's analysis pointed to the idea that regardless of the question of origins and the cultural diffusion/independent invention argument, the interest of string figures is in how they are developed in distinctive ways by different cultural groups.

Identifying characteristic stylistic traits

As research continued and more collections were documented, characteristic regional and local traits were identified: the preponderance of asymmetrical designs in Inuit repertoire, for example. Differences in style, not just of finished

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[101] Andersen, *Maori String Figures*, 1927: 7–8.
[102] Andersen, *Maori String Figures*, 1927: 6.
[103] Andersen, *Maori String Figures*, 1927: 6. Jenness, 'Eskimo String Figures', 1923: 284. 'From many regions only the completed figures are known, and these may sometimes be made in two or three ways. It is therefore very difficult to determine what figures are genetically connected and still more difficult to decide which should be assigned priority.'
[104] Andersen, *Maori String Figures*, 1927: 9.

designs, but of characteristic openings, movements and extensions of figures, were noted. In 1906 Jayne described a movement:

> so general in the Navaho Indian figures that, following Dr. Haddon, in conversation we often speak of it as the 'Navaho movement' or, coining a new verb, direct that the loops on a finger shall be Navahoed.[105]

Kathleen Haddon followed up, using the verb 'to Navaho' and its extension 'navahoing' (the loops), in her 1911 book *Cat's Cradles From Many Lands,* embedding the term in the string figure lexicon (Fig. 3.14).[106] In her book Jayne began the sequence of 'Figures which do not begin with Opening A', with a description of the Navajo figure *Bow*.[107] The opening used in this figure came to be known as *Opening B* or the 'Navajo Opening' (Fig. 3.15). Later in the same chapter she described the figure *Little Fishes*, collected by Haddon on Murray Island (Mer) in the Torres Strait in 1898. Similarly proving to be reasonably common, the opening used in this figure came to be known as *Opening C* or the 'Murray Opening' (Fig. 3.16).

Some movements were identified by local communities themselves. In Papua, Jenness had noted that two characteristic movements that recurred with frequency in the Goodenough Island figures, usually following each other, were given specific names: *nauwa* and *luatataga*.[108] At Maupiti in the Society Islands, Handy reported there was a native vocabulary for all major moves.[109] Dickey, on the other hand, found that 'Hawaiians have no names for any of the movements of string figures'.[110] In the Gilbert Islands, similarly, there were no names for the commoner movements involved, but Maude observed:

> At the end of many of their figures the Gilbertese often make a further variation, sometimes more and sometimes less complicated, this being known as the *rabata-na*, *maniba-na*, or *kaomata-na* of the figure.[111]

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[105] Jayne, *String Figures*, 1906/1962: 20. This movement involves the lower loop on a digit with two or more loops on it, being lifted over the upper loops, off the digit, and released on the palmar side.
[106] Kathleen Haddon, *Cat's Cradles from Many Lands*, 1911: 4–5.
[107] Jayne, *String Figures*, 1906/1962: 212–14. (At the beginning of Chapter 6.)
[108] Jenness, 'Papuan Cat's Cradles', 300.
[109] Handy, *String Figures from the Marquesas and Society Islands*, 1925: 9–10.
[110] Dickey, *String Figures from Hawaii*, 1928: 10.
[111] Maude and Maude, *String-Figures from the Gilbert Islands*, 1936/1958: 3.

Having collected string figures in both Papua and the territories of the North American Inuit, Diamond Jenness was able to make comparisons. Among the Inuit, a characteristic movement involving 'the interchanging or combining of the loops on opposite thumbs or fingers'—named *Katilluik* (put two things together)—he noted, 'is rarely found in Melanesia'. On the other hand, 'that most characteristic feature of Melanesian figures, the "Caroline Extension" with its outward position of the palms'—was unknown among the Inuit.[112] The 'Caroline Extension' was first described by Jayne in 1906, as a distinctive method of final extension used in a number of figures collected by her brother in the Caroline Islands, but at that time, recorded nowhere else (Figs. 3.17A and 3.17B) (see Video 2—Technique 1).[113] As collections were made from more Pacific island groups, the distribution of the *Caroline Extension*—its presence or absence—became a focus of interest and discussion.

The connection between string figure method and styles of movement as cultural artefacts was elaborated by Erich von Hornbostel (1877–1935)—an Austrian ethnomusicologist and colleague of Boas—in the preface he wrote to accompany Julia Averkieva's monograph on Kwakiutl string figures.[114] Commenting on the similarities between the Kwakiutl repertoire (for which he had prepared a distributional analysis) and Inuit string figures, he ventured:

> Even more than by statistics, experts will be convinced when they themselves making Kwakiutl string figures will *feel* their characteristic Eskimoan style. For style in string figure making, as in dancing and singing, is deeply rooted in motor behaviour. (For the same reason tribes, or individuals, chiefly differ not in *what* they make but in *how* they make it.) … Apart from what may be called 'kinetic melody' (which of course, cannot be described), the type of motor habit common to both peoples is revealed by various features of their string game technique.[115]

It is noteworthy that this stylistic aspect of string figures is something that von Hornbostel identified primarily as a *feeling*, that could be best (most convincingly)

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[112] Jenness, 'Eskimo String Figures', 1923: 294.
[113] I advise viewing this video now if you have not done so previously.
[114] Julia Averkieva collected string figures among the Kwakiutl in 1930–31, but publication of her paper with von Hornbostel's introduction did not go ahead.
[115] von Hornbostel, Erich M., and Mark Sherman. 'Kwakiutl String Figures: A Preface'. *Bulletin of String Figures Association* (16), 1989: 25–48; 32–35. (Italics original.)

understood by someone through experience—'when they themselves' make the figures.

Tricks, slips, catches and moving figures

> Various movements appropriate to the object represented are also made—thus, swinging movements are given to the limbs of the spiny lobster; or, by drawing the hands apart, a sinuous motion is given to the snake.[116]
> A. C. Haddon, 'The Ethnography of the Western Tribe of Torres Straits', 1890

In Rivers and Haddon's 1902 article 'A Method of Recording String Figures and Tricks' they had distinguished between 'string figures' which were 'intended to represent certain objects or operations' and 'tricks'—'knots or complicated arrangements of the string that run out freely when pulled'. They admitted however, that it was sometimes difficult to discriminate one from the other.[117] In 1920 Rouse Ball defined three categories or classes of figure: alpha class—the production of a design; beta class—moving or action figures (often used as illustration of an event or story); and gamma class—'string paradoxes where the unexpected happens', aiming at the 'creation of a surprise effect'. The difficulty of such classifications is demonstrated by the example Ball chose to illustrate his alpha class—figures resulting in the production of a finished (fixed and static) design: the Navajo figure *Lightning* (Fig. 3.18).[118] Ball's 1920 publication was the transcript of a lecture, and at this point he paused to demonstrate the figure:

> You see the final result appears suddenly, almost dramatically, and I regard this as an excellent feature of it. Observe also that the production of the figure is rapid … I think quickness, which comes easily as soon as one knows the moves, adds finish to the working and is worth cultivating.[119]

This is the same figure Kathleen Haddon used to entertain people in the Torres Strait in 1914—a figure that as she described it, 'flashes out in a most realistic fashion'.[120] In New Caledonia, Compton found *Lightning* (which he refers to as a 'trick') in the local repertoire, and he recorded another figure 'in which the player's

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[116] Haddon, A. C. 'The Ethnography of the Western Tribe of Torres Straits'. *Journal of the Anthropological Institute of Great Britain and Ireland* 19, 1890: 297–440; 361.
[117] Rivers and Haddon, 'A Method of Recording String Figures and Tricks', 1902: 147.
[118] This figure collected by A. C. Haddon in Chicago in 1901, was first published in 1903. See Haddon, 'A Few American String Figures and Tricks', 1903: 213–23.
[119] Ball, *An Introduction to String Figures*, 1920/1971: 3–4.
[120] Kathleen Haddon, 'An English Girl in New Guinea', n.d.: 8. Quoted in Rishbeth, 'Kathleen Haddon (1888-1961)', 1999: 4–5.

object is to dazzle the beholders by the speed with which the meshwork is made and unmade,' the title of which he translated as *Look!* (Fig. 3.19).[121] As he wrote in his description:

> The figure thus produced is displayed for an instant only, then immediately unmade by letting go with the LH thumb and rotating the hands twice in the reverse direction. It is again made as before, unmade, remade, ad. inf. The idea is to dazzle the spectator by the rapidity of the rotating movements and the suddenness with which the complete figure is presented to and removed from sight.'[122]

The manipulations involved in activating 'moving or action figures' and 'string tricks or catches' (sometimes also referred to as 'slips'), were generally noted in the records of string figure repertoire. Other types of movement effects like those discussed by Ball and Compton above, and the animation of figures through mimetic movements as described by A. C. Haddon in the above quote, not deemed part of the method of making as such, were not always commented on.[123]

Section 3: Use, meaning and intention—issues of interpretation

In this period the purpose or social function of string figures was also a subject of interest to researchers. Information gathered on the social uses of string figure making as a practice in context reflects on the understanding of designs as being realistic in intent. In this section, therefore, I treat the question of social function and realism together.

'Any serious purpose' or 'merely a pastime' ('only for amusement')

From the beginning of recorded observations, the possible religious or magical significance of string figures was commented on with interest. In many of the societies in which they were collected string figures were linked with mythical stories and legends. In some instances they were accompanied by chants. Along with method (instructions for making), researchers were directed to record 'the name of each figure and its alleged meaning as well as any songs or stories associated with it.'[124] Landtman in 1914, and Jenness in 1920, reported how string

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[121] Compton, 'String Figures from New Caledonia and the Loyalty Islands', 1919: 206.
[122] Compton, 'String Figures from New Caledonia and the Loyalty Islands', 1919: 219–20.
[123] Notably, the Haddons, both father and daughter, always commented on these aspects of designs.
[124] A Committee of Section H, British Association for the Advancement of Science. *Notes and Queries on Anthropology*. 5th ed. London: The Royal Anthropological Institute, 1929: 323.

figures in the Papuan communities they collected from played an increase-ritual function in relation to the staple yam crop. Jenness reported that on Goodenough Island 'the proper time for playing cat's cradles is at the *mwa'mo* harvest', which immediately precedes the planting of yams. 'At all other times the old men prohibited them lest they should bring disaster on the gardens.'[125] In 1901 Captain Comer had reported the belief among the Iglulik Inuit that 'boys must not play cat's cradle, because in later life their fingers might become entangled in the harpoon-line. They are allowed to play this game when they become adults.'[126] In 1926 Frank Speck reported that amongst the Montagnais-Naskapi to the south (who had many figures corresponding with those of the Inuit), string figures 'are executed to influence the game animals and serve as magico-religious agents for success.'[127]

In Fiji, Hornell reported string figures had no mythological significance or magical value, but were 'played nowadays solely for pastime'.[128] He attributed this to the 'blight of missionary influence'—even the most innocuous or innocent games, if associated with the old customs, being suppressed, banned or their meaning bowdlerised. In the Gilberts (Kiribati), Honor Maude noted similarly that the making of string figures was 'fast becoming merely a pastime … shorn, by the influence of Christianity, of the magico-religious significance which it at one time possessed.'[129] 'But they were not forgotten', she insists. 'I collected over 100 patterns.' Using notes collected earlier by Arthur Grimble, the British Commissioner in the islands (a resident since 1914), Maude was able to describe a number of different contexts—mytho-religious narratives and ceremonies and folklore traditions—in which string figures played a part. For example they had a role in funerary rites and ideas about the afterworld. On the death of a Gilbertese, a series of figures were performed beside the body as part of the *tabe atu* ceremony. The person who performed these was known as 'the straightener of the path'. It was believed that on their way to the afterworld the spirit of the dead person

[125] Landtman, 'Cat's Cradles of the Kiwai Papuans', 1914: 221. Jenness, 'Papuan Cat's Cradles', 1920: 300.
[126] Boas, *The Eskimo of Baffin Land*, 1901: 161.
[127] Speck, Frank G. 'Culture Problems in Northeastern North America'. *Proceedings of the American Philosophical Society* 65 (4), 1926: 272–311; 295.
[128] Hornell, *String Figures from Fiji and Western Polynesia*, 1927: 6.
[129] Maude and Maude, *String-Figures from the Gilbert Islands*, 1936/1958: 1.

meets the ancestor creator *Na Ubwebwe*, and must perform a series of string figures with him, without making a mistake, in order to pass on—'should he fail he is caught and entangled in the string.'[130]

In 1906 Haddon had constructed the answer to the question of 'Why?' the game is played as an either/or issue. On the one hand the making of string figures could have a religious or mythological significance, and the patterns a symbolic content, on the other hand, 'it may merely be a pastime, and the figures and designs may be nothing more than casual illustrations.'[131] Researchers in the Pacific in the 1920s and 1930s assessed the cultural significance of string figures very much according to these binary terms. Handy reported they were taken 'a little more seriously' in the Marquesas than in the Society Islands. She was told that in the Marquesas they originated as patterns used by 'professionals' for lashings of sennit on 'canoes, coffins, house posts, adzes and the like', and that this 'seems to have given them a dignity which still endures'.[132] Mythological allusions occurred frequently in the naming of figures in both the Society Islands and the Marquesas.[133] In Hawaii Dickey reported that while allusions were made to mythical events through the names given to string figures and the chants accompanying them, none of these references were 'reverent' but made 'only for amusement'. With one exception, he could not identify any figure 'that suggests use in connection with any serious purpose.'[134]

In these discussions two interesting observations about the nature of string figures as a cultural practice come to light. Dickey noted that the subjects of Hawaiian string figures were:

> those that entered into daily life and talk: love affairs, animal life, turtles, shrimps, fish, crabs, geography, mountains, springs, places, potatoes, stars, bridges, houses, fishnets, calabash nets, eyes, navels, and breasts, people in well known stories and legends.[135]

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[130] Manuscript by Mr. F. A. Grimble quoted in Maude and Maude, *String-Figures from the Gilbert Islands*, 1936/1958: 9–10.
[131] Haddon, 'Introduction'. In Jayne, *String Figures*, 1906/1962: xxii.
[132] Handy, *String Figures from the Marquesas and Society Islands*, 1925: 3–4.
[133] Handy, *String Figures from the Marquesas and Society Islands*, 1925: 7.
[134] Dickey, *String Figures from Hawaii,* 1928: 11. The exception was a figure used by priests in healing the sick. See: 143–44.
[135] Dickey, *String Figures from Hawaii,* 1928: 10.

The short chants (often extracts from longer myths or legends) that accompanied them, as with Hawaiian literary culture in general, he described as 'highly figurative' (in the sense of being the opposite of literal in meaning):

> arising from a play on words, the form of the object, its nature, or its associations. There is no objection to mixed metaphors. Geographical references jump from place to place so fast sometimes as to make the head swim, each place having some association aside from its location that in ancient poetry made it a conventional figure of speech.[136]

This use of what might be called 'the allegorical mode' makes, he says, translation difficult: 'It would take a lifetime to run every figure of speech to its lair.'[137] But it is this aspect of the practice of string figures that he believes was its main attraction. He ventures that the loss of this larger culture—'the loss of knowledge of the old allusions, along with the loss of knowledge of the old mythology, history, and the names of winds, and seas'—had led to a decline in the practice of string figures.[138] Told how previous generations 'would sit by the hour repeating these little chants as they made figures', suggested to Dickey this was 'the literature of the common folk', the chants relating to and often extracted from the longer heroic poetry cycles for which they lacked the memory. In this context, he implies, string figures functioned as a mnemonic device.[139] It can be concluded that in this instance at least, the subject or meaning of string figures is not as straightforward as it first appears, but is something elaborated through a complex web, of narrative, form and action.

In the Marquesas, Handy noted that string figures were met with enthusiasm from all, including 'old men chuckling over the jingles that are intoned with the sliding figures': 'the native humour, strong rhythmic sense, and cryptic allegorical allusions combine to make these jingles delightful to listen to, but almost impossible to translate.' [140] 'The humour', she adds 'usually too crude to be tolerated by our standards, need not be translated.'[141] She wrote circumspectly:

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[136] Dickey, *String Figures from Hawaii,* 1928: 11.
[137] Dickey, *String Figures from Hawaii*, 1928: 11.
[138] Dickey, *String Figures from Hawaii,* 1928: 11–12.
[139] Dickey, *String Figures from Hawaii,* 1928: 11. 'Strange to say, Hawaiians able to recite these long chants as a rule can make no string figures.'
[140] Handy, *String Figures from the Marquesas and Society Islands*, 1925: 3.
[141] Handy, *String Figures from the Marquesas and Society Islands*, 1925: 10.

‘Most of the sliding figures are given names descriptive of the movement they resemble in the native mind. *Taata ino* (bad man) … is very evidently a missionary term substituted for words of erotic significance.’[142] Dickey’s statement that references to mythology are ‘not reverent, being made for amusement only,’ is connected to the fact that ‘the underlying ideas’ of many of the chants were erotic.[143] The dichotomy invoked between something being ‘serious’ or for ‘amusement’ only disallows that it could be both. Further, the equation of the ‘serious’ with the authentic culture of the past and ‘amusement’ with the ‘degenerate’ culture of contemporary times, disallows ‘amusement’ and bawdiness in particular as part of a traditional register of emotions and affect. Both Handy and Dickey conclude that the connections between string figures and traditional mythology and legend survive now only in a diluted form: ‘so hazy is the native memory regarding the ancient legends and tales whose events and characters are referred to in a fragmentary way in these sing-song jingles, that few of them could be explained.’[144] Both with the chants, and even more so the string figures themselves, it could be argued however, that the meaning was not in any putative ‘explanation’, but rather in the doing itself.

Realism and representation

> They are all intended to be realistic; in some cases the object represented is obvious, in others the imagination must be called into play, but other natives invariably recognise them.[145]
>
> A. C. Haddon, ‘The Ethnography of the Western Tribe of Torres Straits’, 1890

The idea that string figures are ‘realistic’ mimetic representations of an intended subject (equated by most collectors with the name of the figure supplied), is a presumption that was never really questioned, despite evidence which troubled or complicated this claim. In *Artists in String: Their Regional Distribution and Social Significance*, published in 1930, Kathleen Haddon put aside diffusionist questions to suggest that string figures had value as a form of ‘evidence’ for the more traditional ethnological task of the ‘description’ of the life of a people, literally

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[142] Handy, *String Figures from the Marquesas and Society Islands*, 1925: 7. This same figure—only made using the feet—is also found in the Yirrkala repertoire as *Man and Woman Copulating* (AASEAL #158).
[143] Dickey, *String Figures from Hawaii,* 1928: 11.
[144] Handy, *String Figures from the Marquesas and Society Islands*, 1925: 10.
[145] Haddon, ‘The Ethnography of the Western Tribe of Torres Straits’, 1890: 361.

illustrating what was most common and because of that important in a culture, and giving an insight into 'customs and ways of thought'. Selecting five discrete areas whose string figures were well documented, she took a 'geographical' approach, building a picture of the way of life of the people as adaptations to the particularities of their environment. She discussed a representative sample of string figures, as both a reflection of, and conversely a form of documentation of these different life ways and experiences—'its shapes and details mirrored in string'.[146] Kathleen Haddon was following a line of investigation prominent in mainstream anthropological thinking at the time, linking culture with environment—a development of the Boasian legacy.

The five areas/ethnic groups she chose were: Alaskan Inuit, Navajo Native Americans, Kiwai Papuans, Cape York Peninsula Aborigines, and the West African Gold Coast. Selected with comparative interests in mind, much of the discussion was framed in these terms. For example, the Alaskan Inuit repertoire was noted for the absence of figures representing types of things common elsewhere: few topographical features because they live on a flat featureless tundra, none of the night skies because it is commonly cloudy and they navigate by wind direction, no thunderclouds and lightning because this is a rare weather event, over half of their figures are of animals, and few are of plants, because they are hunters and do not cultivate. The Navajo living under clear desert skies had numerous figures of celestial bodies, the Kiwai Papuans had figures such as *Men Going to Make a Garden*, and figures of the plants that were their staple crops. Most of these observations, were as Haddon acknowledged 'obvious', but it was nevertheless novel to view string figures in this way. Hornell welcomed the new viewpoint on the subject, as 'a much needed vitalizing influence … instilled into dry bones.'[147] Haddon gave instructions for each of the figures, and an illustration of the final design was accompanied by an outline drawing interpreting its purported subject.

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[146] Kathleen Haddon, *Artists in String*, 1930: 38.
[147] Hornell, James. 'Artists in String: String Figures: Their Regional Distribution. By Kathleen Haddon. (Mrs. O. H. T. Rishbeth) Methuen and Co. Ltd., London, 1930.' [Review.] *Man* 30, 1930: 161–62; 161.

According to Haddon, 'A collection of string figures might be likened to a picture gallery.'[148]

In his review of the book R. M. Dawkins brought up the question of 'the kind of resemblance, the degree of realism, for which … the primitive artist, looks, and with which he is satisfied'.[149] Taking the Inuit figure *The Caribou in the Willows* as being 'the most realistic' example given in Haddon's book, he cited as the more common case, figures that 'do no more than suggest the intention to one who already knows it.'[150] (Fig. 3.20). The level of abstraction accepted in string figure designs suggested to Dawkins that 'he [the primitive artist] has quite a different way of looking at works of art, and that what to the white man seems a difficulty requiring explanation is to the native no difficulty at all.'[151] The abstraction of primitive art—'to our eyes just as purely pattern and just as subjectless as these string figures'—had been generally accounted for by the concept of 'degeneration' from an earlier more realistic state. As this explanation was 'inadmissible' in the case of string figures Dawkins argued, it suggested that the notion of 'degeneration' itself was something 'the white man may be introducing … quite unnecessarily.'[152]

Most collectors at some point voiced consternation over the representational quality of the designs they were recording, the link between the figure and its title or name, the thing represented—the link between signifier and signified. In his popular book of 1920, *An Introduction to String Figures* (re-released in 1971 as *Fun with String Figures*), W. W. Rouse Ball complained about a figure collected by A. C. Haddon in 1898, called *The Sleeper*: 'This is a Torres Straits figure, in my opinion dull in itself and not suggestive of the supposed object, but experience shows, pleasing to some.' (Fig. 3.21).[153] In Hawaii, even taking into account the use of 'figurative allusions', Dickey found that 'in quite a number of figures form bears no apparent relation to the name or to its accompanying chant.' 'In these figures',

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[148] Kathleen Haddon. *Artists in String.* 1930: 148.
[149] Dawkins, R. M. 'Artists in String. String Figures: Their Regional Distribution and Social Significance. By Kathleen Haddon (Mrs. O. H. T. Rishbeth). Foreword by Prof. J. L. Myres. Methuen and Co., 1930.' [Review.] *Folklore* 42 (3), 1931: 324–30, 326.
[150] Dawkins, 'Artists in String', [Review], 1931: 326.
[151] Dawkins, 'Artists in String', [Review], 1931: 327.
[152] Dawkins, 'Artists in String', [Review], 1931: 327.
[153] Ball, *An Introduction to String Figures*, 1920/1971: 52–53.

he ventured, 'some sort of conventionalised imagery seems to be involved.'[154] Handy had similar problems in the Marquesas, where many of the names given seemed 'to have no concrete reason for connection with the figures'. She gives a list of examples: the most plainly perplexing perhaps being *pua'a vaevae vau*, 'the pig with eight legs' (Fig. 3.22).[155] Dawkins made a valuable observation in regard to these cases in Hawaii and the Marquesas similarly, where the figures were more often than not accompanied by story in song or chant, figurative and allusive in nature, and 'as far from a plain statement as the accompanying figure is from a realistic photographic picture'.[156] Mentioning the possible mnemonic function of the figures suggested by Dickey, he imagined meaning unfolding in the 'imaginative character of the dual performance.'[157]

In the context of the question of realism, Dawkins also raised the phenomenon of the same design being interpreted differently by different groups of people. He cites as an example given in Kathleen Haddon's book, the Kiwai Papuan's *Turtle* being the same figure that for the people of Cape York Peninsula represented *The Full Moon*.[158] Roth, in 1902 was the first to comment on this aspect. The string figure designs he collected came from different communities spread over a wide area of Northern Queensland, from the Coen River, inland from Aurukun on the Gulf of Carpentaria in Cape York, to the Tully River on the east coast south of Cairns. He found that the same designs occurred in distant locations sometimes with similar interpretations and in some instances, quite different ones: for example, Fig. 4 in Roth's Plate XI represented a *River: large and broad* at Princess Charlotte Bay, while on the lower Palmer River it represented a *Fish-hawk*—'the two squares representing the outstretched wings' (see Fig. 3.23B). He also found that the same figure could have different identifications in locations that were not that far apart: for example, Fig. 3 in Plate VIII identified as *Honey: the cells of the*

[154] Dickey, *String Figures from Hawaii,* 1928: 11.
[155] Handy, *String Figures from the Marquesas and Society Islands*, 1925: 7.
[156] Dawkins, 'Artists in String', [Review], 1931: 329.
[157] Dawkins, 'Artists in String', [Review], 1931: 329.
[158] Dawkins, 'Artists in String', [Review], 1931: 327. See Kathleen Haddon, *Artists in String*, 1930: 84.

comb at Cape Bedford, is interpreted on the middle Palmer River as *Scales of crocodile* and on the lower Palmer River as *Lobes of fat: bandicoot* (Fig. 3.23A).[159]

Tracking the coincidence of figures between connected but distinct ethnic groups in his distributional analysis of Inuit figures, Jenness had also found that across a large regional area, the same designs were identified differently by different groups. He was among the first to articulate the notion that the interpretation of figures was influenced by 'local conditions'.

> [Figure] 13 was interpreted by the inland Eskimos of northern Alaska as an old man dragging a bearded seal, whereas the Mackenzie Delta natives considered the animal a beluga. Bearded seals are not uncommon along the Alaskan coast, but are rare in the Mackenzie Delta. The beluga, on the other hand, is particularly common in the Delta, and the hunting of it in spring was … a feature of native life.[160]

Similarly, in the Oceanic region, as the comparative tables accompanying the publication of collections from different island groups increasingly revealed over time, the same design meant different things to different peoples.

For Kathleen Haddon 'art' was by definition 'imitation of the real'. In claiming string figures as art—'conscious imitations of real objects executed in the medium of string'—she needed to assert their makers were as artists 'directive and constructive'.[161] This led her to speculate on the origins and development of the practice of string figure making.[162] She argued that, plainly 'string figures arise out of the *use* of string'; through experience with the manipulation and control of the medium in societies where string is a pervasive technology. In 'fiddling with string', the recognition of chance resemblances in the tangles was a natural felicity. This theory of origins in 'pure fabrications—post-named', accounted for the widespread occurrence, in different parts of the world, of the simplest figures. Skill and literacy then developed, common movements were mastered, and 'having discovered that a series of manipulations give rise to certain figures, it is easy to

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159 Roth, *Games, Sports, and Amusements*, 1902: 10–11.
160 Jenness, 'Eskimo String Figures', 1923: 293.
161 Kathleen Haddon, *Artists in String,* 1930: 140, 144.
162 Kathleen Haddon, *Artists in String,* 1930: 138–44.

imagine that the native would go farther, and by introducing a slight modification develop a new figure.'[163]

Haddon recognised the development of a language of forms in string with regional specificity, apparent in 'the whole range and style of the figures.' While the development of new figures is attributed to individual creative agency, the development of local regional styles she sees as the result of 'a process of natural selection and survival'—only those designs surviving 'that are felt to be particularly appropriate'. Incidences of 'different names being given to the same figure in different but near-by places', she explains as a special case: the result of diffusion. In the process of transmission of a design from one group to another, its original title may have no resonance in the new location, and so it is replaced with one that does. Haddon's explanation of the developmental process is shadowed by the conviction that string figure making is a mimetic enterprise. The artist's development of new figures is supposedly inspired by the realisation of some new mimetic possibility, the community accepts those figures into the lexicon that are the most compelling as realistic representations of things in their environment. This principle presumably operated also in the transmission of designs from one group to another: adoption being reliant on there being a compelling match of subject for the design being introduced. Haddon recognises the technical logic of the medium, but is not able to appreciate the aesthetic exploration of the relationship between method and form as part of the art involved.[164]

At the end of *Artists in String*, Haddon supplied a comparative table analysing the objects represented by string figures in different regions of the world, divided into different object classes: celestial, physical geography, plants, animals, etc. (Fig. 3.24)**.** Haddon's new focus on the subjects that figures represented as reflective of cultural identity was influential. In the Maudes' study of Gilbertese figures published in 1936 they similarly included a table listing the number of figures in the collection according to subject classification. They noted that a large

[163] Kathleen Haddon, *Artists in String,* 1930: 143.
[164] See 'Conclusion' in Kathleen Haddon, *Artists in String,* 1930: 137–149.

number of the Gilbertese figures represent *maniba* or wells, which, as the main water supply on these low coral atolls subject to severe periodic droughts:

> have acquired a great importance in the life of the natives and have gradually become symbolical of beauty and fruitfulness. Hence a Gilbertese, on being shown any new figure of the common diamond pattern, will usually see in it a representation of his all-important wells.[165]
>
> [see Fig. 3.25]

Section 4: The study of Aboriginal string figures in Australia

Reports by nineteenth-century commentators documented the existence of string figures in Victoria (called *cudgi cudgick* by the people of the Western Port Ranges), among the Adelaide tribe of South Australia, in the Brisbane area (called *warro-warro*), as well as in Central Australia, as previously mentioned in the introduction to this chapter.[166] At Christmas 1901 in Borroloola in the Gulf of Carpentaria, Baldwin Spencer 'spent many hours watching the women playing string games', and sketched some of the stages in the making of figures: 'eagle-hawks, opossums, lizards, yams and dugongs.'[167] Daisy Bates, working in Western Australia from 1904 to 1912, recorded that '*meeroo meeroo* string games were played all over the state.'[168] The first substantial collections of string figures were made in Australia—the eight mounted figures Haddon collected from the Torres Strait in 1888–89 followed by the 31 figures collected by the Cambridge Expedition in 1898 (a selection of which were published in 1902 and 1906, and the whole collection in 1912), and the 74 figures collected by Roth in Northern Queensland also around the turn of the century (published without instructions in 1902).[169]

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[165] Maude and Maude, *String-Figures from the Gilbert Islands*, 1936/1958: 3.

[166] Roth, *Games, Sports, and Amusements*, 1902: 10. Davidson, *Aboriginal Australian String Figures*, 1941/2006: 769. In this section I maintain the use of the contemporary term 'tribes' to describe different groups of Aboriginal people.

[167] Spencer, Sir Baldwin. *Wanderings in Wild Australia*. Vol. 2. London: Macmillan, 1928: 581–84. A. C. Haddon had advised Gillen and Spencer to look out for the practice on their Australian expeditions. Rouse, Sandra Louise. 'Ethnology, Ethnobiography and Institution: A. C. Haddon and Anthropology at Cambridge 1880–1926'. PhD Thesis. University of Cambridge, 1996: 66, n. 8. A. C. Haddon to Baldwin Spencer, 23 October 1900. Baldwin Spencer Papers. Pitt-Rivers Museum Archives.

[168] Bates, Daisy. 'Songs, Dances and Games'. Daisy Bates Papers: MS 365, Box 17, Folio 34. National Library of Australia (hereafter NLA).

[169] It should be noted in regard to my statement that the first major collections were made in Australia, that Haddon and others considered the Torres Strait, annexed in 1879 by Queensland then a British Colony, to 'belong' to Melanesian Papua rather than Aboriginal Australia.

In 1914 Kathleen Haddon collected six figures from the Krapingala tribe living on the shores of Lake Alexandrina in South Australia, one from Victoria and 17 figures from Cape York Aborigines, all of which she published in 1918.[170] G. A. V. Stanley, a geographer, collected up to 60 figures from children at the Yarrabah Mission near Cairns in Queensland, of which he published 20 in 1926.[171] Apart from this however, the subject was largely 'neglected'.[172] This was the only Australian research published until D. S. Davidson's *Aboriginal Australian String Figures* of 1941, which documented his findings from fieldwork undertaken over a number of years in the 1930s.[173] Davidson lamented that recent interest in string figures in Australia had been 'confined to the collection of final patterns'.[174] He was referring here to the work of Norman Tindale (1900–93) at the South Australian Museum, among others.[175]

Tindale, Shepherdson and Mountford

On the earliest of the annual expeditions of the Adelaide Board for Anthropological Research (BAR), Tindale had taken the opportunity to make collections of mounted figures, although few procedures were recorded. The primary purpose of the Board's annual expeditions was to collect physiological data. Usually of two or three weeks' duration, they took place in the August university break each year, from 1928 to 1939. Field activities followed an established protocol of data recording, measurements and testing, but as discussed by Philip Jones, a broader range of ethnological information was also collected: on kinship, language, 'customs, beliefs, games and technology'.[176] At Koonibba in 1928—where, he

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170 Haddon, Kathleen. 'Some Australian String Figures'. *Proceedings of the Royal Society of Victoria* 30, Part 2, 1918: 121–36.

171 Stanley, G. A. V. 'String-Figures of the North Queensland Aborigines'. *Queensland Geographical Journal* 40–41 (26–27), 1926: 73–92. Stanley (a 'Science Research Scholar in Geography' at the University of Sydney), organised the twenty or so figures he reported on in groupings according to subject, providing a precedent for the approach Haddon took in *Artists in String*.

172 Davidson, *Aboriginal Australian String Figures*, 1941/2006: 771.

173 As mentioned in Chapter 2 Davidson spent time in Australia in 1930–31 and 1938–40.

174 Davidson, *Aboriginal Australian String Figures*, 1941/2006: 771.

175 Davidson, *Aboriginal Australian String Figures*, 1941/2006: 772. Davidson also referred to the work of Caroline Tennant-Kelly who had taken photographs of string figures at Cherbourg mission in Southern Queensland in 1934. A number of these photographs were recovered with her papers in 2009, now in the Fryer Library at Queensland University. Tennant-Kelly, C. *The Caroline Tennant-Kelly Ethnographic Collection: Fieldwork Accounts of Aboriginal Culture in the 1930s*. DVD. Brisbane: The University of Queensland, 2011.

176 Jones, Philip. 'South Australian Anthropological History: The Board for Anthropological Research and Its Early Expeditions'. *Records of the South Australian Museum* 20, 1987: 71–92; 79–80.

noted, 'not many were remembered'—Tindale collected one mounted figure from a member of the Wirangu tribe. He also collected instructions for making this figure using Rivers and Haddon's terminology.[177] The next year, in 1929, he collected 78 mounted figures from children—mainly young girls 10–16 years old—of the Arunta and Kukatja tribes at Hermannsburg; but the methods of making were not recorded (Fig. 3.26).[178]

Davidson visited Tindale in November 1930 and on a three-day trip to Swan Reach, inland along the Murray River, they collected string figures.[179] Five mounted figures obtained on this occasion are in the Museum's collection.[180] Instructions for these figures and a number of tricks were recorded, and are included in the catalogue of figures in the main body of Davidson's book.[181] Lists of titles of the mounted figures in the collection for which no instructions had been recorded were included as appendices. As well as those collected at Hermannsburg in 1929, Davidson included two figures collected by Tindale in the Diamantina on the annual BAR expedition in 1934 (one of which comprised three stages with corresponding mounted figures), another collected that year in the Coorong, and 16 collected from Yolngu in Arnhem Land, on the mainland west of Milingimbi island, by the missionary Harold Shepherdson, which entered the collection in

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[177] Tindale, Norman. 'Field Notes and Journal on the Anthropological Expedition to Koonibba on the West Coast of South Australia by Norman B. Tindale. August 1928. Adelaide, S. Australia': 53–55. Norman Tindale Collection: AA388/1/5. South Australian Museum Archives. 'Ngura, cluster of ngura or camps.' A75838, Australian Ethnology Collection. South Australian Museum. While the Board undertook excursions before this, the 1928 Koonibba trip was the first of the regular annual expeditions, and the first Tindale participated in. See Jones, 'The Board for Anthropological Research' 1987: 71–92. Jones, Philip. 'Norman B. Tindale'. [Obituary.] *Records of the South Australian Museum* 28 (2), 1996: 159–76.

[178] Davidson recorded 78 figures from Hermannsburg in the South Australian Museum collection. 64 now remain—found unregistered in the Museums' store in 1990. The process of collecting these figures is documented in Tindale's journal. 'Diary of Researches 1922–1930': 318–20. Norman Tindale Collection: AA 338/1/2. South Australian Museum Archives. Photographs and film were also taken.

[179] Tindale, Norman. 'Murray River Notes by Norman B. Tindale. 1930–1952. Adelaide, South Australia': 43, 225–26. Norman Tindale Collection: AA338/1/31/1. South Australian Museum Archives.

[180] See Probert, Martin. 'Museums and Other Institutions with String Figure Artefacts—an inventory of string figures mounted on card, string figures on film, string figure photographs, and recordings of string figure songs.' http://website.lineone.net/~m.p/sf/archives.html. Last updated August 2010.

[181] Davidson, *Aboriginal Australian String Figures*, 1941/2006. See Davidson's catalogue of figures nos. 16, 38, 63, and tricks nos. 70, 72, and 74. Of the five mounted figures in the collection listed by Probert, 'Spear' (A14957) is the only one not mentioned in Davidson's catalogue. This figure was not available (could not be found) on my visit to the museum.

1935.[182] To have been able to examine all these figures Davidson evidently visited Tindale at the Museum again when he was in Australia in 1938–40.

In the commentary in his publication, Davidson specifically drew attention to the 'twists in the string at various points in the patterns' of Shepherdson's Arnhem Land figures as a 'novel elaboration … not noted in any other region'. As he had collected many of the same patterns in other areas in Northern Australia, he concluded these 'remarkable twists' were a peculiar and unique local development (Figs. 3.27 and 3.28).[183] While demonstrating 'the widespread importance of string figures in Australian culture', these collections however, like Roth's, Davidson directed, were 'worthless for historical purposes'.[184] Reiterating the argument tendered by Jenness and Andersen he wrote that 'since many designs could be produced by entirely different procedures', comparisons could not be based on final patterns alone but required the support of 'full descriptions of the manipulations'.[185] Davidson did however include reference to these figures in his comparative tables at the back of the book.

All but one of the mounted figures collected by Tindale in the South Australian Museum are made from either human hair or animal fur string. Those collected in 1934 in the Diamantina and the Coorong are listed in the Museum database as possible reconstructions by Tindale. Despite Davidson's statement to the contrary, Tindale did in fact record the methods of making these figures.[186] After Davidson's visit, and possibly due to his influence, Tindale did not again make any large collections of mounted figures as he had at Hermannsburg in 1929. On subsequent field expeditions he took some photographs and recorded instructions for a small

[182] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 885–89. Davidson says there are three figures from the Coorong without instructions in the collection (page 772), but he lists only one in the Appendix (page 888). (It is possible that the count of three includes the single figures from Kooniba and Manunka in South Australia that are also in the collection, but not included in his appendices.) Harold Shepherdson worked as a missionary in Arnhem Land for fifty years, based at Milingimbi between 1928 and 1942. The South Australian Museum has some 695 items collected by Shepherdson in the early 1930s. There are now 15 (of the original 16) mounted figures from Milingimbi in the South Australian Museum collection.
[183] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 772, 781, 885.
[184] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 771–72, 783.
[185] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 783.
[186] Tindale, Norman. 'Journal of the Anthropological Expedition to the Diamantina, North-East of South Australia, August 1934': 171–77. Norman Tindale Collection: AA338/1/12. South Australian Museum Archives.

number of figures, usually accompanied by drawings of the final design. For example at Warupuju in the Warburton Ranges in 1935 he recorded the method used by the Ngadadjara for making a figure called *Eni na* or *Eni wai* (no name), another version of *The Leashing of Lochiel's Dogs* (Figs. 3.29 and 3.30).[187] He did not develop his interest any further than this however—he did not publish.

While conducting research at Nepabunna in the Northern Flinders Ranges in South Australia, initially on the BAR expedition of 1937 with Hale and Fry, and returning again in 1938 with his own party, C. P. Mountford took photographs of people making string figures and in 1950 published line illustrations of 45 designs.[188] He presented a number of the figures as narrative sequences: the Emu sequence of 12 figures (being the longest), the Dingo sequence (six figures) and the Subincision sequence (four figures) (Fig. 3.31). Mountford wrote, 'I often noticed Aboriginal men and women sitting in groups, telling stories and illustrating them with figures,' implying that this was a current practice, and the sequences he presented were a record of 'storytelling' as he had observed it.[189] However his diaries suggest that the making of the figures was in fact initiated by the researcher's interest: 'The people had almost forgotten them, but gradually remembered the figures as one or the other reminded the old people about them'.[190] The Dingo sequence and the Subincision or initiation sequence were demonstrated to Mountford by his informant Albert, but the Emu sequence appears to be something of a conflation: for example it includes a figure (Fig. 3.31(k)) 'The dead emu') that was shown to Mountford by Albert's wife as part of a separate three-figure sequence about a bird

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[187] Tindale, Norman. 'Anthropological Expedition to Warburton Range, Western Australia by Norman B. Tindale. July-September 1935. Journal. Adelaide, S. A. 1935': 201. Norman Tindale Collection: AA 338/1/14. South Australian Museum Archives. While a literal translation of *Eni wai* is probably 'any way', Tindale recorded the title of the figure as 'name none', i.e. as having 'no name'. The method used for making this figure was different to those recorded by both Jayne and Andersen. Tindale had collected the same figure at Swan Reach in 1930 and the Coorong in 1931, in both instances made using different methods again. Tindale, 'Murray River Notes': 226. Tindale, Norman. 'Journal of Researches in the South East of S. Australia by Norman B. Tindale. Volume 1. 1931-1934 with some earlier notes copied in': 34–35. Norman Tindale Collection: AA 338/1/33/1. South Australian Museum Archives.

[188] Mountford had previously been a member of the 1935 BAR expedition to the Warburton Range on which Tindale, Hale and Fry collected string figure designs, and the 1936 expedition to The Granites.

[189] Mountford, C. P. 'String Figures of the Adnyamatana Tribe'. *Mankind* 4 (5), 1950: 183–89; 183.

[190] Mountford, C. P. 'Expeditions to Flinders Ranges June 1937, May 1939, Myths and Ceremony, Field Notes'. Part 1, June 1937: 225. Mountford-Sheard Collection: PRG 1218/8/1. State Library of South Australia (hereafter SLSA).

(not an emu) called Wiritjura.[191] It would seem that Mountford took some licence in recreating the storytelling function of string figures as he believed it had existed in the past.[192] His emphasis on the narrative content and ordering of the figures—notably characteristic of his approach to Aboriginal art in general—is nevertheless novel and refreshing. Mountford did not record instructions, so the interesting question of the relationship between the narrative sequencing and technical series of the figures would need to be speculatively reconstructed.

D. S. Davidson's continental survey

Davidson's 1941 study of Australian string figures was conventionally focused on technical identity. It was part of a program of research—developing on from his 1927 thesis on social institutions—tracking the history of diffusion of various material culture traits through a distributional analysis of their presence across the Australian continent. Davidson was known for his ability to handle 'the details of material culture with great precision' and to have a remarkable memory for them. His obituarists commemorated, in particular, his mastery of string figure technique: 'his demonstrations … as beautifully executed as those of a prestidigitator.'[193] One of his earliest publications in 1927, completed while still studying for his doctorate, was a notice of three string figures and one trick, collected from Virginia Indian tribes.[194] Frank Speck, his supervisor, would have been influential in the development of Davidson's interest in material culture.[195] Others in the larger circle of Speck's students were involved in collecting string figures from Native American peoples.[196] The field of string figure studies was

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[191] Mountford, C. P. 'Expeditions to Flinders Ranges June 1937, May 1939, Myths and Ceremony, Field Notes'. Part I, June 1937: 229 and Part II, May 1938: 77. See also accompanying box of contact prints of photos of string figures (Negs. 507A–K; 719A–k; 720A–C; 721A–H; 798A–H). Mountford-Sheard Collection: PRG 1218/8/1, PRG 1218/34. SLSA.

[192] Mountford, C. P. Notes for chapter 5 'Childhood'—'String Games'. Mountford-Sheard Collection: PRG 1218/8/17. Unbound items (Box 15) 1937–1942. Item 3. SLSA.

[193] Hallowell, A. Irving, and Erna Gunther. 'Daniel Sutherland Davidson, 1900-1952.' [Obituary.] *American Anthropologist* 56 (5), Part 1, 1954: 873–76; 873–74.

[194] Davidson, D. S. 'Some String Figures of the Virginia Indians'. *Indian Notes* 4 (4), 1927: 384–95.

[195] See Hallowell, A. Irving. 'Frank Gouldsmith Speck, 1881–1950'. [Obituary.] *American Anthropologist* 53 (1), 1951: 67–87; 69-71.

[196] Speck, 'Culture Problems in Northeastern North America', 1926: 195. In this paper Speck refers to research undertaken by Mrs. Hallowell on the string figures of the Montagnais-Naskapi. Irving Hallowell married his first wife Dorothy Kern in 1919. The most likely opportunity for this work would have occurred through accompanying her husband on field trips to Labrador with Frank Speck in the summers of 1923 and 1924. See Stocking, Jr., George W. 'A. I. Hallowell's Boasian Evolutionism: Human Ir/rationality in Cross-Cultural, Evolutionary, and Personal Context'. In *Significant Others: Interpersonal*

prime ground for the 'age and area' theory Davidson expounded. His monograph is unique in the literature however. All the studies of the 1920s, notwithstanding their comparative tables, were basically surveys of the repertoires of individual island groups. Jenness was his only real forbear, in offering a 'comprehensive comparative study of an entire ethnic area'.[197]

Davidson recorded 124 string figures and 22 string tricks in the various communities he visited, spread across the continental expanse of Australia (Fig. 3.32). These were individual instances in which a string figure was made, 'sightings' as it were, or witnessed 'events'. Taking account of duplications (the same design made using the same method), this reduced to an inventory of 68 different figures and six different tricks.[198] The majority were collected in 'North Australia' (the top half of the Northern Territory): out of 69 string figure 'events' recorded in this area, 53 different figures were identified. In Western Australia where 51 'events' were recorded, by contrast there were only 14 different figures identified. The general shape of his survey, outside of Western Australia, is clearly fairly random. While he did not claim to have made a 'complete list' of the figures known in any area, he considered his findings 'a fair sampling of relative intensity'.[199] Davidson did not provide a coherent narrative or any concrete details about his fieldwork—such as how long he spent in each location—by which to assess the validity of this claim. The story has to be pieced together from his general commentary.

In North Australia, the data for those tribes represented by only a few figures, was 'gathered from stray individuals encountered in other tribal territories' and, he says, it is likely that a more intensive survey would show that neighbouring tribes in an area knew 'more or less the same figures'. In Western Australia, where his investigations were more thorough, he considered other figures if known, were 'probably not numerous'.[200] The relative paucity of figures in Western Australia as

and Professional Commitments in Anthropology, edited by Richard Handler. Madison, Wisconsin: The University of Wisconsin Press, 2004: 196–261; 203.

[197] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 771.

[198] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 776.

[199] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 781.

[200] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 776.

a whole, and the small number collected from any one community, compared to the pattern in North Australia, combined with existing reports in the literature of the prevalence and variety of figures further east, led Davidson to conclude, as summarised in his distributional map, that string figures diffused west and south from the north-east, and from North Queensland in particular (Fig 3.33).[201] Due to the pattern of distribution—the decrease in number of figures as 'the distance from northern Queensland increases' and their absence in Tasmania and Coastal West Australia—combined with his finding of an 'apparently rapid diffusion through the western third of the continent within the last century,' he suggests that string figures were introduced onto the Australian continent 'only a few hundred years ago.'[202]

According to the age and area theory, the point of origin of a trait is where it is the most long-lived or has the 'greatest antiquity', and due to this, is found to have the greatest concentration, and variety and complexity or distinctiveness as created by 'local development'. As a trait diffuses over area through time, it loses potency, and becomes less prolific, simpler and more generalised. The forces of diffusion are like those of evolution: gradualist, uniform, and teleological, but in reverse—a devolution. Davidson's conclusions—his reading of the data regarding the distribution of string figures on the Australian continent—takes little account of the effects of actual historical circumstances on the observed 'intensity' of a trait.

Davidson's catalogue of figures was organised according to opening. The clan or tribal affiliation of the peoples from whom the figure was recorded or the places collected was given, along with any alternative titles that were attributed to the design.[203] This occurred most commonly when a string figure design was found in multiple locations, but as Davidson commented, some designs had multiple identities in the one location. For example, he noted that at Hermannsburg 'several patterns have a variety of names'.[204] The comparative chart at the back of the book

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201 Davidson, *Aboriginal Australian String Figures*, 1941/2006: 777–80.
202 Davidson, *Aboriginal Australian String Figures*, 1941/2006: 780, 793.
203 Davidson uses tribal designations formulated from earlier research. See Davidson, D. S. 'An Ethnic Map of Australia'. *Proceedings of the American Philosophical Society* 79 (4), 1938: 649–79.
204 Davidson, *Aboriginal Australian String Figures*, 1941/2006: 886.

tabled where each figure had been recorded within Australia and in other Oceanic collections (Fig. 3.34A). Note that the first stage of Davidson's catalogue, no. XXXVIII, *Men Coming to a Fight* (see Fig. 61 in Fig. 3.34B), collected from the Maraura people in South Australia, is the same (2-diamond design) figure collected by Tindale in Hermannsburg as *Frog* (among other titles) illustrated in Figure 3.26, and by Shepherdson from Yolngu in Arnhem Land as *Goanna*, and with twists added as *Stingray* (Fig. 3.27).

The comments Davidson makes on the regional affinities of Australian string figures are more interesting and compelling than his analysis of distribution within Australia. He defined a tentative list of common traits indicating a 'uniformity of tradition' between Australia and larger Oceania, designating the region, as a whole, a 'major string figure area':

> 1) Use of two strings and the services of two players for a single figure. …
> 2) Placing strings on lap for certain movements. …
> 3) Crossing hands for extension. …
> 4) Turning one hand in, the other out, in some extensions. …
> 5) Use of doubled loop. …
> 6) Concept of a series whereby several progressive patterns are made by a single player or alternatively by two players. …
> 7) The Elbow Opening. …
> 8) The Pindiki movement.[205]

The 'Pindiki movement' was Davidson's preferred alternate term for the *Caroline Extension* (see Figs. 3.17A and 3.17B).[206] Its use was pervasive in the Australian figures he had recorded. Davidson placed a general caveat on his list of Oceanic traits—that due to the paucity of records, he could not say they were definitively peculiar to this area alone. That is, he could confirm their presence in this area, but not their absence elsewhere. Exempted from this, the *Pindiki Movement* was the one trait understood to be peculiar to the Oceanic region, and Davidson suggested that its distribution could throw light on the history of string figures in the area:

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[205] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 783–85.

[206] Davidson preferred the term *Pindiki movement* to *Caroline Extension*, as the manoeuvre could be used as a step in the manipulation of a figure as well as a final extension. The term 'Pindiki' appears to have been introduced by Kathleen Haddon in 1930 as 'a native name' for the extension. (She does not however specify from which native group it came.) Davidson, *Aboriginal Australian String Figures*, 1941/2006: 785. Kathleen Haddon, *Artists in String*, 1930: 156.

> In addition to its apparent universal use in Australia it is found in New Caledonia, the Loyalty Islands, Fiji, New Zealand (not common), the Ellice, Tokelau, Gilbert and Caroline Islands, and in Nauru. It seems to be lacking in Tonga, the Marquesas and Society Islands, Tahiti, Hawaii, and in North and South America, Asia, Africa and Europe.[207]

Davidson inferred from the regional distribution of the *Pindiki*—its currency in the western Pacific (Australia, Micronesia, Melanesia and western Polynesia), and absence from the eastern Pacific of outlying Polynesia—that it was a recent invention, its distribution following as a separate diffusion after the first migration of people (and string figures) across the Pacific some 1500 YBP. Davidson thought that in the Australian case, 'it seems likely that it accompanied the original introduction of string figures from Melanesia'.[208]

Davidson discerned a close relationship between Australian and Melanesian figures in particular:

> Not only do we find in Melanesia identical procedures for a number of the more complex Australian patterns but, equally significant, also the presence of distinctive string figure usages, manipulations and extensions not reported for other parts of the world.[209]

However, apart from noting the predominance of the *Pindiki Movement* or *Caroline Extension* in both Australia and Melanesia, he does not provide any further detail on the nature of these shared 'usages, manipulations and extensions'.

Davidson's conclusions throughout, as he acknowledged, relied on inference and supposition, based on meagre factual data—'the present evidence, unsatisfactory as it is for most areas'.[210] Radcliffe-Brown, as mentioned in Chapter 2, had criticised Davidson's PhD thesis as offering 'plausibilities at best'. (See Chapter 2, p. 72.) Similarly, his work here was open to the charge of being little more than conjecture:

> *Thus it is possible, but by no means demonstrated nor necessarily probable*, that string figures came into the Pacific with Polynesians or Micronesians, or diffused from the west into New Guinea and western Melanesia late in the

[207] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 785.
[208] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 785–92.
[209] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 783.
[210] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 781.

> pre-Polynesian period. Distributional evidence ultimately may reveal some definite suggestions on this question.[211] [my italics]

Davidson's primary interest was in the technical identity of designs for use in tracking diffusion, rather than the social use and function of string figures. He comments on this subject only briefly. While admitting it seemed 'strange', given 'the complex social and totemic systems … and the importance of magic and food-increase rites' in Aboriginal culture, he found no evidence that designs had any significant content or meaning or, in Dickey's terms, 'serious purpose': 'practically no patterns have been given a social, totemic or magical connotation.' He concluded: 'on the basis of present information it would seem that string figures in Australia serve almost entirely the purpose of amusement …'[212] The only reported exception, he writes: 'are the figures of Arnhem Land, North Australia, concerning which there is a vague rumor of some association with initiation rites.'[213]

Conclusion

The existence of the same designs in distant places was one of the things that excited anthropological interest in string figures: as grist for the mill in the debate between evolutionist independent invention and diffusionist schools of thought. Some simple designs (such as *The Leashing of Lochiel's Dogs*) were found to have almost universal distribution. However, multiple ways of making these and other designs were recorded. For the purposes of comparative analysis, in order to assert a connection between figures when the same design could be made in a variety of different ways, a record of the method of making came to be seen as essential. The collecting of string figure repertoires in the early twentieth century was concentrated in the North American territories of the Inuit and in the Pacific region. In comparisons of repertoires, while some common shared figures were identified, the majority were found to be locally unique. As more collections were documented, distinctive stylistic traits began to be recognised at regional and local repertoire levels. These were not just differences in finished designs, but in the characteristic openings and movements used, and the form of extension of figures

[211] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 793.
[212] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 782
[213] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 782.

(i.e. the *Caroline Extension*). The prescribed optimal method for collecting string figures involved collectors learning how to make the figures themselves. This was an important factor enabling the appreciation of these stylistic traits as embodied kinaesthetic experience.

In contrast to the technical focus of diffusionist studies of string figure repertoire, in her 1930 book *Artists in String* Kathleen Haddon elaborated how different regional repertoires reflected the particularities of culture and environment of the people, through the choice of subjects depicted. While understanding the formal qualities of string figure designs as a product of their technical logic Haddon saw the art of string figures purely in terms of their supposedly mimetic function—suggesting, ‘a collection of string figures might be likened to a picture gallery’. The idea that string figures were realistic representations—as intended by their makers—persisted despite collectors having problems recognising the subject of many figures, and the observation that the same figure could represent different things to different people. As I discuss in the following chapters, this idea was central to McCarthy’s treatment of his data.

Chapter 4
The string figures of Yirrkala: the making of a museum collection

Introduction

In a letter to Mountford written in February 1948 (a month before the departure of the Expedition), McCarthy reported that he had been 'reading up the string figures' but found 'the technique extremely difficult to follow—Bell gave it up, he told me, but I shall look up further references'.[1] The Arnhem Land Expedition was the first opportunity McCarthy had to do fieldwork with living peoples, and it was the first and only time he worked on string figures. It is possible that Mountford, who as mentioned in the last chapter collected string figures from the Adnyamathanha people in the northern Flinders Ranges in 1937 and 1938, suggested the project. He reassured McCarthy: 'If you have not time to learn the string games, we could collect the completed examples and mount them on sheets of cardboard. Even if the techniques are not recorded, it will be some sort of a record.'[2] As we know however, as most emphatically stated by D. S. Davidson, final patterns alone, without a record of the manipulations or instructions by which they were made, were considered worthless as 'scientific' data.[3] The most important influence on McCarthy's decision to study string figures on the Expedition would have been the previous work done on the subject by Davidson. His 1941 publication, *Aboriginal Australian String Figures*, was a continental survey, and McCarthy likely saw the

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[1] McCarthy, Frederick D. to C. P. Mountford, 4 February 1947 (sic). Papers of Frederick D. McCarthy: MS3513/14/8. AIATSIS. F. L. S. (Frank) Bell undertook fieldwork in Tanga, New Ireland in 1933, as the recipient of an ANRC grant. McCarthy's comment regarding Bell, most likely referring to his preparations for this trip, suggests that string figures were on the agenda at Sydney University as a subject of research at that time. Radcliffe Brown, Raymond Firth, and Camilla Wedgewood (who taught in the department in 1929 and 1934), had all collected string figures as part of their fieldwork regimens. Radcliffe-Brown as a Cambridge student of Haddon and Rivers was an initiate. He collected string figures in the Andaman Islands in 1907, and Daisy Bates records him taking an interest in 'string games' in their time together in the field, at Sandstone, inland from Geraldton in Western Australia in 1910. Two figures collected by Radcliffe-Brown in the Andamans were included in Kathleen Haddon's 1911 book. The first ANRC Fellowship recipient Raymond Firth, collected string figures during his fieldwork in Tikopia in 1928–29. Camilla Wedgewood, another Cambridge graduate close to Haddon, also collected string figures during her ANRC Fellowship fieldwork in New Guinea in 1932–33.

[2] Mountford, C. P. to Frederick D. McCarthy, 4 February 1948. Papers of Frederick D. McCarthy: MS3513/14/8. AIATSIS.

[3] Davidson, D. S. *Aboriginal Australian String Figures*. (Originally published in *Proceedings of the American Philosophical Society* 84 (6), 1941: 763–901.) Reprint edition. Carlisle, Western Australia: Hesperian Press, 2006: 763–901; 783.

opportunity to compliment this with an intensive study. He had noted Davidson's suggestion that Arnhem Land string figures were locally unique: 'known to employ manipulations different to those used elsewhere in Australia.'[4] The project would have appealed to McCarthy's sense of professional purpose: filling-in the map. As he told himself in his diary: 'There is no complete collection from Arnhem Land in existence.'[5]

McCarthy was one of three anthropologists on the Expedition. When the party reached Darwin they swapped notes on the work each wanted to do.

> Setzler is planning to do archaeology, some physical anthropology, material culture collection, techniques & function.
>
> I intend to do trade, archaeology, material culture, art & legends, go out with Margaret's group on Walkabout & go out hunting, fishing, & visit quarries, make a collection & study techniques & function.
>
> Monty wants to do art & legends, & to get a collection.

McCarthy saw the need for them to concentrate their efforts on select areas:

> I want to work on a set plan without interference so that I can complete some lines of work & not get a confused picture of a tangled skein of work… We have only a short time in each camp, the natives have to learn to like us & tell us their secrets, & we have got to specialize to succeed.[6]

There was undoubtedly competition between Mountford and McCarthy over territory in the 'art field'—collections made, research undertaken, and later publication. In particular, both Mountford and McCarthy had experience in documenting rock art (Mountford through photography); for both it was an area of primary interest. McCarthy spent a number of days documenting a series of cave sites at Junduruna near a ceremonial ground on the western side of Groote Eylandt. On 11 June he wrote in his diary:

> I slept very well that night after the anxiety of completing the job had passed—it is, I think, the first scale chart made of a Northern Australian painting site & it will cause some admiration (which will tickle my vanity a

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[4] McCarthy, Frederick D. 'Arnhem Land Expedition. Report on Scientific Work', n.d.: 1–11; 7. Typescript. Correspondence Files, Arnhem Land Expedition. AMS10/22/1948. Australian Museum Archives.
[5] McCarthy, Frederick D. 'Diary 4. Yirrkalla Diary No. 1 and Milingimbi', 14 July 1948. Papers of Frederick D. McCarthy: MS3513/14/4. AIATSIS.
[6] McCarthy, Frederick D. 'Diary 1. Field Notes. Groote Eylandt 1', 27 March 1948. Papers of Frederick D. McCarthy: MS3513/14/1, AIATSIS.

> little), even tho it might cause Monty to think that I am invading his art field.[7]

Mountford did indeed resent this incursion into what he saw as his territory. When they had it out McCarthy argued that Mountford's attitude was unreasonable:

> As this was a scientific expedition in the field to obtain both specimens & as wide a range of scientific results as is possible within the scope of the particular members' science, then he had no right to restrict these efforts.[8]

The dynamic of their relationship—Mountford protective of his ground; McCarthy aggrieved at a lack of 'scientific' principle—mirrors that of the larger amateur/professional fissure. The differences between the two men over the more substantive issue of the dispersal of the collections can be seen as a product of this divide. While the story of the Arnhem Land Expedition has been told a number of times, in order to set the scene I begin this chapter with an account of the general circumstances of the Expedition: its genesis, institutional stakeholders, personnel, and the dynamics among the researchers in the field.

The main focus of this chapter is an analysis of the making of the collection of string figures and accompanying documentation at Yirrkala: what McCarthy did when and where and with whom. This information is recorded in his Expedition diaries and notebooks.[9] The process involved in writing up his data and preparing the manuscript of his paper on 'The String Figures of Yirrkalla' for publication in the *Records* of the Expedition is also examined.[10]

Finally, I look at some of the problems with McCarthy's documentation in the *Records*—errors in the recording of techniques and duplication of designs—that compromise the claims he made for the collection based on the number of different

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[7] McCarthy, Frederick D. 'Diary 2. Groote Id. Diary No. 2,' 11 June 1948. Papers of Frederick D. McCarthy: MS3513/14/2. AIATSIS.

[8] McCarthy, 'Diary 4', 19 July 1948.

[9] All members of the Expeditionary party were encouraged to keep diaries of their time in the field and were supplied with notebooks for this purpose. (C. P. Mountford to Frederick D. McCarthy, 2 December 1947. Papers of Frederick D. McCarthy: MS3513/14/8. AIATSIS.) As well as using them for his diaries, McCarthy recorded field notes in dedicated volumes of these notebooks—to which he also gave the title 'Diary'. Thus 'Diary 6' (subtitled 'String-Figure Techniques. Yirrkalla and Oenpelli') contains information about the process of collecting the string figures and begins the inventory of techniques recorded for each figure, which is continued in 'Diary 7'. 'Diary 6' is in the Australian Museum Archives. 'Diary 7' is in the AIATSIS collection, along with his other diaries and notebooks from the Expedition.

[10] McCarthy's variant spelling of Yirrkala has been preserved in references to that text.

figures recorded. As outlined in the discussion framing Chapters 1 and 2, the 'comprehensive' nature of the data he collected on the string figures in Yirrkala was the reason he gave for considering the collection one of the major achievements of the Expedition in the field of anthropology—and this 'comprehensiveness' was largely argued through number: 'a record number of string figures from one group of natives'.[11]

Expeditionary politics

C. P. Mountford's (1890–1976) leadership of the Arnhem Land Expedition was a career coup. His interest in Aboriginal art and ethnology had up until that time been pursued largely in a private capacity or, from the mid-1930s, in his role as Honorary Ethnologist with the South Australian Museum.[12] Mountford supported his anthropological activities through steady employment in a regular 'day job'. Trained as an electrical engineer, he worked for Australia Post (then the Federal Postmaster-General's Department) from 1920 onwards. First stationed in Darwin, and then from 1923 back in Adelaide, he developed a particular talent as a photographer and film-maker. It was this work that drew the attention of Arthur Calwell, Minister for the Department of Information, a wartime agency then transitioning to a peacetime role promoting Australia's interests overseas.[13] In 1945 Calwell offered Mountford a position in the Department of Information (arranging leave from the Postmaster-General's Department), sending him on a promotional lecture tour of the USA showing two colour films he had made about Aboriginal life in Central Australia: *Tjurunga* (1942) and *Walkabout* (1942).[14]

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[11] McCarthy, Frederick D. 'Diary 5. Yirkalla Diary No. 2 and Oenpelli', 12 November 1948. Papers of Frederick D. McCarthy: MS3513/14/5. AIATSIS.

[12] Jones, Philip. 'Inside Mountford's Tent: Paint, Politics and Paperwork'. In *Exploring the Legacy of the 1948 Arnhem Land Expedition*, edited by Martin Thomas and Margo Neale. Canberra: ANU E Press, 2011: 33–54; 35. Between 1935 and 1942 Mountford participated in three expeditions mounted by the Adelaide Board for Anthropological Research. See Jones, P. G. 'South Australian Anthropological History: The Board for Anthropological Research and Its Early Expeditions.' *Records of the South Australian Museum* 20, 1987: 71–92.

[13] Vickery, Edward L. 'Telling Australia's Story to the World: The Department of Information 1939–1950'. PhD thesis, Australian National University, 2003: 119–46. Chapter 6: 'The Transition to Peacetime 1943–1950'.

[14] May, Sally K. *Collecting Cultures: Myth, Politics, and Collaboration in the 1948 Arnhem Land Expedition.* Plymouth UK: AltaMira Press, 2010: 37–38.

Presenting to an audience of 4,000 at the National Geographic Society (NGS) in Washington, Mountford impressed its President, Gilbert H. Grosvenor. The initial germ of the idea for the Expedition followed from their subsequent meeting.[15] Mountford applied to the NGS research fund for a grant to support a research expedition to Arnhem Land. This was a small venture—with Mountford himself as sole primary researcher—concentrating on the study of the art, ethnology and music of the indigenous people of the area.[16] The project received support from the Society—attracting a grant of $10,000—on the understanding that the Australian government would provide Mountford's salary and transport, and that an American biologist from the Smithsonian Institution would be allowed to accompany the party.[17] From this point the proposal grew both in scope and in the number of stakeholders involved. The plan for the Expedition was hatched in a postwar political environment, in which a collaboration between Australian and American scientists could be leveraged in support of friendly relations—a 'good neighbour' policy—between the two countries. Alexander Wetmore, Secretary of the Smithsonian Institution, saw an opportunity to augment their Australian holdings. With the NGS undertaking to cover expenses, he committed to sending a number of the Museum's natural history specialists and an ethnologist. The Commonwealth Government signed up to make it a joint United States–Australian research venture with substantial 'in kind' support to underwrite the larger venture.[18]

The final Expedition was therefore very different in make-up, sponsorship and purpose from that initially proposed to the NGS by Mountford in 1945. In a statement sent to the Director-General of the Department of Information in June

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[15] Thomas, Martin. 'A Short History of the 1948 Arnhem Land Expedition'. *Aboriginal History* 34. 2010: 143–70; 147.

[16] Thomas, 'A Short History of the 1948 Arnhem Land Expedition', 2010: 148.

[17] Support offered by the Australian government as stated in Mountford's application to the NGS, 5 March 1945. Cited in May, *Collecting Cultures,* 2010: 42. For details of the NGS grant see Thomas, 'A Short History of the 1948 Arnhem Land Expedition', 2010: 147, n. 13. For an account of the conditions of the NGS grant see Mountford, C. P. 'The Report of the Origin, Objects, Activities and Results of the Combined National Geographic Society and Department of Information's Expedition to Arnhem Land. March–November 1948': 1. Papers of Frederick D. McCarthy: MS3513/14/15. AIATSIS.

[18] Thomas, 'A Short History of the 1948 Arnhem Land Expedition', 2010: 148–49. The NGS allocated a further $10,000 to cover the expenses of four scientists from the Smithsonian. The Minister, Arthur Calwell, liaised with the army and air force for support with transport and supplies, and with the Minister for the Interior for organisational support in the Northern Territory.

1946, Mountford stated that its primary scientific object was to answer the question: 'how the aborigines live off the land'. The Expedition's aims were twofold:

> a) To gather information about the aboriginal tribes of Arnhem Land and their environment that will be of value in any future administrative problems.
>
> b) To gain a more accurate scientific knowledge of the marine and terrestrial fauna and flora of Arnhem Land.[19]

The plan of research described not so much collaboration as a team approach to studying how Aboriginal people interacted with their environment: natural scientists surveying the flora and fauna of the area, an anthropologist identifying the Aboriginal names of foods, 'methods of collection, preparation, abundance or otherwise', and medical scientists studying the diet and health of the people. Mountford specified that there should be a female anthropologist in the party, as he planned 'special emphasis will be given to the life of Aboriginal women, of which remarkably little is known.' As 'leader, anthropologist and photographer', Mountford described his own role as documenting Aboriginal life in still and cine film, with his research 'into the arts and crafts' now something that 'will dovetail into the general picture'.[20] A further six months down the track in a letter written by Mountford to Grosvenor in January 1947, art and ethnology (apart from what could be associated with recording the 'pattern of life' of the people), are no longer specified as separate specific areas of importance. Mountford's responsibility, apart from his leadership role, had firmed into the production of 'five coloured cine films on the ethnology and natural history of Arnhem Land' for the Australian National Film Board.[21]

The American contingent was to comprise four scientists from the Smithsonian—Herbert G. Deignan (ornithologist), David H. Johnson (mammalogist), Robert R. Miller (ichthyologist) and Frank M. Setzler (archaeologist and Head Curator of Anthropology, appointed Deputy Leader of the Expedition)—and NGS staff writer and photographer Howell Walker. It was arranged through the Australian Minister

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[19] Mountford, C. P. 'Scientific Objects of the Expedition', June 1946. AASEAL Correspondence, Volume 1, 1945–1947. Mountford-Sheard Collection: PRG1218/17/4. SLSA.
[20] Mountford, 'Scientific Objects of the Expedition', June 1946.
[21] May, *Collecting Cultures,* 2010: 6–7.

for Health for three scientists from the Institute of Anatomy to join the expedition as a Nutrition Unit, to study the diet and health of Aboriginal people. These were Brian Billington (medical officer), Kelvin Hodges (biochemist) and Margaret McCarthur (nutritionist).[22] The other Australian scientist included in the team at this stage was a young botanist, Raymond Specht (b. 1924)—a recent graduate of Adelaide University.[23] Originally planned for 1947, the Expedition was delayed for a year because some of the Smithsonian staff were unexpectedly needed elsewhere, and without the full complement of Americans the Australian government felt there was 'insufficient a basis' for the publicity they expected the project to generate.[24]

McCarthy was a late recruit and the last of the scientific staff to become attached to the Expedition (Fig. 4.1). The invitation was made by Mountford in December 1947 and McCarthy's inclusion was not officially confirmed until early February 1948, only a month before departure.[25] There is no clear statement in the documentary record of the reason for McCarthy's eleventh-hour call-up. The best surmise is that Mountford was uneasy about Setzler's capability for or interest in studying food-getting practices—an essential part of the larger research plan. This role, in Mountford's thinking, had always been earmarked for an American anthropologist: and there were a number of specific individuals he proposed to the Smithsonian for the position, none of whom were available.[26] Setzler's expertise was in archaeology, and the program of activity assigned to him by Wetmore was a museum and collections oriented one. As Setzler informed Mountford, his brief concerned: '1) Archaeological surveys and excavations; 2) A general ethnological

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[22] May, *Collecting Cultures,* 2010: 42.
[23] McCarthy, Lynne. 'Ecology and the Arnhem Land Expedition: Raymond Specht, a Botanist in the Field'. In Thomas and Neale, *Exploring the Legacy*, 2011: 157–69; 160.
[24] Mountford, C. P. to Alexander Wetmore, 28 January 1947. Cited in May, *Collecting Cultures,* 2010: 44.
[25] Discussions regarding McCarthy's inclusion were ongoing from December 1947 when the initial invitation was made. A. B. Walkom, Director of the Australian Museum, agreed to McCarthy taking leave (on full pay) in January 1948, and this request was approved by the Public Service Board in February. See the following letters: A. B. Walkom to C. P. Mountford, 19 December 1947; A. B. Walkom to N. L. Salmon (Secretary, NSW Department of Education), 19 January 1948; N. L. Salmon to A. B. Walkom, 11 February 1948. Correspondence Files, Arnhem Land Expedition. AMS10/22/1948. Australian Museum Archives.
[26] May, *Collecting Cultures,* 2010: 46.

study of the material culture, together with anthropological measurements.'[27] Notably, it was after this exchange that the invitation to join the Expedition was issued to McCarthy.

On the Expedition McCarthy took on the role of studying 'Food & Calendar'.[28] He accompanied the nutritionist Margaret McArthur on field trips to Hemple Bay on Groote Eylandt and Fish Creek near Oenpelli (now Gunbalanya), the site of the Expedition's last base camp.[29] The aim of these sorties away from settlement centres was to observe Aboriginal people living a more traditional lifestyle. McCarthy was keen to do this work. He considered observing 'the men's hunting, fishing and camp-work procedures'—the study of 'techniques & function'—an integral part of making a material culture collection.[30] As this was to be the first opportunity he had to do fieldwork with living peoples, he was particularly interested in seeing objects 'being made and used', and to collect and document those objects.[31] He also wanted to take photographs of these activities for display in the Museum, as the basis for life groups and murals.[32]

McCarthy's inclusion brokered a partnership with the Australian Museum. As Sally May has noted, the collections of ethnographic material made by the Expedition, were 'an offshoot and a bonus in terms of core aims', and only vague understandings—rather than actual agreements—about their dispersal were made prior to departure.[33] Mountford wrote to the Australian Museum's Director A. B. Walkom:

> I did not mention anything about collections, because it might complicate matters, but you can take my personal assurance as leader that your Museum will receive a representative series of all ethnological material collected, and I am asking the Smithsonian Institution to return to you, after

[27] Setzler, F. M. to C. P. Mountford, 1 October 1947. AASEAL Correspondence, Volume 2, 1945–1948—Applications. Mountford-Sheard Collection: PRG1218/17/5. SLSA.
[28] McCarthy, 'Diary 1', 11 April 1948.
[29] McCarthy, 'Report on Scientific Work', n.d.: 4, 9.
[30] McCarthy, 'Diary 1', 27 March and 2 May 1948.
[31] McCarthy, Frederick D. Personal communication cited in Jones, Cathy. 'The Toys of the American Australian Scientific Expedition to Arnhem Land Ethnographic Collection'. Diploma of Museum Studies, University of Sydney, 1987: 12.
[32] McCarthy, 'Diary 5', 4 October 1948.
[33] May, *Collecting Cultures,* 2010: 66, 92, 98–99.

> they have been examined, a series of the fish, animals and birds taken by the American scientists.[34]

One of the conditions of McCarthy's secondment to the Expedition—'Walkom's edict' McCarthy called it—was that aside from his wage, 'it was not to cost the museum any money'.[35]

On the first leg of the Expedition there was a delay in transporting the whole party and their full complement of equipment to Groote Eylandt. The majority of the Expedition party flew into Groote at the beginning of April with essential supplies only, while the remainder of their materials (food, equipment, and the all-important trade tobacco), were to be transported by barge, accompanied by Walker, Deignan and Johnson. The *Phoenix*, delayed firstly by weather and then stranded on a reef, arrived at Umbakumba some five weeks after it was due, halfway through the party's 14-week stay.[36] This frustrated the scientists' ambitions, and a sense of disquiet set in regarding Mountford's personal style of leadership. According to McCarthy, Mountford believed that as leader he should make all the decisions: there was no discussion, and there were no clear lines of communication.[37] This view is supported by the testimony of Ray Specht.[38] Further, McCarthy began to feel that Mountford's decisions did not take into account the other expedition members' requirements as researchers—what they needed for the success of their individual projects—but were made selfishly, in the interests of Mountford's personal research agenda. While many in the party were disaffected with Mountford and may have doubted his competency as leader, his relationship with Setzler and McCarthy was the most fraught.

Other writers have described the tension in the relationship, particularly between Mountford and McCarthy, as more or less the natural outcome of the crossover

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[34] Mountford, C. P. to A. B. Walkom, 31 December 1947. Correspondence Files, Arnhem Land Expedition. AMS10/22/1948. Australian Museum Archives.

[35] McCarthy, Frederick D. to C. P. Mountford, 16 January 1947 (sic.) AASEAL Correspondence, Volume 1, 1945–1947. Mountford-Sheard Collection: PRG1218/17/4. SLSA.

[36] Mountford, C. P. 'The Story of the Expedition'. In *Records of the American-Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 1: Art, Myth and Symbolism. Carlton, Vic.: Melbourne University Press, 1956: xxi–xxx; xxiii–xxv.

[37] McCarthy, 'Diary 1', 27 March 1948.

[38] Specht, R. L. 'An Insider's Perspective: Raymond Louis Specht's Oral History', edited and introduced by Margo Daly. In Thomas and Neale, *Exploring the Legacy*, 2011: 283–310; 292–93.

between their fields of interest leading to competition between them.[39] As Martin Thomas writes: 'unlike the naturalists, who represented discrete disciplines, there was much more likelihood of the anthropologists stepping on each other's toes.'[40] From McCarthy's perspective, however, the main area of contention between himself and Mountford was not a matter of personal rivalry but of professional principle. It concerned the substantive issue of the dispersal of the collections, involving questions of ownership and accountability, and of particular importance to McCarthy, professional purpose and procedures—the proper recording and storehousing of the collections. Their differences, I would argue, were fundamentally the result of their positional asymmetry as amateur and professional, in relationship to the institutional base of the Expedition.

Debates over the dispersal of the material culture collections are recorded in some detail in McCarthy's diaries. Mountford's intention was for the collections to be split in three: divided between Sydney, Washington and the South Australian Museum in Adelaide.[41] As McCarthy wrote:

> This means that Australia gets 2/3 & U.S. 1/3, Adelaide buys from Mountford his third, altho it contributes no funds or salary to the expedition, & there is some doubt about where the money Mountford receives goes.[42]

Setzler was dissatisfied. He believed it should be split between Sydney and Washington and ventured that the 'selling of such a collection could have serious repercussions on Mountford & it is an unwise procedure'.[43] McCarthy agreed. Later on, McCarthy came to believe that Mountford intended making his own private collection of bark paintings; with a 'representative series' of examples going to the museums in Sydney and Washington, and to Adelaide:

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[39] May, *Collecting Cultures,* 2010: 66–68, 74–76, 98–99. Thomas, 'A Short History of the 1948 Arnhem Land Expedition', 2010: 157–58. See also Jones, 'Inside Mountford's Tent', 2011: 48.
[40] Thomas, 'A Short History of the 1948 Arnhem Land Expedition', 2010: 157.
[41] May, *Collecting Cultures,* 2010:108. This was in part a hangover from Mountford's original submission to the NGS in March 1945, in which he suggested that all ethnological material collected should be lodged with the South Australian Museum, allowing him access to it for research and publication. At that time Mountford was the only ethnographic researcher, and there were no institutional stakeholders.
[42] McCarthy, 'Diary 1', 27 March 1948. To explain: the idea was that the collection made by Setzler and McCarthy was to be split between the Smithsonian and the Australian Museum, while Mountford would sell the collection he made to the South Australian Museum—hence the 2/1 split of the collections as a whole between Australia and the U.S.
[43] McCarthy, 'Diary 1', 27 March 1948.

> He [Mountford] is not really concerned whether we get a collection or not so long as he gets a private collection of bark paintings which I believe he wants for the purpose of exhibitions & lectures in the US.[44]

McCarthy raised the issue of the distribution of the collections when Kevin Murphy, the Director-General of the Department of Information, visited the Expedition at Yirrkala on 12 July, in response to more general concerns over Mountford's leadership. Murphy stipulated that there should be a three-way division of the collections between the Smithsonian, the Commonwealth Government, and the Australian Museum: 'Murphy was astounded that the South Australian Museum, without any financial interest by way of funds or personnel was to get anything & at once decided that the Commonwealth Govt should get its share.'[45] The arguments grumbled on, however. On 19 July there was an altercation between McCarthy, Setzler and Mountford in the ethnological store tent:

> He [Mountford] accused us of hurting his work on this expedition, stating that he had planned it for years, had gone through untold trouble to achieve it, & now, by reason of the commonwealth gov't taking the third share of the ethno specimens, that it was all taken from him.[46]

After Setzler and McCarthy returned to Yirrkala from three weeks at Milingimbi there was another discussion on 22 August:

> We talked again to Mountford about the sub-division of the collection, & he told us that his collection would be sent to his home in Adelaide for study & then on to Canberra, whilst a three-way division of the other ethno specimens (excluding bark paintings) would be made on the basis that unique specimens will go to Canberra, one of two specimens to Canberra & Washington, & a 3rd where available to Sydney. I shall have to fight hard to get a good collection particularly anything but ordinary material. So far as we know, he has given up the idea of retaining a private collection, the basic point upon which I have disagreed with him right thru, because I believe that no individual is entitled to a private collection of any kind from an official expedition of this kind. [47]

After this, there appears to have been an uneasy truce. The party was packing up for the move to Oenpelli, the last base camp. Setzler and McCarthy divided between them, for their respective institutions, a collection of almost 70 Yirrkala barks kept

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[44] McCarthy, 'Diary 4', 1 August 1948.
[45] McCarthy, 'Diary 4', 12 July 1948.
[46] McCarthy, 'Diary 4', 19 July 1948.
[47] McCarthy, 'Diary 4', 22 August 1948.

in the ethnological store. As McCarthy complained in his diary, Mountford had already 'picked all the best & most interesting paintings out of this series for his (Canberra) collection', on top of the ones he kept hidden 'wrapped up in his tent'.[48] At the end of the Expedition, the collections which had been divided at various points along the way were packed and consigned. As McCarthy records: 'the Mountfords packed their own collection & addressed it to Adelaide (not Canberra).'[49]

According to the Department of Information, Mountford's employer on the Arnhem Land Expedition, he was 'a film director not an anthropologist'.[50] The South Australian Museum, with which he had a semi-professional honorary affiliation through which he wanted to support rights of access to a collection, was not actually a partner in the venture. The idea of Mountford purloining a collection for himself—for his own personal study or other use, or to sell—seems wrong to us today, as it did to McCarthy then. However, it should be acknowledged that before there was institutional support for (and a monopoly on) anthropological research, many researchers undertook their work as, in a sense, 'sole traders' or 'merchant venturers'—as Mountford did. Haddon, on his first zoological trip to the Torres Strait in 1888, had some funding from the Royal Society and the Royal Irish Academy. In order to recoup costs for the expedition (and one of the reasons he ever became involved in anthropology at all), he nevertheless intended making collections of ethnographic objects to sell to museums. After offering one complete set to either the Pitt Rivers Museum at Oxford or the British Museum, he intended to 'offer for sale to other museums a second or third set' and 'only keep personally a few trivial articles & a few for private presents'.[51]

McCarthy kept a record of everything that he and Setzler collected on the Expedition and that Mountford deposited in the ethnological store tent, and the first thing he did on his return to Sydney was accession his share of the material

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[48] McCarthy, 'Diary 5', 24 August and 2 November 1948.
[49] McCarthy, 'Diary 5', 12 November 1948.
[50] McCarthy, 'Diary 4', 12 July 1948.
[51] Rouse, Sandra Louise. 'Ethnology, Ethnobiography and Institution: A. C. Haddon and Anthropology at Cambridge 1880–1926'. PhD Thesis. Cambridge: University of Cambridge, 1996: 58–61.

into the Australian Museum's collection—approximately 680 items.[52] This total did not include the archaeological material (registered at a later date) or, notably, the string figures. Mountford, by contrast, never made an inventory of his collection during or after the Expedition, when it was held at the South Australian Museum. As documented by Sally May, there is evidence that Mountford sold or traded and gifted items from the collection.[53] Further to this, items collected by Mountford on later trips in 1949 and 1951 were mixed in with the AASEAL (American–Australian Scientific Expedition to Arnhem Land) material, and were included in his volume on 'Art, Myth and Symbolism' in the *Records* of the Expedition.[54] It appears McCarthy's concerns for the integrity of the collection, if left under Mountford's control, had merit.

Collecting the string figures at Yirrkala

Yirrkala, on the mainland coast, was the site of the Expedition's second base camp (Map 1). The Expeditionary party flew from Groote Eylandt into Gove airport by Catalina sea-plane on Thursday July 8, passing over the Yirrkala mission. McCarthy recorded his first impressions:

> Yirrkalla is in a beautiful situation. The main buildings are on a granite hill, the natives live in corrugated-iron huts set in three rows on a flat to the North, & there is an extensive garden for cassava, sweet potatoes, peanuts, bananas etc. A clear stream from a large swamp supplies the water, & the site is beside a beautiful sea beach.[55]

Yirrkala had been established as a Methodist mission in 1934, as part of a larger network of Christian missionary presence along the Arnhem Land coast. Members of the 14 Yolngu clans living in the surrounding region were drawn to the settlement out of curiosity and for food rations. As Wilbur Chaseling, the first

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[52] McCarthy, Frederick D. 'Diary 8. Ethnology Register', 1948. Papers of Frederick D. McCarthy: MS3513/14/7. AIATSIS. AMAR, 1949: 7.
[53] May, *Collecting Cultures,* 2010: 113–20.
[54] Elliot, Craig. 'American Australian Expedition to Arnhem Land Cataloguing Consultancy Report,' 1992: 46. Unpublished manuscript. National Museum of Australia Library. May, *Collecting Cultures,* 2010:111–20. McCarthy noted the inclusion in Mountford's volume of items he had not seen; i.e. that were not 'submitted for … sharing between the institutions'. He took this to mean that more material had been concealed by Mountford during the Expedition than they had realised. (McCarthy, Frederick D. to J. W. Evans, October 1957, cited in May, *Collecting Cultures,* 2010: 112.) Philip Jones claims that several of the barks illustrated in this volume were in fact collected on later trips Mountford made to Arnhem Land in 1949 and 1951. (Jones, 'Inside Mountford's Tent', 2011: 48, n. 28.)
[55] McCarthy, 'Diary 4', 9 July 1948.

missionary, recalls: 'Many small hordes came to Yirrkala within a few weeks of our arrival.'[56] The people set up their camps on the beach on the other side of the creek to the mission, an area that came to be known as 'Beach Camp' (Fig. 4.2). This remained the main social space of the community even after other accommodation had been built (Fig. 4.3 A and B). Within two years, there were approximately 200 people with a strong connection to the mission station, if not resident all of the time. A school was set up and some medical care was provided, people were employed in work around the mission, tending the gardens that were established, and herding stock.[57]

Arrival in Yirrkala

On McCarthy's arrival in Yirrkala he noted that a significant proportion of the local population was living beyond the settlement: 'There are 100 natives here at present but as many again are out in the bush & at Pt. Bradshaw, Caledon Bay & Melville Bay because of a shortage of food.'[58] The 'catchment' of the mission extended north along the coast to Melville Bay, incorporating the eastern side of Arnhem Bay, up to the English Company Islands, and in the south as far as Cape Shield on Blue Mud Bay— part of an area that is today serviced by the Laynhapuy Aboriginal Corporation and supported by the Buku-Larrnggay Mulka Art Centre (Map 3).[59] The Expedition set up their tents a stone's throw along from Beach Camp, 'on a sodded sand-dune overlooking a wide curving sandy beach and the Arafura sea'.[60] The Yirrkala Creek, in which the Expedition party could bathe, wash, and get their drinking water, ran behind the camp (Fig. 4.3 C and D).[61]

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[56] Chaseling, Wilbur S. *Yulengor: Nomads of Arnhem Land*. London: The Epworth Press, 1957: 16.
[57] Chaseling, *Yulengor*, 1957: 16–18. McKenzie, Maisie. *Mission to Arnhem Land*. Adelaide, Sydney, Melbourne, Brisbane, Perth: Rigby, 1976: 79–82.
[58] A recent cyclone had decimated the gardens. McCarthy, 'Diary 4', 9 July 1948.
[59] McKenzie, *Mission to Arnhem Land*, 1976: 79–85.
[60] McCarthy, Frederick D. and Frank M. Setzler. 'The Archaeology of Arnhem Land'. In *Records of the American and Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 2: Anthropology and Nutrition. Parkville, Vic.: Melbourne University Press, 1960: 215–95; 223. Thomas, Martin. 'Expedition as Time Capsule: Introducing the American-Australian Scientific Expedition to Arnhem Land'. In Thomas and Neale, *Exploring the Legacy*, 2011: 1–30; 3–4. According to Thomas the area in which the Expedition set up camp is now the site of the Yirrkala cemetery.
[61] Setzler, Frank M. 'Diary. Vol. II', 8 July 1948: 148. Papers of Frank Meryl Setzler, 1948–1973. MS5230. NLA.

With an eye to garnering publicity for the Expedition, Mountford had promoted the idea that Arnhem Land and its people were isolated and untouched by the influence of 'white civilisation'.[62] He touted the Expedition as going back in time to the Stone Age—'here nomadic natives follow their age old customs', in a land 'scarcely scratched by European exploration'.[63] In reality there had been a missionary presence in the region for some decades and during World War II a substantial military force was stationed in Arnhem Land. Furthermore, for at least 300 years Arnhem Landers had been trading with Macassans, who had visited on a seasonal basis for the trepang harvest—before this was stopped by the Australian government early in the twentieth century. As McCarthy commented: 'These people have had a steel age culture for centuries derived from the Malays.'[64] Gove airport, only some 8 kilometres by road from Yirrkala, was established as an RAAF base in 1943 (Fig. 4.3 F). At the height of operations, over 5,000 servicemen were stationed there.[65] Kolinio Naulago Saukuru, a Fijian missionary who took over the running of the mission at Yirrkala in 1944, made a particular connection with the RAAF base, and servicemen were welcomed by him at the mission.[66] The RAAF base closed in early 1946.

On arrival at Groote Eylandt, McCarthy had at first been perturbed by the amount of European influence on native life, and given that the Expedition had been tasked with studying their mode of 'living off the land', particularly the dependence on mission rations. For April 5, the day after their arrival, he wrote in his diary:

> I went to bed at 9PM but, though tired out, couldn't sleep because of our situation. Here we are, 16 of us, backed by US & Australian funds but the natives are almost completely civilised, speaking English well & have dropped their ceremonial, hunting life.[67]

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[62] Mountford, C. P. to Chairman of the NGS Research Committee, 5 March 1945. Cited in May, *Collecting Cultures,* 2010: 97.
[63] Mountford, Charles P. 'Exploring Stone Age Arnhem Land'. *National Geographic Magazine*, December 1949: 745–82; 745.
[64] McCarthy, 'Diary 1', (at Hemple Bay) 2–9 May 1948.
[65] 'Gove Airport'. In *Wikipedia*. http://en.wikipedia.org/wiki/Gove_Airport, accessed 5/07/14.
[66] McKenzie, *Mission to Arnhem Land,* 1976: 147–48. Kolinio or Kol as he was known, and fellow Fijian Ratu Aminiasi Laveta (Aminiasi), who replaced him at Yirrkala in 1948, just before the Expedition arrived, were both sea boat captains. Aboard the Methodist mission cutter *Larrpan*, they played an important role in the evacuation of Croker Island in 1942 and both were involved in war-time sea rescues of airmen. (Anon., 'Methodist Conference Greets Noted Fijians', *The Argus*, 29 February 1944: 3; and McKenzie, *Mission to Arnhem Land,* 1976: 118–39.)
[67] McCarthy, 'Diary 1', 5 April 1948.

At Yirrkala, Setzler commented: 'the natives seem more Europeanised and more aggressive'.[68] Robert Miller wrote in his diary:

> The natives greeted us about like the Groote blacks at the end of our 3 month's stay—no reserve at all. In fact they are very sophisticated, shrewd, speak & understand English (for the most part), and know most of the answers! Contact with the Gove base during the war is responsible. They do not go for tobacco but want real hard cash—on the line—or else food … Even the little children … turn down lollies—asking for flour, sugar & tea instead![69]

At Yirrkala, the people had also had previous contact with anthropologists. The Berndts had only recently spent a prolonged period in residence during 1946–47.

McCarthy planned spending 'only five weeks at most' in Yirrkala itself during the Expedition's stay there. He wanted to go to Milingimbi Island with Setzler to undertake archaeological excavations for at least a month, and to explore other sites in the Yirrkala hinterland. McCarthy had been unwell when they first arrived at Yirrkala, and once he had recovered, he was keen to get started. His diary entry for 14 July recorded his advance preparations for the work ahead. He made a list of the material culture items they required, set up the 'ethnological store-tent', and began to study the string figures.[70] At each of the base camps McCarthy made a checklist of items to be collected, cribbed from W. Lloyd Warner's book *A Black Civilization* (based on three years fieldwork in Milingimbi from 1927 through 1929).[71] He then set about commissioning—getting them made. As Setzler wrote in his diary: 'It all seems backward, but that is our only method for obtaining ethnological specimens.'[72]

The terms on which the collections made by the Expedition were acquired has not been clearly understood. Neither McCarthy nor Setzler had discretionary

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[68] Setzler, 'Diary. Vol. II', 8 July 1948: 149.
[69] Miller, Robert R. 'Diary. Book II', 9 July 1948. Papers of Robert Rush Miller, 1947–1951. MS10053. NLA.
[70] McCarthy, 'Diary 4', 14 July 1948.
[71] Warner, W. Lloyd. *A Black Civilization: A Social Study of an Australian Tribe*. New York and London: Harper and Brothers, 1937. McCarthy had a copy of Warner's book with him on the Expedition. For an outline of Warner's fieldwork and his own collecting practices see Hamby, Louise. 'The Reluctant Collector: Lloyd Warner'. In *The Makers and Making of Indigenous Australian Museum Collections*, edited by Nicolas Peterson, Lindy Allen, and Louise Hamby. Carlton, Vic.: Melbourne University Press, 2008: 355–86.
[72] Setzler, 'Diary. Vol II', 15 July 1948: 159.

expenditure provided by their own institutions. All items collected were paid for from Expedition funds, specifically the grant Mountford had originally received from the NGS. At each of the base camps, as Philip Jones has written, the Expedition employed a number of people 'as general workers' who remained 'on the payroll as artists.'[73] Early on at Yirrkala, Setzler recorded: 'We've got 12 natives working on bark paintings and material culture objects.' (Fig. 4.4).[74] The list of 'Artists and Helpers' on retainer included McCarthy's and Mountford's main informants: Mawalan, Mathaman and Wandjuk Marika, and Nänyin Maymuru, whose brother Narritjin was employed by the Expedition in the cookhouse. Ngarrawu Mununggurr, McCarthy's main informant in the work he did on the string figures, and her co-wife Djunbiya (the second and fourth wives respectively of Nänyin Maymuru) were employed by the Expedition to work in the Nutrition Unit lab washing bottles etc. Bangara (wife of Narritjin) worked in the laundry. At Yirrkala this group was paid 2/- a week plus rations (for themselves and their dependents) for the duration of the Expedition's stay (Fig. 4.3 E). Others, like husband and wife Mäw and Bali Mununggurr, who Margaret McArthur worked with at Port Bradshaw for three weeks, were similarly paid 2/- a week for the period of their employment.[75]

The bulk of material culture objects (including bark paintings) collected on the Expedition were commissioned from the salaried 'artist helpers'. While people from outside communities in particular did bring things in to trade, it is apparent that this was in addition to the standard arrangements—(the exception, and not the rule). Having skilled workers on hand in this way allowed copies to be made of interesting 'unique' specimens: given Mountford's rules regarding the dispersal of

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[73] Jones, 'Inside Mountford's Tent', 2011: 45. Sally May's contention that Mountford's 'collection strategy' at each base camp was 'to establish a tent where Aboriginal people could bring items they wanted to trade', for which they were paid in cash—the idea of Mountford's 'shop'—is based on remarks made by Fred McCarthy in an interview with Craig Elliot in 1991. Despite the fact that many of the statements made by McCarthy in this interview were (for whatever reason) patently unreliable, Elliot does not question the veracity of this particular idea, and May goes on to build upon it. (Elliot, 'AASEAL Cataloguing Consultancy Report', 1992: 86. See source in 'Transcript of interview with Fred McCarthy, 12 December 1991': 118–42; 119, 134. May, *Collecting Cultures*, 2010: 64–5, 84.)

[74] Setzler, 'Diary. Vol II', 12 July 1948: 156.

[75] Bray, John E. to C. P. Mountford, 20 July 1948. AASEAL Correspondence, Volume 5, March–July 1948. Mountford-Sheard Collection: PRG 1218/17/18. SLSA. 'Aboriginal staff required at Yirrkala.' http://www.samemory.sa.gov.au, accessed 11/11/14.

the collections this was particularly valuable. One such case, which comments amusingly on the personal politics at play, is recorded in McCarthy's diary:

> Harney brought in a wooden penis from the salt tidal plain on the southern side of Arnhem Creek. It is swished with leafy branches as part of the men's sugar-bag increase rites. He got the natives to make a replica of it to go with the original, which is cracked & decayed, & when it was finished & painted Monty got the story, retained my copy of the object, & had smaller ones (shaped differently) made for Setzler & me![76]

Collecting the string figures

McCarthy's account of the process he adopted in collecting the string figures at Yirrkala—what he did when and with whom—is recorded in his diaries and notebooks. Another contemporary source is McCarthy's report to his superiors at the Australian Museum. In this, he acknowledged his debt to his principal informant, Ngarrawu: 'a positive genius with a piece of string. She produced one hundred and eighty figures, all of which were photographed, mounted on card, and the techniques recorded.'[77] This statement implies a logical order to the activities involved in making the collection: Ngarrawu makes a figure, it is photographed on her hands before being mounted on card, and then the instructions for making it are recorded. It did not, however, happen this way. The stages in the process and the three data types they relate to (photograph, mounted specimen, and textual record) were each collected on separate occasions.

The time McCarthy spent collecting the string figures at Yirrkala can be divided into three phases. In the first of these—a two-week period from shortly after his arrival in Yirrkala to his departure for Milingimbi—he collected mounted specimens only. He secured his first series (some 'half-a-dozen' figures) from Mathaman Marika, one of the men with whom he had sustained contact during his time in Yirrkala. He found that Mathaman was not very good at making string figures however—'a poor manipulator'—so the next day he approached the women at Beach Camp. Working with a small group of three women and one man—Bali, Bangara, Daku and Mithili (Bangara's son-in-law), he collected 20

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[76] McCarthy, 'Diary 5', 28 August 1948.
[77] McCarthy, 'Report on Scientific Work', n.d.: 7.

figures.[78] Archaeological diversions took up the next two days. When he returned to the task, he worked for the first time with Ngarrawu, who was to become his principal informant.

Ngarrawu Mununggurr was a young Djapu woman in her twenties from the Caledon Bay area (a granddaughter of Wonggu). Married to Nänyin Maymuru of the Manggalili clan, she had one young child at the time. She was regularly employed as a domestic by the mission, and with her co-wife Djunbiya, had been co-opted by the Expedition to work as an assistant in the Nutrition Unit's lab, washing bottles and doing other tasks. Kelvin Hodges and Brian Billington, who ran the lab, first alerted McCarthy to the women's skill at this 'pastime'. McCarthy was impressed by the dexterity of both women—'Djunbia was a clever exponent who favoured figures incorporating lots of twists'—but he decided to 'concentrate his investigation' on Ngarrawu, as she seemed to know a greater range of designs.[79] McCarthy found Ngarrawu 'an ideal subject with whom to work'. This would have been in part because she was already on the Expedition's permanent payroll, and hence was available to work with him. (McCarthy noted that Roy/D̲ad̲aynga Marika, the younger brother of Mawalan, was a 'skilful string-figure worker'. McCarthy was not able to work with him however, as he was employed by the mission.[80]) Ngarrawu was, McCarthy records, 'a slim, graceful woman, shy in manner, but always happy & laughing': 'a most obliging & cheerful person'.[81] After returning from another archaeological excursion to Yalangbara with Mathaman and Bill Harney (where they documented a cave-painting site), McCarthy spent three solid days working with Ngarrawu, at the end of which his collection of

[78] In the collection as it now exists there is one mounted figure attributed to Mathaman, two to Mithili, three to Daku, six to Bangara and 16 to Bali—a total of 28. Two of the figures attributed to Bali were made jointly with Ngarrawu, suggesting they were made on another day.
[79] McCarthy, Frederick D. 'The String Figures of Yirrkalla'. In *Records of the American and Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 2: Anthropology and Nutrition. Parkville, Vic.: Melbourne University Press, 1960: 415–511; 415.
[80] McCarthy, 'Diary 5', 7 September 1948. There are two mounted figures in the collection attributed to D̲ad̲aynga, one made with Ngarrawu.
[81] Citations in order: McCarthy, Frederick D. 'Diary 6'. 'Arnhem Land Expedition Diary No. 6. String-Figure Techniques. Yirrkalla and Oenpelli', 1948. AMS515. Australian Museum Archives. McCarthy, 'Diary 5', 7 September 1948.

mounted string figures had grown to over 90. Djunbiya was also present during these sessions and Bill Harney assisted with the mounting of the figures.[82]

As well as the industrially manufactured string used to make the string figures, McCarthy had brought with him sheets of cardboard for the purpose of mounting them: the string figures were fixed to the cardboard support with judiciously placed pieces of 'sticky tape'.[83] The support was annotated with the name of the maker, the name of the subject in English and its Yolngu Matha name (as transcribed phonetically by McCarthy). Relevant finger positions were marked in, and sometimes the general position of the hands was sketched. In some cases parts of the design were identified as representing specific features—as for example with an animal subject: head, tail, belly, and so on (see AA§7 Fig. 2, AA§1 Fig. 6 and AA§10 Fig. 2). From McCarthy's diary entries it can be estimated that the average time spent collecting a specimen was approximately 20 minutes. The concentration of this activity into three half-day and four full-day sessions set a fairly demanding pace. At the end of this period, McCarthy made a listing of the mounted figures he had collected and checked them against the illustrations in Davidson's study, which he had with him, noting comparisons—often included as an annotation on the mounted support itself.[84]

After spending the next three weeks at Milingimbi, when he returned to Yirrkala on 20 August, McCarthy learned that the Expedition was due to depart for Oenpelli in less than a fortnight. He was concerned this left 'very little time for recording the string figure techniques'.[85] McCarthy spent part of the next four days working exclusively with Ngarrawu recording instructions for making the string figure designs he had previously collected in mounted form. Regardless of who made the

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[82] Various people visited or joined the Expedition for a period of time. Bill Harney a self-described 'old bushy' with extensive knowledge of the area and its people, was a Native Affairs Department Officer. He joined the Expedition in Yirrkala to assist in liaison with the local people (replacing Howard Coates who had been in the role). See May, *Collecting Cultures*, 2010: 35, 71–72.

[83] The original sticky tape holding down the figures was replaced when conservation work was done on the collection in the mid-to-late 1990s. (Stan Florek, Australian Museum, personal communication, 10/11/14.) McCarthy had intended to collect string figures at the first base camp on Groote Eylandt, but was frustrated by the fact that the cardboard he had brought with him to mount the figures was delayed on the stricken *Phoenix*. (McCarthy, 'Diary 1', 12 April 1948.)

[84] McCarthy, 'Diary 4', 28 July 1948.

[85] McCarthy, 'Diary 4', 20 August 1948.

original figure, Ngarrawu provided the instructions for all, with the exception of some new figures he collected from Wandjuk on his penultimate evening in Yirrkala. During sessions that lasted two to three hours, they spent an average of 15 minutes on each figure. McCarthy recorded the methods of making from observation. This was facilitated by Ngarrawu's remarkable ability to execute the figures 'in slow motion', 'step by step', allowing McCarthy time to write down the instructions for one movement before she continued on with the next.[86] This skill was 'invaluable' to McCarthy for whom, following Davidson, the collection of figures without instructions would have been 'worthless'.[87] Unlike other collectors we have looked at, McCarthy did not learn how to make the figures himself as part of the recording process. Ngarrawu's ability to accommodate the demands of McCarthy's methodology overall was truly a feat. Working from the mounted figures placed before her, she reproduced designs almost faultlessly, at random, on demand.[88]

During the run-up to the Expedition's departure, McCarthy had competing demands on his time, including preparing the material culture collection for transport and recording interpretations of the 70 or so bark paintings that he and Setzler had collected. He had obviously decided to call it a day on the string figures, with 65 techniques recorded of the 90-plus mounted specimens collected, when on Saturday 28 August, he began to 'write up' his findings.[89] The instructions recorded in McCarthy's notebooks are not his actual field records, but were transcribed from the original 'loose notes' (no longer extant).[90] It was only at this time, when writing up the instructions—or, at the earliest when he listed the mounted figures

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[86] McCarthy, 'The String Figures of Yirrkalla', 1960: 415.
[87] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 783.
[88] McCarthy, 'Diary 6', 1948; and McCarthy, 'The String Figures of Yirrkalla', 1960: 415–17. McCarthy writes that when making the first 65 mounted figures collected, Ngarrawu made 'only two obvious mistakes'. Then, when reproducing the designs from the mounted figures for McCarthy to record the instructions, there were three figures she could not replicate: two that she had made herself, and one made by Djunbiya. In this process Ngarrawu would sometimes make the wrong figure. McCarthy records that 'on one occasion she made the same wrong figure twice, by two different methods,' and that another time she 'made the one design three times when trying to make two others of a somewhat similar pattern'.
[89] McCarthy, 'Diary 5', 28 August 1948.
[90] McCarthy refers to the process of transcribing the instructions from his 'loose notes' into his diary in a letter to Bill Harney in May 1949. McCarthy, Frederick D. to Bill Harney, 5 May 1949. McCarthy Papers: MLMSS 3188 AA-ON 1350. Box H2313. SLNSW.

collected, before he went to Milingimbi—that a field order was established.[91] It is telling that in his diary entry for that day he tallies up the numbers for the other members of the team (leaving spaces to fill where he does not have them to hand): 'Miller got his 201st fish species on the trip, Specht has 225 species of plants from Yirrkalla, Deignan has __ species of birds on the trip, & Johnson has __ species of mammals.'[92]

Number was a currency in which all the researchers on the Expedition traded. With the exception perhaps of the Nutrition Unit, the total numbers of things collected was the measure of their work both for themselves and others; it was always the thing cited to summarise the Expedition's achievements. The emphasis on number went beyond it being an easy way of thinking about their performance, or translating what they were doing in their particular fields to their masters, or to a lay public. It was both simpler and more complex than that. Collecting as many specimens as possible was the object of the exercise. In making these collections for the museum as 'storehouse' they were working to build the repository of data on which future knowledge could be built. Their research paradigm was acquisitive rather than analytical.

This concern with quantity was made explicit in McCarthy's diaries. When the party was advised that the boat coming to transport their gear to Oenpelli was delayed, the three activities of collecting, recording and writing up were combined in a final spate of string figure research. Working with Ngarrawu, McCarthy caught up on recording the outstanding techniques for the 90-plus mounted figures already collected, and documented new ones. This continued for a little more than a week, by which time the new departure date was approaching. His diary tells the story:

> 4 September: I continued working with Narau & got the total of string figures to 173. …
>
> 5 September: In the evening I worked with Narau & took the total to 183 string figures … .

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[91] This is evident from the fact that #1 in the Field Order is a figure made by Ngarrawu; while figures made by others, that we know to have been collected prior, are spread through the order.
[92] McCarthy, 'Diary 5', 28 August 1948.

> 7 September: The total now is 190 … or, three times greater than from any other locality in Australia & probably the largest single collection obtained in any one locality in the world. There are probably more to be got here & I shall try to get ten more to make the 200 should time permit.[93]

During this period, he began for the first time to collect mounted figures and their instructions together.

While highly appreciative of Ngarrawu's knowledge of designs and her skill at making them, McCarthy had been frustrated by the process of eliciting designs from her; complaining that 'she was not very resourceful in producing additional figures unless a request for them was made.' After collecting those 'voluntarily performed', McCarthy solved the problem by suggesting subjects 'from the range of animals, plants and natural phenomena of the locality, and from the material culture of the people.' He would 'suggest the subject and Na:rau would make the figures.' Asella Laveta, the daughter of the Fijian missionary Amianassi, who spoke Yolngu Matha and worked with McCarthy on securing the language names for designs, also helped by 'stimulating the production of some obscure designs.'[94]

During this third and final phase of McCarthy's work on the string figures at Yirrkala, he began to record a new and different kind of data: what he referred to as 'social background' or 'social tie-up' material. This information about customary aspects of string figure making was told to him by his male Rirratjingu clan informants—Wandjuk Marika, his father, Mawalan, and Mawalan's brother Mathaman. They described various prohibitions and law concerning string figure making, including regulations that applied differentially to men and women.[95] Whereas men used string figures in a ceremonial context—specifically in enacting the Wäwilak sisters myth; they were an everyday activity for the women. This explained, to McCarthy, the greater expertise at string figure making shown by the women. His informants emphasised that 'in daily life the making of string figures is a woman's pastime.' While an 'open' activity, it was seen as part of the women's domain:

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[93] McCarthy, 'Diary 5', 4–7 September 1948.
[94] McCarthy, 'Report on Scientific Work', n.d.: 7. McCarthy, 'The String Figures of Yirrkalla', 1960: 415.
[95] McCarthy, 'The String Figures of Yirrkalla', 1960: 423–24.

> The women make their figures amongst themselves, and not in front of the men, particularly the old men, as a rule. The men walk past and do not look because the game belongs to the women's sphere of life.[96]

McCarthy recorded that there were different men's names and women's names for some of the figures, denoting their 'inside' and 'outside' significance as used in 'ritual' or 'secular' contexts, and there were a number of figures that were meant to be made by men or women only.[97] The children were instructed according to these rules:

> The girls learn to make the women's figures, and the boys are taught the men's figures, and both are smacked or reprimanded if they should make figures belonging to the other sex.[98]

McCarthy also outlined a complex set of kinship relations which regulated who could make two-person, four-handed figures with whom, in particular which female/male partnerships were allowed and which were prohibited:

> A woman may make a four-handed figure with a close relative or a very good friend among the women. There are few men with whom she may do so and they must be close relatives. She does not make them with her husband. She may make them with her *nabibi* (mother's brother) … but not with her *galle* (mother's brother's son or daughter) … .[etc.][99]

At this time, McCarthy recorded a number of narratives—mythical legends or stories—involving string figures. The most important of these (which he reproduced in full in the Expedition *Records*) related the making of string and string figures to the well-known Wäwilak sisters myth cycle: 'String was first made by the two *Wawalik* sisters … [who made] a record in string of all the animals, plants and other things they saw, as well as their own activities.'[100] The Wäwilak sisters myth provided an explanation of the origins of string figures, and the sanction for their making. By McCarthy's count there were 92 string figures mentioned in the myth, of which he had collected all but 18.[101] McCarthy suggested that the making of string figures provided a potent 'link between the women and the tribal mythology': 'As they make the figures the women are thinking not only of

[96] McCarthy, 'The String Figures of Yirrkalla', 1960: 424.
[97] McCarthy, 'The String Figures of Yirrkalla', 1960: 421, 424.
[98] McCarthy, 'Diary 6', 1948. McCarthy, 'The String Figures of Yirrkalla', 1960: 424.
[99] McCarthy, 'The String Figures of Yirrkalla', 1960: 424.
[100] McCarthy, 'The String Figures of Yirrkalla', 1960: 424, 427.
[101] McCarthy, 'The String Figures of Yirrkalla', 1960: 425–27.

a particular animal but of its significance in the *Wawalik* sisters' saga.'[102] In relation to another legend he was told involving the mythical being Wuyal, Wandjuk made for McCarthy (at his request), a bark painting of 'string figure dreaming place'. McCarthy drew a sketch of this painting in his notebook, identifying the various elements represented and recording an index of the corresponding Yolngu Matha terms (Figs. 4.5A, 4.5B and 4.5C).

On his last day in Yirrkala, McCarthy escaped from packing up the camp to take photographs of the string figures. His approach to this was characteristically focused. He had planned to photograph various stages in the making of the designs, but no doubt due to the time constraint, he chose to record the final stage only of the complete series. In the three hours between 9 AM and noon, Ngarrawu made 149 figures for him to photograph. In the hour after the lunch break, she made another 40 figures (Figs. 4.6A and 4.6B).[103]

> While I was writing down the name and number of one that I had photographed *Narau* would have completed the next one, her long slim fingers moving rapidly, gracefully, and surely through the complex series of manipulations. She did the figures in the order I requested and not at random as a subject came into her mind, but she also produced thirty-six additional designs.[104]

McCarthy then photographed Mawalan and Wandjuk making a number of figures (AA§1 Fig. 7 and AA§7 Fig. 5). The previous evening McCarthy had collected five new figures from Wandjuk, including three 'only the men make'.[105] These figures are the only ones in the catalogue whose instructions were not provided by Ngarrawu.

Filming on the beach

McCarthy's focus at Yirrkala was on collecting string figure designs: the mounted figures and their instructions. Nowhere in his documentation is there any description of the activity of string figure making observed in a social context,

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[102] McCarthy, 'The String Figures of Yirrkalla', 1960: 427.

[103] McCarthy, 'Diary 5', 7 September 1948. McCarthy records in his diary taking photographs of Ngarrawu making approximately 190 figures. There are, however, only 159 photographs from this session in total in the Australian Museum Archives. From changes in location and the evident time of day recorded in these images, it is possible to establish the order in which they were taken, and that a roll of film is missing (most likely corresponding to the 40 images McCarthy records taking after lunch).

[104] McCarthy, 'The String Figures of Yirrkalla', 1960: 417.

[105] McCarthy, 'Diary 5', 6 September 1948.

either at the base camps or in his forays living with traditional groups in the bush. The information McCarthy records about the social practice of string figure making was not the result of ethnographic observation, but was told to him by Mawalan, Wandjuk and Mathaman Marika. He did take some incidental photographs of children making string figures, as part of documenting a larger scene. For example, in his photos of the mosquito or pile house, built as a demonstration set-piece for the Expedition's film-makers (Fig. 4.7).

> Maolin [Mawalan], old man with goatee, was the principal attraction & a perfectly natural actor. Handsome W [Wandjuk] _ _ _ _ _ excellent interpreter, gave Monty's instructions. God how photographers trump up things. But it was very interesting and mostly quite natural, with the many children fondling a little pup, playing string games etc.[106]

Observational-style ethnographic film-making was not part of the ethos of the 1948 Expedition. At the different camps Mountford organised the performance of ceremonies for the camera. At Yirrkala an abridged version of the Wäwilak sisters ceremony was performed as 'a special make up for the photographers.' (A ceremony that could take weeks if not months was scheduled for an afternoon.)[107] Similarly the making of objects, techniques used in hunting and food preparation, even children playing—regardless of whether or not they would have been happening in any case as part of the daily round—were performed for the camera. Film provided another medium of collection. Cinematographer Peter Basset-Smith had been included in the Expeditionary party, so as to leave Mountford free to act as Director. Howell Walker, the NGS photographer, also had a film camera, with which he took three miles of footage over the course of the Expedition.[108] As McCarthy later commented:

> Honestly, I don't think natives in any other part of Australia have been subjected to so much celluloid—it was like a Hollywood set when the three movie cameras were in action. Fortunately, the natives are natural actors and excellent subjects for the camera …[109]

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[106] Miller, 'Diary. Book II', 30 August 1948.
[107] Miller, 'Diary. Book II', 26 August 1948.
[108] Harris, Joshua. 'Hidden for Sixty Years: The Motion Pictures of the American-Australian Scientific Expedition to Arnhem Land'. In Thomas and Neale, *Exploring the Legacy*, 2011: 239–51, 239.
[109] McCarthy, Frederick D. Transcript of 7HT Hobart Radio Interview, 16 January 1949. Papers of Frederick D. McCarthy: MS3513/14/14. AIATSIS.

In the archived collection of film taken on the 1948 Expedition by Mountford and Bassett-Smith is footage of Wandjuk and a group of (unidentified) children making string figures on the beach at Yirrkala, in front of the Expedition's cook shack and mess tent.[110] A photograph—in a newspaper clipping in McCarthy's diary—taken of preparations for the filming, offers a counter-point to the 'naturalism' of Mountford's footage, and the still photographs he took of the session (Figs. 4.8A and 4.8B). This footage is a rare and valuable resource. In contrast to the stillness of the mounted figures, the film footage documents string figure making as a dynamic process. And it records aspects of making that exceed the prescriptions of step-by-step instructions: the impromptu interactions between makers, the various forms of play involved in the animation of figures, the role of display. In later chapters I use excerpts from this footage combined with my own contemporary field video to explore the nature of Yirrkala string figure style.

Record and response

On his return to Sydney, outside of his Museum work, McCarthy's time was devoted to writing up reports on the results of the work he had done in Arnhem Land for publication in the *Records* of the Expedition. He co-authored two papers: one with Setzler on the archaeology of Arnhem Land and another with Margaret McCarthur based on their observations of food gathering routines at Hemple Bay and Fish Creek. He prepared a paper on the cave paintings he recorded on Groote and nearby Chasm Island and another on the string figures.

McCarthy continued transcribing the instructions for the string figures into his notebooks when he was back in Sydney, completing the task within a few months.[111] He wrote an introductory commentary for the paper, and worked out the order of the figures. While in May 1950 he considered the paper 'well-organised', it took three years before it was completed, and another seven years until it was published.[112] The initial delay in completing the paper was caused by difficulties with the commissioning of illustrations: 225 line drawings of the

[110] The film footage taken by Mountford and Bassett-Smith is archived at AIATSIS.
[111] McCarthy to Bill Harney, 5 May 1949.
[112] McCarthy, Frederick D. to Fred Gray, 23 May 1950. McCarthy Papers: MLMSS3188 AA-ON 1350. Box H2313. SLNSW.

figures. The Australian Museum Director, A. B. Walkom refused to allow a Museum artist to work on Expedition-related business, and so Mountford organised an artist in Adelaide to do the job, but funds were limited.[113] The drawings were based on the photograph of the figure when available (with reference being made to the mounted figures to check string crossings), and otherwise on the mounted figures alone.[114] A cache of figures and photographic prints travelled back and forth a number of times between Sydney and Adelaide, as did the final pencil drawings, sent to McCarthy with the original source material for his approval before being inked. By early 1952 with only 70 of the drawings completed McCarthy was frustrated by the process: 'The text is all in order so far as I can go without the illustrations'; 'I cannot complete my manuscript until I have the drawings beside me for reference and numbering etc. in the text.'[115]

In September that year having exhausted available funds, Mountford sent a total of 120 drawings and the remaining source material back to the Australian Museum. It appears that at this point Walkom relented and one of the resident Museum artists Miss Beatty completed the drawings, and added the textual annotations to the artwork. This work and with it the paper itself was completed in August 1953.[116] There was then a hiatus of another two years until the process of editing the manuscript began at the start of 1956: the year of publication of Mountford's volume on 'Art, Myth and Symbolism' (Volume I of the *Records*). The editing of McCarthy's paper continued through that year. While he felt that Mountford took delight in making unnecessarily sarcastic editorial jibes, there were numerous inconsistencies and discrepancies in McCarthy's manuscript that the Melbourne University Press editors queried.[117] During 1957, it was decided (for reasons that

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[113] The artist was a Miss Gwen Walsh. Mountford, C. P. to A. B. Walkom, 11 January 1951. Correspondence Files, Arnhem Land Expedition. AMS10/22/1948. Australian Museum Archives.
[114] Mountford, C. P. to A. B. Walkom, 20 February 1951. Correspondence Files, Arnhem Land Expedition. AMS10/22/1948. Australian Museum Archives.
[115] Citations in order: McCarthy, Frederick D. to Bill Harney, 18 February 1952; McCarthy, Frederick D. to Ralph Bodle, 18 February 52. McCarthy Papers: MLMSS3188 AA-ON 1350. Box H2313. SLNSW.
[116] McCarthy, Frederick D. to A. B. Walkom, 17 August 1953. Central Correspondence Files, Arnhem Land Expedition. AMS235/G70/513. Box 118. Australian Museum Archives.
[117] See the following letters from Mountford to J. W. Evans (new Director of the Australian Museum replacing A. B. Walkom) conveying queries to McCarthy regarding his manuscript on the string figures, from both himself and the editors at Melbourne University Press: 2 January 1956, 7 February 1956; 13 February 1956; 30 August 1956. Central Correspondence Files, Arnhem Land Expedition. AMS235/G70/513. Box 118. Australian Museum Archives.

are unclear) to publish Volume III on 'Zoology' before Volume II on 'Anthropology and Nutrition', which contained all four of McCarthy's papers. Volume III appeared in 1958, with publication of Volume II delayed until 1960.[118]

McCarthy's paper in the **Records** *of the Expedition*

In June 1960 McCarthy wrote to Setzler: 'The infamous vol. 2 of the Records of the Arnhem Land Exhibition (sic) has at last appeared.' McCarthy was happy with the other papers he had worked on, but was disappointed with the paper on the string figures due to the treatment of the illustrations:

> The long mesh figures have all been reduced to one column width when they should have been two column width to make the lettering clearer, but the small figures have been enlarged out of all proportion to their value. I wrote Monty about this when I saw the galley proofs but the blocks were made and nothing could be done about it. Otherwise the paper is satisfactory.[119]

The greater part of McCarthy's paper on 'The String Figures of Yirrkalla' published in the *Records* of the Expedition is taken up by the catalogue of figures: the instructions for each figure accompanied by an illustration of the final design, (based either on the mounted specimen or on a photograph) (AA§3 Fig. 1).[120] The catalogue is organised, as was standard practice, according to method of construction—those figures made from the same opening being grouped together. Prefacing the catalogue is an index of the figures listed in order, with their name in English, their 'Native name' and the moiety of the subject.[121] Introducing this inventory of data McCarthy begins by acknowledging the role of his informants,

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[118] Mountford and McCarthy had been in dispute over a number of matters relating to the publication of research from the Expedition. Mountford claimed the change in order of the volumes was due to his 'refusal to accept some very poor work from McCarthy'. (Mountford quoted in a letter from Setzler, Frank M. to Fred McCarthy, 26 June 1957.) McCarthy claimed that this statement and the changing of the order—disparaging and delaying publication of his work—were a result of this dispute and Mountford's campaign against him. (McCarthy, Frederick D. to J. W. Evans, 10 July 1957.) Central Correspondence Files, Arnhem Land Expedition. AMS235/G70/513. Box 118. Australian Museum Archives.

[119] McCarthy, Frederick D to Frank Setzler, 7 June 1960. McCarthy Papers: McCarthy Papers: MLMSS3188 AA-ON 1350. Box H2314. SLNSW.

[120] Maude, Honor C. and Mark A. Sherman. 'The String Figures of Yirrkala: A Major Revision'. *Bulletin of the International String Figure Association* 2, 1995: 89. As Maude and Sherman note: 'The drawings made from the mounted specimens typically *do not* show the hands, whereas those made from the photographs *do*.'

[121] For Yolngu everything belongs to one or other of two classificatory categories called moieties. The division between Dhuwa and Yirritja orders the Yolngu world. For example, people take marriage partners from the opposite moiety to their own.

who are all identified by name. He pays particular tribute to Ngarrawu, as he did also in an article on string figures in the *Australian Museum Magazine* in 1958:

> Na:rau … proved to be a golden goose, to coin a term; a genius with a loop of string. She set a world's record which may never be broken. Of the 212 designs that I collected at Yirrkalla Na:rau made all but 10, and fashioned all but 6 of the 187 techniques (or series of manipulations secured). Whether she made the figures slowly for recording purposes or rapidly for photography, her errors were remarkable [sic] low. Her long slim fingers moved gracefully over the strings, like a pianist's over the keys of her piano. Her astoundingly wide knowledge of the designs, sequences of manipulations and subjects is, from the technical and quantitative points of view, proof of a mastery of her craft and of the possession of highly intellectual powers of mental and manual co-ordination. With Na:rau string-figure-making is an art.[122]

McCarthy then discusses the attributes of the repertoire. The majority of figures he describes as 'fixed and unmoving mesh patterns', symmetrical in design, commonly based on diamond and zigzag patterns. These are string figures as we know them. He identifies a smaller group of figures (about one-fifth of the collection), as a unique series: 'hitherto unrecorded … among the string figures of the world.' These 'simple figures … made from a loop opening on the fingers', were 'either displayed on the hands or laid on the ground and folded into position' (AA§10 Fig. 1)**.**[123] The other peculiar local feature McCarthy draws attention to is the 'numerous', or as he put it in his 1958 article, the 'excessive number of twisted strings' incorporated into designs—a 'novel' feature of the figures collected earlier by Shepherdson from Yolngu near Milingimbi, as noted by Davidson.[124]

McCarthy identifies few moving or action figures (he notes only three), and fewer sequences of figures than 'might have been expected in an area where the practice is so well developed.' (He notes 11 sequences with two stages, two sequences with three stages, and one, the longest, with five: the *Parrotfish* sequence.) Similarly, he finds that the great majority of figures are made using a small number of manipulations. (Approximately half the figures have less than 10 steps, 'the

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[122] McCarthy, Frederick D. 'String Figures of Australia'. *The Australian Museum Magazine* 12 (9), 1958: 279–83; 281.
[123] McCarthy, 'The String Figures of Yirrkalla', 1960: 417–19. Of the 36 figures of this type identified by McCarthy, only five are displayed on the hands.
[124] McCarthy, 'The String Figures of Yirrkalla', 1960: 415, 417. McCarthy, 'String Figures of Australia', 1958: 283. Davidson, *Aboriginal Australian String Figures*, 1941/2006: 772, 781, 885.

majority below twenty, tailing off markedly between twenty and thirty', with only two 'exceptionally long figures'.)[125] While *Opening A* and *Opening B* were 'predominant', the 'use of first position, Opening C and various loop openings were all well exploited', he writes.[126]

In his discussion of the 'Naming of the Figures' McCarthy lists the subjects represented in the repertoire (identified according to the title of the figures) under a series of headings: 'Human beings and their activities', 'Weapons', 'Implements and utensils' … 'Mammals', 'Birds', 'Fish' … 'Mollusca', 'Crustacea', 'Worm' (i.e. there was only one).[127] He writes that: 'The most important source of motives lies in the local environment, human and animal life, and material culture.' He identifies a 'comparatively large' series of introduced Indonesian and European subjects. Some of these appeared to be new figures, others were evidently repurposed (i.e. 'old figures given a new name', such as *Two Armbands* also serving as *Two Pannikins*).[128]

While confirming the conviction that 'the imitative motive is one of the most important inspirations in the making of string figures', he acknowledges that 'the resemblance of the designs to the subject they portray varies considerably': 'Many of the mesh and most of the folded figures are excellent representations, but other designs bear no resemblance whatever to the subject.' He notes that, 'the diamond series is conveniently named according to the number of diamonds in the design, which, in turn, represent a similar number of people, animals or plants.'[129]

In this context, McCarthy makes the comment that 'the names of the figures vary considerably among the men, women and children.' The meaning of this statement

[125] Davidson discussed the number of manipulations used as one of two variable factors (along with the types of manipulation used) in his definition of string figures as a 'complex' of culture traits or 'culture complex', i.e. therefore a significant trait for comparative purposes. Davidson, *Aboriginal Australian String Figures*, 1941/2006: 786–93.

[126] In the index of figures preceding the catalogue, there are 19 figures (or sequences of figures) listed that begin from *First Position*, 53 that begin with *Opening A*, 28 that begin with *Opening B*, and 8 beginning with *Opening C*. McCarthy, 'The String Figures of Yirrkalla', 1960: 417–8.

[127] While the inclusion of this section on 'subject' in the paper, may have been generally influenced by Kathleen Haddon's work, the 'scientific' way of listing the subjects in taxonomic categories is akin to Roth's organisation of his data.

[128] McCarthy, 'The String Figures of Yirrkalla', 1960: 419–21.

[129] McCarthy, 'The String Figures of Yirrkalla', 1960: 421.

is not clear. That is, whether he is referring to variation between the different user groups (i.e. 'men, women and children'), or a general variability within as well as between these groups. The use of the word 'among' suggests the later interpretation, and that this is a separate observation to that of the men having ritual names for the same figures women gave secular names to. 'To secure consistency', McCarthy writes, 'I have used throughout only the names given to me by *Narau*'.[130]

McCarthy then prosecutes the 'scientific' claims of his research—the significance of the number of string figures collected in relation to the world map of string figures, and the implications of the collection for diffusionist hypotheses. By adding the 212 figures he had collected at Yirrkala to a total of 303 collected elsewhere across Australia to date, and allowing for approximately 100 of those designs to be duplicated between collections, he reaches a count of the number of string figures known in Australia of 'just over 400'.[131] A total that, as he writes,

> far exceeds that of any other people, the nearest approach being the 156 of the Eskimos (Jenness), 115 of Hawaii (Dickey), and 62 plus of the Gilbert Islands (Maude). It is significant, also, that the Yirrkalla collection far exceeds the number produced by any other single camp or community in the world, the best example of which is the 69 of the Copper Eskimos (Jenness).[132]

Using similar 'back of an envelope' calculations, given that the total of figures known in the world was 'about the 1000 mark', he claims, 'the Yirrkalla series thus constitutes about one-fifth of all known string figures.'[133]

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[130] McCarthy, 'The String Figures of Yirrkalla', 1960: 421.

[131] Leaving aside for the moment the number of figures collected at Yirrkala, McCarthy's calculation of the total number found in Australia is questionable. The number he cites from Davidson's survey, does not accord with Davidson's own calculation of the number of different figures collected in Northern and Western Australia (68 in total, plus six tricks as opposed to the 89 McCarthy cites). McCarthy cites a figure of 78 for Central Australia (being the number of mounted figures Tindale collected at Hermannsburg for which methods had not been recorded and which Davidson had already suggested contained many probable duplications, within itself as a collection and with the figures he collected); and a figure of 90 from Queensland, relating to collections made by Roth (74 figures without instructions), Haddon (17) and Stanley (26). The idea that McCarthy's reckoning of 100 duplications was made 'through a comparison of designs' is hardly credible.

[132] McCarthy, 'The String Figures of Yirrkalla', 1960: 422. The number of figures collected from the Copper Eskimos was in fact 89. In his distributional analysis, across the whole field, Jenness identified 69 figures 'that appear in one locality alone'. (Jenness, D. 'Eskimo String Figures'. *Journal of American Folklore* 36 (141), 1923: 281–94; 289, 291.)

[133] McCarthy, 'The String Figures of Yirrkalla', 1960: 422.

Comparing the Yirrkala designs with other Oceanic collections, McCarthy identifies 'sixteen similar designs in Melanesia, fifteen in Polynesia and twelve in Micronesia'.[134] He does not, however, include a comparative table with his paper. Davidson had found a strong connection between Australian and Melanesian figures, and had concluded on the basis of distribution patterns that string figures diffused into the Australian continent through Northern Queensland via the Torres Strait and Cape York. Based on his findings that only 24 Yirrkala figures and three from Central Australia were duplicated in Queensland, McCarthy makes two conclusions: firstly, that 'the majority of Australian figures are of local origin', and secondly that, as he had argued previously with regard to other traits, Arnhem Land constituted another point of entry for diffusion from the north.[135]

As stated in Chapter 3, Davidson found no evidence for Aboriginal string figure designs having significant content or meaning: 'practically no patterns have been given a social, totemic or magical connotation … it would seem that string figures in Australia serve almost entirely the purpose of amusement'.[136] What is, therefore, singular in McCarthy's report is the long section of information he includes at this point in his introduction, under the heading of 'Socio-magical regulation'—the data gathered in his last days in Yirrkala—including the relationship of string figures to the Wäwilak sisters myth cycle.[137]

***Responses to McCarthy's paper in the* Records**

During preparation of McCarthy's paper he had a number of enquiries from interested enthusiasts. Its publication garnered only one response from the professional community however, in a review of Volume II of the *Records* by Joseph Birdsell in *American Anthropologist*. (D. S. Davidson, who had a particular interest in the subject, had died in 1952, before the paper was published.)[138] Birdsell's commentary came at the end of his review. In contrast to his generally positive

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[134] McCarthy, 'The String Figures of Yirrkalla', 1960: 422.
[135] McCarthy, 'The String Figures of Yirrkalla', 1960: 423.
[136] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 782.
[137] McCarthy, 'The String Figures of Yirrkalla', 1960: 423–29.
[138] Davidson, D. S. to Fred McCarthy, 18 April 1950. McCarthy Papers: MLMSS3188 AA-ON 1350. Box H2313. SLNSW. Davidson wrote: 'Your string-figure paper interests me greatly ... and I look forward to seeing the results'.

response to the volume as a whole, he was disparaging, referring to the study of string figures as 'one of the bric-a-brac figures in the cabinet of anthropology'. He flippantly proposed that given the large sample size (the 212 figures collected) and McCarthy's argument that the majority of figures were of local genesis, the paper sounded the death knell for 'the little game of using string figures to trace cultural relationships'.[139]

This provoked an indignant response from Barbara Lane, who had herself collected string figures during a year's fieldwork on Pentecost Island in Vanuatu in 1953–54. As she argued:

> Cultural relationships are not traced solely or even primarily on the basis of duplication of figures. More crucial affinities lie in style and procedure—distinctive openings, manipulations, extensions, and releases, as well as associated cultural data like names, meaning, and function.[140]

She insisted that the project was not dead, but that any meaningful conclusions required more comparative data. This was a call that, as Birdsell pointed out in his subsequent reply to her, echoed down through the six decades since Rivers and Haddon's 1902 article, which had been intended precisely for the purpose of stimulating the collection of more data.[141]

On display in the Museum

Complementing his experience of observing objects 'being made and used', the photographs that McCarthy took on the Expedition provided a source of images for use in Museum displays. As well as appearing as photographs, these images were used as the basis for paintings and sculptural models. In the 1950s McCarthy redesigned the Aboriginal galleries, installing two new island cases comprising 20 separate displays focused on specific cultural practices: dress and ornament, communications, fire-making, game and fish traps, twines and gums, for example. Still fundamentally 'displays of specimens' according to Attenbrow and Khan, as McCarthy stated in an article on the new exhibits 'we followed a general principal

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[139] Birdsell, Joseph B. 'Records of the American-Australian Scientific Expedition to Arnhem Land, Volume 2: Anthropology and Nutrition. Edited by Charles Mountford. New York: Cambridge University Press, 1960.' [Review.] *American Anthropologist* 64 (2), 1962: 410–12; 412.
[140] Lane, Barbara. 'On String Figures: A Protest'. *American Anthropologist* 65 (4), 1963: 910–11; 911.
[141] Birdsell, Joseph B. 'Re the Cavalier and the Casual: A Reply'. *American Anthropologist* 65 (4) 1963: 911–12.

of using as much illustration as possible to explain the material and subject to the visitor'.[142] For example:

> 'Twines' draws the eye with a life-size painting of an attractive young woman, rolling twine on her hip, from whom lines run to the hair on another woman's head, a possum and a plant—to represent the human, animal and vegetable sources from which twines originate.[143]

One of the most successful exhibits of this kind was on 'the manufacture and use of stone implements' (Fig. 4.9). Rather than exhibiting an array of what to most people 'look just like so many broken stones':

> It was decided to demonstrate each of the technical processes by using actual implements held in cast hands, and this problem was solved so successfully that an impression is given of a native standing behind the exhibit and poking his arms through holes in the wall. It has proved fascinating to the public. … The message of exhibits of this kind is imparted to the visitor almost at a glance.[144]

Similar treatment was given to the larger wall cases, including one on 'Games and Pastimes', which, as well as a page of illustrations from Roth (see Fig. 3.7), included a photograph of Ngarrawu making a figure (Fig. 4.10).[145] The mounted figures were never registered into the Museum's collection by McCarthy, and they were not included in any displays. The style of presentation adopted in these permanent exhibits seems to have been trialled by McCarthy in the work he did for the 1953 UNESCO travelling exhibition of 'Australian Aboriginal Culture'; many of the same subjects are covered and some of the same material is used—the photograph of Ngarrawu for example (Fig. 4.11).[146]

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[142] Attenbrow, Val, and Kate Khan. 'F. D. McCarthy: His Work and Legacy at the Australian Museum'. In *Archaeology in the North. Proceedings of the 1993 Australian Archaeological Association Conference*, edited by Marjorie Sullivan, Sally Brockwell and Ann Webb. Darwin: North Australia Research Unit (ANU), 1994: 5–16; 12. McCarthy, Frederick D. 'New Aboriginal Exhibits at the Museum'. *Australian Museum Magazine*, March 1961: 279–82; 282.
[143] McCarthy, 'New Aboriginal Exhibits at the Museum', 1961: 281.
[144] McCarthy, 'New Aboriginal Exhibits at the Museum', 1961: 279–81.
[145] The illustration used in the gallery display is Plate VII from Roth, Walter E. 'Games, Sports, and Amusements.' In *North Queensland Ethnography*, Bulletin No. 4, 1902.
[146] The exhibition was assembled at the Australian Museum over a three year period: 'most of the work of selecting and arranging specimens, photographs and art work, and of preparing the text for the brochure' was undertaken by McCarthy. The exhibition toured Australia, New Zealand, the United States and Canada. McCarthy, F. D. 'Preface'. In *Australian Aboriginal Culture*. 2nd ed. Canberra: Australian Government Publishing Service for the Australian National Advisory Committee for UNESCO, 1973. See also, McCarthy, F. D. 'The UNESCO Travelling Exhibition of Aboriginal Culture'. *Art Galleries and Museums Association of Australia and New Zealand Bulletin* (7), July 1953: 11–14.

Problems with McCarthy's paper—'a tangled skein of work'

> I hope that I have finished with string figures, they tie one up too much.[147]
>
> F. D. McCarthy, 23 May 1950

> They almost drove me insane at Yirrkalla and working them out since has been far worse.[148]
>
> F. D. McCarthy, 18 February 1952

McCarthy's paper on the string figures in the *Records* was a prodigious achievement, but that said, there are significant problems with it. The two major issues I will discuss here are the errors in the instructions, and the duplication of designs. As a case study, I will focus on the figures in the *Two Vulvas* subset (see AA§3 Fig. 2–Fig. 5).

On the Expedition, McCarthy spent the morning of August 26 collecting interpretations of bark paintings from Wandjuk Marika, and Nänyin and Narritjin Maymuru. He noted in his diary, that this was a particularly 'interesting day', because of the insights gained into 'the artists approach'. McCarthy commented on how the meaning of abstract motifs in Yolngu paintings varied depending on the context in which they were used, and how colour also, rather than being necessarily descriptive, was used symbolically to convey meaning:

> Colour is used, as is form, in a context & it can only be explained in this manner. They use cross-hatched lozenges for trees, creeks, flowing water at flood time, falling sand, ochre dug out of a hole by a man or goanna, etc. but what it represents is interpreted from the context. Similarly they use wavy, curved & straight line for waves & ripples at sea, breaking on a beach or rocks, or on a billabong. The colours differ either purposely to indicate a different meaning or to make the drawing more attractive.[149]

While this shows that he understood in principle how the same form could have multiple meanings—pre-empting Nancy Munn's analysis of the representational

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[147] McCarthy, Frederick D. to Fred Gray, 23 May 1950. McCarthy Papers: MLMSS3188 AA-ON 1350, Box H2313. SLNSW.
[148] McCarthy, Frederick D. to Ralph Bodle, 18 February 1952. McCarthy Papers: MLMSS3188 AA-ON 1350, Box H2313. SLNSW.
[149] McCarthy, 'Diary 5', 26 August 1948.

code of Warlpiri paintings as a 'discontinuous meaning system'—this insight did not carry over into his collection and analysis of the string figure designs. [150]

In McCarthy's work, the idea of an 'essential' link between figure and subject, signifier and signified, initially hitched to the presumption of the 'realism' of string figure designs, can be seen to morph into differences in method serving to explain the multiple identities attributed to the one final pattern or design. The idea that the representational code of string figures was mimetic realism reinforced the notion of an essential link—a one-to-one correspondence—between figure and subject. The belief that different subjects in a repertoire would necessarily be represented by different figures was a major factor contributing to the duplication of designs in McCarthy's record. The same figure, if collected under another name, is more often than not given a separate entry by McCarthy, usually on the basis of a purported technical difference in the method of making.

For the diffusionist project differences in method were deemed significant for the purpose of tracking cultural contact. Different methods of making the same one design, found in distant locations, constituted separate string figure identities. In McCarthy's study of the Yirrkala string figures any and all observed differences in method, including those produced as 'effects' of his own documentation processes, through a kind of conceptual 'slippage' become the basis for distinctions of meaning or identity within a single local repertoire. It is in this way that the errors in McCarthy's instructions and the duplication of designs are linked.

Writing instructions for making string figures is an exacting skill, which perhaps unsurprisingly, McCarthy did not fully master. Honor Maude found that she could recreate less than 10 per cent of the Yirrkala designs following McCarthy's instructions. This inspired 'a major revision' of his methods by Maude and Mark Sherman published in 1995 (Fig. 4.12). Some required more reconstructive work than others. While following the original instructions as closely as possible, they

[150] Munn, Nancy D. 'Visual Categories: An Approach to Representational Systems'. *American Anthropologist* 68 (4), 1966: 936–50.

describe their revisions as '"educated guesses" nonetheless'—and there are still 16 figures that remain 'unsolved'.[151]

Errors

The general quality of McCarthy's instructions for making the figures is poor. Often procedures are not described clearly—in particular the form of final extension or display of a figure. And they are riddled with errors. Commonly, a string, loop or finger is wrongly identified. There are errors also in the ordering of steps: with a step being added in or left out, or misplaced in the sequence.[152] McCarthy's errors are identifiable as such, because they make the instructions 'unworkable' (see AA§3 Fig. 3i).

McCarthy's errors are understandable as a reflection of the inherent difficulties of the task, but perplexing at the same time, given the importance of technique to the putative scientific value of the endeavour. Maude and Sherman suggest one cause of these errors was that McCarthy made his observations facing the maker, and so was always transposing, left and right, near and far etc. The more germane problem I would argue was that his record of the techniques of making was based on observation alone, rather than, as was part of the collecting process of many before him, developed through learning how to make them himself.

My analysis of his working procedures, shows that once he had identified Ngarrawu as his primary collaborator, McCarthy set out to collect as many string figures as he could in the time available at Yirrkala—mounted figures in the first instance. His recording of techniques was significantly enabled by Ngarrawu's ability to make the figures slowly, step-by step. The speed with which they worked required McCarthy to have confidence in his own acuity. He seems never to have reflected upon or exhibited any doubt about the accuracy of his records. When the editor of his paper at Melbourne University Press queried the repetition of a command in one set of instructions ('on p. 145 line 36–9. Is there any necessity for

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[151] Maude and Sherman, 'A Major Revision', 1995: 91. Sherman describes some of his experience of this project in Sherman, Mark A. 'Honor C. Maude: A Tribute to the World's Foremost Authority on Pacific Island String Figures'. *Bulletin of the International String Figure Association* 5, 1998: 1–38; 25–26.
[152] These are termed 'identity errors', 'omission and duplication errors' and 'transposition errors' respectively by Maude and Sherman. Maude and Sherman, 'A Major Revision', 1995: 90.

having the same entry twice?'), he shot back: 'The movement was repeated by the operator and was therefore recorded.'[153]

McCarthy's faith in his written records seems to have been bolstered by a belief in the veracity of field observations as unassailable facts—or perhaps it was simply a necessity. It is apparent that McCarthy never replicated the designs himself in order to check the instructions. Throughout the lengthy process of preparation of the manuscript for publication, it would appear that McCarthy did not review the catalogue of figures in any considered way. As well as the fine-textured errors already discussed, there are what could be called gross errors, which further destabilise the reliability of the published record. The most disconcerting of these is where the instructions given do not match the illustrated figure accompanying them. In the majority of cases, reference to the mounted specimen confirms that the title of the figure and the illustration are a match—identifying the problem as being that the wrong instructions have become attached to the figure (rather than the images being transposed as might occur in the design layout phase of publication).

The first figure in McCarthy's listing, #1 *Two Conch Shells*, provides a case in point (see AA§3 Fig. 1). The illustration, based on a photograph, matches the mounted figure of the same title. The instructions are those recorded under this title in McCarthy's notebook (and the field number of the entry matches that of the mounted specimen), but they are not the correct instructions for making the figure.[154] The published instructions in the *Records* generally follow those written out in McCarthy's field notebooks word for word (with only the occasional discrepancy). As established earlier, these were not his actual field records

[153] The editor's queries were relayed to McCarthy in a letter from Mountford to the Director of the Australian Museum, 7 February 1956. McCarthy responded through a memo to the Director, 14 February 1956. Series 235. Central Correspondence Files. G70/513. Arnhem Land Expedition. Box 118. Australian Museum Archives.
[154] Maude and Sherman identify the correct instructions for #1 *Two Conch Shells* as those listed for #65 *Echidna*.

however. It is evident that in the process of transcribing his original 'loose notes' into their final form in his notebooks, some things got mixed up.[155]

Duplication

In the run of his work McCarthy collected some outright duplicates (or doubles): for example, *Bandicoot* was collected twice, as numbers 8 and 101 in the field order. In the mounted collection, the design for *Bandicoot* also appears as *Rat* and *Water Goanna* (see AA§1 Fig. 1).[156] While recognising the identity between the final designs, McCarthy assigns these three figures two separate entries in the *Records,* because *Water Goanna* (involving an interim figure *Waterhole or Billabong*) was made by a different procedure to *Bandicoot* and *Rat* (AA§1 Figs. 2 and 3).[157]

Following in the technical tradition of string figure studies focused on diffusionist questions, McCarthy privileges the method of making as the key determinant of string figure identity. That is, the same final figure made using a different technique (despite equivalence of graphic pattern and structural design) is considered a distinct entity, and is accordingly given a separate entry in his database. However, the errors in McCarthy's instructions, in combination with his demand for a high level of exactitude in order to confer sameness of technique, produced a significant level of duplication. There are numerous examples of the same design, made using the same method, repeated under different titles.

The instructions accompanying #1 *Two Conch Shells*—which, as mentioned, do not match the figure illustrated—are identified by Maude and Sherman as a reiteration or 'version' of those for the next figure in the catalogue, #2 *Two Vulvas* (see AA§3 Fig. 1). (It is most likely that the instructions attached to #1 *Two Conch Shells* were

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[155] Given the complexity of the task of describing string figure techniques—notwithstanding the assistance of Rivers and Haddon's nomenclature—it seems likely there would have been at least one if not more drafts of the written instructions, before they reached their final form as transcribed in the notebooks.

[156] McCarthy recorded the Yolngu Matha title of this figure as 'amaeowa'—most likely the phonetic transcription of 'mayawa', the term for frill-necked lizard. I continue, however, to use McCarthy's translation *water goanna*.

[157] McCarthy notes the relationship between the figures in annotations on the mounted specimens. In the listing of figures in the *Records* he mistakenly attaches the note 'also called rat and bandicoot' to #89 *Goanna* rather than #88 *Water Goanna*.

those recorded for making *Penis and Vulva*—which McCarthy lists as an alternative title for the *Two Vulvas* figure.)[158] The next figure in the record #3 *Two Bottles*, while identified as being 'the same' as *Two Vulvas,* is accorded a separate entry by McCarthy, because, as he states, it is 'made by a different technique'. The next figure #4 *Two Waterholes*, again seemingly identical in pattern and structure, is also accorded a separate entry—no doubt on the same basis.

We can presume that McCarthy took down the instructions for this figure as made on four separate occasions by Ngarrawu when she was asked to make the figure in the four mounted specimens (Field #64, #112, #138, #171: see AA§3 Fig. 2). The errors and lack of clarity in McCarthy's written instructions masks the parity between them. McCarthy for example uses different phraseology in different versions of the instructions to describe the same movement—an artefact carried through from his notebooks to the final publication. Maude and Sherman conclude the instructions for #2 *Two Vulvas* and #3 *Two Bottles* are in fact identical (see AA§3 Fig. 3ii). In my analysis in Appendix A (AA§3 Fig. 3iv), I use these instructions as the 'standard' version, against which I compare the other two 'methods' recorded. The differences are in all instances minor and inconsequential.

In the collection there are four substantively identical mounted figures with four different titles, and in the *Records* four different versions of substantively identical instructions, that have been defined as three separate unique figures. Significantly, the figure is misrepresented in the *Records* as having a horizontal orientation—demonstrated by this comparison of the illustration with the photograph on which it was based (AA§3 Fig. 4). McCarthy's instructions do not correct this—the final extension involving a complex rotation of the hands is inadequately described. The problems encountered in this particular example are repeated in a myriad of other instances throughout the catalogue of figures.

[158] Nhukan, the Yolngu title recorded for *Two Vulvas*, according to the Yolngu Matha Dictionary (YMD) means 'make love, copulate'.

Form and content, method and meaning

In his introductory remarks in the *Records* McCarthy is adamant that different identities are attached to 'the same figure' (the one pattern) when made using different methods, or displayed with a different extension, or orientation.

> An important element of the design of many figures is the manner in which the hands are posed in display, as shown in the illustrations. In some instances the women show the same figure with the hands in different positions, and this practice is one of the reasons why one figure bears several names.[159]
>
> At first glance there appears to be a similarity between two, three or four of the figures illustrated. Some identical designs are produced by different techniques and from different openings. Close examination will reveal that similar figures are frequently distinguished from each other by being displayed on different fingers or suspensions.[160]

McCarthy does not give any examples to elaborate more specifically on what aspects of method act as meaningful differences; and the problems with his documentation make it difficult to independently interpret and assess these claims. As in the example of the *Two Vulvas* subset, while non-existent or minor variations in method are accorded significance as the basis for the different identities attributed to the one figure, substantive aspects of the final display of that figure can be misrepresented or overlooked. While not convincingly demonstrated in this case, his contention should not be peremptorily dismissed out-of-hand, however. The ways in which method of making may influence the meaning or identity of a figure is something that I explore further in Chapter 6.

Conclusion

In a radio interview soon after his return from the Expedition, in referring to the 10,000 fish that Bob Miller collected, McCarthy felt the need to clarify: 'Let me explain that these are not all different kinds of fish, because it was necessary for Dr. Miller to secure a large series of each species for study purposes.'[161] One of the

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[159] McCarthy, 'The String Figures of Yirrkalla', 1960: 418.
[160] McCarthy, 'The String Figures of Yirrkalla', 1960: 418.
[161] The number of fish specimens collected by Robert Miller continues today to be misreported. In his report written immediately after the Expedition, Mountford cited the number of fish specimens collected as 10,000. However, in later publications he commonly gives the number as 30,000, as for example in his 'Epilogue', in the final volume of the *Records* on Zoology. In the preface to the same volume, written by Raymond Specht, the numbers of specimens collected by each researcher are clearly tabulated. Miller's catch of fish is listed as 14,300 (plus 49 amphibians). Mountford, C. P. 'The Report of the Origin,

reasons such series were required was variation within species. Boas saw the need for 'long series' applying equally well to the study of man-made anthropological 'specimens', and for the same reasons:

> Serious scientists know perfectly well that in the study of biological and anthropological phenomena observations on a single specimen are generally misleading … . the series alone can give us what is characteristic, while, when only an individual is available, characteristic traits may be overlooked, or we may be liable to consider an accidental trait as characteristic for a whole group.[162]

The aim of the systematic approach to collecting followed by McCarthy was to compile 'as comprehensive and detailed' a record as possible. The problem with 'facts', as Marvin Harris has put it, is that 'facts are limitless'.[163] As I commented in my discussion in Chapter 1, any properly scientific 'systematic' approach has to be in dialectical relationship with a 'system', which orders the facts collected, determining among other things which are significant and which are not, as a guide to further collecting.

As we have seen, in McCarthy's diary he drew a parallel between the number of string figure designs he collected and the number of species collected by the natural scientists. The problem with his record, and the claims he makes for his work, is that he accords just about any variation in 'method' in any individual 'string figure event' as the basis for the equivalent of a species distinction. In Boas's terms he fails to distinguish accidental traits from characteristic ones. In the terms of modern semiotic theory he fails to distinguish what are meaningful 'marked' differences within the system from what are not.

The duplication of designs in McCarthy's record undermines the claims he makes for the significance of the collection based on the number of different figures collected: a 'record total from one camp or locality'; 'one-fifth of all known string

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Objects, Activities and Results of the combined National Geographic Society and Department of Information's Expedition to Arnhem Land, March–November 1948', 1949: 1–18; 15. Papers of Frederick D. McCarthy: MS3513/14/15. AIATSIS. Specht, R. L., ed. *Records of the American-Australian Scientific Expedition to Arnhem Land*. Volume 4: Zoology. Parkville, Vic.: Melbourne University Press, 1964: vii, x.

162 Boas, Franz. 'Some Principles of Museum Administration'. *Science* 25 (650), 1907: 921–33; 930.

163 Harris, Marvin. *The Rise of Anthropological Theory: A History of Theories of Cult*ure. London: Routledge and Kegan Paul, 1969: 286–89.

figures'.[164] His work however, still stands 'as the most complete study … made in one area in Australia'.[165] Read 'against the grain' McCarthy's record is valuable for the different story it tells. Rather than being a catalogue of the different individual figures in the Yirrkala repertoire, McCarthy's record is best thought of as a 'long series' of string figure 'events'.

McCarthy's study of the string figures of Yirrkala is an extreme case of the method of record making coming to define the phenomenon under study, itself—the act of collecting defining what was being collected. To an extent, depending on the practitioner, this affected the study of string figures as a whole. The attention to detail and precision required to record string figure methods promoted the idea that the process of making was equally exact and precise. The recording of methods of making as a way of collecting string figure designs—merely the act of writing them down—tended to define them as unvarying formula executed by rote (or 'muscle memory'): a set sequence of steps, beginning with a particular opening, leading to a final outcome. In the following chapters, through an analysis of McCarthy's record supported by data from my contemporary fieldwork, I show that the Yirrkala repertoire operated as a multivalent meaning system, and (as demonstrated by Ngarrawu) exhibited a dynamic and flexible approach to technique.

[164] McCarthy, 'String Figures of Australia', 1958: 283. McCarthy, 'The String Figures of Yirrkalla', 1960: 422.
[165] McCarthy, 'Diary 5', 12 November 1948.

Chapter 5
A second wave of string figure studies post-1970

Introduction

The 1970s saw a resurgence of interest in the study of string figures. Just when the subject had finally been consigned to 'the past' of anthropology, it attracted a new wave of recruits from different disciplinary backgrounds and with varied interests. The String Figures Association, founded in Japan in February 1978, quickly attracted an international membership. It became a focal point of connection for the 'second wave'. The first *International Edition* of the Association's *Bulletin* was published in September that year—co-edited by Hiroshi Noguchi (born c. 1926), a Japanese mathematics Professor (founder of the Association), and Philip Noble (b. 1946), an Anglican missionary, who had collected string figures during three years stationed in Papua New Guinea in the early 1970s.[1] With membership open to 'anyone interested in string figures', the Association was intended to be a broad church.[2]

The life of the society was enacted through the exchange of information and ideas in the Association's *Bulletin*. Articles describing original collections from historical source documents as well as the publication of newly collected data (from one or two designs to whole repertoires) aimed to complete the project anthropology had left undone. A dominant thread of interest from the start was the technical exploration and analysis of string figure construction, which at its most arcane drew on topological knot theory. Members with this bent were involved in inventing new figures as well as reconstructing methods for making figures known only by their final designs. In issue #3 (1979) of the *Bulletin*, while Philip Noble gave an account of his experience collecting string figures in Papua New Guinea, an article by Hein Broos and Judith Humphrey explored the creative possibilities of 'variation' in string figure design through inserting different movements at the

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[1] Noble, Philip D. *String Figures of Papua New Guinea*. Boroko, P. N. G.: Institute of Papua New Guinea Studies, 1979.
[2] Noguchi, H., and P. D. Noble. 'The Articles of Association', *Bulletin of String Figures Association of Japan—International Edition* (1), 1978: 1.

same point in a technique sequence, and Yukio Shishido offered a 'solution' to *A Nauru Dandy*, one of the figures published without instructions by Jayne in 1906.[3]

In 1994 Mark Sherman (b. 1960) took over as Director of the rebranded International String Figure Association and Editor of the *Bulletin,* now the *Bulletin of the International String Figure Association* (*BISFA*). Sherman's stewardship brought new energy and a sense of academic purpose to the Association's mission 'to gather and distribute string figure knowledge'.[4] *BISFA* published profiles of influential individuals in the history of the study of string figures: Caroline Furness Jayne, Kathleen Haddon, Honor Maude. The Association also developed a self-reflexive historical consciousness, publishing on its own history.[5] The work of early researchers was retrieved from the archives: John Stokes' collection of Austral Islands figures from the 1930s, Frederick W. Waugh's collection of North American Ojibwe and Innu string figures from the 1910s and 1920s.[6] The 'major revision' of the methods for making the Yirrkala figures by Honor Maude and Mark Sherman, published in *BISFA* in 1995, is a representative document of the second wave. The 'correction' of McCarthy's instructions was aligned with the project of finding 'solutions' to 'unknown' figures from the historical record. As mentioned previously, Honor Maude had found she could make only 10 per cent of the Yirrkala figures based on McCarthy's recorded instructions.

Honor Maude's primary knowledge and understanding of string figures came from her involvement in the fieldwork collecting that had characterised the foundational history of the study. Beginning in the late 1960s she edited for publication the

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[3] *Bulletin of String Figures Association of Japan – International Edition* (3), 1979. From Issue #5 (1980) the *Bulletin* was published on an annual basis under the simpler generic title *Bulletin of the String Figures Association* (*BSFA*).
[4] Back cover text, *Bulletin of the International String Figure Association* 1, 1994.
[5] Noguchi, Hiroshi, and Philip Noble. 'The Cradle's First Cats: A History of the International String Figure Association'. *Bulletin of the International String Figure Association* 3, 1996: 1–7. Noguchi, Hiroshi. 'Fifteen Years for Ayatori'. *Bulletin of the International String Figure Association* 12, 2005: 1–56. Sherman, Mark. 'Someone Who Loved the String: A Tribute to Tom Storer'. *Bulletin of the International String Figure Association* 14, 2007: 1–37.
[6] Sherman, Mark A. 'String Figures of the Austral Islands: Collected by John F. G. Stokes (1875-1961)'. *Bulletin of the International String Figure Association* 1, 1994: 69–150. Waugh, Frederick W., and Mark Sherman. 'Ojibwe String Figures and Tricks'. *Bulletin of the International String Figure Association* 8, 2001: 46–124. Waugh, Frederick W., and Mark Sherman. 'Innu String Figures and Tricks'. *Bulletin of the International String Figure Association* 12, 2005: 66–147.

records of a number of significant Pacific collections made in that earlier period. In this way her career formed a bridge between the first and second waves. Maude's thinking about methods of making was mediated through her experience in the field and her broad knowledge of repertoire. The relationships between figures across different repertoires informed her understanding of string figure identity. She allowed for a degree of difference within sameness in how an idea or 'common basic theme' might be realised. Maude recognised repertoire as historically dynamic, identifying a variety of internal factors giving rise to change and development, including creative experimentation and 'imperfect transmission', alongside the outside influences of diffusion.[7]

In contrast, Sherman's primary engagement was with historical collections made by others—he did not engage in any fieldwork himself until 1999.[8] His conception of string figure identity was influenced by the exacting demands of mathematical definitions of equivalence. Sherman's analysis of the systematic relationships between figures within repertoire was one of his most significant contributions to the study of string figures. While in his work he documented the logic of invention, nonetheless he viewed change as something that only occurred slowly over long periods of time. Although not overt, Maude and Sherman's collaboration on the 'major revision' of McCarthy's methods is not without inherent tensions, due to their differences in outlook.

In this chapter I document the activity and interests of the second wave of string figure studies, beginning with an account of the work of Honor Maude. After looking at the influence of topological knot theory on string figure studies generally during this period, I concentrate my focus on the work of Mark Sherman. I conclude by reviewing the work of Maude and Sherman in the 'major revision' of the instructions for the Yirrkala string figures, as a prelude to the technical analysis of the repertoire I conduct in Chapter 6.

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[7] Maude, Honor, 'The String Figures of Tikopia'. In Firth, Raymond, and Honor Maude. *Tikopia String Figures*. Royal Institute Occasional Paper 29. London: Royal Anthropological Institute of Great Britain and Ireland, 1970: 7–11; 7–9.

[8] See Wirt, Will, Mark Sherman, and Mike Mitchell. 'String Games of the Navajo'. *Bulletin of the International String Figure Association* 7, 2000: 119–214.

Honor Maude: experimentation and invention in the Pacific

In the mid-1960s Honor Maude edited Camilla Wedgwood's notes on string figures made during her 1932 fieldwork in Northern New Guinea, for publication in *Oceania*.[9] This initiated Maude's involvement over the next 30 years in the publication of earlier field collections from the Pacific region. This work significantly increased the historical corpus, and gained her a reputation as 'the world's foremost authority on the subject.'[10] In her work Maude analysed string figure repertoires in terms of their 'affinities' of 'style and procedure', defining a number of 'technique complexes' aligned with different culture areas; and two distinct 'technique cultures' (my terminology) operating in the Pacific region.[11]

Affinities of style and procedure

Of the 10 studies Maude published, four were based on her own field research, and six were co-authored in collaboration with other collectors. She worked with Raymond Firth on *Tikopia String Figures*, published in 1970—a collection he had made 40 years earlier, in 1929 (see Map 2). Firth's records survived in the form of his original field notes. While he had retained the skill of making string figures for a number of years after his fieldwork, by the time it came to preparing this publication it was long gone, due to 'lack of practice'.[12] Maude's expertise was needed firstly to test the instructions for the figures, and as Firth himself put it, to 'translate' them into 'publishable form'.[13] (Maude also provided illustrations of the final designs for this publication.)

Maude's expertise was also essential to the task of making comparative analyses. The ability to recognise similarities and differences between string figures is dependent on the technical literacy and understanding of the practitioner, and the

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[9] Maude, Honor, and Camilla H. Wedgwood. 'String Figures from Northern New Guinea'. *Oceania* 37 (3), 1967: 202–29.
[10] Sherman, Mark A. 'Honor C. Maude: A Tribute to the World's Foremost Authority on Pacific Island String Figures'. *Bulletin of the International String Figure Association* 5, 1998: 1–38.
[11] The phrase 'affinities' of 'style and procedure' is taken from Lane, Barbara. 'On String Figures: A Protest'. *American Anthropologist* 65 (4), 1963: 910–11; 911. (See Chapter 4, p. 172.)
[12] Firth, Raymond. 'Preface: String Figures in Tikopia Social Life.' In Firth, Raymond, and Honor Maude. *Tikopia String Figures*. Royal Institute Occasional Paper 29. London: Royal Anthropological Institute of Great Britain and Ireland, 1970: 1–6; 1.
[13] Firth, Raymond. 'Preface'. In Maude, Honor. *Solomon Islands String Figures*. String Figure Monographs 1. Canberra: The Homa Press, 1978: xiii–xv; xiii.

scope or extent of their knowledge. Kenneth Emory was fulsome in his praise for Maude's work on his field notes for their 1979 publication *String Figures of the Tuamotus*—again a collection made years earlier on Bishop Museum field trips in 1929, 1931 and 1934:

> The list of corrections and additions to the Tuamotuan string figures, the rearrangement of their order, and the [digesting/dissection] of the comparative analysis … convert the record into an ethnographic document of real and lasting significance.[14]

It is notable, that in all phases of the work involved in the study of string figures, there is a constant movement back and forth, or translation, between making and the written record. You need to make in order to record. You need to make in order to test the record and write clear instructions, and you need to make in order to compare.

Maude's comparative analyses have a level of sophistication lacking in the commentaries of others. Maude constructed comparative tables for many of the studies she published, but it is her notes, made in the introductory texts to these works, and accompanying her descriptions of figures, which most impress. Notably, Maude was not concerned with exact correspondences in technique, recognising an 'extent of similarity and variation' in how the same idea might be realised.[15] For example, she identified the figure *Raukape*—generically known as *Ten Men*, after the title it was given when first collected in the Caroline Islands in 1904 by Jayne's brother William Furness—as one of three 'widely known Pacific figures' in the Tikopia repertoire (see Fig. 5.1A).[16] In her comparative table Maude gives its Australian title as *Crocodile*, following Davidson's designation (see Figs. 5.1B and 5.2).[17] In her commentary, she wrote that throughout the Pacific 'the construction (except for a minor move which achieves the same result) is identical,

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[14] Emory, Kenneth to Honor Maude, 5 October 1970. Papers of Henry Evans and Honor Courtney Maude (1904-1999): MSS 0003. D) Honor Maude Papers, Item 3. University of Adelaide Library.
[15] Maude, 'The String Figures of Tikopia', 1970: 8.
[16] Jayne, Caroline Furness. *String Figures and How to Make Them*. Reprint edition. (First published as *String Figures. A Study of Cat's-Cradle in Many Lands*. New York: Charles Scribner's Sons, 1906.) New York: Dover, 1962: 150–56.
[17] This was the most common of the various names he recorded for this figure. See Davidson, D. S. *Aboriginal Australian String Figures*. (Originally published in *Proceedings of the American Philosophical Society* 84 (6), 1941: 763–901.) Reprint edition. Carlisle, Western Australia: Hesperian Press, 2006: 844–45.

except in North Queensland, where the opening is different and the Navahoing is done on the little fingers instead of the thumbs, but the basic theme remains the same.'[18] She is referring specifically here to the method Stanley recorded in 1926 at the Yarrabah Mission near Cairns, where the figure was known as *Shoal of Fish* (Fig. 5.3).

In 1978 Maude published the first of four titles under her own imprint (The HOMA Press).[19] *Solomon Islands String Figures* combined designs that had been collected by Raymond Firth on his way to and from Tikopia in 1928–29 travelling through the central and eastern Solomon Islands (including the Santa Cruz Group); and a collection made by Christa de Coppet during two years of fieldwork with the Are'Are on Malaita Island in 1963–65 (see Map 2). The focus of her analysis was the identity of Solomon Island figures as a complex within the region, revealed through comparative analysis with collections of figures from other island groups.[20] In this publication Maude developed upon two conclusions drawn by Davidson in 1941. Firstly, reiterating Davidson, she described the Oceanic region 'from New Guinea eastwards to Easter Island and the Carolines southwards to New Zealand' including the Torres Strait, and 'most if not all of Australia', as 'a separate and relatively homogenous technique complex'. Within this unity, she recognised a number of 'specialised string figure complexes': Polynesian, Micronesian and Melanesian, with New Guinea, the Torres Strait and Australia forming a fourth quarter (see Map 2).

Maude characterised the Solomons as a 'convergent area' that was notably heterogeneous and eclectic, utilising a variety of different openings, and an equal diversity of continuation techniques. It combined methods that marked the unique

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[18] Maude, 'The String Figures of Tikopia', 1970: 8, 34.
[19] Based in Canberra where the Maudes lived from 1957, the name of the press combined the first two letters from Honor Maude's first and last names.
[20] The different locations from which the two collections were drawn offered an opportunity to assess the consistency of string figure culture within an island group; and with thirty-five years between the two collections, the stability of techniques and patterns through time and generational change. Maude flags these as significant points of interest. Her descriptions of the figures include names of informants, places and dates collected, allowing one to appreciate the incidence of individual figures, i.e. if they existed in both collections, but Maude does not offer a summary or any conclusions on these two points.

character of local repertoires in other areas.[21] She identified 10 per cent of the repertoire as 'basic oceanic patterns known throughout the region,' that is, 'Oceanic core' figures.[22] In her publications Maude unfortunately does not describe the attributes of the regional technique complexes she identifies in a concise and focused way. Rather, this analysis is distributed through her commentary on individual figures. Similarly, there is no comprehensive listing of 'Oceanic core' figures or analysis of their characteristic traits.[23]

Again reiterating Davidson, Maude associated this core or nucleus of 'basic oceanic patterns' with an ancestral culture that travelled with the eastward dispersion of peoples into the Polynesian Pacific. She agreed with Davidson's view that the lack of the *Caroline Extension* in Polynesian societies (except for among the New Zealand Maori and the Tikopia—which although Polynesian is a geographic outlier within Melanesia), suggested it was a later invention. Based on her broad knowledge of Oceanic repertoires Maude made a further inference: that subsequent to this original migrational event, the invention of the *Caroline Extension* as 'a more effective method of presentation', stimulated 'an expansion in the quantity and variety of string figures' in the western Pacific islands of Micronesia and Melanesia. Davidson had asserted that the *Caroline Extension* (or *Pindiki movement*) was 'purely incidental' rather than an integral feature of string figure designs, a kind of decorative add on: 'no more than an efficient and convenient method of stretching the strings the better to portray the design.'[24]

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[21] Maude, Honor. *Solomon Islands String Figures*. String Figure Monographs 1. Canberra: The Homa Press, 1978: ix-xi.
[22] Maude, *Solomon Islands String Figures*, 1978: x. Maude's designation of 'Oceanic core' figures was based on their wide distribution. It was not accompanied by an analysis of how these figures necessarily acted as core or 'parent' figures, giving rise to variant or 'child' figures.
[23] In the comparative table in Maude's book on the Solomons Islands repertoire there are ten figures found in eight or more localities—accounting for the percentage she identified as 'Oceanic core'. In her final HOMA monograph on the string figures of Pukapuka, published in 1989 (based on a collection made in the mid-1930s), Maude was prepared to designate only five figures in the repertoire as definitively 'Oceanic core'. Three of the 10 figures identified in the Solomons repertoire did not appear in Pukapuka. Maude found that while these figures were common in the western Pacific (Micronesia, Melanesia, PNG/Australia), they were rare in the eastern Pacific of extended Polynesia. This reduced list of five included only figures that were common in both east and west. In his 1992 article on the Austral Islands repertoire (based on a collection made in the early 1920s), Mark Sherman argued for two further figures to be designated 'Oceanic core'. Beaglehole, Pearl, and Honor Maude. *String Figures from Pukapuka*. String Figure Monographs 4. Canberra: The Homa Press, 1989. Sherman, 'String Figures from the Austral Islands', 1994.
[24] Davidson, *Aboriginal Australian String Figures*, 1941/2006: 786.

Contrary to this view Maude saw the *Caroline Extension* as a major developmental step in string figure evolution:

> It must be stressed that the Caroline Extension is far from being a normal or obvious method for displaying the final, or any intermediate, patterns in a figure, but rather a sophisticated technique unknown in most parts of the world and difficult to learn except by those who have already acquired a dexterity in string figure making … where it has been adopted as a technique it tends to supersede other extensions as the preferred form … Thus the Nauruans, the most proficient string figure makers known in the Oceanic region, end 91% of their figures with a Caroline Extension; the Tikopia 74% and the Gilbertese 72%. The more eclectic Solomon Islanders … make use of it to display almost half of their figures.[25]

Honor Maude made a significant contribution to the second wave of string figure studies through publication of Pacific repertoires collected earlier in the twentieth century. Her technical analyses of these repertoires advanced understanding of string figure style. In her work Maude defined two distinct 'technique cultures' (as I am calling them) operating in the Pacific region: an 'ancestral' pan-Pacific 'Oceanic' culture and a more recent culture distinguished by the use of the *Caroline Extension*, circumscribed in range to the Western Pacific (Micronesia, Melanesia and the Australian quarter). I use Maude's definition of these two 'technique cultures'—'Oceanic' and 'Western Pacific'—in my analysis of the Yirrkala repertoire in the next chapter.

Understanding and invention among the Tikopia

In the series of publications reviewed above, there is an appreciation by Maude and her collaborators of the creativity involved in string figure making generally, and in the characteristic developments of particular repertoires. Even with the eclectic Solomon Islanders, Maude is at pains to counter any implication they are 'mere copyists, incapable of inventing innovations of their own'. As she writes:

> One has only to mention their interesting way of producing the Murray Opening … or the superb drama of Sisihiuke … or their charming variation of the standard Loyalty Islands well pattern … or again their distinctive method of making loops to create designs of unusual beauty.[26]

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[25] Maude, *Solomon Islands String Figures*, 1978: x-xi.
[26] Maude, *Solomon Islands String Figures*, 1978: xi.

'One of the most striking features of Tikopia string figures,' Firth notes, 'is the overt recognition of inventiveness in them.' (This stood out to Firth as the Tikopia were 'not remarkable for aesthetic creation in the graphic arts.') 'String games in Tikopia constituted a living art', he writes, 'in which new figures were invented or traditional ones modified.'[27] Called *sikosiko,* on Tikopia string figures were ordinarily a game played by children, but according to Firth they were 'not regarded as unworthy of the attention of adults.'[28] The repertoire consisted of well-recognised figures with names descriptive of their associated subject. Names were shared between what were considered variants of the same basic type. New figures were aligned as variants of known patterns with the addition of the name of the person who had invented it—normally an adult.[29] Of the 18 figures Firth collected of this sort, half were attributed to people of past generations, the others to people still living. A third were attributed to women, who Firth notes were 'acknowledged by society at large as inventors'. This practice of naming new figures suggested to Firth that 'Tikopia who were skilled in making string figures had quite a taxonomic interest in patterns produced':

> Apart from their concern with the technical procedures of pattern making, Tikopia interested in these figures took an abstracting, generalising view of the patterns, classifying them into a relatively small set of major types by recognised structural criteria.[30]

Firth recorded that his informants on Tikopia appreciated the connection between the structural and procedural logic of designs:

> They recognised *Kau Tukeniva* (Milky Way), *Manini* (reef fish), etc. as generic types differing specifically according to shape and number of diamonds in the particular form. When I was collecting figures I listened to various discussions as to how many *Kau Tukeniva* or other named types there might be, and how many diamonds or other distinguishing marks in each. It was said for example, that there were three *Kau Kupenga* only: those of Pa Koroatu (no. 14), Pu Atafu (no. 15) and Pa Rangifuri (no. 16). The first was said to be a development from *Vai ngutu rua*, the second and third from *Vai ngutu toru*.[31] [see Fig. 5.4]

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[27] Firth, 'Preface: String Figures in Tikopia Social Life', 1970: 5.
[28] Firth, 'Preface: String Figures in Tikopia Social Life', 1970: 1–2.
[29] This practice was also recorded on Bellona (near Rennel island), another Polynesian outlier in the Solomons group. Kuschel, Rolf. 'Games on a Polynesian Outlier Island: A Case Study of the Implications of Cultural Change'. *Journal of the Polynesian Society* 84 (1), 1975: 25–66; 46–47.
[30] Firth, 'Preface: String Figures in Tikopia Social Life', 1970: 6.
[31] Firth, 'Preface: String Figures in Tikopia Social Life', 1970: 6.

In the instructions for the Tikopia figures, following Firth's field notes, indigenous language terms are used to describe various movements, including the *tao* and *ta* sequence which appears in all of the *Kau Kupenga* figures: '*Tao sokotasi, ta e rua, kape ake* and release little fingers.' The direction *tao*, instructs the maker to hold down one, two or three strings with the thumbs. The continuation *ta*, then instructs the maker to pick up one, two or three strings with the index fingers. In this example (i.e. the instructions to *Kau Kupenga* I, II, III and IV), the direction is to hold down one string (*tao sokostasi*) and pick up two (*ta e rua*), which is the simplest form of the sequence. (*Kape ake* directs the maker to pick up the far little finger strings with the thumbs and return, as the immediate completion of the movement. This is followed by a uniform sequence of movements to finish off and extend the figure.)[32] Maude drew attention to the extensive use, and repetition of the variant possibilities of this movement sequence, as a unique characteristic of Tikopia figures: 'to the specialist the most interesting feature of their indigenous constructions is … the experimental development of a single technique complex'.[33] In her discussion of the Tikopia figures Maude made the observation that nowhere in the Pacific 'do we find the islander's repertoire a static one'. In figures handed down from generation to generation, the causes of change and development that Maude identified included: 'imperfect transmission', the incorporation of innovation brought by outside influences (through migration or visitors), chance discovery and 'deliberate invention'.[34]

The string figures of Nauru

In 1937 while resident on the Gilberts, inspired by illustrations of the 'unique and complicated patterns' from Nauru in Caroline Furness Jayne's book, Maude organised a six week visit to the island with the aim of collecting instructions for how to make them (see Map 2). Nauru had been a German protectorate from 1888 until 1914, when it was surrendered to the British. In 1910, the German anthropologist Dr Paul Hambruch visited the island for six weeks. In the published

[32] For an extended explanation of these movements see 'Terminology' in Firth and Maude, *Tikopia String Figures,* 1970: 13–15.
[33] Maude, 'The String Figures of Tikopia', 1970: 9.
[34] Maude, 'The String Figures of Tikopia', 1970: 7–9.

report on his research, there is an account of string figure competitions conducted as part of a roster of all-island 'Olympic Games' as they have come to be referred to in the literature, that resulted in 'a proliferation of new designs and a refinement of technique probably unique in history.'[35] While women 'knew as wide a range of patterns as any man', only men performed in public competition:

> One after another exhibits to the gathering his latest figure; turning away so that they cannot see his method of construction, and then suddenly holding up the figure in front of all to hear their comment. Others thereupon endeavour to make the new figure themselves as quickly as possible and to hold it up in front of the inventor. It is quite amazing how speedily some of them can reconstruct the technique of making a new figure and copy it accordingly.[36]

For many, he reported, string figures became an obsession: 'they rarely separate themselves from their string which they either wind round their shoulder and hip or around their left wrist. Their leisure time is spent in thinking out new patterns.'[37] Hambruch recorded that some figures required the assistance of three, four or more people to execute, and he described series 'which progress from pattern to pattern, showing a number of connected scenes and sometimes taking half an hour to complete.'[38] It is worth noting here that the complexity of Nauruan designs was in part the result of having 'four or five loops instead of the usual three on each hand, making ten strings instead of six to be manipulated'.[39]

When Jayne published Ernest Stephen's designs in 1906, Nauruan string figures were recognised as 'the most elaborate' ever collected.[40] By the time of Honor Maude's stay on Nauru in 1937, the influence of Western culture contact including Christian Missionaries who discouraged 'indigenous amusements', and the impact of phosphate mining, had eaten away at Nauruan culture generally. She found

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[35] Maude, H. E. 'Preface. The Cultural Setting.' In Maude, Honor. *The String Figures of Nauru Island*. Occasional Papers in Asian and Pacific Studies 2. Adelaide: Libraries Board of South Australia, 1971: ix–xix; xiii-xvii.
[36] Hambruch, P. *Nauru. Ergebnisse der Südsee-Expedition, 1808-1910*, 1914. Part II: Ethnographie. B: Micronesian. Vol. I: 367. Cited in Maude, H. E. 'The Cultural Setting', 1971: xiv.
[37] Unspecified source (possibly Hambruch, *Nauru*, 1914) quoted in Maude, H. E. 'The Cultural Setting', 1971: xiii.
[38] Maude paraphrasing Hambruch. In Maude, H. E. 'The Cultural Setting', 1971: xiv.
[39] Maude, Honor. 'Introduction. The String Figures of Nauru.' In Maude, *The String Figures of Nauru Island*, 1971: xxi–xxv; xxii.
[40] Jayne (*String Figures*, 1906/1962: 367) quoted in Maude, H. E. 'The Cultural Setting', 1971: ix.

when she arrived that string figures had almost ceased to be known except among a group of old men, whom she enlisted to her task.

> Every day I went out to the village, mostly on a bicycle, and gradually collected a few old men, not many, and one younger man who could show me the string figures. First of all they produced a long, very fine string made out of plaited human hair and they generously gave me one. The language, of course, was difficult in a way but as I only had to copy with my hands what they were doing with theirs, that was all right and now and again they would do a figure and bark at me 'amwangiyo' which was a series of movements to finish a design. As I had learnt those movements elsewhere, that helped me tremendously. There was another series of movements to finish off the figure to the best advantage and I had learnt that one already before as well. So each morning I would go out to the village and collect what I could, be taught a certain number and then go back to the Residency (of the Australian Administrator) and there spend the afternoon having a rest and writing up the figures I had learnt, making sure that it was all correct. The next day the same thing happened. So for about six weeks I went on learning.[41]

As Maude's experience testifies, the lifestyle of the Nauru islands no longer supported the making of string figures. 'The major creative art of Nauru' as Harry Maude called it, had fallen into decline.[42] However, among the group of men she worked with, Maude's interest provoked a re-engagement and revitalisation. As she recalled, 'There was much conferring and exchanging of advice as my informants endeavoured to remember and reconstruct half forgotten figures.'[43]

> The old men would put their heads together overnight and see how many figures they could remember. Occasionally I would point to the pictures in Jayne's book to see if they could remember how to make them. The next day they would show me any they could remember … [and] … they started to invent them.[44]

Stopping over in Nauru briefly on a trip back to the Gilberts the year after her stay on the island, she found the Administrator Commander Garcia, had left for her a collection of 23 new figures made by the men pinned to board, 16 of which were new inventions.[45] She got what instructions she could for these figures in the 48 hours before her boat left, including for *Administration Staffs*, a new invention

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[41] Maude, Honor C. 'Nauruan Episode: The Story of My Adventures Collecting String Figures on the Island of Nauru'. *Bulletin of the International String Figure Association* 4, 1997: 8–11; 9.
[42] Maude, H. E. 'The Cultural Setting', 1971: xviii.
[43] Maude, 'The String Figures of Nauru', 1971: xxii.
[44] Maude, 'Nauruan Episode', 1997: 9.
[45] Maude, 'The String Figures of Nauru', 1971: xxii.

'of a beauty and technical skill equal to the finest examples of the Nauruan classical tradition.' (Fig. 5.5). As attested to by Harry Maude, the outstanding characteristic of Nauruan string figure making was its creativity: 'the Nauruans have possessed the originality and expertise to construct entirely new patterns … to depict what interested them in their changing environment.'[46]

'Transmission, adaptation and invention'[47]*—I*

In Chapter 3, I described how Kathleen Haddon's account in *Artists in String* (1930) pays limited attention to the creative agency involved in string figure making. While recognising the opportunity for individual creativity, her analysis was constrained by the idea that the aim of the figures was mimetic. In Haddon's model of the development of regional style, figures were accepted or not into a community repertoire on the basis of whether or not they were generally thought to be 'appropriate' representations, or likenesses. Regional differences, as far as they were explained, were seen as 'mirroring' the different realities or experience of people living in different environments.

Honor Maude's studies of Oceanic collections introduce other considerations into the mechanisms at work in the development of individual string figure complexes, as exemplified by the repertoires of different island groups. Maude and her collaborators document their informants' understanding of method, and their experimentation with variations in form. And in her discussion of the Tikopia figures she introduced the idea of aesthetic preference:

> Like the Navaho Indian who, on being shown an intricate and beautiful Nauruan design, replied that, 'It is not a string figure', the islanders too have their aesthetic conceptions of what constitutes a perfect pattern: and to the Tikopia it would seem that perfection lay in variations on a single theme—the *tao* and *ta* complex.[48]

In *Artists in String*, Kathleen Haddon pointed to the seven figures representing stars in the known Navajo repertoire as a reflection of their importance in the

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[46] Maude, H. E. 'The Cultural Setting', 1971: xviii.
[47] Boas, Franz. *A Lecture Delivered at Columbia University in the Series on Science, Philosophy and Art*. New York: Columbia University Press, 1908: 24. Cited in Darnell, Regna. *And Along Came Boas: Continuity and Revolution in Americanist Anthropology*. Amsterdam and Philadelphia: John Benjamins Publishing Company, 1998: 278.
[48] Maude, 'The String Figures of Tikopia', 1970: 9.

Navajo world: their physical presence and cultural associations. ('No one who has spent even one night under the Arizona stars will be surprised at this.'[49]) However she cautions against interpreting the fact there are three figures representing owls, as similarly being taken to mean that owls are particularly important to the Navajo. While different finished designs, the three figures named 'Owl' are related through their basis in the same manipulation. She reasons that if 'the first figure made resembled and was called an "owl", the others were quite probably called the same by analogy.' As the multiplicity arises in this case from a technical or mechanical source, she concludes it 'denote[s] nothing.'[50] The ironic thing about this commentary is that the figures for *Owl* are technically related to the figures for *Stars* in the Navajo repertoire (a point acknowledged by Haddon). In Jayne's book, ordered as it is according to related technique, the three *Owl* figures are part of a series of 10 Navajo figures (including five of the seven 'star' designs) 'which are all done in much the same way, but come out in characteristic patterns in the end.' These figures are all variations on *Many Stars*—the same figure known in Tikopia as *Raukape*:

> They all start with Opening A, or a modification of it; after that, however, some go on as 'Many Stars', but end differently; others have a few new movements and then end with some from 'Many Stars', while others begin and end as 'Many Stars', but have different intermediate movements.[51]
>
> [see Fig. 5.6]

Against the predominant view of string figure repertoire as a static and unchanging form of 'traditional culture', with the same patterns handed down from generation to generation, Maude and her collaborators emphasised the dynamic and creative nature of string figure making in the repertoire they documented. This example suggests that the technical understanding and experimental attitude to form, documented by Maude in the Pacific, was more widespread.

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[49] Haddon, Kathleen. *Artists in String. String Figures: Their Regional Distribution and Social Significance*. London: Methuen, 1930: 45–46.
[50] Haddon, Kathleen. *Artists in String*, 1930: 47–48, 138.
[51] Jayne, *String Figures*, 1906/1962: 8, 52–53.

Knot theory: mathematical equivalence and string figure exactitude

In 1937 Maude collected a repertoire of 107 figures on Nauru, including eight of the 15 figures collected earlier by Stephen as reproduced in Jayne.[52] When she returned in 1938, in the time available, she was able to collect instructions for only nine of the 23 new designs left for her by Garsia. As Jayne had done, she reproduced the 'unknown' designs—photographs of the figures as presented to her, pinned to board—in an appendix to her 1971 book.[53] This left an inheritance of seven Stephen/Jayne figures and 14 Garsia/Maude figures yet to be solved. Reconstructing the methods for making the 'unknown' Nauru figures became a focal point of interest for members of the String Figures Association.

In *BISFA* in 1995—the same issue as the 'major revision' of the Yirrkala string figures by Maude and Sherman—Joseph D'Antoni (with assistance from Mark Sherman) published solutions to all 20 of the 'unknown' Garsia/Maude figures, and all but two of the Stephen/Jayne figures. In his preamble he defined criteria for judging the worthiness of a reconstruction. As well as superficially looking the same, he specified that the string crossings in the reconstruction should match those in the original. His third criteria was that the reconstruction should be based on methods consistent with those used in other figures known from the local repertoire.[54] In 1996, Yukio offered solutions to the last two remaining Stephen/Jayne figures.[55] In 2001 the Institute for Pacific Studies issued a second

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[52] Yukio, Shishido. 'The Reconstruction of Nauru String Figures'. *Bulletin of String Figures Association* (6), 1981: 15–20; 20. Whether Maude recorded eight or nine of the Stephen's figures in Jayne, depends on the status of the figure *Tinamitto* (Maude, *The String Figures of Nauru Island*, 1971: 126–27). Yukio points out that this design is not in fact the same as the figure illustrated in Jayne (Fig. 839) titled *Tinamitto; a Nauru Dandy*. Given the story accompanying the figure in Maude, that the girl *Tinamitto* was the favoured love of *Dauwaba* 'a young man with a number of sweethearts', Shishido concludes that Maude's figure *Tinamitto*, and the figure in Jayne, properly *Dauwaba, A Nauru Dandy* (for which he had devised a method of making), were two separate figures constituting, 'the couple of string figures'.

[53] Appendix II: 'Photographs of String Figures shown to Captain R. C. Garsia'. In Maude, *The String Figures of Nauru Island*, 1971: 149–52. The photographs illustrate 20 of the 23 Garsia figures (nos. 4-23). Maude recorded instructions for making six of these figures (one of which was *Administration Staffs*), as well as the three that are not illustrated here.

[54] D'Antoni, Joseph. 'The Reconstruction of Unsolved Nauruan String Figures'. *Bulletin of the International String Figure Association* 2, 1995: 33–86, 48.

[55] Yukio, Shishido. 'The Reconstruction of the Remaining Unsolved Nauruan String Figures'. *Bulletin of the International String Figure Association* 3, 1996: 108–30. Yukio's article discussed three figures. He defended his reconstructions of *Butterfly* and *A Nauru Dandy* published in his 1981 article (both of which only required modification to the opening to equate exactly with the designs published in Jayne), and he offered a reconstruction for *A Seasnake*, the last of the figures, which had continued to be allusive. In this he made use of Storer's 'linear sequences'.

edition of Maude's *The String Figures of Nauru*, expanded with the addition of instructions for the previously 'unknown' figures, as reconstructed by members of the Association.

It can be inferred that the logic behind D'Antoni's insistence that the crossings of the strings match, is in part that a singular design goal was necessary for the complex task of reconstruction, since, as it was found, that goal in itself often produced alternative solutions. In the next issue of *BISFA*, in response to D'Antoni's remarks defining the criteria for judging reconstructions, Yukio Shishido posed the question of how different a figure has to be in order to be recognised as different by participants engaged in the activity of string figure making. He cited an example of a figure from his own childhood *Yodan-Bashigo* (a ladder with four steps). When a left-handed person makes the figure, the final design is slightly different in that the crossing of the strings at the centre are reversed. As he averred, then as now, 'almost all of us would take notice of that difference. Nevertheless, we would usually agree that both figures are the same. Can this level of identification be unique to ourselves?'[56] Yukio thought it probable that the Nauruans similarly were not particular about such differences, that string figures that differ by only a few string crossings were considered to be the same by Nauruan artists. He noted that the method for making the figure *Eidiowinago* collected by Maude resulted in a difference of this sort compared with the figure as drawn in Jayne.[57] He suggested that the reason for this was that probably 'both versions of *Egarawinago* were in existence' (see Figs. 5.7A and 5.7B).[58]

To make Maude's figure 'identical' with the image in Jayne (presumed to be the maker's view), right and left need to be interchanged or swapped in Step 3 of the

[56] Yukio, 'The Remaining Unsolved Nauruan String Figures', 1996: 114.
[57] Fig. 840 in Jayne (No. 14 of Stephen's Nauru figures), identified as *Egarawinago,* equates to an interim stage in the method for making *Eidiowinago* recorded by Maude. The same interim figure appears as a stage in the making of *Administration Staffs*. Yukio states that the difference between the Jayne and Maude versions of the figure is that the central string crossings differ, as in his example of the figure from his childhood. However, in the 2001 edition of *The String Figures of Nauru Island* co-authored with members of ISFA, in which both versions of the figure are represented, the difference seems to be in the crossings of the transverse strings. Separate to the differences in string crossings between the two designs, D'Antoni points out that the drawing of the right-hand corner of the upper diamond in Jayne is flawed. (D'Antoni, 'The Reconstruction of Unsolved Nauruan String Figures', 1995: 63.)
[58] Yukio, 'The Remaining Unsolved Nauruan String Figures', 1996: 113–14.

opening (*Nauru Opening 2*).[59] This alters which string is in front and which is behind in the pattern of crossings over the upper and lower transverse strings (Fig. 5.8A). Some string figures, whether viewed from the maker's or the observer's side (the mirror image in reverse), are identical in design in all details. In other cases, as in this instance, the two views of the design are homeomorphic but contain subtle differences. These differences are similar in kind to those that occur in the single view of a figure as the result of other-handedness—alterations to which strings cross over and under each other. Compare for example the two views of the central crossing strings—one from the maker's and the other from the observer's side—with the differences in the pattern of crossings as the result of other-handedness, in Jayne's and Maude's respective versions of the figure (Figs. 5.8B and 5.8C).[60]

The point to be made is that we can be certain that the two 'versions' of *Egarawinago/Eidiowinago* constituted by the different patterns of the central crossing strings were both 'in existence', because they are simply two views of the one figure. Not only would both have existed every time the figure was made, it can be assumed both maker and observer would have agreed that they saw 'the same' thing. On this basis, it follows that the differences in the pattern of crossings over the transverse strings would also have been seen as similar enough to be considered 'the same'. As Yukio Shishido wrote, for the purpose of reconstruction, 'various aspects of the "real world" string figure [have to be left] on the shelf.'[61]

The precision enlisted for the solving of figures has its roots in mathematical typology or knot theory, in which the analysis of string crossings is used to answer questions of sameness and difference.[62] In 1988 a special issue of the String Figures Association's *Bulletin* was devoted to a treatise by mathematician and

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[59] See Maude, Honor, and members of the International String Figure Association. *The String Figures of Nauru Island.* 2nd edition (revised and expanded). The University of the South Pacific Centre in Nauru and Institute of Pacific Studies, 2001: 20 (for *Nauru Opening 2*), 174 (for D'Antoni and Sherman's correction to Maude's instructions).

[60] It is likely that the parity of the central crossing strings would be altered by other-handedness in another step (possibly Step 1) of the opening sequence—however, I am not able to make the figure to test this.

[61] Yukio, 'The Remaining Unsolved Nauruan String Figures', 1996: 114.

[62] Akveld, Meike, and Andrew Jobbings. *Knots Unravelled: From String to Mathematics*. Shipley, United Kingdom: Arbelos, 2011: vii. 'Are two given knots the same or different?' is cited by Akveld and Jobbings in the preface to their book, as one of the essential questions asked by Knot Theory.

string figure enthusiast Tom Storer, simply titled, 'String-Figures'. In this paper one of Storer's primary aims was to find a remedy for the uncertainty that characterised descriptions in the historical record. As he wrote in his introduction:

> If one reads a particular author's construction of a complicated string-figure, usually ambiguity as to the individual steps involved abounds! In most cases, a representation (picture, schema, ideograph) of the finished product prefaces this description, to let you know when you have correctly resolved these ambiguities; and, in a fair percentage of these cases, the representation itself will be incomplete, or incorrect (with respect to internal string-crossings, for example). The hope here is, of course, that one (and only one) of the string-positions whose construction 'goes something like this' has a representation 'that looks something like this'. And for the great authors (e.g. C. F. Jayne, H. Maude) this usually works; for the lesser authors (e.g. F. D. McCarthy) it rarely does.[63]

Storer's goal was to develop a precise descriptive method or 'unambiguous formal language' to accurately 'conserve' string figure repertoire.[64] As a way of recording the structure of a figure, from which 'the associated schema is unambiguously recoverable,' he developed the method of 'linear sequencing'. Starting from a given position on the loop of string (conventionally the left thumb arc) and moving in a clockwise direction, the 'linear sequence' describes the structure of a figure by listing in order the points of 'local positional identity' that would be encountered in succession, if as Storer suggested, 'we imagine an ant crawling along' the string. These points of 'local positional identity' reference the relationship of the string to the 'supporting frame' (i.e. most commonly fingers of the hand) and its 'interrelationship to itself' (i.e. crossings).[65]

In Figure 5.9 I reproduce Storer's demonstration of the process for developing linear sequences for a simple construction of crossing strings. The careful differentiation of the identity of internal string crossings, because of their relationship to string manipulation, was of major significance in the development of linear sequences as Storer emphasised. To describe the sequence of steps involved in making a figure, Storer developed a symbolic code or 'Calculus of string figure manipulation', based on 'the classical "function notation" of

[63] Storer, Tom. 'String-Figures.' *Bulletin of String Figures Association*, (Special Issue 16), 1988: i–ii.
[64] Storer, 'String-Figures,' 1988: i.
[65] Storer, 'String-Figures,' 1988: 1–9.

Mathematics/Symbolic Logic' (see Fig. 5.10).[66] The calculus for a figure was developed by undertaking a 'constructional/crossing analysis' of all intermediate positions and the final figure (through the process of linear sequencing), and then translating the manipulations by which these transformations were effected into code. In Figure 5.11 I reproduce Storer's linear sequence and calculus for *The Leashing of Lochiel's Dogs*, or *Crows Feet* as he calls the figure.

This simple figure, as discussed in Chapter 3, had almost worldwide distribution, with slightly different construction methods being recorded in different locations. Using the technique of linear sequencing, Storer is able to identify whether these different methods do in fact result in identical—that is mathematically equivalent—figures. This sort of precision can be useful in comparisons between repertoires, as it is in the task of reconstruction. The problem with this approach is that it ignores the question of the criteria used to define string figure identity in practice—that is as understood within a particular community of practitioners, which after all was the primary subject of study.

Mark Sherman: cores and variants and family trees; blocks and nodes and calculus equations

In his work on historical repertoires, Mark Sherman developed the analytic potential of visual methods of describing string figure techniques. He used family technique trees and the symbolic calculus developed by Tom Storer, as forms of data visualisation, to reveal the systematic relationships between figures in a repertoire.

Cores and variants and family trees: the Kwakiutl repertoire

In 1984 (the year that he joined the SFA), Sherman located Julia Averkieva's 1931 manuscript on Kwakiutl string figures in the Boas papers at the American Natural History Museum. Julia Averkieva, a master's student from the USSR studying at Columbia, had accompanied Boas on a four-month field trip to Fort Rupert on Vancouver Island in the winter of 1930–31, where she collected the instructions for 102 string figures and 10 tricks, accompanied by photographs and pencil

[66] Storer, 'String-Figures,' 1988: ii.

sketches. The commentary by Von Hornsbostel, discussed in Chapter 3, was written as an introduction to this paper, which, however, was never published.

Sherman spent many years editing the manuscript that was finally published in 1992, some 60 years after Averkieva's original research. A large part of the work Sherman did involved clarifying Averkieva's instructions using the precise terminology of Rivers and Haddon. (Averkieva had used Jayne's simplified terminology which Sherman found was not up to the task.) He provided an updated distributional analysis, appending to the description of each figure a comprehensive listing and commentary on related figures in other collections (many published since the original preparation of Averkieva's manuscript).[67] Sherman added an appendix addressing the question of 'Origins and Affinities' based on a technical analysis of the repertoire. Sherman's aim in this was to establish the relationship between the repertoire of the Kwakiutl and those of their Inuit/Eskimo and North American Indian neighbours. His conclusion was that the Kwakiutl repertoire combined elements (figures and techniques) from both of these string figure 'schools', uniting two streams of development 'that apparently diverged long ago'.[68] Rather than addressing the substance of Sherman's larger argument regarding string figure diffusion in North America, I am interested here in the methods he used in his technical analysis of the string figure repertoire.

Building on the work of Jayne, Jenness and Maude, Sherman was concerned in tracking the relationship between core figures and their variants in Averkieva's Kwakiutl repertoire. As he defined these terms: 'Core figures are the "parent" figures of a given repertoire, whereas variant figures are the "children" of core figures, arising through alteration, modification, omission, and recombination of the technique sequences used in constructing the core figures.'[69] (And we could add here repetition.) The standard way of identifying core and variant figures

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[67] Sherman, Mark A. 'Introduction'. In Averkieva, Julia, and Mark A. Sherman. *Kwakiutl String Figures*. Anthropological Papers of the American Museum of Natural History 71. Seattle and London, New York: University of Washington Press and American Museum of Natural History, 1992: xvii–xxxi; xxii – xxv. See discussion of 'The Distribution Data' and Table 1.
[68] Sherman, Mark A. 'Appendix B. Kwakiutl String Figures: Origins and Affinities'. In Averkieva and Sherman, *Kwakiutl String Figures,* 1992: 151–80; 180.
[69] Sherman, 'String Figures from the Austral Islands', 1994: 70.

using diffusionist methodology was to look at distribution data: the most widely distributed were presumed to be the oldest and, therefore, core figures, while those with only local distribution, were presumed more recent variants. (See discussion of Jenness' work on Inuit/Eskimo repertoire in Chapter 3, pp. 109.)

As Sherman did not have other data sets from the Northwest coast with which to compare the Kwakiutl repertoire, he attempted instead to decide the status of individual figures on the basis of a technical analysis. Starting from shared openings, and sequences, he constructed 'family trees' branching at points of key variant manipulations (see Fig. 5.12). These 'family trees' ordered figures according to shared technique sequences, revealing relationships not necessarily evident from looking at final patterns (see Fig. 5.13). Shared 'technique blocks', not described by the structure of the tree, were indicated by an overlaid encasing box of dotted or broken lines (see Fig. 5.14). These 'family trees' could alternatively be thought of as a kind of 'flow chart,' in that they visually record the technique sequences used to make a figure or set of figures, in the order in which they are performed.

Sherman designates each branch of the tree as a 'family', named after one of the figures. For example KSF [Kwakiutl String Figure] 23, 24, and 25 are named 'The Toad Family' after the title of KSF 23 (see Fig. 5.13). While stating that 'within each family, one member is by definition a *core figure*,' and by extension the others are variants, he cannot definitively state which is which. The family tree analogy implies a genetic lineage, an evolution from prior, simpler to later, more complex forms. This relationship is not clear in the structure of many of his family groups however.

Blocks and nodes and the Kwakiutl figure **Two Trees**

In his 1991 publication 'Rationally-designed String Figures: Variations of the Kwakiutl Figure "Two Trees"', Sherman further developed his understanding of the structure of figures and their interrelationships, by breaking up the sequence of manipulations used to make a figure into 'Blocks' and 'Nodes'. He defined block sequences as discrete manipulation sequences 'essential' to the 'integrity' of the final pattern, defining 'framework strings, loops required for extension etc.' As such, they could not be omitted without compromising the end product—the final design. Nodes were the points in-between these technique blocks, where other manipulation sequences could be inserted. Node sequences were primarily 'ornamental in nature … serv[ing] to alter or augment the final design without destroying the essential framework', that is, 'loop twists, exchanges, interweavings etc.'[70]

In this article Sherman looked at the Kwakiutl core figure *Two Trees* and its variants *Two Forked Trees*, *Three Trees* and *Four Trees*, as represented in this chart from the1992 monograph (Figs. 5.14 and 5.15). 'Chart 4' shows two 'families' of figures that all share a popular Kwakiutl technique, Sherman termed the 'Northwest Coast Intertwine'. In the *Tree* family [KSF 44, 45, 46, 47], variation occurs after this sequence; in the *Butterfly* family [KSF 39, 40, 41, 42, 43] it largely occurs beforehand. Averkieva had described *Two Trees* in 10 steps. Sherman's analysis of the figure determined that 'the actual weaving takes place in five distinct phases'; accordingly, he divided these 10 steps into five technique blocks, identifying six nodes (Figs. 5.16A and 5.16B). Block 4 represents the 'Northwest Coast Intertwine', which incorporates Averkieva's steps 7 to 9. All four *Tree* family figures result from additional manipulation sequences inserted after this, at node 5 (although the sequence in *Two Trees* involves only the release of the indices followed by the extension of the figure). Sherman used this 'Block and Node' analysis in combination with Tom Storer's symbolic notation. Replacing lengthy word descriptions with linear equations enabled Sherman to conceptualise technique sequences as discrete units, while maintaining the same level of detail (Figs. 5.17A and 5.17B).

Sherman's aim in this paper was to explore possible variations of the figure through utilising the other nodes, 'each capable of producing a whole "family" of variations'. He goes about this systematically, trialling the possibilities, from single manipulations at a single node to multiple manipulations at multiple nodes

[70] See Sherman, Mark A. 'Rationally-Designed String Figures: Variations of the Kwakiutl Figure "Two Trees"'. *Bulletin of String Figures Association* (17), 1991: 29–106; 29–33. Sherman, Mark A. 'Evolution of the Easter Island String Figure Repertoire'. *Bulletin of String Figures Association* (19) 1993: 19–87; 24.

(Fig. 5.18A). Of the hundreds of variations he trialled, Sherman presents 136 in the article, in order to explore the logic of the figure. In his selection, he focuses on 'interesting' or 'attractive' figures that retain the basic integrity of the design, including variations in which other figures are inserted between the *Two Trees* (Fig. 5.18B).

The Easter Island repertoire and Tom Storer's string figure calculus

In his 1993 article on the Easter Island repertoire, Sherman used a 'Block and Node' analysis combined with Storer's string figure calculus, to effect. Sherman's object in this work was to reconstruct the methods of making 81 'unknown' figures published by Ramon Campbell in 1971 (i.e. images of final designs without instructions for making). As his starting point he used construction methods for a set of 23 'traditional' figures recorded by another researcher, Olaf Blixen, in 1979. As a first step he rewrote these construction methods in Storer's symbolic code, and by vertically aligning similar or identical construction sequences (as read along the horizontal axis), was able to reveal a structure of shared technique sequences, common to the majority of these 'traditional' figures. While Storer's code is strictly speaking, textual, Sherman revealed its analytical capacity as a form of data visualisation. Sherman's analysis identified a pattern of five shared block sequences common to 19 of Blixen's 23 figures, with utilisation of four of six potential nodes (Fig. 5.19). As he wrote: 'The ability to align "sentences" written in Storer code proved to be a powerful tool for revealing so-called "genetic" relationships between seemingly unrelated string figures.'[71] The Easter Island repertoire was shown through this process to be uniquely and peculiarly consistent (if not limited), a fact that Sherman linked to its isolation. On the basis of this analysis Sherman went on to search other variations (other possible combinations of manipulations at different nodes), identifying 'probable solutions' to 42 of Campbell's 81 figures.

Knowledge of the structural relationships between figures was identified by earlier researchers as being part of the understanding of the indigenous practitioners they

[71] Sherman, 'Someone Who Loved the String', 1993: 36–37. Blixen had recognised the shared sequence of movements in the repertoire as the *Pascuan sequence*.

interacted with, associated with 'inventiveness'. As Firth expressed it in his commentary on the Tikopia: skilled practitioners had 'an abstracting, generalising view of the patterns'. In Nauru, Maude reported how the old men she was working with would 'put their heads together overnight' in order to recall figures to show her the next day. The new inventions they later came up with suggest that Maude's choice of words here was more than a figure of speech. As Sherman wrote of his exploration of the possibilities of variation: 'aboriginal people of the world have been using a similar approach for centuries.'[72] His analysis of the Kwakiutl and Easter Island repertoires showed, he argued, that 'new figures arise through variation of existing figures: rarely are string figures invented *de novo*':[73]

> Oftentimes, new manipulation sequences can be introduced at nodes (Sherman, 1991: 33–78). Sometimes, a block can be repeated in order to increase the complexity of the final pattern (Sherman, 1991: 78–83). In other cases, block sequences can be modified (Sherman, 1991: 88–91) … And finally, it is occasionally possible to combine or juxtapose block sequences from two unrelated figures (Averkieva & Sherman, 1992: 157), thus creating a new hybrid entity.[74]

As he commented: 'The Kwakiutl were quite skilled at "splicing together" Blocks in their quest for new figures'.[75]

Sherman's 'Block and Node' analysis has the advantage of side-stepping the implication of evolutionary sequencing inherent in the concept of core and variant figures and the 'family tree' analogy. It has the capability to encourage a less hierarchical exploration of the relationships between figures, at multiple levels. However, its drawback is that it does not encode when the same point is reached by different means, in the way that the 'family tree' model does.

'Transmission, adaptation and invention'—II

In Sherman's discussion of the Kwakiutl string figures, at the same time that he recognises an 'intellectual' component in the development of the repertoire, this is not accorded any role in transmission or diffusion between the Kwakiutl and their North American Indian and Inuit neighbours. Sherman's ideas in this regard were

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[72] Sherman, 'Rationally-Designed String Figures', 1991: 92.
[73] Sherman, 'The Easter Island String Figure Repertoire', 1993: 24.
[74] Sherman, 'The Easter Island String Figure Repertoire', 1993: 24–25.
[75] Sherman, 'Rationally-Designed String Figures', 1991: 88.

strongly influenced by Father Guy Mary-Rousseliere's study of the string figures of the Arviligjuarmiut, a Netsilik tribe at Pelly Bay (now Kugaaruk in Canada's Nunavut territory) published in 1969.[76] Following Kathleen Haddon, Mary-Rousseliere made a distinction between the ability to reproduce a design in a relatively short period of time, and the mechanism involved in long-term memorisation, which being reliant on 'a partially unconscious muscular memory of some sort', required repeated exposure.[77] While Mary-Rousseliere recognised, and himself recorded, instances of invention, he argued that transmission of figures between population groups only occurred with 'intimate, prolonged social contact'.[78]

Observations on the practice of string figure making as a craft are scattered in the margins of a literature focused primarily on recording designs. Due to the opportunistic nature of the bulk of string figure research, rather than being studied directly, understandings of the processes of learning and maintenance, invention, evolution and adaptation of repertoire within and between communities, were largely inferred from distribution data.[79] However Mary-Rousseliere had the opportunity to make observations over time during his long-term residency among the Netsilik. He noted that specific methods of making any string figure design were transmitted through the family unit, and that this was a long-term process due, he argued, to the need for repetition over time to 'fix' it in memory. On the other hand, among the community, he recorded variation in the way the same

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[76] Mary-Rousseliere, Father Guy, *Les Jeux de Ficelle des Arviligjuarmiut*, Musees Nationaux du Canada, Bulletin 233, 1969. Mark Sherman translated the commentary section of the study into English for publication. Mary-Rousseliere, Father Guy. 'Les Jeux De Ficelle Des Arviligjuarmiut'. Part 2. Translated by Mark A. Sherman. *Bulletin of String Figures Association* (18), 1992: 34–89. Mary-Rousseliere collected string figures from the Netsilik at Pelly Bay from the mid-1950s to the mid-1960s.
[77] Mary-Rousseliere, 'Les Jeux De Ficelle Des Arviligjuarmiut', 1992: 36.
[78] Sherman, 'Appendix B. Kwakiutl String Figures: Origins and Affinities', 1992: 152.
[79] Mary-Rousseliere's study built on the work of T. T. Paterson and his concept of Eskimo string figure 'conservatism'. Paterson (1909–1994), a Cambridge trained anthropologist, collected string figures during the 1930s while on the Wordie Arctic Expeditions. In his 1949 analysis of the distribution of string figures across the Arctic territories (drawing on records to that date), he found there were equally large numbers that were either widespread or found in a single location only, while comparatively few designs were known in two or three adjoining areas. He concluded from this that the figures with wide distribution travelled with the dispersal of an original population, those found in one location only were the result of more recent local development, and that transmission from one population group to another was a rare occurrence. Paterson, T. T. *Eskimo String Figures and Their Origin*. Copenhagen: Acta Arctica, 1949: 49–50.

pattern or design was made—including ten different methods of making one common figure—suggesting the agency of creative experiment. While the majority of figures he collected had been previously recorded elsewhere (only 14 per cent of the collection being identified as originating locally with the Arviligjuarmiut), nearly 60 per cent of the methods he recorded were original. Mary-Rousseliere concluded that the 'conservatism' seen as characterising Eskimo/Inuit string figure distribution related to the pattern or design of figures, rather than the methods used to make them.[80] This of course has implications for the importance given to method in tracking diffusion.

In the literature, acknowledgement of the role of intellectual abstract conceptualisation and concomitant 'inventiveness' in the development of string figure repertoire is in tension with a prevalent and persistent conviction that somatic 'body memory' was the principle, and in most cases, sole vehicle of learning and recall. That, as Mark Sherman put it, 'the hands "remember" the figure rather than the brain.'[81] The many considerations of influence on the transmission of figures both within and between communities, applicable to any cultural trait, tend to be overshadowed by this one explanatory factor.

Sherman's use of family 'technique trees' and calculus 'equations' as forms of data visualisation, enabled him to build on the work of Jayne, Jenness and Maude, in exploring the 'genetic' relationships between figures, revealing the underlying systems structuring any given repertoire. While this sort of analysis is abstract and etic, it is not necessarily foreign to the emic perspective of practitioners—many of whom it has been argued take 'an abstracting generalising view of patterns'. These models provide an overview of the sequencing of individual manipulations used to construct a figure, but they are not unfaithful to the experiential reality of that process—while they do not seek to reproduce its 'flow', they retain its logic. In the next chapter, I use these models as a way of understanding the relationships between figures in the Yirrkala repertoire. In preparation for this I briefly revisit

[80] Mary-Rousseliere, 'Les Jeux De Ficelle Des Arviligjuarmiut', 1992: 39–40.
[81] Sherman, 'Appendix B. Kwakiutl String Figures: Origins and Affinities', 1992: 152.

Maude and Sherman's 'major revision' of McCarthy's instructions, in the context of the methodological and conceptual developments discussed above.

The major revision

The purpose of Maude and Sherman's 'major revision' of the Yirrkala string figures was to correct the errors in McCarthy's instructions, and it was limited to this aim. While acknowledging the duplication of figures revealed through this process Maude and Sherman honoured all variations in method recorded by McCarthy, however minor. They eschewed making judgements about difference and sameness, conferring identity between figures only when their corrections revealed the instructions to be exactly the same. In this we see the influence of second wave string figure exactitude.

In the *Sugarbag* subset there are four mounted specimens of a 3-diamond design that McCarthy identifies as three different figures in the *Records*: AASEAL #6 *Ironwood Gum Cement*, #35 *Three Huts* and #80 (Method #12) *Three Locusts in a Tree* or *Sugarbag* (*Three Bee's nests in a Tree*) (see AA§4 Plate 7 and AA§4 Fig. 1).[82] The method recorded for #35 *Three Huts* includes an interim figure (#66 *Emu's Tracks*/#67 *Stingray-spine Spear*), after which it follows the same steps shared by the other figures.[83] #80 (Method #12) *Three Locusts* or *Sugarbag* produces a design identical in every way to *Three Huts*. #6 *Ironwood Gum Cement* is however, treated as a separate figure by Maude and Sherman due to the other-handedness of the procedure.

Whether the figure is made right or left-handed affects the pattern of wraps on the perpendicular end strings, as can be clearly seen in Maude and Sherman's illustrations (photographs taken from the maker's perspective) (AA§4 Fig. 2). *Three Huts* and *Three Locusts*/*Sugarbag* (made using a left-handed method) have a double wrap on the right and a single wrap on the left. *Ironwood Gum Cement* (made using a right-handed method) has a single wrap on the right and a double wrap on the left (and for reasons that are not clear to me, Maude and Sherman

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[82] Another case of the wrong instructions being attached to a figure, Maude and Sherman have identified the correct instructions for AASEAL #80 as those accompanying ASSEAL #12.
[83] This figure is not recognised by McCarthy as an interim figure as such, but is recorded separately.

have inverted the figure—which however does not alter this distribution).[84] Note that whether made using a left-handed or right-handed method the pattern of the transverse string and central string crossings remain the same (see also AA§4 Fig. 1).

The precision of the distinction being upheld by Maude and Sherman is not necessarily supported by the evidence of the collection.[85] And as was the case with the Nauru figure *Egarawinago/Eidiowinago*, the maker's and observer's alternate views of this figure produce the same sort of differences as those that result from other-handedness in method, when viewed from a single perspective (AA§4 Fig. 3). Maude and Sherman's treatment of *Ironwood Gum Cement* as a separate figure on the basis of it being made 'other-handed', begs the question whether such a distinction was of importance to the Yolngu themselves.

Allied with the 'exactitude' of their approach to string figure identity, Maude and Sherman's 'revision' suggests they shared in common with McCarthy an underlying belief in the 'essential' one-to-one correspondence between figure and subject—something akin to string figures as platonic forms: the idea that for any subject or 'thing' (deemed a singular unique entity), there is a singular unique or 'true' form of string figure that represents it. In their work Maude and Sherman referred to photocopies of the mounted figures and contact sheets of the original photographs, as well as the published instructions and accompanying illustrations in the *Records*. In a number of cases there are discrepancies between these sources. In the collection there is a set of simple figures with loops on two or three digits of one or both hands, variously twisted. In several, the number of twists on each loop varies between the instructions, illustration (and the photograph on which it was based) and the mounted specimen of the figures, as is the case with #57 *Menstrual Blood of Three Women* (see AA§9 Fig. 3 and AA§9 Fig. 4). McCarthy's instructions for the figure describe triple twists on each loop. The mounted specimen has double twists on 1, 5 and L2, and a quadruple twist on R2. The photograph, and the illustration based on it, shows single twists on each loop. In these cases, giving the

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[84] Left-handed method: at Step 2, L2 picks up R palmar string. Right-handed method: at Step 2, R2 picks up L palmar string.

[85] The mounted figure of *Sugarbag* is made right-handed, rather than left-handed.

instructions for each of these variations, Maude and Sherman conclude that the 'true identity' of the figures 'remains uncertain.'[86] This ignores the interpretation that there was in fact no one 'true identity' or exact 'correct' form of these figures. It is worth remembering here that the mounted specimen was collected, the instructions for making recorded, and the photograph taken, all on separate occasions—recording three separate string figure 'events'.

In McCarthy's catalogue, #52–#55 duplicate the one figure under four different titles (see AA§8 Fig. 1). While the instructions in the four entries are indeed all different, in all cases except one, these differences are the result of minor errors in recording, and variation in how the instructions have been written out—not in the method itself (see AA§8 Fig. 2). I am calling this series of figures the *Damala Duplication*. In his field notes McCarthy recognised the resemblance of the final designs but in the *Records*, rather than giving us one figure with multiple titles or identities, he defined four separate figures. (Problems with translation may have played a part in this: ngakngak and damala are both names for the white-breasted sea eagle, but were understood by McCarthy to be the names of two different species of bird, white goshawk and parrot respectively.) [87] In their revision Maude and Sherman recognise the parity between the four designs but treat #52 as a minor variant due to its asymmetric extension. This feature, in my view, is most likely the result of a 'mistake' in the steps leading up to the final extension of the figure, that Ngarrawu then attempts to 'correct' (see AA§8 Fig. 2 and Video 3—Demo A). The figure in the *Damala Duplication* is the Oceanic core figure known in Tikopia as *Raukape*. A figure that, as discussed earlier, despite minor variations in recorded method in different repertoires, Maude recognised as being 'the same' in terms of its 'basic theme' across the Pacific region.

Maude and Sherman's work in the 'major revision' sorting out the 'actual' from the 'artefactual' in McCarthy's recorded instructions has been invaluable to my

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[86] See comments accompanying #59 *Three Women Sitting Down* and #60 *Fish-Net*. Maude, Honor C. and Mark A. Sherman. 'The String Figures of Yirrkala: A Major Revision', *Bulletin of the International String Figure Association* 2, 1995: 87–187; 126.
[87] According to the YMD, ngakngak refers to the mature female and damala to the mature male. In my experience they are alternative names.

analysis of the collection. However, their limited aim of correcting the record means that while they recognise exact duplications, any differences in method, however minor, are left to stand, by default supporting McCarthy's contention that they were intentioned 'meaningful' differences.

Conclusion

A semiotic analysis of the production of meaning in string figure repertoire seems an obvious response to the troubled comments made by collectors, including McCarthy, about the 'realism' of individual string figure designs. In the next chapter, accordingly, I explore the nature of the Yirrkala string figure repertoire as an aesthetic meaning system. This approach replaces a preoccupation with designs looking 'enough like' or 'not enough like' their subject, with an analysis of how they function as units of meaning within a semiotic system. In the Saussurian model of language on which I base my understanding of semiotic systems, the most important point to understand is that, both the material sign (the signifier), and the conceptual field referred to (the signified) are articulated through relationships of difference:

> Both signifier and signified are purely relational or differential entities … arbitrary divisions of a continuum … not autonomous entities … defined by some kind of essence. They are members of a system and are defined by their relations to the other members of that system.[88]

In analysing the Yirrkala string figures as a semiotic system, I firstly consider method or technique of making as a source of potential semiotic *diffèrance*. To focus solely on the final designs as visual signs—as an art historical analysis might conventionally do—would fail to take into account the constitutive importance of the process of making in string figures as a creative medium. Performed by the body in time and space, string figures need to be understood as a multimodal performance practice incorporating gesture and movement, and through voice, in speech and song, the appurtenances of narrative and naming—all of which provide

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[88] Culler, Jonathan. *Ferdinand de Saussure*. Revised edition. New York: Cornell University Press, 1986: 33–39.

additional significatory potential.[89] In the first instance however, the technique of making designs must be considered as a potential signifying practice—part of the process of making meaning/meaning making.

Unlike other collectors McCarthy did not learn how to make the figures himself. He firstly collected mounted specimens for as many different subjects as he could and then recorded through observation Ngarrawu's method of making them—in effect documenting a 'long series' of individual string figure 'events'. As stated in the conclusion to the last chapter, in McCarthy's work the idea of an 'essential' link between figure and subject, initially attached to the presumption of the 'realism' of string figure designs, morphed into differences in method serving to explain the multiple identities attributed to the one final pattern or design.

I begin the next chapter with a technical analysis of the repertoire based on McCarthy's record, as corrected by Maude and Sherman. I use Mark Sherman's concept of family technique trees, and adopt his use of Storer's calculus, to understand the technical relationships between figures in the repertoire. Through my analysis I demonstrate that the likely explanation for McCarthy's observation that the same 'identical design' is attributed with a different meaning 'when produced by different techniques and from different openings' or 'displayed with hands in different positions', is that a significant number of figures in the Yirrkala repertoire duplicate the same basic patterns made using two alternative technique cultures. At least two different methods of making each of the 2-, 3- and 4-diamond designs in the repertoire (and standard variations on these designs) are recorded in McCarthy's catalogue of figures. One method, using the *Caroline Extension* for the final display of the figure, can on the basis of Maude's analysis, be aligned with a Western Pacific technique culture; the other method can be aligned with an Oceanic (or pan-Oceanic) technique culture. The presence of these two technique cultures in the Yirrkala repertoire is not remarkable in itself. The point of interest is how they may be used to structure meaning in the repertoire.

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[89] I am taking the term 'multimodal' from Jenny Green's work on Western Desert sand stories. Green, Jennifer. 'Between the Earth and the Air: Multimodality in Arandic Sand Stories'. PhD thesis, University of Melbourne, 2009.

Chapter 6
Thinking through making and meaning I: analysis of the Yirrkala collection

Introduction

The Yirrkala repertoire is simple and compact in terms of patterns made and techniques used. The most striking thing about it is the richness of the language—the meanings (or significations) recorded by McCarthy—built on this circumscribed base. Looking down the list of titles there is a wide breadth of subjects represented: landscape features and natural phenomena, humans and their activities, material culture objects (including those introduced from Macassan and European sources), animals and plants.

In McCarthy's catalogue the same design is often recorded as representing multiple subjects. This is a predominant feature of the 'mesh patterns' in particular. McCarthy accounts for the different identities attributed to the one design through differences in the method of making. In this chapter I evaluate this explanation through an analysis of the ways in which meaning is distributed in the repertoire. This analysis is based on McCarthy's published record of designs, their method of making (as revised by Maude and Sherman), and their identifications, with reference being made also to the collection of mounted specimens and photographs.

In this task I am looking at the relationship between three variables: process, form and meaning.[1] The chapter begins with a discussion of my findings from a technical analysis of what McCarthy terms the 'mesh patterns' in the repertoire. In this discussion, I assess which sort of differences in method, of those recorded by McCarthy, could reasonably be considered as differences through which meaning is patterned. While the relationship between form and meaning is considered in this discussion, the focus is on process. Later in the chapter, looking at the distribution of meaning across the repertoire as a whole, I consider the operation of the figures as visual signs. My analysis of method informs this discussion, but

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[1] Any variation within any of these three elements is used by McCarthy to define a 'string figure' as a unique individual identity.

here the focus is on the form of the figures and how this operates in the distribution of meaning.

A technical analysis of the mesh designs in the collection: the language of process

As outlined in Chapter 4 McCarthy divided the repertoire into two basic types: one larger group, fitting the conventional understanding of string figures, that he called 'mesh patterns' (that I am calling 'mesh designs'); and a smaller series of 'simple figures' made from 'loop openings', the majority of which were uniquely displayed on the ground.[2] I am calling these 'ground designs' (see AA§3 Fig. 1 and AA§10 Fig. 1). There is a third type of figure warranting separate treatment to the mesh designs with which McCarthy placed them: these are simple figures again, made from *Opening A* or *B* (and another opening with loops on both little fingers), in which further manipulations are limited to swapping the loops onto different digits and variously twisting the strings. I am calling these 'loop designs' (AA§9 Fig. 1).

In the Plates in Appendix A I present a series of diagrams as visual models of the relationships between the mesh designs in the repertoire, developed from my technical analysis of the instructions for the figures. There is one large family technique tree that groups together more than 20 figures that all share a common point of development or evolution, from which separate family lines branch (AA§1 Plate 1). This is the *Goanna Family* of figures and it belongs to the Western Pacific technique culture.

In the records, I found two distinct methods of making each of the 2-, 3- and 4-diamond patterns and their common variant (a wrapped centre crossing). One of these methods can be associated with the Oceanic technique culture and the other with the Western Pacific technique culture (as identified by Maude). I have represented this patterning in a table (AA§2 Plate 3). This is accompanied by a series of technique trees of these designs, paired to illustrate the differences in method of the two technique cultures (AA§2 Plate 4. See also the individual Plates 5–13).

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[2] Of the 36 figures of this type identified by McCarthy, only five are displayed on the hands.

Finally there is a group of figures produced by variations at the one same point in an otherwise shared sequence of steps, which is represented through a set of calculus equations or 'sentences'. This group of figures—the *Damala Variations*—are based on the Oceanic 'core figure' *Raukaupe* (known as *Damala* in Yirrkala) discussed in Chapter 5 (see also 'The *Damala Variations*' in AA§8 Plate 14 and AA§8 Fig. 4).

While these models or schema account for the majority of the mesh designs in McCarthy's catalogue, they are not definitive, nor are they exhaustive of all relationships between these figures. That is, one could develop models/schema that describe other relationships. I have developed this group of models as a way of representing the relationships I see as important in the structure of the repertoire—they encode one interpretative view. In Appendix A I explain the models at greater length (see the preamble explaining the *Goanna Family* tree, AA§1 Plate 1).

Two different technique cultures: the role of the *Caroline Extension*

Maude characterises the distinction between the Western Pacific and Oceanic technique cultures through the respective presence or absence of the *Caroline Extension*. This form of final display was first recorded in figures collected from the Caroline Islands published in Jayne (as discussed in Chapter 3, p. 114, Fig. 3.16). Described by Jenness in 1923 as 'that most characteristic feature of Melanesian figures'; Davidson found it was pervasive in the Australian Aboriginal figures he collected (See Chapter 3, pp. 134–135). Davidson saw the *Caroline Extension* (or *Pindiki Movement* as he preferred to call it) as simply, an 'efficient and convenient method' of final display. He considered it an optional refinement. As such, he wrote, it has no 'necessary association with any figure or groups of figures', and could be 'applied to numerous figures in all parts of the world'.

The final display of Oceanic figures in the Yirrkala repertoire is 'converted' to the *Caroline Extension* with some regularity. Maude and Sherman identify a common method used for making this 'improvement' (as they call it).[3] However, in the majority of figures that use the *Caroline Extension*, it is a necessary element in attaining the final design, related to the structural integrity of the figure, as I will show. This structural reliance on the *Caroline Extension* is what defines the alignment of a figure in the Yirrkala repertoire with the Western Pacific technique culture.

Maude described the *Caroline Extension* as a 'sophisticated technique' that was responsible for 'an expansion in the quantity and variety of string figures' in the Western Pacific as contrasted with areas in the Polynesian Pacific where it was unknown (Chapter 5, p. 189-90), Maude associated *Position 1* and *Opening A* with Oceanic figures, *Openings B* and *C* being more characteristic of Western Pacific figures. Other stylistic features or traits accompanying the *Caroline Extension* were never clearly defined, I presume in part because the use of the extension was articulated differently across repertoires aligned with different regional technique complexes, within the area. In the following discussion, and continuing in the next chapter, I will explore its development in the Yirrkala repertoire and its association with other traits.

The 2-diamond set

The *Two Vulvas* subset design discussed in Chapter 4 is a 2-diamond pattern made in the Oceanic style. It is displayed with loops supported on the thumbs and middle fingers (the common and characteristic form of support for Oceanic figures). The *Two Conch Shell* subset design is a 2-diamond pattern made in a Western Pacific style. It is displayed using the *Caroline Extension* with one loop on the little fingers and the other around either the index or middle finger. (The *Two Conch Shell* subset is a group of three figures belonging to the larger *Goanna Family* of Western Pacific figures. For a comparison of the two designs see AA§3 Plates 5 and 6, and AA§3 Fig. 6.)

Both designs have the same basic 2-diamond pattern, but are made by different methods, which results in figures with different structures, as seen from the

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[3] Maude, Honor C. and Mark A. Sherman. 'The String Figures of Yirrkala: A Major Revision'. *Bulletin of the International String Figure Association* 2, 1995: 87–187; 97.

mounted specimens (AA§3 Fig. 7). In the figures in the *Two Vulvas* subset the strings of the outer sides of the diamonds are wrapped around each other: they have a double wrap (or full twist) on one side/at one end, and a single wrap (half twist) on the other. These wraps, the result of the *Navajo Movement*, secure the design in place in the final extension of the figure. In the *Two Conch Shell* subset of figures these same strings simply cross over each other. In this design the *Caroline Extension* is essential to the integrity of the display of the final pattern by holding the strings that make the outer sides of the diamonds in place. The *Caroline Extension* is an intrinsic element of these figures, performing a structural task in the realisation of the final pattern or design.

The difference in structure and method of final display of these designs is the result of their different methods of construction—different processes of making involving characteristic common movements. As I have said the side wraps securing the outer sides of the diamonds in the *Two Vulvas* subset are the result of the *Navajo Movement*—a signature of all 2-, 3-, and 4-diamond designs in the Yirrkala repertoire made using the Oceanic method (see AA§2 Plate 4). The *Two Conch Shell* subset of figures use a sequence of movements that involves rotating the figure 180 degrees, placing it down on the lap or ground and picking it up again, inserting different fingers into different loops, to progress the design. While both methods result in a 2-diamond pattern, the differences in the process of making these designs and in the final display of the figures are distinctively different in pronounced ways appreciable to both maker and observer.

The two different methods of making affect the orientation of the final figure to the degree that one seems more naturally displayed with a vertical orientation, while the other is more naturally horizontal. However, the orientation of both figures is easily altered. As I mentioned in Chapter 4 the finger positions annotated on the mounted figure of *Two Waterholes* (in the *Two Vulvas* subset) indicates that it was displayed using a conversion to the *Caroline Extension*, and so probably with a horizontal orientation; and McCarthy noted on the mounted figure of *Intertwined Snakes* (in the *Two Conch Shell* subset) that it was displayed vertically, as in this photograph of the figure: AA§3 Fig. 9. While in the introduction to his paper, McCarthy mentioned the importance of the final display to the identity of a figure, the orientation of figures in particular, as I have said, is often overlooked in the instructions or misrepresented in the illustrations in the *Records*.

The 3-diamond and 4-diamond sets

The technique used in the *Two Conch Shell* subset in which the figure is rotated, placed on the lap or ground and picked up again, with different fingers inserted into different loops to progress the design, is a 'clever' manoeuvre. Recorded by Davidson in other locations in Australia, he identified the manoeuvre as a Melanesian influence.[4] (I am calling it the *Melanesian Rotation*.) The methods used to make the 3-diamond and 4-diamond figures in the Yirrkala repertoire, which end in the *Caroline Extension* and are therefore aligned with a Western Pacific technique culture, exhibit a similar approach or style of making (see AA§2 Plate 4).

In the 3-diamond design the weaving of the pattern is made by repeatedly freeing one hand, and reinserting the fingers into different loops to progress the design (a manoeuvre again identified as a Melanesian affinity).[5] There are two versions of the Western Pacific method of making the 4-diamond design. In both, after the opening, the figure is laid on the ground, then picked up, forming a loop around the wrists (a similar type of action to that performed in the *Melanesian Rotation*). In the simpler, more direct version of the method, the thumb then releases the loops it is holding and the wrist loops are picked up by the fingers of the opposite hand and placed on the thumbs, in turn. In the other version, after formation of an interim figure it is again laid on the ground and the thumb is released from the loops it is holding to pick up the former wrist loop string. This 'clever' swapping action, freeing and reinserting fingers into loops, or one hand picking up the loops from the other hand and moving them, is different in manner to the interweaving of the strings done largely by the fingers alone, on the stable loom of the hands, which (with the exception of the *Navajo Movement*) characterises the Oceanic versions of these diamond designs.

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[4] Davidson, D. S. *Aboriginal Australian String Figures*. (Originally published in *Proceedings of the American Philosophical Society* 84 (6), 1941: 763–901.) Reprint edition. Carlisle, Western Australia: Hesperian Press, 2006: 763–901; 783–84, 852–55. See catalogue no. 41 *Python* and no. 43 *Canoe*.
[5] Maude and Sherman, 'A Major Revision', 1995: 98.

The 2-diamond and 3-diamond figures made using the Western Pacific technique culture, as well as being distinctively different in method, are distinctively different in appearance in final display from their Oceanic counterparts (AA§3 Fig. 6 and AA§4 Fig. 4). However, the 4-diamond figures made using these different technique cultures, apart from the different fingers supporting the design in display, are visually equivalent (AA§5 Fig. 1).

In the Yirrkala repertoire the use of two technique cultures creates variation in the method of making the same basic visual patterns. The different methods of making designs result in characteristic differences in the position of the hands in the final display of a figure (which fingers are used to support the figure, and sometimes its orientation)—aspects that are visually coded. As McCarthy noted:

> A feature of the display of the completed figure is the manner in which the fingers and hands become an integral part of the composition of string and the same figure may be shown at different angles for this purpose.[6]

McCarthy did not use 'differences in technique culture' as part of the terms of his analysis, but he noted the effects on the final display of figures and commented on their relationship to meaning:

> In some instances the women show the same figure with the hands in different positions, and this practice is one of the reasons why one figure bears different names.[7]

Through my analysis of the 'mesh patterns' it is possible to see how traits related to technique culture could operate as significant markers of difference distributing meaning across patterns that have a similar basic visual identity. The difference between the two methods would be appreciable to both maker and observer as process, and in its visual outcomes. The repetition in McCarthy's collecting process means that the general identity of the majority of figures is reiterated three times—with the mounted figure, the instructions for making, and photograph. These three sources tend to reinforce each other in regard to the technique culture

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[6] McCarthy, Frederick D. 'String Figures of Australia'. *The Australian Museum Magazine* 12 (9), 1958: 279–83; 281.
[7] McCarthy, Frederick D. 'The String Figures of Yirrkalla'. In *Records of the American and Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 2: Anthropology and Nutrition. Parkville, Vic.: Melbourne University Press, 1960: 415–511; 418.

used in making any figure. (See note on 'Identity and the process of collecting the instructions' in the Introduction to Appendix A.)

Different ways of doing the same thing in the *Goanna Family* technique tree

In McCarthy's records, even the smallest variation in method is attributed as the source of meaningful difference, responsible for the different identities attributed to the same pattern or design, an assertion supported through default by Maude and Sherman in their 'major revision'. The small variations in method in the *Two Vulvas* subset discussed in Chapter 4, along with 'other-handedness' as displayed in the *Sugarbag* subset discussed in Chapter 5, should both, I argue, be considered examples of 'natural variation' in the practice of making string figures in Yirrkala in 1948. In the mesh designs there are numerous examples of 'different ways of doing the same thing' (as is evident from the technique trees in Appendix A). The credibility of these variations as sources of marked or meaningful difference can be addressed through looking at them more closely, and considering their pattern of distribution in the repertoire. In the following discussion I assess the likely significance of choice of opening, variations within the same technique sequence, and the use of alternative technique sequences or blocks.

My discussion will focus on the three figures in the *Two Conch Shell* subset: #1 (Method #65) *Two Conch Shells*, #24 *Water Buffalo* and #74 *Intertwined Snakes* (see AA§1 Plate 1, AA§3 Plate 6 and AA§3 Fig. 8). The instructions accompanying *Two Conch Shells* in the *Records* were identified by Maude and Sherman as belonging to the *Two Vulvas* subset of figures. They located the correct instructions for the *Two Conch Shells* figure attached to #65 *Echidna*, thus providing three versions of the method of construction correlating with the three different identities recorded for this design.

Does the opening matter?

The first principle in the analysis of string figures, and the establishment of typologies in the technical tradition, is the opening used. In McCarthy's study, as in many others, the collection was organised according to this principle, figures being categorised or grouped according to opening. The example of the *Two Conch Shells* subset and the *Goanna Family* tree as a whole, shows that in the Yirrkala repertoire choice of opening does not operate as a necessary indicator of 'genetic' identity or relationship, but could still operate as a marked difference, used to generate meaning within the system.

Two of the figures in the *Two Conch Shells* subset begin with *Opening A* and one with *Opening B* (AA§3 Fig. 10). In *Two Conch Shells,* after beginning with *Opening A* the next step recreates the configuration of strings formed directly from *Opening B* with which *Intertwined Snakes* begins. In *Water Buffalo* (the long version of making this design), after beginning with *Opening A* the first sequence of steps reaches an interim stage McCarthy recorded separately as *Billabong* (although it is not recognised as a figure as such here). The next sequence of steps progresses to the 'common shared position' in the *Goanna Family* technique tree. The same result is achieved through a single movement in Step 2 of *Intertwined Snakes* and Step 3 of *Two Conch Shells* (1, from above, removes 2 loop). From different beginnings, all three construction sequences reach the same point—and from here all follow the same procedure to achieve the final design.

The majority of figures in the *Goanna Family* tree begin with *Opening B*. Along with *Two Conch Shells* and *Water Buffalo*, *Two Stingrays* (a continuation of the *Two Conch Shells* design) begins with *Opening A*. In the instructions for *Two Stingrays* McCarthy recorded another method of, in effect, converting *Opening A* to *Opening B* (as seen in *Two Conch Shells*). In Video 4—Demo B, I demonstrate the different methods used to reach the 'common shared position' in the *Goanna Family* tree, as found in the *Two Conch Shell* subset and the figure *Two Stingrays*. See AA§3 Fig. 10 for a comparison of the instructions for these variations in method.

The *Goanna Family* tree demonstrates that in the Yirrkala repertoire flexibility of technique extends to choice of opening. Rather than it being a determinant of the design that follows, it is literally an opening, a way of beginning—as one opening configuration of strings is easily, and often, transformed into another. (This characteristic is also found in the technique trees for other mesh design figures in the repertoire.) It is nevertheless possible—it is in fact because of this, rather than despite it—that choice of opening, in concert with other variations in method, marks the different identities attributed to the same final form, as suggested by McCarthy.

Subtle variations in a technique sequence and alternative technique sequences or blocks

Comparison of the methods used to reach the 'common shared position' in the *Goanna Family* of figures provides a good example of the 'different ways of doing the same thing' recorded by McCarthy. *Water Goanna* and *Water Buffalo* both follow 'long form' methods of making (compared to the methods used in the other figures in their respective subsets) (see AA§1 Plate 1). They share the same interim stage (the figure *Billabong*), but as the two figures begin from *Opening B* and *Opening A* respectively, they use a different sequence of steps to reach it. From there, they share a similar technique sequence to reach the 'common shared position' in the technique tree, but with some subtle differences in the steps (see AA§3 Fig. 10 and Video 5—Demo C).

The differences in method in this technique sequence (after the interim stage) are, I contend, not credible as intentioned meaningful differences. In the Yirrkala string figures there are many similar examples of subtle variations in method in parallel technique sequences that, I argue, should be considered as 'natural variation'. In contrast, the use of alternative technique sequences or blocks—that is, distinctively different movement sequences that achieve the same result—could more credibly act as differences distinguishing the various identities attributed to the one design. As discussed in Chapter 4 McCarthy allocated *Water Goanna* a separate entry in his catalogue from *Bandicoot* (also *Rat*), because although these figures had the same final design, *Water Goanna* was made using the 'long form' method discussed above. Following this logic, the use of this technique block could be one of the factors that serve to differentiate between *Water Buffalo*, *Two Conch Shells* and *Intertwined Snakes*.

The *Goanna Family* technique tree reveals an alternative method of making the *Two Conch Shells* subset 2-diamond design, as an interim stage in the *Mokuy* suite of figures (see AA§1 Plate 1). (The *Mokuy* suite figure was collected in mounted form three times—with three different titles. The instructions were collected twice, documenting the exact same method.) After the interim figure *Goanna 1*, the technique tree branches and the pathways for making the *Mokuy* suite and the *Two Conch Shells* subset diverge. In the *Mokuy* suite pathway the same technique sequence found in *Water Goanna* and *Water Buffalo* (after the interim figure *Billabong*), is used to progress to the 2-diamond design (as highlighted in the technique tree). This sequence of repetitive rhythmic action (or variations upon it), weaving the figure through the ordering of which finger picks up which string, is found in other figures in the repertoire. I am calling it the *Yolngu Weave*.

In comparison with the *Yolngu Weave*, the alternative technique sequence used in the *Two Conch Shell* subset constitutes a 'clever' Melanesian short-cut. The use of alternative technique sequences such as these exemplify a flexible approach to technique as a characteristic of the Yirrkala repertoire. As appreciable differences in the procedure for making a design, they could, I argue, more feasibly act as marked differences.

McCarthy recorded a different method for making each of the figures in the *Two Conch Shell* subset:

#1 *Two Conch Shells*—Opening A (transform to B)
'short form' method, horizontal orientation
#24 *Water Buffalo*—Opening A
'long form' method, horizontal orientation
#74 *Intertwined Snakes*—Opening B
'short form' method, vertical orientation

It is possible that these differences have a semiotic function, differentiating the identity of each figure, one from the other. It is equally possible that this group of figures demonstrates a flexible approach to technique, and the multivalency of designs. I discuss this example further in Chapter 7.

A visual analysis of the collection: the language of form

So far in this chapter I have assessed the relevance of the types of variation in method McCarthy records as marked differences, by examining them and their patterning in the repertoire more closely: different openings, subtle variations in parallel technique sequences, the use of alternative technique sequences or blocks, and the use of alternative technique cultures. In the next part of this chapter I look at the way in which meaning is distributed across the larger repertoire of figures on the basis of their formal visual language.

While asserting that differences in method distinguished the identity of one string figure of the same or similar design from another, McCarthy at the same time believed that mimetic imitation or realism was the primary motivation inspiring string figure design. In this formulation, the iconic resemblance between the string figure and the thing it is taken to 'represent' is the mechanism through which it communicates or signifies—even though, as McCarthy admitted, this relationship is not always clear.

> The resemblance of the designs to the subjects they portray varies considerably. The imitative motive is one of the most important inspirations in the making of string figures. Many of the mesh and most of the folded figures are excellent representations, but other designs bear no resemblance whatever to the subject. The diamond series is conveniently named according to the number of diamonds in the design, which, in turn, represent a similar number of people, animals or plants.[8]

My analysis of the 'signifying potential' of method or process, treats technique as a signifier having no necessary correlation with the signified—constituting what is termed a 'pure sign'. 'Iconic signs', by distinction, are defined by the motivated relationship or 'resemblance' that exists between signifier and signified. In this section I consider the operation of the string figures in the Yirrkala repertoire as iconic visual signs.

Iconicity in the Yirrkala string figures

My examination of making and meaning in the string figures of Yirrkala follows in the footsteps of Howard Morphy's 1991 analysis of Yolngu painting. As he sought to answer 'how is meaning encoded in Yolngu art?' I am seeking to answer 'how is meaning encoded in Yolngu string figures?'[9] The division in the string figure repertoire between mesh designs and ground designs maps in obvious ways with the distinction Morphy draws between geometric and figurative forms of representation as components of Yolngu painting. In the way that both

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[8] McCarthy, 'The String Figures of Yirrkalla', 1960: 421.

[9] Morphy, Howard. *Ancestral Connections: Art and an Aboriginal System of Knowledge*. Chicago and London: University of Chicago Press, 1991: 142–80; 144. Chapter 8: 'The Components of Yolngu Art.'

representational systems operate in Yolngu painting as part of the same 'communicational code', often occurring together and interacting in the one work, similarly these different forms of string figure making occur together and interact—or they did, as in the Wäwilak sisters narrative that McCarthy recorded, for example.[10]

Morphy gives greater importance to iconic motivation—that is, when the link between signifier and signified is based on formal affinity or likeness—in the operation of figurative schema in Yolngu art, than in how the geometric elements work. 'Iconicity', in this instance (i.e. geometric art) he writes, 'is not the main factor in the encoding of meaning in the signs, nor is it the primary factor in their interpretation.'[11] This conclusion is informed by Morphy's concern with the syntactic context in which elements occur—that is the context of the painting as a whole, as one clan story or another—and how that affects meaning through its connection to larger systems of difference and affiliation. He argues that the differences between clan designs (a subsystem within the geometric system) for example, can be considered as being sociologically rather than iconically motivated—the system of reference for the differences between the designs being 'the relationship between the groups themselves.' Morphy nevertheless recognises 'a degree of iconicity' operating in the meanings assigned to geometric elements, and he accepts that while from an etic analytic perspective iconicity may play 'a relatively minor role … from a Yolngu ontological perspective clan designs are iconic'. [12]

In the analysis of the Yirrkala repertoire that follows I will show that in both the mesh designs and ground designs there is a continuum between pure signs—in which the relationship between signified and signifier is arbitrary—and iconically motivated signs. In his discussion of iconicity in the 1980 article 'What Circles Look Like', Morphy makes a distinction regarding two possible directions of motivation explaining the iconic form of designs that is relevant in this context. McCarthy's

[10] For the different senses in which these two 'representational systems' can be considered as part of the same communicative code or system see Morphy, *Ancestral Connections*, 1991: 151.
[11] Morphy, *Ancestral Connections*, 1991: 151.
[12] Morphy, *Ancestral Connections*, 1991: 176-79.

statement above, that 'the imitative motive is one of the most important inspirations in the making of string figures', suggests that the iconic form of string figure designs is the result of imitation of their subjects, even if involving some degree of abstraction. This supposes that the direction of motivation is from subject to form, or signified to signifier. As Morphy points out in relation to other indigenous graphic systems, it can be the other way around—the direction of motivation being from signifier to signified. That is, the form of the design (the signifier) is not an anterior product, an invention inspired by its subject (the signified), but rather it is the prior entity to which subjects or meanings are attached as required.[13]

While string figure designs are often interpreted or explained as 'looking like' their subjects, figures are available for a range of 'permissible interpretations'. In the majority of cases the iconic relationship between the graphic schema of a design (the signifier) and a particular subject (as signified) is not 'necessary and sufficient' to limit the identification to that subject—as evidenced by the multiple identities attached to the one design. As Howard Morphy explains with regard to figurative schema in Yolngu paintings, 'looks like' really means 'an acceptable representation of'.[14] McCarthy's comment on the meanings attached to the diamond designs in the repertoire describes just such a relationship. 'The diamond series' he writes, 'is conveniently named according to the number of diamonds in the design, which, in turn, represent a similar number of people, animals or plants.' Another example is the re-purposing of the *Two Armbands* design (that also represents *Two Dingos*) to represent *Two Pannikins* (see AA§5 Plate 10).

Iconicity in the Yirrkala mesh designs: seeing and seeing as

The figures in the *Two Vulva* subset all represent two of something—all containers of some sort: vulvae, bottles, waterholes—and in this the iconic relationship between figure and subject is the same. The figures in the *Two Conch Shells* subset, by comparison, represent different types or classes of thing: two shells, a water buffalo, snakes intertwined. The 2-diamond design can be seen to bear an iconic

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[13] Morphy, Howard. 'What Circles Look Like'. *Canberra Anthropology* 3 (1), 1980:19–22.
[14] Morphy, *Ancestral Connections*, 1991: 164.

relationship with each of these subjects. However, the subject being represented needs to be known, prior to us 'seeing' it (see AA§3 Fig. 8).[15] To 'see' the design as *Intertwined Snakes* or *Water Buffalo* requires us to 'look at' it differently, than when we see it as two of something—vulvas, bottles, waterholes, conch shells.

An unusual feature of the Yirrkala collection is the identification of the parts of designs in terms of what they represent—as annotated on the mounted specimens, and reproduced in the illustrations in the *Records*. McCarthy writes that this suggests that the figures 'actually represent the subjects to the natives and are not named capriciously'.[16] Examination of these identifications, comparing the different ways in which the one design is interpreted, illustrates rather their flexibility as representational schema.

For example the 4-diamond design with a wrapped centre crossing, as made using the Oceanic method is used to represent *Mangrove Bird*, *Native Cat* and *Spider*. The same pattern made using the Western Pacific method represents *Parrotfish*. In terms of the visual form of the final design, there is no apparent reason why the one set of figures could not be made using the other method, and vice versa (AA§7 Fig. 1).[17] The attribution of identity in the case of these designs is, I argue, not motivated by mimetic realist concerns as suggested by McCarthy. In many instances in the repertoire the latitude in the identification of a design demonstrates, from an etic analytic perspective, that its iconic relationship with its subject is secondary to its customary or agreed usage—which in semiotic terms gives it the status of a pure sign.

In my fieldwork, I asked people to identify the figures in McCarthy's photographs of Ngarrawu. Generally speaking, they were confident only of the identities of those figures they remembered how to make. In other cases, they responded to my questions by asking themselves the question: 'what does it look like?' This

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[15] For the art historical discourse on 'seeing and seeing as' refer to: Gombrich, E. H. *Art and Illusion: A Study in the Psychology of Pictorial Representation*. 4th ed. (First published 1960.) London: Phaidon, 1972: 4–8. Baxandall, Michael. *Painting and Experience in Fifteenth-Century Italy*. 2nd ed. (First published 1972.). Oxford: Oxford University Press, 1988: 29–32.
[16] McCarthy, 'The String Figures of Yirrkalla', 1960: 421.
[17] Of course this particular organisation of identities across the two technique cultures may be incidental—attaining significance only as an effect of the collection process.

approach was applied equally to mesh and ground designs. Initially I took this as 'the best response in the circumstances' that people could offer—an indication of loss of knowledge of the traditional repertoire. I came to realise that, regardless of that issue, this was a habitual response to any question regarding representation, of a 'what is it?' kind. Further to this, I observed that when the identity of a figure was already known/decided—'what it looked like' was interpreted to fit that identity. (See, for example, Video 7—Making and not making … *Miyapunu/Turtle* in which the tail of the turtle is demonstrated as if an intrinsic attribute of the design, and undeniable evidence that it was indeed a turtle/the representation of a turtle.) In Yolngu culture the dominant habit of reading images is as iconic signs—or rather iconic resemblance is the dominant style of explanation of their meaning. Yolngu are adept at 'seeing as'.

An experimental development: the Western Pacific 3-diamond design

As discussed in Chapter 3 Kathleen Haddon postulated a kind of post-facto identification as the first stage in the development of string figures as an art—the recognition of chance resemblances in the tangles of the string leading to the first simple figures. She then imagined that as skill and literacy in the medium advanced, new figures with specific mimetic resonances were consciously developed. This idea can be seen in the development of the Gilbertese diamond designs representing wells, and the inventions of the Nauruans representing various subjects, both documented by Maude (as discussed in the last chapter).

In any successful creative endeavour, the artistic 'problem' (representational or otherwise), I argue, needs to be understood as a question posed (and answered) in the language of the medium concerned. Firth and Maude's commentary on the Tikopia repertoire in particular, emphasised the way in which string figure creativity was linked to technical understanding. Experimentation and invention were based on exploration of the characteristics and potential of the medium. The inventions of the Gilbertese, the Tikopia and the Nauruans came about through the partnership or interaction between technical experiment, and representational sense making, rather than as the product of a mimetic realist impulse as such. In this process, rather than the motivation between signifier and signified running in one direction or the other, it can be thought of as working in both directions at once.

In the Yirrkala repertoire the Western Pacific 3-diamond *Bäpi* subset of figures provides an example of this kind of relationship, in which technical innovation can be seen working in tandem with iconic potential in the development of variations on the one basic design. The 3-diamond design in the *Sugarbag* subset of figures discussed in Chapter 5 is an 'Oceanic core' figure found across the Pacific, both east and west.[18] The titles attached to it in the Yirrkala repertoire show that it is seen as a 3-diamond design—representing three of something; for example, huts, locusts, bee's nests. While also essentially a 3-diamond design, the titles given to the *Bäpi* subset of figures show that it was not seen in this way. The structurally open nature of the design allows for different forms of support during the making of the figure and variable forms of extension. In the repertoire this is exploited to create a variety of different iconically motivated identities.

In #45A&B *Birth of a Baby* and *Baby Born* the figure is made in the conventional manner, with loops on the hands securing the two supporting transverse strings. In the figures #46 *Lightning* and #16 *String Bag*, which also follow in sequence, the loops on one hand are transferred: one around the neck, the other held by the teeth. After the figure *Lightning* is woven, the teeth release the loop they hold to make *String Bag* (AA§4 Fig. 5A&B). In both these sequences the figure changes state. *Baby Being Born* is a classic form of 'moving figure'—the crossing strings are worked down the transverse supporting strings, until the *Baby* [is] *Born* (AA§4 Fig. 6A&B). Other variations in method (largely at the beginning of the construction process), result in distinct differences in the final extension of the design, expressed in the range of identities the figure supports, not all of which can so clearly be seen as iconically motivated, such as the twists added to *Macassan Man* (see AA§4 Plate 8 and AA§4 Fig. 7).

[18] It was first recorded by Jayne as *A Caroline Islands Catch*.

Iconicity in the Yirrkala ground designs

The ground designs are notably smaller than the mesh designs—with up to four figures being mounted on the one card (AA§10 Fig. 3). The length of string used in the mesh designs varies—generally ranging between 150 cm to 300 cm. Many of the ground designs are made with far shorter lengths. In other cases the length of string might be similar, but it is looped on itself multiple times before making the figure using a doubled, four or eight stranded loop of string. While the string is basically used to 'draw' an outline of a figurative schema, McCarthy described these figures as 'folded into place'. Some simple manipulations are common: adding twists to the loop of string, crossing the string over itself, using a half or full twist to form two loops or one or more smaller loops on a larger loop (AA§10 Figs. 3–5). In two figures, #132 *Paw Paw Tree with Fruit* and #154 *Diving Duck*, separate shorter loops of string are used as additions to the usual single loop of string (AA§10 Fig. 6).

While these representations are supposedly based on 'look like' criteria, in this group of figures there are also examples of the same or very similar designs representing multiple identities. The five figures #111 *Pygmy Goose*, #128 *Crow Walking*, #135 *Female Wallaby*, #136A *Seagull*, and #138 *Magpie Goose* all have the same basic body outline/shape (AA§10 Fig. 7). The level of ambiguity of figurative schema in the string figures, as Morphy found in relation to figurative schema in Yolngu bark paintings, can be considered as an outcome of the relationship between 'the number of "like" things extant in the environment' and 'the distinctiveness of the features the schema encodes'.[19] Due to the constraints of the medium being used—one continuous loop (or line) of string—and the limits it imposes on the level of detail that can be obtained, there is a greater ambiguity in the figurative schema in the string figures than in the bark paintings.

Looked at in isolation as graphic schema the figures in the Yirrkala repertoire—both the mesh patterns and the ground designs—sit on a continuum between abstract form/pattern and figurative icon. Among the 'mesh' figures, there are designs that have a stronger iconic relationship to their subject than most: the

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[19] Morphy, *Ancestral Connections*, 1991: 158.

figure #66 *Emu's tracks*/#67 *Stingray-spine Spear* and #34A *Two Stingrays* for example (see AA§4 Plate7 and AA§1 Plate 1). Among the ground figures, there are designs in which the 'look like' relationship with their subjects is more challenging than usual, such as #133 *Bee* and #117 *Octopus* (AA§10 Fig. 4 C and D).

Conclusion

In my analysis of the repertoire as a technical system I found that there was a degree of flexibility or choice in how designs are constructed. I argue that whereas small differences in method should be considered akin to 'natural variation', choice of opening, alternatives at the level of technique block and technique culture could potentially operate as marked differences accounting for the different identities given to the same or similar designs.

In my analysis of the repertoire as a visual system, I found that the majority of designs can be read as iconically motivated. The iconic relationship is not however monothetic—that is, 'necessary and sufficient' to limit the identity of the one design to the one subject. There is often a significant degree of latitude in the 'permissible interpretations' attributed to any one design. The level of ambiguity involved in the iconic relationship between design and subject suggests that convention has a defining role in which identities are attached to which designs. In the next chapter I develop this analysis using information gathered from my contemporary fieldwork.

Chapter 7
Thinking through making and meaning II: field notes

Introduction

I begin this chapter with a discussion of the fieldwork setting or site and my fieldwork methodology. After introducing the individuals that I worked with most closely, I analyse the process involved in 'remembering' the string figures of Yirrkala. Contrary to the notion that the skill of string figure making and its transmission relies primarily on 'embodied knowledge', I argue that this faculty works in tandem with the cognitive mind in an integrated process of 'thinking through doing'.

I then continue the semiotic analysis of making and meaning begun in Chapter 6. The experience of my contemporary fieldwork confirms that technical flexibility is a characteristic of Yirrkala string figure making. I found that variations in method do not act to differentiate between the multiple identities given to the same figure in the way McCarthy infers. Rather, the figures in the repertoire have multivalent identities. I go on to isolate those aspects of process that can be seen to play a role in the distribution of meaning, all of which have visual outcomes—directly linking process, form and meaning. The chapter concludes with a discussion of the role of context in the identification and interpretation of figures.

Field site and method

At the beginning of the project I imagined a single trip of some six weeks duration 'in the field', reconnecting the collection with its source community, recording their responses, drawing out their memories and recording the current practice of string figure making. In the end I made multiple visits to Yirrkala of varying length, over a five-year period (2008–12). The pattern of my fieldwork developed organically, in response to opportunities and contingencies of a practical kind, as well as the dynamics of the research itself.

Yirrkala as field site

The development of the Nabalco (now Rio Tinto) bauxite mine and processing plant on the Gove Peninsula, and the establishment of the mining town of Nhulunbuy, some 20 km from Yirrkala by road, has been the major influence on the economic, political, social and everyday life of the community over the recent past. From the 1950s, the interest of mining companies in the area brought the Balanda world to Yirrkala in a very different way to the missionary presence, requiring Yolngu to engage with a larger Australia directly, firstly in protest against the intrusion upon their land. From 1963 on, when the historic bark petition was sent to the Australian parliament, the community at Yirrkala has sought to assert rights to land and sea, and to self-determination, through the force of argument of its art and culture.[1] The sharing of culture with mainstream Australia, as a way of fostering understanding and respect is the central idea behind the annual Garma Festival for example—my introduction to the field. The Buku-Larrnggay Mulka Art Centre [Buku or the Art Centre]—my first point of contact with the community at Yirrkala—functions as a cornerstone of this project: disseminating the attendant claims of Yolngu cultural sovereignty through the sale and promotion of their art.

The town of Yirrkala, has a seasonally variable population of between approximately 600 and 1,000. It is a 'protected' Aboriginal community that outsiders generally need permission to visit. However, people are able to access the Art Centre and other public spaces at Yirrkala without a permit. Members of the community commute between Yirrkala and Nhulunbuy for work, shopping and entertainment, on a daily basis. They also regularly travel between Yirrkala and the various outlying homeland centres established since the 1970s, for family and ceremonial reasons.

While Yirrkala would be classified as a 'remote' community due to its geographical location, it is well connected to mainstream Australia and the larger world. That world visits Yirrkala: the proximity of the mining town of Nhulunbuy, and the airport which services it with daily flights connecting to Australia's major cities, makes Yirrkala easily accessible. The Art Centre's turnover is supported by passing

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[1] Wells, Edgar. 'Some Events at Yirrkala During 1962 and 1963'. *Australian Institute of Aboriginal Studies Newsletter*, March 1981, 31–40. Blake, Andrew ed. *Saltwater: Yirrkala Bark Paintings of Sea Country*. Yirrkala: Buku-Larrnggay Mulka Centre, in association with Jennifer Isaacs Publishing, 1999. Morphy, Howard. *Becoming Art: Exploring Cross-Cultural Categories*. Oxford and New York: Berg, 2007: 59–67.

trade as much as through its relationships with commercial galleries in Darwin and the southern capitals and its online presence.[2]

Members of the community visit Australia's major cities, Darwin, Adelaide, Brisbane, Sydney and Melbourne, with some regularity, again to visit family, to receive health treatment, to attend meetings and art events. More artists have in recent years travelled with their work to galleries and museums overseas. Members of the community that I met in Yirrkala I also met in Sydney, Melbourne and Canberra. In this sense, 'the field' I worked in was a mobile inter-cultural space.

An anthropology of loss: knowing and not knowing

In preparation for my fieldwork, I thought I would learn a few of the simpler figures from the repertoire. At the beginning, having had no experience in making string figures, I was particularly clumsy—with no feel for the string and its behaviour, or for the movements of the fingers and hands involved. I remember in particular trying to make the figure *Bandicoot* (in the *Goanna 1* suite)—a simple figure that ends in the *Caroline Extension*. For a long time, over repeated attempts in repeat sessions, I could not get it 'out'. I could not 'see' or 'understand' how to achieve the extension, despite my best efforts. I would reread the instructions, looking for what I had missed, and try it again. (The best way to learn to make string figure designs is through copying from another person—learning to make them from written instructions is a special type of purgatory.) One day, the particular coordination of movements of fingers and hands required, clicked—I got it. My own passage from 'not knowing' to 'knowing', made me aware of the bodily sense or 'know-how' in handling the string that counts as basic competence—the necessary foundation of string figure literacy, that can only be gained through the practice itself.

[2] It should be noted that the situation has considerably altered since the end of my fieldwork in 2012. With the decision in 2014 to close the aluminium refinery as part of the Gove mining operation, the population of Nhulunbuy has significantly decreased, as has the general level of traffic in and out of the area. Qantas no longer services this route, for example.

Before I went to Yirrkala, I was told by Wukun Wan̲ambi, that 'they don't do it anymore.'[3] He was both right and wrong. While no longer recognised as a common everyday practice, many of the people I met, of all ages and both genders, had a small repertoire of figures and tricks they could demonstrate. These demonstrations often occurred in casual encounters: with children outside the shop at Yirrkala for example. Most memorably, in the beer garden at the Walkabout Hotel in Nhulunbuy after the Garma Festival in 2008, my friends and I got talking to Timmy Burarrwanga, one of the leaders of the Cultural Tourism Program at the Festival, and his party. When I declared my interest in Yolngu string figures, Timmy taught me a trick (I am titling 'Hangman'), he then unsuccessfully attempted to make *Miyapunu/Turtle* with his cousin John, and then when they arrived, another cousin Geoff and his friend Elaine Mununggurr demonstrated the figures they knew: *Spear*, *Spearthrower*?, *Butterfly* and *Damala* (Fig. 7.1). It seemed that in Yirrkala there was a residual string figure repertoire, even if severely attenuated, that was still being passed on. After my first prolonged stay in Yirrkala over the Christmas season of 2008–09, I defined a small core repertoire of commonly known figures and tricks (Figs. 7.2–7.6 and Video 6—Tricks). Furthermore, it was evident from an impromptu session with a group of eight women held on the porch of Djakala Mununggurr's house that some, particularly the older women, had a greater fluency in handling the string and knew how to make a wider range of figures (Fig. 7.7).

While my interest in string figures would provoke the making of a figure or display of a trick, I found it difficult to move beyond this. I was new to the community and they to me. In conversation, responses to the topic of string figures in Yolngu culture accompanied by the historical material on the collection that I presented were mixed. For some, they were just 'not that interesting': a children's game.[4] For others, they were associated with a past time, and my enquiries were a reminder of

[3] Wukun Wan̲ambi (b. 1962) is an artist, and was at the time co-Director of the Mulka Art Centre. I spoke with him in mid–2008 when he was visiting Canberra.
[4] Interview with Djalinda Yunupingu, Yirrkala, 10 January 2009.

the loss of cultural knowledge. As Rarriwuy Marika remarked: 'Why didn't the anthropologists bring them before all the old people gone?'[5]

Djarpirr (Julie) Mununggurr remembered being taught how to make string figures at the Yirrkala school by visiting women elders. She recalled, as a teenager in the 1960s, sitting with her group of girlfriends outside the 'fruit shop', 'getting ngarali (cigarettes), learning how to smoke, used to talk about the boys, (and playing with strings)'. For her, they were associated with a time that ended with the coming of the mining town in the 1970s. As she explained: 'Too more excitement they have at Nhulunbuy. So we forget about the Mission days. Too excited for the future. Never again we have that past onto the present onto the future.'[6] Du̲n̲diwuy Mununggurr, like Djarpirr associated them with the 'old mission days':

> People used to sit and play with strings to show other people they make them—and teach other people … . Sit and make them after work. After hunting, come home, bored … make string figures. Fifties, sixties and seventies, beginning eighties—people still did it. Don't know if they still do it in the Homelands.

She explained to me that while some traditional activities were continuing, that string for example was still made for ceremonial purposes, and for making dilly bags for sale, string figures were 'not interesting' because they were not something 'that can buy and sell.'[7]

Participant intervention: 'active methods of pursuing ethnographic evidence'

> But the Ethnographer has not only to spread his nets in the right place, and wait for what will fall into them. He must be an active huntsman, and drive his quarry into them and follow it up to its most inaccessible lairs. And that leads us to the more active methods of pursuing ethnographic evidence.[8]
>
> Bronislaw Malinowski, 1922

On subsequent field trips, I worked with a number of the older women, who in a series of interview/workshop sessions engaged in a process of remembering the string figures they once knew. The sessions provided an opportunity for talking about string figures and the role in their lives more broadly. These women,

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[5] Interview with Langani, Rarriwuy and Kathy Marika, Trinity College, Melbourne, 16 January 2008.
[6] Interview with Djarpirr Mununggurr, Yirrkala, 17 January 2009.
[7] Interview with Du̲n̲diwuy Mununggurr, Yirrkala, 12 January 2009.
[8] Malinowski, Bronislaw. *Argonauts of the Pacific: An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea*. London: Routledge and Kegan Paul, 1922: 8.

children around the time of McCarthy's visit in 1948, formed a direct link with the historical culture documented by the collection. But they had not made string figures before my enquiries, in most instances as they recalled, since they were young women (perhaps 40–50 years ago): 'When we got older we stopped making it.'[9] These sessions, while generally light-hearted, were nevertheless often hard work for both parties. Remembering required the women to start from a position of 'not knowing' something they had formerly known well, to engage in a process of trial and error, to risk looking silly, to risk failure, and to deal with what this remembering might entail—or bring with it. Some of the women I approached did not pick up the string.

String figure making was not a part of the ongoing culture that people were engaged in—an activity that I could observe or interact with and ask questions about, just in the natural 'course of things'. They did not have any status in the contemporary value economy in Yirrkala. The rationale and impetus for string figure activity came from my research project alone—the significance of which for these women, was abstract, distant, and if anything, situated in the past. I attempted a number of projects, which sought to engage people in ways that had more contemporary relevance to them: a workshop teaching the children at the Garrthalala School for example.[10] The idea was to raise awareness of this heritage as a cultural resource, and foster projects that could gain some independent momentum. This did in the end meet with success through the suggestion that we make prints from the string figures, and that string figure making be added to the program of cultural activities for visitors to the Garma Festival.

A series of five soft-ground etchings of string figure designs were made, which were exhibited at the Gapa̱n Gallery at the Garma Festival in August 2010. String figure making workshops, led by the women and myself, were held as part of the Festival program. Dipililnga Marika's print was featured on the Art Centre's t-shirt sold at the Festival, and seen around the Festival ground (see AB§2 and AB§3). The activity generated around string figures in this way provoked engagement,

[9] Du̱nd̲iwuy Mununggurr, Yirrkala, 14 August 2009.
[10] While I went to Garrthalala, for a number of reasons the workshop at the School did not eventuate.

interaction and discussion on the subject—providing me with material for study. The public visibility of string figures at the Festival, and the appreciation of them shown by others raised their status and interest value among the women I was working with. Through 'becoming art' string figures were able to enter a cross-cultural value economy, a space in which Yolngu were practiced at communicating.[11] The women's understanding of their relationship to string figures shifted from 'not knowing' to 'knowing', due to the personal gaining or regaining of practical skill (as I described it earlier). Of parallel importance was the public visibility and appreciation they received through the print project: their 'knowing' about string figures being reflected back to them through the 'gaze of others'.

Field cast

In this chapter I will focus on the work I did with five women, three based at Yirrkala (Dhundhunga Mununggur, Mulkun Wirrpanda and Nonggirrnga Marawili), and two living on Elcho Island (Judy Gurrawurra and Wanymuli Dhamarraṉdji). I worked with each of these women on more than one occasion, never by themselves alone, always with at least one other person, and often in a larger 'family' group, whose repertoire I also recorded. I am separating them out from this field context, to focus on them as individuals, for the methodological purpose of facilitating analysis.[12] I sought these women out as the most skilful in making string figures and the most knowledgeable: they used a greater variety of techniques and remembered a larger number of designs than others. Notably, each had a distinctive individual repertoire—that is each of these women made figures that were unique to them, as well as those they shared as part of a common repertoire. Most importantly, they were willing to work with me and engage with the process of remembering. In Appendix B, Section 1, I present a brief introductory profile of each of the women and their companions in the field.

[11] The term 'becoming art' references the book of that title by Howard Morphy. Morphy, Howard. *Becoming Art: Exploring Cross-Cultural Categories*. Oxford and New York: Berg, 2007.
[12] While these individuals themselves never overlapped, members of the groups in which I worked with them did.

Remembering the string figures of Yirrkala

> They help each other, long time ago. (Yo.) We're … *forgetting?* And we don't know yet … Old people all gone. (Yo.)[13]
>
> DM: Important. (Ehh.) But we try hard, you know … Important. Because … We try hard but we can't do it, you know. RM: But it might come back …? DM: We try hard. Try, try, try, it's going to come back.'[14]

In the literature on string figures, at the same time as documenting experimentation and invention reliant on a conceptual understanding of the relationship between particular actions or technique sequences and their results, the observation is commonly made that learning and recall ('permanent fixing') of designs relies on a 'kind of "muscular memory" that is partly unconscious.'[15] As Sherman put it, 'the hands "remember" the figure rather than the brain.'[16]

Recent writing on embodied or enactive knowledge or cognition tends to treat skilled technique and know-how reliant on habitual rhythmic practices as different in kind and separate from, representational, 'declarative' or 'explicit' thought.[17] Lambros Malafouris for example states the 'efficacy' of material engagement is that it makes it possible '*to think through things, in action, without the need of mental representation.*'[18] His discussion of enactive knowledge tends to describe it as content-less. I am in agreement with John Sutton that this 'theoretical decentring of

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[13] Djakala Mununnggur (with interjections from Mulkun Wirrpanda), Shady Beach, 23 May 2010.
[14] Djakala Mununnggur, in discussion with Robyn McKenzie (with interjections from Mulkun Wirrpanda), Wirrwawuy, 25 May 2010.
[15] Haddon, Kathleen. *Artists in String. String Figures: Their Regional Distribution and Social Significance*. London: Methuen, 1930: 142. Mary-Rousseliere, Father Guy. 'Les Jeux de Ficelle Des Arviligjuarmiut'. Translated by Mark A. Sherman. *Bulletin of String Figures Association*, 18, 1992: 34–89; 35–6.
[16] Sherman, Mark. 'Appendix B: Kwakiutl String Figures: Origins and Affinities'. In Averkieva, Julia, and Mark A. Sherman. *Kwakiutl String Figures*. Anthropological Papers of the American Museum of Natural History 71. Seattle and London, New York: University of Washington Press and American Museum of Natural History, 1992: 151–80; 152.
[17] See for example Ingold, Tim. *Making. Anthropology, Archaeology, Art and Architecture*. London and New York: Routledge, 2013: 109–124; 111. Chapter 8: 'Telling by Hand' in which he draws a distinction between 'articulate knowledge' that 'takes the form of statements' and embodied or enactive knowledge that cannot 'or not without great difficulty' be articulated. For a current theoretical framework developed around this thesis see Malafouris, Lambros. *How Things Shape the Mind: A Theory of Material Engagement*. Cambridge, Mass. and London: MIT Press, 2013. For a discussion of 'enactive knowledge' in relation to string figure-making see Eastop, Dinah. 'String Figures Matter: Embodied Knowledge in Action'. *Craft Research* 5 (2), 2014: 221–29.
[18] Malafouris, Lambros. 'The Cognitive Basis of Material Engagement: Where Brain, Body and Culture Conflate'. In *Rethinking Materiality: The Engagement of Mind with the Material World*, edited by Colin Renfrew, Elizabeth DeMarrais, and Chris Gosden. Cambridge: McDonald Institute for Archaeological Research, 2004: 53–62; 58. Italics in original.

all forms of declarative memory in favour of skill memory and know-how' risks reinstating a Cartesian dualism.[19] What is productive in current theoretical explorations of the 'extended mind' hypothesis is precisely the recognition of the interplay between material engagement and representational thought in human cognitive processes. My fieldwork supports the contention that both representational thought and enactive process are necessary in making string figures. In string figure making, body and 'mind' work together in a dynamic, iterative, looping process of thinking through doing.

Learning from others

Part of the practice of making string figures involves, as a matter of course, not making them: getting it wrong—in a recursive cycle of learning, forgetting and relearning. (Father Guy) Mary-Rousseliere, as mentioned in Chapter 5, collected string figures from the Netsilik at Pelly Bay in the Canadian Arctic over a 10-year period from 1956. Out of a total of 128 figures that he collected, he found the adults he worked with could recall on average only 30 or 40 figures each, no more than 30 per cent of the repertoire. He also documented individuals 'forgetting' figures from one year to the next. From this he concluded that maintenance of a string figure repertoire required the collective memory of a community of sufficient size—utilising a form of socially distributed memory.[20] On many occasions I witnessed this form of memory/remembering in action.

Miyapunu/Turtle (#164A *Green Turtle*) is a popular figure, part of the contemporary core repertoire that everyone knows, even though, at any particular time, they might not necessarily know how to make it successfully. After that first time at the Walkabout Hotel, during my fieldwork I recorded people making and not making *Miyapunu* over and over again (see Video 7—Making and not making … *Miyapunu/Turtle*). On the porch at Djakala's house in early 2009, two women attempting to make *Miyapunu* are being prompted and directed by the others around them. There is conflicting advice and disputation—'yaka, that's

[19] Sutton, John. 'Material Agency, Skills and History: Distributed Cognition and the Archaeology of Memory'. In *Material Agency: Towards a Non-Anthropocentric Approach*, edited by Carl Knappett and Lambros Malafouris. New York: Springer, 2008: 37–55; 49.
[20] Sutton, John, et al. 'The Psychology of Memory, Extended Cognition, and Socially Distributed Remembering'. *Phenomenology and the Cognitive Sciences* 9 (4), 2010: 521–60.

wrong'—through a number of unsuccessful attempts, until they finally get it out. Later that year, I record Dhundhunga who was present that day on Djakala's porch, not making *Miyapunu* with Du<u>nd</u>iwuy Mununggurr. The day after, Wendy and Dorothy Mununggurr are successful. On Elcho in 2012 after recording Mavis and Judy not making *Miyapunu*, I make it with Judy, showing her the step she has forgotten. She then shows me how to convert it to the next figure in sequence—*Miyapunu Yothu/Baby Turtle* (#164B *Green Turtle Cut Open*). A few days later, working with Dipililnga's family, there are several attempts at making *Miyapunu*. When I join in, despite having made it only recently, we still do not succeed.

The women I had been working with came together on the day we pressed string figures for making prints at the Art Centre in 2010. While waiting, Mulkun and Dundiwuy discussed making *Miyapunu*, but they didn't know how to—casting about, they asked each other, who would know? Earlier that day, Mulkun had been sitting trying unsuccessfully to remember how to make *Damala*. This figure is another which I have documented people attempting to make, as often as they have actually made it. When Dipililnga Bukuḻatjpi arrived, she made the figure. Mulkun learned how to make it from observing Dipililnga. Dipililnga also made *Knife* (#124) which Mulkun attempted to copy. Working with Dipililnga and her mother at Elcho two years later in 2012, Wanymuli made *Knife*. A little while later Dipililnga made it, explaining to me, 'I was watching her'.[21] These exchanges describe the group dynamic of recursive iteration involved in the maintenance of string figure repertoire through distributed collective memory.

Thinking through doing: somatic memory and 'Thinking, thinking …'

On the first occasion I worked with Mulkun in 2010, at Shady Beach, she reviewed in her mind the designs she thought she used to know but had now forgotten, and she looked through the 1948 images of Ngarrawu. Then, with string in hand, trying to replicate one design, through the action of making she remembered another, that she identified as *Dakul* (#119 *Stone Axe/Dakul*). Made with a winding or twisting action, she repeated the movement a couple of times, with obvious

[21] Interview/workshop session with Wanymuli Dhamarra<u>n</u>dji and Dipililnga Bukuḻatjpi, Galiwin'ku, Elcho Island, 14 September 2012.

enjoyment (see Figs. 7.8A and 7.8B; see also Video 19—Technique 3: Clip 3). The next time I worked with her, two days later at Wirrwawuy, she made at least one of the figures we had been looking at and discussing that first day—the single diamond figure (#21 and #179) *Ŋarŋga/Waterhole* (Figs. 7.9A and 7.9B).[22] In this instance the photographic record acted as a prompt, or aid to memory.

In the process of remembering, the women utilised bodily or somatic memory in combination with 'thinking'—the word they used to describe it—accessing abstract cognitive mind, as agency or repository. I recorded many instances of individuals attempting to remember figures through a process of trial and error. The rhythmic movements of the hands were encouraged by verbal prompts (or nudges): 'bitjan, bitjan, bitjan' (like this, like this, like this) and 'dhuḏup, dhuḏup' (through here, through here), as the person remembered the order of the movement sequences through replaying the feel of the bodily actions involved. Attempts at remembering through doing were interspersed with periods of 'thinking', when action was halted after the failure of an attempt, or reaching a block and unable to go any further. At these points, there was sometimes literally a scratching of heads, the verbal explanation 'thinking, thinking', or as in the video of Mulkun remembering how to make *Yolngu*, a quiet contemplation of the strings (Video 8—Thinking, thinking … Mulkun remembering *Yolngu*).

At Biranybirany in August 2009 Nonggirrnga and Nyangungnu Marawili both made the figure *Ḏaŋgultji/Brolga*. When I worked with Nonggirnga again in 2012, she tried to convert this figure into something else, unsuccessfully at first. She then made the conversion but did not name the figure. Only the third time, now seemingly confident, did she identify it as *Ḏaŋgultji Nest* (Fig. 7.10). (Neither of these figures are in the AASEAL record.) Nonggirrnga alone remembered the *Parrotfish* sequence (#101A–D). She had problems however, with the conversion from *Guya/Fish* to the next figure in the sequence *Cooked Fish* (#101C *Catching Parrotfish* to #101D *Cooked Parrotfish*). Over two different sessions in 2012, it was

[22] Another figure she made was possibly an attempt to make AASEAL #125 Waitjamindi/bark water container, which we had also been looking at.

only on the fourth attempt that she realised a result that she was satisfied with (AA§7 Fig. 4).

The process of remembering the string figure designs was not always successful. Dhundhunga evidently had two different ways of making a figure, unique to her repertoire, that she identified as *Galanyin/Honey* (#5 *Man Lying Down*)—but she only ever succeeded in realising the figure using one of these methods (Fig. 7.11). She repeatedly attempted to convert this figure to something else, although again, did not succeed. In these failed attempts, after making an error, rather than returning to the beginning and starting again, she would often reinsert her fingers into different loops, in order to continue. This way of working suggested a technical dexterity based on a sophisticated understanding of the medium—even if this was something now in abeyance/in process of retrieval.

T. T. Paterson (1909–94), a Cambridge trained anthropologist, collected string figures during the 1930s while on the Wordie Arctic Expeditions. One of his most proficient informants with a repertoire of about 70 figures was a woman called Amaunilik.[23] As Paterson recalled, when she was teaching him and he 'asked her to stop at a complicated part, she could not resume from the point where she had left off, but had to start all over again from the beginning'.[24] While this example supports the idea 'the hands "remember" the figure rather than the brain', in contrast, McCarthy was only able to make his record of the Yirrkala string figures due to Ngarrawu's ability to make the figures 'in slow motion', 'step by step'—giving him the time to write down the instructions for one movement before she continued on with the next.[25] Different individuals obviously have different abilities, which may be related to different cognitive styles, as popularised in the concept of 'learning styles'.[26] Renowned painter and cultural leader Gulumbu

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[23] For more on Paterson see Chapter 5, n. 79.
[24] Paterson, T. T. 'Eskimo "Cats' Cradles"'. *The Geographical Magazine* 9, 1939: 85–91; 88.
[25] Sherman, 'Appendix B. Kwakiutl String Figures: Origins and Affinities', 1992: 152. McCarthy, Frederick D. 'The String Figures of Yirrkalla'. In *Records of the American and Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 2: Anthropology and Nutrition. Parkville, Vic.: Melbourne University Press, 1960: 415–511; 415.
[26] For example, the VAK/VARK model defines three/four modalities: visual learning, auditory learning, read/write learning and kinaesthetic or experiential learning. For an overview of scholarship in the area see Rayner, S. G. 'Cognitive Styles and Learning Styles'. In James. D. Wright ed., *International*

Yunupingu, told me that she didn't know anything about string figures because she didn't do it. 'I wasn't any good at them'.[27] The women I worked with had been selected because they were good at making string figures. The behaviour of my informants suggested that their knowledge of and ability to 'remember' string figure designs, was based as much in a conceptual process (of 'thinking', of the mind), as it was in a sensory process (of 'feeling', of the body).

Working variations on a theme

On the second day working with Judy and Mavis on Elcho they took a different approach to the task of remembering: reconstructing the methods of making figures from the images I showed of Ngarrawu. As part of a powerpoint presentation I had three images in sequence: the figure #56 *Cloud*, followed by the beginning of a two-person weaving sequence, and the interim figure #164A *Two Yams* (I did not have an image of the final figure in the sequence #164B *Four Yams*) (Fig. 7.12). After reconstructing the figure *Cloud*, Judy and Mavis (taking their cue from the photographs) improvised or experimented with constructing a figure as a two-person weaving process (Video 9—Improvisation and Experiment: Judy and Mavis make *Minhala*). Both being expert fibre artists seems to have influenced their approach—after initially working on the hands, they placed the figure on the ground and wove the strings directly. The final figure that resulted they identified as *Minhala*/*Long Necked Tortoise* (Fig. 7.13).

While they were able to repeat the figure, whether it was one they had 'remembered' or a novel invention, I do not know. The next day Judy and Mavis made the more conventional form of *Minhala* (Fig. 7.14B). Working over the next few days with Dipililnga's family, she and her mother made two variations on this standard design, one beginning with the figure *Cloud* (Fig. 7.15). This episode illustrates a willingness to experiment with the medium: these different forms of the figure constituting what Honor Maude might have called variations on a theme. (As illustrated in Fig. 7.14A, both Davidson and McCarthy recorded variations on this design.) *Minhala* was a constant figure in Mulkun's repertoire, which she made

Encyclopedia of the Social and Behavioural Sciences. 2nd Edition. Vol. 4. Oxford: Elsevier, 2015: 110–17.

[27] Conversation with Gulumbu Yunupingu, Nhulunbuy, 2 June 2010.

on each occasion I worked with her, but again the way she made it changed—sometimes it had a central rib (as in the standard design), sometimes as in the figure used in her 2012 print, it did not (Fig. 7.16).

Technical flexibility and semantic fluidity in the contemporary repertoire

The contemporary repertoire shows a basic continuity with that of 1948: the same patterns, techniques and identifications recur. However, as well as departures from the 1948 record, there was variation among the contemporary makers I worked with. I recorded a significant range of variation in both the techniques used to make designs and in their identifications.

Two findings are of particular significance in relation to the analysis of the 1948 repertoire in Chapter 6:

1) Different women made the same figure (here, design and identity), using different methods. I also recorded instances of the one woman using different methods to make the same figure (at different 'event-times').
2) Different women attributed different identities to the same figure (here, design and method). I also recorded instances of the one woman attributing different identities to the same figure, as well as attributing the same identity to different figures (at different 'event-times').

I illustrate these findings in turn below.

Variation in method

Example 1: Mokuy–Yolngu

Both Mulkun and Nonggirrnga remembered the *Mokuy* suite figure (see *Goanna Family* tree AA§1 Plate 1). They each had different methods of making it, both of which varied from the method used by Ngarrawu recorded by McCarthy. Both Mulkun and Nonggirrnga identified the figure as representing *Yolngu* (people) (see AA§1 Plate 2).

Like Ngarrawu, Nonggirrnga began with *Opening B*, but took the alternative pathway through the *Goanna Family* technique tree (as discussed in Chapter 6, pp. 224–25). Identifying the interim figures in the sequence, she moved from *Goanna 1* (identified as *Biyay*/*Goanna*) to *Two Conch Shells* (identified as

Gapu/Water) using the Melanesian 'short-cut'. Then after making *Mokuy–Yolngu*, repeating the *Mouth Pick-up* move, Nonggirrnga converted it to a 4-diamond design—identified on one occasion as *Ganguri*, a type of yam, and on another as *Yolngu*, 'people walking down to sit in shade of tree'—in this instance continually moving her hands, altering the symmetry of the diamonds, and setting them in motion (AA§1 Fig. 8).

Mulkun began with *Opening A*, followed by an unusual manoeuvre (the thumb passing over and hooking up from behind the 5f string, best done one hand at a time), which bypassed both the 'common shared position' and the core figure *Goanna 1,* reaching the interim *Two Conch Shells* design directly (see AA§1 Plate 2; see also Video 8—Thinking, thinking … Mulkun remembering *Yolngu*).

Nonggirrnga's and Mulkun's different ways of reaching the *Two Conch Shells* design shows variation at the level of technique block that does not affect the meaning or signification attributed to the design. The three different pathways now recorded for making this figure illustrate the technical flexibility available within the system.

<u>Example 2: Possum</u>

As outlined in Appendix A, in the *Records* McCarthy recorded four methods of making the *Possum* set figure. For a single maker he recorded an Oceanic Method A and Western Pacific Method B. For two participants he recorded Methods C and D (both variants of the Western Pacific Method B) for making the three-figure sequence *Male Possum*, *Possum Nest* and *Female Possum*.

Mulkun made this design that she called *Biyay/Goanna* ('in a tree') each time I worked with her. She displayed the figure vertically, sometimes converting it to a horizontal figure (similar to AASEAL#85) that she also called *Biyay/Goanna* (AA§6 Fig. 6A). However, she never made the three-figure *Possum* sequence. Over the time I worked with Mulkun she demonstrated a number of different methods of making the figure. In one case she used the hands of a partner as a loom to weave the design on (Method D—the most common method I observed). On another occasion she used her own feet in place of a partner's hand. On another she wove the figure on her lap (Method C). She also wove the figure on her own hands alone (in a version of Method B, but beginning with *Opening A*). These variations in technique were all used to make the same Western Pacific form of the figure, and the figure was always identified in the same way, no matter how it was made (Video 10—Mulkun making *Biyay/Goanna* (*Possum*)).

In Chapter 6 I demonstrated that small differences in method (subtle differences in parallel technique sequences, 'other-handedness'), did not constitute significant 'marked' differences in the Yirrkala repertoire. The evidence of my contemporary fieldwork shows that contrary to my suggestion in that chapter, neither do differences at the larger scale of technique block. The variation in method I found in my fieldwork experience confirms technical flexibility as a characteristic of Yolngu string figure making. To return to the example of the *Two Conch Shell* subset (Chapter 6, pp. 225), we can conclude that there is no necessary link between the method of making the figure and its meaning—rather this is a design with multiple possible meanings, that can be made in a variety of different ways.

The evidence in the contemporary repertoire of different individuals using different methods to make the same figure, as well as the one individual making the same figure using a variety of different methods, gives support to my contention that McCarthy's catalogue in the records should be understood as documenting a series of individual string figure 'events'. Rather than defining the repertoire as a catalogue of individual figures—comprised of specific methods, attached to specific designs, attached to specific identifications—it can alternatively be understood as a system, of which these events recorded by McCarthy are individual instances.

Variation in identification

The *Possum* set figure is attributed with multiple identities in the *Records* (see discussion in AA§6 and AA§6 Plate 11)**.** As well as *Possum* (when made as part of the three-figure sequence), as a single figure it is identified variously as *Frog in a Pool*, *Brown Hawk*, *Forehead Band* and *Moonfish*. In my fieldwork I also recorded multiple identities for this figure. While Mulkun consistently identified it as *Biyay/Goanna*, it was called *Honey* on Djakala's porch, and Matjinydji/'small, tiny, dilly bag' by Judy. Made in sequence Nonggirrnga and Marrnyula identified this figure as *Larrakitj*, followed with *Possum Nest* and *Rupu/Possum* (a variant in line with the identification in the *Records*), while for Judy and Mavis, made in series in this way it was identified as *Djitama*/a type of yam.

In my fieldwork I found some figures that had stable identities both through time and across the contemporary field (i.e. agreement between 1948 and now, and between the different individuals I worked with); and others that had multiple and varied identities (with little or no concordance between now and then, or among contemporary makers). These latter figures were identified differently by different individuals, and also by the same individual at different 'event-times'. In Figure 7.17 I list examples of figures with stable identities. In Figure 7.18, as an example of the multiple and varied identities attributed to figures, I have collated the different designs taken by at least one person to represent *Biyay*/*Goanna*, along with the different identities given to those same designs by others. More than just multivalency, my fieldwork establishes that semantic fluidity and 'tolerance of dissonance', are features of the Yirrkala repertoire as a meaning system.[28]

Example 3: Dingo–Mokuy–Yolngu

The sequence identified in the records as #104A&B *Two Dingos* and *Four Dingo Pups*, was made by both Dhundhunga and Nonggirrnga. On Djakala's porch in January 2009 Dhundhunga, holding the figure vertically, identified #104A (*Two Dingos*) as Mokuy or Ngäṉuk/*Spirit*, and then continued on to #104B, the 4-diamond design, which was identified through another member of the group as *Dead Man's Bones*. In August that year she repeated the identification of #104A as *Mokuy*, and made a different figure as a continuation, *Coffin for the Spirits*. She also made #104B without marking the interim stage, identifying it as *Possum* (AA§5 Fig. 3). In the one session in 2012, Nonggirrnga repeatedly identified the sequence as *Two Dingos* and *Four Dingo Pups* as in the record, and alternatively, as *Yolngu*

[28] Sillitoe, Paul. 'Contested Knowledge, Contingent Classification: Animals in the Highlands of Papua New Guinea'. *American Anthropologist* 104 (4), 2002: 1162–71: 1167. As disagreement over the identification of animal species, as well as their classification is not uncommon in oral tradition societies, it is not surprising that there would be dissonance in the identification of representations of the same. See also Rudder, John. 'Qualitative Thinking: An Examination of the Classificatory Systems, Evaluative Systems and Cognitive Structures of the Yolngu People of North-East Arnhem Land'. MA thesis, Australian National University, 1983: 174–77. Whitehead, Harriet. 'Identifying Game Species With the Aid of Pictures in Papua New Guinea'. *Pacific Studies* 18 (4), 1995: 1–38; 12–20.

and *Ganguri* ('ngatha, cooked one') (AA§5 Fig. 4).[29] This occurred in the same session in which she made the *Mokuy* suite figure that, as discussed previously, she also identified as *Yolngu*, and the 4-diamond design following it, as *Ganguri*.

The different identities attached to this sequence of designs (and the way in which those identities are shared with other figures), makes it apparent that many of the 'mesh' figures are open to a range of 'permissible interpretations'. The identity of figures (including multiple identities) are often constant in the repertoire of any one individual, but vary across the repertoires of multiple individuals.

Du<u>n</u><u>d</u>iwuy Mununggurr used the figure AASEAL #104A in her 2010 print. She had learned the figure from Dhundhunga (or remembered it) in our sessions together. I asked her during the process of pressing the figure what I should write down as a title. What did she want to call the print; that is, what was the figure called? I made a couple of 'leading' suggestions taken from McCarthy's record (*Two Dingos* or *Two Armbands* perhaps?). Looking at the figure now lying flat on the bed of the press, Du<u>n</u><u>d</u>iwuy decided it should be titled Bo<u>n</u>ba/*Butterfly*, and she adjusted the design: the two transverse oval loops she explained, were its 'eyes' (AB§2 Figs. 3A and 3B). Designs laid down on a flat two-dimensional surface—as with the mounted figures—look very different to when they are displayed on the hands. However, linking back to my discussion of iconicity in Chapter 6, it offers a further example of the habitual Yolngu way of interpreting images through the play between 'looks like' and 'seeing as'.

Making and meaning

Combining the results of my analysis of the collection in Chapter 6 with the findings from my fieldwork leads to the conclusion that differences in method in making the one design, from choice of opening to the use of alternative technique blocks, do not influence the different identities attributed to that design. In short, the distribution of meaning across the repertoire operates largely independently of the technical base, which is a versatile and flexible system.

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[29] In the session Nonggirrnga made the sequence four times: identifying it twice as *Two Dingos* and *Four Dingo Pups* and twice as *Yolngu* and *Ganguri*.

It remains to assess whether differences at the level of technique culture influence the attribution of identity between figures of the same basic pattern. In my fieldwork I recorded the 3-diamond pattern made using both Oceanic and Western Pacific methods, but otherwise patterns were made by one or the other method only. Direct evidence is therefore not available (except in the case of the 3-diamond pattern). However, given that the iconic potential of designs is at the one time broad and fluid, and at the same time iconic identification is the dominant mode of interpretation/explanation, it is difficult to see method, including at the level of technique culture, as a significant factor in the attribution of identity. The different identities given in the *Records* to the Western Pacific and Oceanic 2-diamond designs for example, are most likely attributions available to the 2-diamond pattern regardless of how it is made: 2-diamonds is 2-diamonds is 2-diamonds.

The exception to this generalisation—and it is a significant one—is where technique culture influences the iconic 'signifying potential' of a design. As discussed in Chapter 6, the 3-diamond pattern made using the Western Pacific method gives rise to a range of different forms of display with distinct iconically motivated identities, not available to the Oceanic form of design. Similarly, the addition of twists to the 2-diamond pattern to make #34A *Two Stingrays* and the addition of further diamonds to that pattern to make #34B *Two Stingrays and Two Young Ones*, as represented in the *Goanna Family* tree, is only possible with the Western Pacific form of the design. While in an analysis of the typology of single figures the 2-diamond pattern may have the same 'signifying potential' regardless of how it is made, considering string figure making as a sequential flow, the method of making that pattern is a meaningful distinction.

There are a number of figures in the repertoire in which variant extensions executed in sequence are linked to the variant identities of the same basic figure—for example in the *Parrotfish* sequence (as made by Nonggirrnga) (see discussion of the *Parrotfish* sequence in the *Records* in AA§7 and AA§7 Fig. 3). #101C *Catching Parrotfish*, a 4-diamond figure with a wrapped centre crossing, is displayed with loops on the thumbs and around both index and middle fingers. With conversion of the display to the *Caroline Extension* (with loops on 5 and 3), the step that

Nonggirrnga had difficulty with, it becomes #101D *Cooking* or *Cooked Parrotfish*. This is a necessary precondition for continuing on to the final figure in the sequence #101E *Crocodile*. Here, it can be seen that the difference in extension when juxtaposed in sequence, is a marked meaningful difference (AA§7 Fig. 4).

In my fieldwork I recorded similar changes of state in the final display of the figure in the *Possum* sequence that related to the different identities attributed to the figure. As can be seen in the photographs of Nonggirrnga and Marrnyula making this sequence, the first figure *Larrakitj*, is displayed with the hands facing in opposite directions (by Participant 2) (AA§6 Fig. 7). Removing the strings from their partner's hands the other participant (Participant 1), then displays the interim figure. Participant 2 taking back the strings from Participant 1, makes the final figure (*Rupu/Possum*), which is identical to the first, only now the hands displaying the figure are facing in the same direction.[30] When Judy and Mavis made this sequence, which they identified as *Djitama/Yam*, they repeated the last two stages—returning to the interim figure and extending the final figure again. As they explained it, the figure made after the first interim stage was the young yam, the one made after the next interim stage, the older yam or 'cooked one' (meaning 'ripe'). These figures were both displayed in the same way (with the hands facing in the same direction), but passing through the interim stage a second time reverses the design, changing the position of the wrapped crossing (AA§6 Fig. 8). In the cycle as made by both Marrnyula and Nonggirrnga and Judy and Mavis, the interim figure is accompanied by actions—the partner hits the central motif (clapping it between their two hands), and blows on it, before taking the figure. Similar actions, can be seen accompanying this sequence of figures in the footage taken at Yirrkala in 1948 (Video 11—*Possum* sequence).

In this example the difference in meaning attached to the figures is linked to a formal change. However, the formal change in the pattern is not meaningful itself in any iconic way (of male and female, younger and older). It is the fact of its difference to the pattern in its former state in the sequence that allows a different

[30] The photographs are taken from different 'events'—in consequence the relationship between participants and figures in sequence does not follow the process as described: i.e. Marrnyula displays both the interim and the final figure.

meaning to be attached to it. In a way this exemplifies the abstract, arbitrary nature of the differential relationship as the foundational building-block of meaning making in a semiotic system. But in this example there is another source of *diffèrance*, arguably more dominant than, but working in concert with, the formal pattern made: the experience of doing it and of seeing it done. Repeating one set of steps after another effects the formal transformation of the design from one thing to another: the consciousness of action taken over time is how that transformation is experienced, and what also in another sense makes the difference; a consciousness that is bodily as much as it is anything else. The changes in these examples, the *diffèrance* that was mobilised, was named and glossed for my benefit, but that *diffèrance* was immanent within the processual (durational movement) technique, the practice of making, itself.

Context and country

The multivalency of string figure designs is to be expected given our understanding of the meaning system operating in other forms of Yolngu visual representation. As Howard Morphy has argued in relation to the interpretation of Yolngu paintings, the meaning of any particular element is influenced by the context provided by the other elements in the painting, considered as an overall unity: moiety and clan associations, and identification of the particular story being referenced in terms of ancestor activity and place. This context reduces the signifying potential of the particular element—the possible range of meanings appropriate to that schema. In relation to geometric representations especially, he argues that 'they require a key to be interpreted', such as the story told during the production of a painting—which that painting is an 'illustration' of. In his discussion he uses as an example the different possible meanings that can be associated with the diamond pattern as employed by different Yirritja moiety clans: wild honey, floodwaters and paperbark swamps, the fire that burned the design on the crocodile's back.[31]

[31] Morphy, Howard. *Ancestral Connections: Art and an Aboriginal System of Knowledge*. Chicago and London: University of Chicago Press, 1991: 169–76.

I want to look again at the figure in the *Damala Duplication*, that was similarly recorded by McCarthy as having a range of different meanings: as well as *Damala* and *Ngakngak* (both terms for the white-breasted sea eagle), *Baru/Crocodile* and *Gapu/Ripples on a Pool* (*Running Creek*). In my fieldwork this figure was given different identities depending on the person who was making it, their clan affiliations, and the particular story and country that they associated it with—although none of this was immediately clear to me.

At Biranybirany in August 2009, under Djarpirr's direction Nyangungu and Nonggirrnga told me the story of Djeṯ. At the beginning of the session they made a number of designs, but they did not illustrate the story as such during its narration (Fig. 7.19). (This would have required a level of skill and string figure literacy they no longer possessed. None of the women I worked with retained this ability.) When I worked with Nonggirrnga again in 2012, it was striking that the majority of the figures she remembered could be related to the Djeṯ story: most notably the *Parrotfish* sequence illustrating the central fishing activity in the story; and *Ḏaŋgultji/Brolga* and *Ḏaŋgultji Nest*, referencing the mothers of Djeṯ. These particular figures were not remembered by others. Nonggirrnga's identification of the *Mokuy suite* design sequence as *Biyay/Gapu/Yolngu/Ganguri* and of #104A&B as *Yolngu/Ganguri* also, could be related to this story. While Djeṯ, his father and grandfather are fishing, his mothers are hunting for yams and at the end of the story they walk into the bush and stop at a billabong to rest, where they are transformed into ant hills.

Nonggirrnga attempted to make the figure Djeṯ many times, but without success. This was despite the fact that it was made by other members of her family group on various occasions: Djarpirr made it the first time I interviewed her at the beginning of my fieldwork in January 2009, and Nyangungu made it on the last day I was in Yirrkala in 2012, as one of the figures she chose to have made into a print, the other being *Ḏaŋgultji/Brolga* (see AB§4 Figs. 6 and 7).

Dipililnga Bukuḻatjpi's 2010 print—the 'nest' design used on t-shirts at the Garma Festival—was made from the interim stage in this figure (see AB§2 Fig. 8 and AB§3 Figs. 1 and 6). People had been referring to the design as both Djeṯ and Damala, it seemed to me interchangeably, and according to the YMD 'djeṯ' was the term for the young of 'damala' (the white-breasted sea eagle).[32] So, I thought I knew what the figure was, titling it *Djeṯ Yalu/Djet's Nest*, so as to make a tie in with the well-known story. This was a naïve mistake on my part. I did not realise that stories, even when popular and well known, were still 'owned'. The Djeṯ story, as told to me at Biranybirany in 2009 by the Marawili sisters, belongs to the Maḏarrpa clan, and features of the landscape at their Yilpara homeland are seen as evidence of these events.

On my return to Yirrkala for the Garma Festival, Dipililnga approached me to say that the figure in her print was not *Djeṯ's Nest*: 'No, it is not Djeṯ. It is Sea Eagle. Djeṯ is not my totem. I can't make that.'[33] She was concerned that she would be seen as taking someone else's story. Dipililnga had been making Damala, her mother's totem—relating to another story, and another place. When I visited Elcho Island in 2012, I was shown the site of Damala's nest—'sea eagle dreaming place'—by Wanymuli. This highpoint in the landscape is now the site of Galiwinku's water towers (Fig. 7. 20).

This case illustrates how the identity of a design is dependent on the context in which it is used—linked here to the identity of the maker, narrative and place. In the Yolngu world, the signifying potential of any string figure design is not exhausted by reference to its formal properties (including factors of iconic resemblance), or method of making, but is mediated through the context of kin and clan relationships.

Conclusion

Mark Sherman, in the company of colleague Will Wirt, had his first fieldwork experience with school children on the Navajo Reservation in northern Arizona in the winter of 1999–2000. Contrary to what Sherman had expected from his work on historical collections they observed that 'sometimes the same name was applied

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[32] According to people in Yirrkala that I talked to, both Yolngu and Balanda, contra to the YMD Djeṯ is not the term for the juvenile sea eagle, but is a different bird—the osprey. Confirming this identification I was assisted by Denise Goodfellow, author of *Birds of Australia's Top End*. Parap, Northern Territory: Scrubfowl Press, 2001.

[33] Conversation with Dipililnga Bukuḻatjpi, Art Centre, Yirrkala, 4 August 2010.

to more than one game, or several names were given to a single game', as well as variations in the extension of figures. For example, they recorded three different ways of extending the figure *Lightning*.[34] They returned again the next year to investigate their findings in a more systematic way. From this they concluded that methods of construction were 'dynamic and variable', and 'rarely identical among performers'—that there was in fact 'no single "correct" way to form many of the figures.'[35] As Sherman and Wirt ruefully commented: 'lack of conformity in method of manufacture is *not* the impression one gets from reading the literature'.[36]

The anthropological study of string figures was concerned with documenting repertoire—the different figures known by a particular people. As it was largely opportunistic, collections were often made up of examples from different individuals in a group, shown to the collector at different times. If a design (or subject) already collected was produced by a new informant, it is unlikely to have been recorded a second or third time. The majority of collectors learned how to make the figures themselves. In this process, both informant and collector would have repeated the design a number of times—a process that would have stabilised the method used. Due to these factors, supported by the essentialist presumptions underlying the study (as discussed in Chapter 4, pp. 174–75 and Chapter 5, p. 210), variation in method and in the identification of figures among any given group of users would not necessarily have been noted.[37]

From my fieldwork I have been able to confirm that in Yirrkala, as Sherman found in his work with the Navajo school children, string figure technique is 'dynamic and variable'. This fundamentally changes the interpretation of McCarthy's achievement. Rather than being the record of a repertoire of individual designs as presented in his catalogue of figures, the collection made by McCarthy (of mounted

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[34] Wirt, Will, Mark Sherman, and Mike Mitchell. 'String Games of the Navajo'. *Bulletin of the International String Figure Association* 7, 2000: 119–214; 120–21, 128–30.
[35] Citations in order. Sherman, Mark, and Will Wirt. 'String Games of the Navajo—Part II'. *Bulletin of the International String Figure Association* 9, 2002: 73–150: 148, 92, 73.
[36] Sherman and Wirt. 'String Games of the Navajo—Part II', 2002: 92.
[37] It was only through his long-term study that Mary-Rousseliere was able to document variation in method of making designs.

figures, instructions and photographs) can be thought of as documenting a 'long series' of 'events' in an emergent system for meaning making/making meaning.

In 1906 Jayne concluded that the study of techniques was more interesting and more meaningful for comparative purposes than final designs. As I wrote in Chapter 3: 'Rather than seeing string figures as unique entities characterised in terms of different final designs, she started to see them as made up of a series of constituent movements, elaborated through a system'. In Appendix A, and the accompanying commentary in Chapter 6, I present an analysis of the system operating in the Yirrkala repertoire, based on McCarthy's records. In my fieldwork I document other ways of negotiating this system and demonstrate its productive capability. Contemporary knowledge of the historical repertoire was limited in terms of the number of individual figures that any one person remembered. However, collectively, the women had significant recall of the technical manoeuvres through which that repertoire was constructed: demonstrating many of the same movements McCarthy recorded the instructions for, or that were captured on film in 1948. This has enabled me to understand and describe the characteristic 'motor habits' (von Hornbostel's term) that constitute Yirrkala string figure style. This analysis is presented in Chapter 10.

Chapter 8
Lots of special strings: material, metaphor and metonymy

> I have no one to help make string for my ceremony because I have no wife, that's why I have been just sitting back and doing nothing.[1]
>
> Birrikitji Gumana, Dhaḻwangu leader, 1970

Introduction

It is not possible to understand the making and meaning of string figures in Yolngu culture without considering the making and meaning of string itself—the material out of which they are made. While historically string or raki was ubiquitous in the everyday world of the Yolngu, it was, as John Rudder has remarked 'at the same time a highly significant part of most, if not all of the secret-sacred items of their ceremonial-religious life.'[2] String is used in just about every object in the ceremonial equipage of east Arnhem Land clans, and notably it features repeatedly in myth as an attribute of ancestor beings.

It is central to the story relating the adventures of the guwak (koel cuckoo), associated with the Yirritja Manggilili clan site of Djarrakpi on Cape Shield, for example. As the story was told to Howard Morphy by Narritjin and Banapana Maymuru, the guwak instructed his companion the possum to spin its fur into string, to disperse to the clans for use in ceremony. Guwak later drops the string on the ground to form features of the landscape (Fig. 8.1). The possum is observed at this task by two women, the guwak's sisters the Nyapililngu. The sisters watched the possum to learn how to make string as they could see how it would 'solve their problems':

> They would be able to make string bags to collect yams and wild plums; they could use the string to bind together the ends of spears and spearthrowers; and they would be able to make pubic coverings. They were so pleased with their discovery that they spun mountains of string which became the great sand-dunes that separate the lake from the sea shore.[3]

In this story the identity of possum fur string is linked to the extra-mundane power of the dreamtime ancestors' waŋarr realm—acting as an agent in super-normal

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[1] Dunlop, Ian. 'Yirrkala 1970—Council Meeting.' (Unpublished transcript of Council Meeting filmed on 16 July 1970.) Translated by Wandjuk Marika, 1976: 46.
[2] Rudder, John. *Tying a Society Together with String*. Galiwinku, NT: J. Rudder, 1975: 1.
[3] Morphy, Howard. *Aboriginal Art*. London and New York: Phaidon, 1998: 131–32.

transformations—at the same time as it is valued for its ordinary, everyday usefulness.

In this chapter I review the role of string, its uses and meanings, in myth and ritual in the historical past. My purpose is to establish the symbolic resonance of string in Yolngu cosmology. The importance of the functional agency of string as a primary material and tool in the everyday Yolngu world is reflected in the spiritual agency it commands in religious belief and practice, as both material and form, extended through the poetic tropes of metaphor and metonymy. I am basing this discussion primarily on historical ethnographic fieldwork by anthropological researchers working in north-east Arnhem Land over an extended period of time, augmented by my own contemporary fieldwork.

Lloyd Warner worked in Milingimbi in the later 1920s. Donald Thomson travelled through and spent time at various locations within the newly legislated Arnhem Land Aboriginal Reserve in the mid-1930s and again during World War II in 1942–43. His collection of material culture objects, and his photographs and papers held at Museum Victoria, is an important, if largely unpublished resource. Only a year before the Arnhem Land Expedition, Ronald and Catherine Berndt spent from September 1946 to July 1947 based in Yirrkala, and made further visits to the area in later years. Their numerous publications have been an important source, but particularly *Art in Arnhem Land* (1950), written with A. P. Elkin. John Rudder, who wrote a short ethnographic study specifically on string in Yolngu culture (*Tying a Society together with String*, 1975), worked as a teacher in north-east Arnhem Land for 13 years from the mid-1960s, at first in Yirrkala and then at Galiwin'ku on Elcho Island.[4] Nancy Williams and Howard Morphy, both important and influential scholars in their respective disciplines, undertook fieldwork in the larger Yirrkala area in the 1970s. Another major source has been Ian Dunlop's Yirrkala Film Project, which documented events in the community from 1970–82. I have drawn on the work of Louise Hamby which is focused specifically on fibre art. She undertook fieldwork at Gapuwiyak in the 1990s, and has since worked on the

[4] He later returned in the 1980s and 1990s, to undertake research for an MA and PhD degree, respectively.

collections of Arnhem Land material culture made by Thomson and Warner.[5] Alan West's useful study of *Aboriginal String Bags, Nets and Cordage* (first published in 1999), was based on fieldwork in Cape York, but also on a close study of the Donald Thomson collection in Museum Victoria.

Arnhem Land in general, and Yirrkala in particular, has been the chosen destination of anthropological researchers over many decades, providing the contemporary scholar with a comprehensive historical record. The same people acted as cultural brokers for a succession of different researchers. For example, Narritjin Maymuru, Howard Morphy's major collaborator in the 1970s, and source for the story of the koel cuckoo, was one of the men McCarthy worked with in 1948. Ngarrawu was married to Narritjin's brother Nänyin. Wandjuk and Mawalan Marika were Ronald Berndt's chief informants. Berndt dedicated his 1951 book *Kunapipi* to them both. Wandjuk played an important role translating for the Arnhem Land Expedition during its stay in Yirrkala. McCarthy was probably closest to the Marika family—he was adopted as Wandjuk's classificatory brother. They were McCarthy's source for the mythology relating to string figure making, and aspects of its socio-religious practice. Wandjuk later acted as translator for Ian Dunlop. In the transcript of the 1970 Town Council Meeting held to discuss the proposed filming project—itself filmed by Dunlop—Wandjuk, rather than providing a literal translation added his own commentary elaborating for the Balanda outsider the meaning of what had been said. The same people appear at different stages in their lives in the documentation of successive researchers, giving us a sense of them as individuals and a layered understanding of at least part of their experience.

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[5] Hamby, Louise. *Containers of Power: Women with Clever Hands*. Richmond, Vic.: Utber & Patullo Publishing, 2010. Hamby's 2001 PhD thesis of the same title is augmented in this publication by research undertaken between 2003 and 2006 on an ARC Linkage Project between the ANU and Museum Victoria: *Anthropological and Aboriginal perspectives on the Donald Thomson Collection: material culture, collecting and identity*. Hamby, Louise. 'The Reluctant Collector: Lloyd Warner'. In *The Makers and Making of Indigenous Australian Museum Collections*, edited by Nicolas Peterson, Lindy Allen, and Louise Hamby. Carlton, Vic.: Melbourne University Press, 2008: 355–86.

Different types of string

In the past, in the more arid parts of Australia, Central Desert areas in particular, human hair string was the most commonly used for both practical, everyday functions and ceremonial and symbolic functions.[6] In Arnhem Land, the common or generic form of string, often referred to as 'bush string', was (and still is), made from plentiful fibrous plant materials, specifically the inner bark or bast (the phloem or vascular tissue) of young arboreal (tree) growth. Warner supplied a long list of the uses of vegetable fibre string:

> (1) the trunk of totemic emblems; (2) tassels of fringe on totemic emblems (this string is usually feathered …); (3) mesh of fishing nets; (4) women's carrying bags; (5) women's and children's 'harness'; (6) men's and women's pubic covering; (7) the wrapping of the ends of hair belts; (8) the wrapping of one variety of armlet; (9) the decorative fringe for baskets or to outline the design on a man's basket; (10) ordinary tying purposes; (11) necklaces; (12) forehead bands; (13) spirit bags; and (14) hafting.[7]

In the past, while men were known to make bush string, it was predominantly a task that was the work of women, as it is today.[8]

A range of different tree species/varieties are used to obtain different qualities of fibre. A common type of string used for everyday purposes, balwurr (as it is called in Yirrkala), is made from saplings of the red flowering kurrajong tree *Brachychiton paradoxus* (and other close relatives in the *Brachychiton* genus) (Fig. 8.2).[9] The aerial or prop roots of the banyan tree and other fig varieties are

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[6] Barbara Glowczewski has done work on the making and distribution of hair strings as part of the reproduction of the social order of relationships among the Walpiri. Glowczewski, Barbara. 'Death, Women and "Value Production": The Circulation of Hair Strings Among the Walpiri of the Central Australian Desert'. *Ethnology* 22 (3), 1983: 225–39. Glowczewski, Barbara. 'Culture Cult: Ritual Circulation of Inalienable Objects and Appropriation of Cultural Knowledge (Northwest and Central Australia)'. In *People and Things: Social Mediations in Oceania*, edited by Monique Jeudy-Ballini and Bernard Juillerat. Durham, NC: Carolina Academic Press, 2002: 265–88.

[7] Warner, W. Lloyd. *A Black Civilization: A Social Study of an Australian Tribe*. New York and London: Harper and Brothers, 1937: 477.

[8] Rudder, *Tying a Society Together with String,* 1975: 1–3. Hamby, Louise. 'Wrapt with String'. *Textile* 5 (2), 2007: 206–29; 209–10.

[9] Identifying the species used during her fieldwork at Gapuwiyak as *Brachychiton megaphyllus,* Louise Hamby follows G. P. Guymer's reclassification of the commonly named red flowering kurrajong. Guymer's taxonomic revision of the *Brachychiton* genus differentiated a number of new species included historically under the single epithet *paradoxus*. I think the question remains open as to what level of differentiation is significant to the designation of balwurr by Yolngu. Other species like the northern kurrajong (*Brachychiton diversifolius*) have been documented as sources of fibre in the Yirrkala area. Yunupingu, Banygul, et al. *Rirratjingu Ethnobotany: Aboriginal Plant Use from Yirrkala, Arnhem Land, Australia*. Northern Territory Botanical Bulletin 21. Darwin: Parks and Wildlife Commission of the Northern Territory, 1995: 22–23. Hamby, 'Wrapt with String', 2007: 209 and Hamby, *Containers of*

another common source of fibre for string making. Both *Ficus virens* (banyan tree) and *Ficus henneana* (a coastal variety of fig) are common species in the Yirrkala area.[10] Filmed in 2012, Video 12—'Making Raki (String)' shows Bulnyinda Marawili removing the bast from a banyan tree root and softening and splitting it into strands of a workable length, while Lipaki Maḻaypa plies it into string on her thigh. With two fibres laid parallel to each other on an angle across the thigh, the movement of the hand rolling away from the body across the top of the fibres, twists them both in one direction; on its return, with additional pressure exerted by the thumb, the hand plies the two twisted fibres together. New strands of fibre are joined in as needed. As Alan West has written the technical designation of two-ply bush string is ssZ; that is, 'each element is S-twisted before being plied together to produce a final Z twist.'[11]

In the process of removing the bast from the banyan tree root and preparing the fibre, over time it turns a vibrant red-brown (lessening in brightness as it dries out). This is clearly visible in the video footage.[12] This fibre and the string made from it, called d̠awu in Yirrkala, is softer and finer than balwurr, which is naturally yellow-white in colour. D̠awu is used for ceremonial purposes, as is the two-tone combination string that Lipaki is making in the video (Fig. 8.3). The pale fibre she

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Power, 2010: 121–23 and n. 57. See Guymer, G. P. 'A Taxonomic Revision of Brachychiton (Sterculiaceae)'. *Australian Systematic Botany* 1 (3), 1988: 199–323; 291–95, 299–302.

[10] Ethnobotanist Glenn Wightman, Northern Territory Department of Land Resource Management, pers. comm. (phone call) 29 August 2013. A variety found only in Australia, formerly known as *Ficus superba* var. *henneana*, it is now recognised by the Australian Plant Census as *Ficus henneana*. Flora of Australia Online, https://www.anbg.gov.au/chah/apc/, accessed 29 August 13.

[11] West, Alan L. *Aboriginal String Bags, Nets and Cordage*. 2nd ed. (First published 1999). Melbourne: Museum Victoria, 2006: 132.

[12] At the time of recording I had thought the colour was being picked up from the stain of ochre paint on the porch, but after watching the footage a number of times I realised this was not the case. Eunice Marika confirmed to me when I showed her the film, that it changes colour 'by itself'. Lucy Wanapuyngu, one of Louise Hamby's principal informants at Gapuwiyak, also confirmed that Banyan tree fibre normally changes colour. She calls this fibre djan'pa. (Email correspondence between Louise Hamby and Lucy Wanapuyngu, 29/08/13.) As ethnobotanist Glenn Wightman explained, bark fibres as well as the wood of many species of tree change colour with exposure to the air—a form of oxidisation perhaps aided in this instance by the breaking down of the cellular structure of the bast through the softening process. (Glenn Wightman, pers. comm. 29 August 2013.)

is using with it is possibly either gurrumu or burrumburr, both softer fibres like d̲awu.[13]

String made from materials reflecting moiety and clan affiliations was historically used by Yolngu in ceremonial contexts (as well as having some everyday uses). Hair string, according to Rudder, had limited application. He records that it was used by four specific Dhuwa clans only, for making hair belts to wear in ceremony, and as a core material in the making of decorative tassels or wan̲a (Fig. 8.4).[14] Warner recorded that hair string was also used as cord on a bullroarer, but that it was never used for any decorative wrapping, and specifically not for wrapping totemic emblems (or rarely). This seems to have been a practical matter, as Warner explains: 'the Murngin [his term for Yolngu] are fond of paint for decoration and human hair string does not take paint as well as fiber string does.'[15] Hamby records that hair string was used for outlining patterns painted with ochres on ceremonial bathi (baskets).[16]

Called bulka or burrkun, possum fur string has been understood as the property of Yirritja clans (Fig. 8.5).[17] It has very similar qualities to hair string. Both human hair and animal fur was spun between the fingers or rolled on the thigh, or a spindle was used to spin and then ply the strands of fibre together into string. In the past, both hair string and possum fur string were made predominantly by men.[18] In the later 1960s and early 1970s, Rudder found that if not replaced altogether by store-bought wool, possum fur string was made by the fur being laid into plant fibre string as it was spun, and that this work was done by women.[19]

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[13] While the botanical source of gurrumu has not yet been identified, burrumburr, a strong but soft, fine, white fibre, is made from the bast of *Phaleria octandra*, 'a spreading shrub that occurs in monsoon vine forests'. Yunupingu et al., *Rirratjingu Ethnobotany,* 1995: 63.
[14] Rudder, *Tying a Society Together with String,* 1975: 4–5, 8.
[15] Warner, *A Black Civilization*, 1937: 477. According to Warner hair string was less rare than possum fur string.
[16] Hamby, *Containers of Power*, 2010: 89, 126.
[17] Hamby, *Containers of Power*, 2010: 92. Hamby records that the Yolngu commonly use the fur from the northern brushtail possum (*Trichosurus arnhemensis*). Dopiya Yunupingu has stated that the Gumatj clan uses bandicoot fur. Hutcherson, Gillian. *Gong-Wapitja: Women and Art from Yirrkala*. Canberra: Aboriginal Studies Press, 1998: 29.
[18] Rudder, *Tying a Society Together with String,* 1975: 4. Warner, *A Black Civilization*, 1937: 477. Hamby, 'Wrapt with String', 2007: 212. See Donald Thomson images in West, *Aboriginal String Bags,* 2006: 11–14.
[19] Rudder, *Tying a Society Together with String,* 1975: 8.

Rudder saw this as a change in practice related to a growing scarcity of possums—the one way of making the string being replaced by the other. However, film footage taken in 1948 of Bali making possum fur string precisely in this way, laying tufts of fur into the string as it is plied and then using it to wrap an armband (wurrwa), suggests that these two different types of string and ways of making, were in use concurrently (see Video 13—*Wurrwa*: Bali making possum fur string, Yirrkala, 1948). Feathered string, the property of Dhuwa clans, was also made in this way—with the feathers being laid into the string during manufacture.[20] Rudder reported that one set of Dhuwa clans incorporated the white down feathers from water birds, split down the mid-rib, to make raman, and another group of clans, used small whole breast feathers from the rainbow or red-collared lorikeet (l̲indirritj) to make worrutj (Fig. 8.6 and Fig. 8.7).[21] In this image of an initiate being painted up for the Djungguwan ceremony at Gurka'wuy in 1976 that was filmed by Ian Dunlop, note that the worrutj used for his chest harness or matjka is made from two-tone combination string. Lying next to his head on the ground, is a headdress made from raman (Fig. 8.8).

In 2013 string made by Lipaki Mal̲aypa and Dhundhunga Mununggurr was featured in the exhibition *String Theory* held at the Museum of Contemporary Art in Sydney. During my fieldwork in Yirrkala, Lipaki was the major producer of string, both for ceremony and for use or sale at the Art Centre. With her house on the corner of the main road into Yirrkala, I would always look for her at work on her porch. Most of the string she makes is d̲awu, rather than work-a-day balwurr.[22] There are not many uses for balwurr in Yirrkala today. String bags are now rarely made. As well as being easier to work with, it may also be that banyan tree fibre is more easily accessible. In 2012 I enquired if Lipaki could make for me some Dhuwa feathered string and some Yirritja possum fur string. Her family members who

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[20] Warner, *A Black Civilization*, 1937: 476. 'The small feathers or down of a cockatoo, jabiru, or other bird are rolled into the fiber string if it is to be used for decorative purposes, a ceremony, or a totemic emblem.'

[21] Rudder, *Tying a Society Together with String,* 1975: 2–3, 7–8. Hamby, *Containers of Power*, 2010: 89–92. Both these terms raman and worrutj, also have the general meaning 'fluff'. The term raman is also used for the cotton wool (from kapok tree seed pods) used for body decoration in ceremony. The term worrutj, like bulka the term for possum fur, also means body hair.

[22] In Gapuwiyak by contrast during Louise Hamby's fieldwork balwurr was the most common type of string made, rather than d̲awu or djan'pa as they call it. Hamby, *Containers of Power*, 2010: 122, 126.

spoke for her in English said that she could, but I would need to supply the raw materials. When I suggested capturing and killing a possum and a white-breasted sea eagle might be difficult, they agreed, and said that she could make both sorts using the stuffing of a pillow. I took them to mean a feather pillow, which I was however unable to find in Nhulunbuy's shops, all the pillows having synthetic filling.[23] The majority of the string in the *String Theory* exhibition judging from its red/brown colour is d̲awu*.* There are some feathered strings, most made using white feathers (probably from commercial sources) and a small number using red feathers from the l̲indirritj parrot (Fig. 8.9). But there is no possum fur string. (Possums are now very rare in the area.) In the film footage taken in 1948 of Wandjuk and children on the beach at Yirrkala making string figures (also included in the exhibition), Wandjuk appears to be using bulka/burrkun possum fur string, whereas the young girl the camera focuses on is using feathered bush string (see Figs. 8.10A&B).

Ceremonial objects made with string

In north-east Arnhem Land, Warner and the Berndts concluded, there are three major myth cycles. These are foundational narratives: stories of supernatural ancestor waŋarr beings whose activities as they travelled in the dreamtime 'created' the world. The Dhuwa Djang'kawu and its Yirritja pair, the Lany'tjung-Banatja, inform the Ngärra ceremonies of their respective moieties. The Dhuwa moiety Wäwilak sisters myth supports three main ceremonial complexes, the Djungguwan, the Gunapipi and the Ngul̲marrk. In *A Black Civilization* (1937) Lloyd Warner published detailed descriptions of Arnhem Land material culture he collected in Milingimbi, including raŋga or sacred objects, their ornamentation and use; organised according to a typology based on materials and form.[24] The Berndts based their discussion of ceremonial objects in various publications, on a collection they made in Yirrkala.[25] Their analysis was organised according to a typology

[23] On the use of commercially available products as substitutes for traditional materials, see Hamby, *Containers of Power*, 2010: 254.
[24] Warner, *A Black Civilization*, 1937: 498–505.
[25] Gray, Geoffrey. '"Cluttering up the Department": Ronald Berndt and the Distribution of the University of Sydney Ethnographic Collection'. *reCollections* 2 (2), 2007. http://recollections.nma.gov.au/issues/vol_2_no2/papers/cluttering_up_the_department.

based on religious hierarchy: the importance of the particular ancestral being or myth the object related to, and the nature of that relationship; that is, whether the object was a representation of a mythic being or a totem associated with them.[26]

String was a prominent material in this corpus. It was used as binding on sacred raŋga objects and poles, or simply attached to them, hanging as decorative mobile filaments. String, as I mentioned previously, was used as the core of waṉa (literally meaning arms), that were attached to raŋga objects and ceremonial baskets and to the armbands of participants. In some ceremonies long lengths of multiple strands of decorated string (I will call them ceremonial ropes) were strung between poles, in the manner of festoons (suspended in a curve between two points), across the space of the ceremonial ground, and connecting it to a larger geography.

In John Rudder's ethnography he analyses the process of making string and things made with string for ceremonial purposes, according to the gendered division of labour involved: the women make the string (whether plain, feathered or in his experience, possum fur string), which the men then take into their possession to make the desired ceremonial items within the closed space of the men's shade. This exchange repeats an episode shared by different mythic narratives (Djang'kawu, Wäwilak), in which the sacred artefacts belonging to female ancestors are stolen by their male companions. Berndt records that a great play was usually made of this: 'Women are asked to prepare long feathered strings which are never directly given to the men, but are always "stolen" by them.'[27]

The wooden posts used in the Yirritja and Dhuwa Ngärra ceremonies as the centrepiece for action on the ritual ground, sometimes referred to as dancing poles, were considered the most important ceremonial objects ('primary raŋga') by the Berndts.[28] They were also the largest and most elaborate. Four of these 'High

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[26] Elkin, A. P., Catherine Berndt, and Ronald Berndt. *Art in Arnhem Land*. Melbourne and London: F. W. Cheshire, 1950: 34–47. See also: Berndt, R. M., and C. H. Berndt. 'Sacred Figures of Ancestral Beings of Arnhem Land'. *Oceania* 18 (4), 1948: 309–28; and Berndt, Ronald M., Catherine H. Berndt, and John E. Stanton. *Aboriginal Australian Art: A Visual Perspective*. Australia: Methuen, 1982.

[27] Berndt, Ronald M. *Djanggawul: An Aboriginal Religious Cult of North-Eastern Arnhem Land*. London: Routledge and Kegan Paul, 1952: 15.

[28] While Warner does not use a graded hierarchy in his analysis of material culture objects, he does recognise 'high' and 'low' raŋga, based on the totem they relate to. See his listing of 'Murngin Clans' in Warner, *A Black Civilization*, 1937: 39–51.

Totemic Emblems' from their collection were first discussed in the 1950 publication *Art in Arnhem Land*. As they describe in some detail, all of the poles have sections of string binding of various kinds (Fig. 8.11).[29] The Dhuwa moiety Djanda/Goanna tail pole (2nd from left), a gift from Mawalan, was considered the most valuable item of all, partly because the Berndts considered the myth of the Djang'kawu and the Dhuwa Ngärra ceremony that it inspired the most important, and in part due to its ceremonial pedigree. It had been used in numerous Ngärra ceremonies and repainted several times: 'the designs on it, yellow and white on a red-ochred background, represent goanna, their tracks on the sand and the dust from their scraping; parakeet feathered pendants, tipped with white eagle-hawk down, hang from its jungle-twine binding.'[30] Next to it (first on left) is a Yirritja moiety Mäṉḏa/Octopus raŋga (Warramiri clan), decorated with waṉa made of multiple strands of wool (a substitute for possum fur string).[31] The other two poles are also Yirritja moiety.

Although still 'extremely sacred', the Berndts classified the objects in their collection used in ceremonies relating to the Wäwilak sisters myth-ritual cycle, as 'secondary raŋga': a didjeridoo 'trumpet' or drone pipe used in the Djungguwan symbolising Yulunggur, the great snake that swallowed the sisters 'bound with jungle string and white seagull and eagle-hawk down … [with] … drooping pendants of parakeet feathers, representing the "fur" on the Python Rainbow Snake and its vivid colours'; an uwar drum or gong used in the Nguḻmarrk, similarly bound with string, painted and hung with feathered pendants.[32] Other 'secondary raŋga' they discussed, were drawn from a range of smaller more portable effigy-like 'totemic emblems', typically representations of animals or plants made either of folded paperbark or carved in wood. These raŋga were commonly bound with string, as Elkin put it 'with the precision of the string on a cricket bat handle,' painted with designs (over the top of the string binding), and further adorned with

[29] Elkin et al., *Art in Arnhem Land*, 1950: 34–38.
[30] Berndt, Ronald M., and Catherine H. Berndt. *The World of the First Australians*. Sydney: Ure Smith, 1964: 371.
[31] Rudder, *Tying a Society Together with String,* 1975: 9.
[32] Elkin et al., *Art in Arnhem Land*, 1950: 30, pl. 4A; 38–41. Berndt and Berndt, *The World of the First Australians*, 1964: 372.

pendants or tassels (waṉa) of different sorts.[33] They were of varying degrees of sacredness and therefore restriction (Fig. 8.12). The white reef heron marradjiri emblem illustrated—an example of a raŋga bound with string—was used in public exchange or trade ceremonies (marradjiri meaning public or 'open') (Fig. 8.13).[34] The Gaṉay (long yam) raŋga illustrated—with string in this instance representing the plant's creepers—could also be viewed in the open, in public. But if considered secret/sacred the raŋga would be transported from a keeping place covered possibly with paperbark, and revealed only to postulants in ceremony.[35]

After completion of a ceremony raŋga were commonly dismantled. The string binding was unwound and would be kept for future use, as were any feather tassels or waṉa.[36] Accompanying a basket he collected Donald Thomson wrote in his notes: 'String and feathers all first came from "ranga", and then used in "djalli" armlets and when these disintegrated used for this "bati"—a fine and highly valued specimen.'[37] As Berndt affirmed, ceremonial string was 'one of the most precious items of wealth in the traditional sense.'[38] The economic basis of the conduct of ceremony, while acknowledged, is not detailed by either Warner or the Berndts. In Warner's description of the Dhuwa Ngärra however, he does take note of the ritual exchange or selling of string at the end of the ceremony. Ceremonial string might be gifted (or sold) to other members of the same Dhuwa moiety (i.e. in exchanges between märi and gutharra), 'as a demonstration of the solidarity of their relationship' or cutting out the gurrutu (relationship) lines, it was traded with members of the opposite Yirritja moiety ('our wakus and our dues and our galles').[39]

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[33] Elkin et al., *Art in Arnhem Land*, 1950: 11, 41–46. See also Warner, *A Black Civilization*, 1937: 498–501.
[34] For another example see the Gumatj Fire Dreaming raŋga illustrated in Elkin et al., *Art in Arnhem Land*, 1950: pl. 18B (c), opp. 86; 42–43 (for commentary).
[35] Elkin et al., *Art in Arnhem Land*, 1950: 43–44.
[36] Elkin et al., *Art in Arnhem Land*, 1950: 11.
[37] Donald Thomson, Notes on catalogue card to item DT 327. The Donald Thomson Collection, on loan to Museum Victoria from the University of Melbourne. Lindy Allen, pers. comm. 6 March 2013. For further comment on the recycling of ceremonial string see Hamby, *Containers of Power*, 2010: 255.
[38] Berndt and Berndt, *The World of the First Australians*, 1964: 312.
[39] Warner, *A Black Civilization*, 1937: 349–51, 355.

Part of the value of ceremonial string resides in it being a labour-intensive commodity.[40] Its value also resides in its spiritual agency, a power and accompanying status that could accrue through the history of that string's usage. The one time when ritual string was destroyed, as reported to Warner, was when there was misbehaviour once a ceremony has begun:

> When someone does a bad thing [unsanctioned sexual relation, open fighting, and the like] when we have a Narra or Djungguan. We must stop that corroboree and throw the ritual string away because our marikmos and maris and kuturas [et cetera] get angry with us and make us sick.[41]

Warner also records an incident when the accidental destruction of 'a magically powerful totemic string', that was in the keeping of one clan for use by another clan for their ceremonial raŋga, was deemed life-threatening to the individual (a woman) who caused the loss. 'An old man said at the time that it was to his clan as though she had killed a strong man.'[42]

The feathered string of the Djang'kawu

Although the Yirritja cycle of the Lany'tjung-Banatja was on the same level in terms of the status of the creator beings involved, the Berndts averred 'their mythology is not nearly so vivid as the Djanggawul, nor are their ceremonies so important.'[43] The Djang'kawu was the most important religious cult in the region, they wrote, according to the people themselves. Ronald Berndt claimed that even people of the Yirritja moiety 'admitted the primary importance of the *dua* Djanggawul.'[44] While particular myth cycles and their associated ceremonies belonged to either Dhuwa or Yirritja clans, members of the opposite moiety would 'assist in the dancing, singing, and making of ritual objects, and may even include certain of their own particular dances based on … [their] … myth cycles.'[45] In ceremonies marking

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[40] Berndt described an exchange ceremony he witnessed in western Arnhem Land among the Kunwinjku, in which the basis of the trade between the two groups taking part was the labour involved in making string. Using hair gathered from the one group of people, the other group made it into hair string, which in the ceremony they then returned to the group whose hair it was, in exchange for other valued goods. Berndt, Ronald M. 'Ceremonial Exchange in Western Arnhem Land'. *Southwestern Journal of Anthropology* 7 (2), 1951: 156–76; 164–67.
[41] Warner, *A Black Civilization*, 1937: 280.
[42] Warner, *A Black Civilization*, 1937: 89–90.
[43] Elkin et al., *Art in Arnhem Land*, 1950: 31.
[44] Berndt, *Djanggawul,* 1952: xvii–xviii.
[45] Berndt, Ronald M. *Kunapipi: A Study of an Australian Aboriginal Religious Cult*. Melbourne: F. W. Cheshire, 1951: 34. Berndt is referring here specifically to the incorporation into Dhuwa Wawilak inspired ceremonies of dances based on Yirritja myth cycles.

points in an individual's life (e.g. circumcision, funeral), that person's mother's clan—a clan of the opposite moiety—would often play a role in the proceedings. While leadership of the conduct of ceremony was the primary responsibility of the particular 'owning' clan headman, it was also overseen by that clan's *djunggayi*, an elder of the opposite moiety with 'managerial or custodial responsibility' for their mother's clan lands and related myth and ritual.[46]

In the religious hierarchy, as the Berndts understood it, the Wäwilak sisters myth was a second-order phenomenon:

> The Wauwalak are not assumed to have 'brought into being' all life, as are the Djanggawul; they symbolically re-enact the situation, but are not creators of it. In native epistemological doctrine this distinction is clearly defined. The Djanggawul came first, the Wauwalak later.[47]

Mawalan Marika was one of Berndt's main informants, and this was certainly how the Rirratjingu saw things, as confirmed by Milirrpum and Wandjuk in 1970. At the Council Meeting held to discuss Dunlop's film project Milirrpum stated:

> The law giver and creator is Djung'awu at Yalangbara. He is the law keeper and creator above all, above Wawalak … Djung'awu is the creation, all the law, and dancing, and for people.[48]

Wandjuk's testimony elaborated on this, by explaining that he actually learned them in this order: 'Djung'awu was the start and I learned it first … the second story I heard and I learned about was Djungguwan … those two Wawalak sisters.'[49] The fact that the Wäwilak were associated with three ritual cycles, Berndt conceded, made it 'a debatable point' which myth was more relevant or influential.[50] While 'the Djanggawul remain aloof in inspiring the great Nara, which in the ritual sense is much "higher" than any of the Wauwalak ceremonies', he wrote, 'the Wawalag-Yulunggul epic almost dominates the scene and is very

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[46] Lendon, Nigel. 'A Narrative in Paint'. In Wally Caruana and Nigel Lendon ed., *The Painters of the Wagilag Sisters Story 1937-1997*. Canberra: National Gallery of Australia, 1997: 20–37; 23.
[47] Berndt, *Djanggawul,* 1952: 12. The Wäwilak are sometimes identified as the daughters of the Djang'kawu.
[48] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 65.
[49] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 68–69.
[50] Berndt, *Djanggawul,* 1952: 12.

pervasive.'[51] Warner wrote that in Milingimbi, 'the Wawilak myth is of extreme importance … and is always present in their thinking.'[52]

As has been commented on, ancestor beings, despite their super-normal capacities, in many ways act as Aboriginal people did: they hunted, gathered food and made camp. In both of these myth cycles, string features as a significant agent, a character almost, in the narrative action. The myth of the Djang'kawu begins with the two waŋarr sisters and their brother travelling from Burralku, the island of the dead, off the coast to the south-east and landing on the mainland at Yalangbara, from where they proceed to visit and through that 'create' all the clan lands of the Dhuwa moiety. At each stop on their journey the Djang'kawu plunged their digging sticks in the ground creating waterholes and planted their djuḏa poles which became trees, they designated totem animals and plants (by calling out or singing their names and/or by depositing them as spirits: through leaving patterned and decorated raŋga objects they had brought with them), and they gave birth to/deposited spirit children, the people of that land.[53] They shaped the landscape, usually through the transformation of some attribute or appurtenance, and gave meaning to shapes in the landscape.

Berndt writes that the Djang'kawu were associated with the sun, its light and warmth, and life-giving properties. Moving from east to west, 'they came on the rays of the rising sun, and finally disappeared into the sunset.' In their canoe they brought with them a ngaṉmarra conical mat, in which they kept their sacred raŋga: digging sticks, djuḏa poles and 'a length of twine, with orange-coloured bird's feathers worked into it', symbolic of the sun's rays, among other things.[54] In the song cycle through which the myth is commonly expressed, a networked web of metaphoric and metonymic links—playing on the colour red and formal homologues of 'feathered string'—are a recurrent leitmotif: the rays of the sun

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[51] Berndt, *Djanggawul,* 1952: 12. Berndt, Ronald M. *Love Songs of Arnhem Land*. Chicago: University of Chicago Press, 1978: 42.
[52] Warner, *A Black Civilization*, 1937: 248.
[53] Rudder, John. 'Yolngu Cosmology: An Unchanging Cosmos Incorporating a Rapidly Changing World.' PhD thesis, Australian National University, 1993: 42.
[54] Berndt and Berndt, *The World of the First Australians*, 1964: 311–12.

(which are said to come from the Djang'kawu sisters' vulvas), and the creepers of the yam, the blood of afterbirth, and the umbilical cord.

Leaving Burralku, 'The sun's rays touch us, warming our backs … Rays like the parakeet-feathered string of our *rangga*. Feathered string like our child! Red glow of the sun.' When the Djang'kawu arrive at Yalangbara, all their raŋga are wet from the sea—'the foam and the spray'. They lay out their 'feathered strings'/'feathered pendants' to dry in the sun (Fig. 8.14A and Fig. 8.14B).[55] Yam creepers or runners grow from the feathered strings spread on the ground, stretching out, pointing to and linking places associated with the Djang'kawu: 'Yam creepers and leaves, like feathered parakeet string, stretching out its "arms"!'[56] Travelling along the coast they plant djuḏa trees. Again 'splashed with salt water and foam', they hang their feathered strings on the trees to dry, (a direct linkage to the ḻindirritj parrot).[57] Later in the song cycle, when the Djang'kawu are at Arnhem Bay, feathered strings are pulled out from the nganmarra mat (the Sisters' uteri), giving birth to raŋga people.[58] The 'feathered pendants'/'feathered strings'—umbilical cords this time—are 'straightened' to 'lead into various places', where the raŋga people are sent/deposited in wells.[59] Again string is used to link people and place.

Strings of connection: arms across the land, paths of flight

Encoded in the myth cycles is what Stanner has called the 'architectonic idea' of Aboriginal culture—a patterned map of difference and relationship between

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[55] Berndt, *Djanggawul,* 1952: 94. Song 29. In his commentary on the myth Ronald Berndt clearly states that the Dang'kawu brought 'feathered string' with them—'twine, with orange-coloured birds' feathers worked into it.' (Berndt and Berndt, *The World of the First Australians*, 1964: 312.) In the introductory chapter to his book on the *Djanggawul*, he makes a distinction between the feathered pendants attached to the dilly bag they brought with them, and 'parakeet feathered string … also among the objects brought by the Djanggawul' (Berndt, *Djanggawul*, 1952: 4–5.) However, in the text of the song cycle the terms 'feathered strings' and 'feathered pendants' are used seemingly interchangeably: 'We hang out the feathered arm-band pendants, putting them on the sacred *djuda* trees; Drying the feathered strings on the *djuda* trees. Rays of the sun touch them.' (Berndt, *Djanggawul*, 1952: 103.)

[56] Berndt, *Djanggawul,* 1952: 100. Song 36.

[57] Berndt, *Djanggawul,* 1952: 103. Song 39.

[58] Berndt, *Djanggawul,* 1952: 170–71. Song 85.

[59] Berndt, *Djanggawul,* 1952. See Chapter 15, 'The Djanggawul Song Cycle: Part Six', 183–200; and Chapter 16, 'Comments on Part Six of the Songs', 201–14. For an example of this imagery see Songs 90–91, 183–85, and commentary 201–06.

people across the land.[60] At each site on their journey, in each clan country, the actions of the mythic ancestor beings has a specificity with which that clan uniquely identifies, which at the same time links it into kin relationships (relationships of likeness) with other clan groups on the path of that same ancestor being. Each land-owning group is 'connected with others' in this way, by at least one major myth cycle, usually two, and frequently more. This system has been succinctly described by Nancy Williams as it relates to the issue of land tenure or ownership. It is notable that in her important book *The Yolngu and their Land*, she chose, as a way of illustrating these relationships and their importance, to focus on how they were expressed through the use of 'lengths of ornamented string' in ceremony.[61]

In the years that followed Mawalan Marika's death in 1967, a number of funeral rites were held in his honour. Berndt documented the first of these held in September 1968 at Yirrkala. Organised by his son Wandjuk Marika, it was formulated around the myth of the Djang'kawu. Dancers postured in the style of djanda the Djang'kawu ritual/sacred goanna. A sand sculpture representing Yalangbara, the Djang'kawu sacred site and Mawalan's spiritual home was built, with three rows of plain sapling poles marking out the ground, from which long 'feathered strings' were festooned (Fig. 8.15A&B).[62]

Nancy Williams documented another ceremony held in 1970, commemorating both Mawalan and his brother Mathaman who had then only recently passed away.[63] This was a Djungguwan, a ritual complex supported by the Wäwilak myth. The ceremony could serve multiple purposes; a general fertility ritual, it could be used as a framework for circumcisions and for honouring the dead as in this case, and was an age-grading ceremony for initiates on the path in-between those two

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[60] Stanner, W. E. H. 'Some Aspects of Aboriginal Religion', *Colloquium* 9 (1), 1976: 19. Quoted in Williams, Nancy M. *The Yolngu and Their Land: A System of Land Tenure and the Fight for Its Recognition*. Stanford, CA: Stanford University Press, 1986: 17–18.
[61] Williams, *The Yolngu and Their Land*, 1986: 38–41.
[62] Berndt provided a limited description of the event. Berndt, Ronald M. *Australian Aboriginal Religion*. Leiden, Netherlands: E. J. Brill, 1974. Fascicle One, Chapter One: 'Introduction', pl. 15–20 and notes, 37–38. Fascicle Two, Chapter Four: 'North Australia', pl. 41–46 and notes, 39–40.
[63] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 1.

points.[64] The Djungguwan has been particularly well documented: with three ceremonies being filmed: at Yirrkala in 1966, at Gurka'wuy, Trial Bay in 1976, and again at Yirrkala in 2002.[65]

The photographs of the Djungguwan ceremonial ground (molk) at Yirrkala in 1970, in Williams' book, show three djuwany ceremonial poles representing the Wäwilak sisters and child, with feathered string or ceremonial rope, called malka hung between them (Fig. 8.16A&B). As Williams explains these strings are generally understood to represent or show the path along which a spirit being travelled, linking places and peoples. The pattern of the feathers on the string itself encodes this:

> The long strands of fibre string decorated with white feather down represent the path of honey bees flying in a straight line as they go between Mirrngatja (Mandhalpuy clan country) … and Yirrkala (Rirratjingu clan country). The white down is like the white foam on honey and also the 'white bees' inside the nest. Lumps of beeswax fixed at intervals on the feathered string represent sites (thus lands and peoples) where the bees touched down on the flight and their relationships through the journey of the bees.[66]

On the ceremonial ground, this path is tethered to an actual spatial orientation and geography. As again explained by Williams, the line of the string (supported by the line of the poles) is oriented so that it 'points from' the site where the ritual is being performed (or that the ceremonial ground on this occasion is symbolising), and 'points toward' another site in the land of a linked group—usually of particular significance either for the organising group, or if a funeral/mortuary ritual, specifically for the individual being commemorated.[67]

At the Council Meeting in 1970 referred to earlier, Roy Marika (brother of Mawalan and Mathaman and head of the Village Council), spoke about how the Wäwilak myth, and the Djungguwan ceremony in particular was adopted by the Rirratjingu clan from the Mandhalpuy clan at Mirrngatja and brought to Yirrkala, in the time of

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[64] Morphy, Howard. Ancestral Connections: Art and an Aboriginal System of Knowledge. Chicago and London: University of Chicago Press, 1991: 85.
[65] Graham, Trevor. *Ceremony: The Djungguwan of Northeast Arnhem Land*. Film Australia. 2006. A compilation of all three films. See also www.filmaustraliaceremony.com.au
[66] Williams, *The Yolngu and Their Land*, 1986: 41.
[67] Williams, *The Yolngu and Their Land*, 1986: 41.

his grandfather's generation. He recounts how his father Djuwakan, then a young boy and his father (Roy's grandfather), joined up with a group of the Marrangu people (at Raymangirr on Arnhem Bay) and 'went to Western Arnhem Land to get the law for Wawalak law.' 'They got this story from Mandalpuy… got the law about the Djungguwan law and Djunggawan object which we have today…'[68] Arguably then, the path of the honey bees flying from Mirrngatja (Mandhalpuy clan country) to Yirrkala (Rirratjingu clan country) in the 1970 Djungguwan, is not only that of spirit beings in the Wäwilak myth, but also the path on which the myth itself was carried by living historical people. The point remains that the myth links different groups of people in different places as the malka string (or ceremonial rope) signifies: the Mandalpuy at Mirrngatja on the Arafura Swamp in the west, the Marrangu at Raymangirr on Arnhem Bay, and the Rirratjingu at Yirrkala.

Ian Dunlop's film of the 1976 *Djungguwan at Gurka'wuy*, shows that the malka string or rope is made up of multiple strands of white-feathered string which are seemingly left loose, bound at intervals by short sections of overlaid red feathers. This ceremony was directed by the Marrakulu clan, on their clan country. In the film, we are told by Ian Dunlop's voice-over narration that the white feathers represent:

> the sea flowing into and out from, the [Gurka'wuy] River. The red feathers tell where the islands are … places where the sacred entities, lie in the sea … The Malka is also the bees' nest. The white is the honey, the red the wax. Malka is also the path of the honey-bee across the different lands it journeyed over, touched and thereby linked.[69]
>
> [Video 14A—*Malka feather string rope*, Gurka'wuy 1976]

The photographs in William's book are taken on the last day of the 1970 Djungguwan at Yirrkala, with the malka string attached to the ceremonial poles,

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[68] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 48–49. As Roy explained the chain of events: 'Mandalpuy handed over to Marrangu and the Marrangu came to the Rirratjingu group and he found and taught the Rirratjingu.' Millurpum later added: 'Those three groups is one group but two different languages, but we have one law, Marrangu, Mandalpuy and my clan Rirratjingu.' (In the transcript, Wandjuk who is translating ascribes his own relationship to the actors involved, removing them a generation: 'my grandpa, my father's father, named Djuwakan.' Later on in the transcript when the story is repeated by Millirpum—on page 63—it is noted in parentheses by Dunlop that Djuwakan was the father, rather than grandfather, of that generation.) This story was told to Nicholas Peterson by Mawalan in 1966. Caruana, Wally. 'The Past 100 Years: A Brief History of the Artists and Their Art'. In Caruana and Lendon eds., *The Painters of the Wagilag Sisters Story*, 1997: 11.

[69] Dunlop, Ian. *Djungguwan at Gurka'wuy: Film Script and Notes*. Lindfield, NSW: Film Australia, 1990: 75.

which only appear then for the first time—the completion of the decoration of the ceremonial ground heralds the completion of the ceremony. Ian Dunlop's film *Djungguwan at Gurka'wuy* documents the major steps in getting to this point, including other, earlier uses of the malka. During the construction phase of the ground, when it is only a series of mounds, the malka is borne by a number of young men across the site. The first in line has the malka tied around his head, the others behind him each carry a section of rope. They kneel, resting the rope on their shoulders, while shaking bundles of leaves, as Dunlop's voice-over explains: 'They are the honey bees, wings whirring. The Malka rope is their path, and also their nest' (Video 14B—*Honey bees, wings whirring*, Gurka'wuy 1976).[70]

In her catalogue essay for *Yalangbara: art of the Djang'kawu* Margie West develops Williams' analysis in her discussion of the 'distinctive orange feathered pendants' or wana used by Dhuwa clans.[71] She demonstrates how variations in design (the types of feathers used and their distribution, the pattern of interspersed sections of beeswax covered strings or bare cord) are used to distinguish individual clans, and different ancestral sites within the one clan estate. To illustrate this point West contrasts the wana associated with the eastern sunrise side of Yalangbara (in Rirratjingu clan country), with those associated with the western sunset side (Fig. 8.14A). The wana decorating the basket and digging stick or mauwalan held by Wandjuk in this photo from 1970, are identified by West as symbolising the high sand dunes at Yalangbara.

> The red colour here represents the sun's rays at sunrise, the small green feathers placed intermittently along the length of the tassels represent the sacred djota, or casuarina trees, at Yalangbara, while the terminal white tufts of seagull feathers are the foam of the waves that wash onto the shore.[72]

The design of these wana is the same as that of the wana attached to the *Djanda* pole illustrated earlier (see Fig. 8.11). In the catalogue West also illustrates a digging stick made by Wandjuk Marika in 1976, wrapped with string and similarly

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[70] Dunlop, *Djungguwan at Gurka'wuy: Film Script and Notes*, 1990: 87.
[71] West, Margie. 'The Sanctity of Ordinary Objects: Material Items of the Djang'kawu'. In Margie West ed., *Yalangbara: Art of the Djang'kawu*, Darwin: Museum and Art Gallery of the Northern Territory, 2008: 139–49.
[72] Williams, *The Yolngu and Their Land*, 1986: 49. Cited in West, 'The Sanctity of Ordinary Objects', 2008: 143.

adorned with three Yalangbara wana. This digging stick (at the time West was writing, as it remains today), is displayed beside the Yirrkala Bark Petition in Parliament House in Canberra (Fig. 8.14B). For West this conjunction underwrites the claim:

> [that] … the feathered tassels and the items they embellish operate just like clan paintings as identifiers of clan identity and conceptual maps of country and its ancestral events.[73]

Lots of special strings

In the transcript of the 1970 Council Meeting held to deliberate on the proposed Film Australia project, the discussion turned repeatedly to the subject of string.

Narritjin first 'mentions about the Madayirri'—'the special string'—made when somebody dies, which he associates with a clan's bäpurru, early on in the meeting.[74] (The term marradjiri, as discussed earlier, denotes 'public or open, outside' as opposed to 'restricted or closed, inside'.) In the transcript Wandjuk explains that there are two types of marradjiri string, the Dhuwa made of white feathers, which they call malka, which we have already seen used in ceremony; and the Yirritja made of possum fur. Narritjin talks more 'about his own Madayirri which was created by his ancestor or creature Nyapilingu,' (i.e. possum fur string as in the story which began this chapter), and how, 'for some special thing, making beautiful maybe with red feathers, or painting.'[75] Later, Nyipaynga of the Yirritja Dhaḻwangu clan refers to the special string they make called yuwan to 'represent the spirit people of the Dhaḻwangu clan'—the ancestors, 'the great great father's father's father's father.'[76] In 1970 Ian Dunlop took photos of a Manggalili clan Yingapungapu ceremony organised by Narritjin at Yirrkala, in which lengths of Yirritja possum fur string are hung from digging sticks, paralleling the use of feathered malka in the Dhuwa Djungguwan (Fig. 8.17). The richness of the

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[73] West, 'The Sanctity of Ordinary Objects', 2008: 144.
[74] Bäpurru denotes a clan as an eternal, spiritual entity. It may be used to refer to the living members of a clan as a collectivity, but it also encompasses former (deceased) members and those potentially yet to come. By extension it is also used to name the mortuary rites that return the birrimbirr spirit of a deceased person to the clan's spiritual reservoir. The deceased person (the deceased person's body) is also referred to as bäpurru during this time. Definition provided by Frances Morphy, pers. comm. 25 January 2016.
[75] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 9.
[76] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 38.

adornments on the material artefacts used in this ceremony, made of string, feather and fur, complement the obviously dramatic ritual action.

At the Council Meeting, Ian Dunlop had sought not simply the approval of clan leaders, but importantly their collaboration in the filming project. In the face of concern about the influence of the mining town, the clan leaders saw value in making a record of their traditional 'law' for future generations. As expressed by Mungurrawuy Yunupingu, leader of the Gumatj clan:

> So we give our law and talk through the film and talk to our own people, young people and children … so they can know our law is strong … so they can hold with their two hands and stand with their feet and teach their children to carry on.[77]

Discussion turned to what the clan leaders wanted to be represented on film. As each spoke in turn, this developed into a compendium of the ceremonial repertoire of each of the different clans. It was in this context—the relationship between the clans, their coming together in discussions like this, and in ceremony—that the subject of string was introduced again. At one point Mungurrawuy drew an analogy between the film project and the marradjiri string: 'now we are talking through this recording through this film and the Madayirri string'.[78] It is evident that the parallel he sees is that both are agents for linking the generations within a clan together, and linking the clans together with each other.

When it was Wandjuk's turn to address the meeting he went into some detail about the different 'special strings' the Rirratjingu have and their uses; the malka string used in the Wäwilak ceremony, and another 'long string of feathers', called merri or 'seagull string' which was used in a ceremony specific to the Rirratjingu and the Yirrkala area.[79] In the gloss Wandjuk gives, this string specifically links the Rirratjingu clan with the Djambarrpuyngu clan (and possibly a third clan, the

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[77] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 14.
[78] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 16. Mungurrawuy Yunupingu: '… now we are talking through this recording through this film and the Madayirri string … place … the Barparu … [Wandjuk explains] that's the tribe, tribe after tribe, every individual tribe … he's referring to all the different elders here.'
[79] The seagull or sea tern (ngurula) features in the Djang'kawu myth. A flock of these birds was seen by the sisters and their brother in open sea on their journey from Burralku to Yalangbara, and they sang about them. Marika, Mawalan. 'The Journey of the Djang'kawu.' In Margie West ed., *Yalangbara: Art of the Djang'kawu*. Darwin: Museum and Art Gallery of the Northern Territory, 2008: 13–18; 13.

Gamalangga) and their respective clan territories, at Yirrkala and Arnhem Bay. In ceremony, 'they used to circle around dancing with these string Mirri.' At the end of the ceremony, the string was cut, and the people 'changed from human beings into birds'. The Rirratjingu, the seagull people, stayed in Yirrkala with their shorter portion of the string, and the Djambarrpuyngu 'took one long string towards western Arnhem Land to Arnhem Bay'.[80]

At Yirrkala, the Berndts collected a number of carved and painted wooden seagull bird's heads with feathered strings attached, used as both love magic tokens and in mortuary ritual.[81] The 'Love Magic Object' illustrated by the Berndts in 1950 fits also with their description of the message string sent to notify of a death (said to 'contain part of the deceased person's spirit'): the feathered string attached to the bird's head being similarly arranged to form the body and wings (Fig. 8.18).[82]

There are numerous examples in the historical record of string being used by Yolngu as a homologue of relationships between people on an interpersonal level: the cutting of a string used to sever a marriage being one example.[83] Berndt describes an intriguingly simple technique for establishing the relationship in the first place, in which a man plies his suit using a length of string (relevant to the girl's moiety) '… placed on the ground and stretched out so that one end leads into the girl's camp and the other into his: he then begins to draw it toward him.[84] The feathered string used for love magic was specifically obtained from raŋga objects.[85] Its efficacy seems to be the result of it either holding or being a conduit for märr, or spiritual power.[86] As both Thomson and Berndt have described, the woman who was the object of love magic was believed to have no control over the situation: 'she is held to be compelled by the power of *marr* and therefore not a free agent.

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[80] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 59–62, 70–72.
[81] Elkin et al., *Art in Arnhem Land*, 1950: 84–91. Berndt, *Love Songs of Arnhem Land*, 1978: Addendum: 'Love-Magic Objects', 192–94.
[82] Elkin et al., *Art in Arnhem Land*, 1950: 88.
[83] Berndt and Berndt, *The World of the First Australians*, 1964: 171. Rudder, *Tying a Society Together with String*, 1975: 10. Berndt, *Love Songs of Arnhem Land*, 1978: 194.
[84] Berndt and Berndt, *The World of the First Australian*s, 1964: 262. Berndt, *Love Songs of Arnhem Land*, 1978: 193.
[85] Berndt, *Love Songs of Arnhem Land*, 1978: 192–93. 'To repeat, this string which was used to decorate *rangga* emblems was also used to make these love charms.'
[86] For a discussion of märr see Thomson, Donald. 'The Concept of "Marr" in Arnhem Land'. *Mankind* 10 (1), 1975: 1–10.

The power or pull of *marr* is a supernatural or *wangarr* matter and is accepted as beyond the woman's power to resist.'[87]

The Berndts and others also recorded the 'common practice' of a man initiating a relationship—often an illicit one—by dropping a length of string into the desired woman's basket, often through an intermediary. If the woman was Yirritja moiety the string would be made of possum fur, and if she was Dhuwa it would be a red feathered string.[88] McCarthy recorded a number of similar uses of string. In his account of these practices the ownership of the string—who the string belonged to—was an essential element in the exchange. McCarthy described a number of circumstances, where a particular outcome would result if something was to occur with a person's string: 'If a youth … should pick up a string which some woman had discarded or lost; should a man burn a women's string; if a woman gave her string to a man; a man stealing a string from a woman; if a man drops a string and a woman picks it up and wears it; if a woman takes a string from a man and hides it in her carrying-bag …'[89]

Women and men often wore string, tied on their body—usually plain bush string. In some instances, as in strings around the waist, they had a functional purpose: being used as a belt to carry things. As a ligature binding the affected part of the body, string was also used as a remedy believed to combat pain: headache, period pain, muscular pain, backache, for example.[90] The two strings Wonggu characteristically wore around his waist, he told Chaseling, were for his chronic backache.[91] Some strings on the body were seemingly worn purely as decoration. In many historical photographs both men and women have lengths of string or some sort of cordage tied quite closely around their neck (Fig. 8.19). McCarthy

[87] Thomson, 'The Concept of "Marr" in Arnhem Land', 1975: 6. Berndt, *Love Songs of Arnhem Land*, 1978: 192–93.
[88] Berndt and Berndt, *The World of the First Australians*, 1964: 261–62. Warner, *A Black Civilization*, 1937: 84.
[89] McCarthy, 'The String Figures of Yirrkalla', 1960: 415–511; 423–24.
[90] Hamby, 'Wrapt with String', 2007: 215–19.
[91] McKenzie, Maisie. *Mission to Arnhem Land*. Adelaide, Sydney, Melbourne, Brisbane, Perth: Rigby. 1976: 80.

recorded that women wore loops of string used for making string figures as necklaces, so they were close to hand 'whenever opportunity offers for a gossip.'[92]

Conclusion

String, made either of possum fur or bark fibre with possum fur or with feathers laid into it is used for wrapping sacred objects, as the core of waṉa, for wrapping armbands and for fashioning matjka and other items worn in ceremony, and for making different forms of marradjiri strings: the 'long form' Dhuwa malka and Yirritja possum fur ceremonial ropes, and 'short form' message strings, and strings used for love magic. These 'special strings' in their different forms and contexts, appear to carry some sort of spiritual agency, life-force or märr, whether that of an individual, a clan or bäpurru, or some material of the waŋarr realm itself. This string is highly valued, and always retained and recycled. In the quote from Birrikitji Gumana, the Dhaḻwangu leader, with which I started this chapter, the importance of string to the conduct of ceremonial life is given personal expression. Birrikitji complains about his own lack of activity on this front being due to his lack of a wife to make string for him: 'that's why I have been just sitting back and doing nothing.'[93] Mirroring its role in the functional everyday world, as the necessary prerequisite for ceremony, string is a primary generative agent in the symbolic economy of Yolngu.

In conversation with Joe [Dr Joseph Neparrnga] Gumbula about the names given to the different forms of strings he affirmed its importance:

> Strings are creating, create something … the history of strings do make things, surrounding peoples, surrounding nature, surrounding ceremonies … and we title them names … string is the manufacturer for all things. That's what string is related to. String in the art … in a piece of still art. A passion that is going to give you energy to make the string into … String's words becomes reality. String's words becomes painting. String's words become story. String's words become something that people wore in ceremonies … Strings is the maker of things …[94]

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[92] McCarthy, Frederick D. 'String Figures of Australia'. *The Australian Museum Magazine* 12 (9), 1958: 279–83; 280.
[93] Dunlop, 'Yirrkala 1970—Council Meeting', 1976: 46.
[94] Interview with Joe Gumbula, Canberra, 10 July 2013.

In his 1975 study ‘A Society Tied together with String’, Rudder documents the expression raki ngayangungur—meaning string at the centre of the emotions—‘something which held or drew a man.’ He expands on this as pertaining to an individual’s basic appetites ‘food, sex or any other basic drive or desire’.[95] As documented by Fiona Magowan: ‘The principle of Yolngu relatedness (gurrutu) is spoken of as a ritual string (raki) which ties one person structurally and emotionally to another.’[96] Recent fieldwork by Bree Blakeman undertaken at Mata Mata, has documented other conjunctions of the term raki/string, connoting the relationship between things, persons and places, as more like a third term, the thing that joins. ‘(We) join together the ends of the string (here). For ceremony, for song. For the power (that we hold in common). We are always joined together (with this place).’[97]

A print workshop run by the Buku-Larrnggay Mulka Art Centre in 2012 produced a potent reprise of this theme. In Djuwakan Marika’s screenprint, *Mari*, he combines a self-portrait with a photograph of his grandfather Wandjuk taken in 1948 by Fred McCarthy. Wandjuk is on the beach at Yirrkala in the process of making a string figure (Fig. 8.20). In the 2012 print the string held by Wandjuk morphs into the earphone cords of his grandson, linking them together (Fig. 8.21). As Djuwakan has said:

> In his photo he is holding *raki* (string) and in my photo I am listening to my music. It looks like he is holding my music. … I like how the *raki* links my mari and me together even though he lived in the past and I am in the present.[98]

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[95] Rudder, *Tying a Society Together with String*, 1975: 10.
[96] Magowan, Fiona. *Melodies of Mourning: Music & Emotion in Northern Australia*. Crawley, WA: University of Western Australia Press, 2007: 64.
[97] Bree Blakeman, ‘Carrying wawa home: in memory of Don Burarrwanga’. http://vimeo.com/43799932.
[98] Djuwakan#2 Marika, ‘Artwork Story’, *Mari*, Screenprint, 2012. Yirrkala Print Space.

Chapter 9
In the footsteps of the Wäwilak: dancing with strings

> Some women may be seen on the edge of the dance-ground, their bodies swaying, their feet moving up and down, or in and out, but always in the one place, and their hands playing a string game, perhaps without string.[1]
>
> A. P. Elkin, 1950

Introduction

For McCarthy's Rirratjingu informants in Yirrkala (Mawalan, Mathaman and Wandjuk Marika), explanation of the origin of string figures and a sanction for their making was provided by the Wäwilak sisters myth. In this chapter I explore the nature of that association, tracking it through visual as well as oral texts: ceremonial objects, paintings, drawings and string figure designs. My aim is to 'locate' the relationship between string figures and the Wäwilak sisters.

The best known version of the Wäwilak sisters myth (as documented by Warner and Berndt) focuses on the climactic events at the sacred well at Mirrarmina on the Upper Woolen River in the western part of Yolngu country, where, in the story, the younger sister makes string figures, while dancing to ward off the advances of the python Yuḻunggur. Through this association string figures are linked with the sacred sexual potency of young women, and menstrual blood; a connection reiterated in secular form in the Goulbourn Island Love Song cycle recorded by Ronald Berndt.

The Wäwilak sisters myth-ritual complex is subject to cultural variation, historical change, and localised difference. The story of matjka-wuma told to McCarthy belongs to an earlier part of the myth, when the sisters are travelling through country on the way to the well at Mirrarmina: as they travel from place to place the Wäwilak sisters make a 'record in string of all the animals, plants and other things they saw'.[2] In north-east Arnhem Land, as I will show, this section of the myth

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[1] Elkin, A. P., Catherine Berndt, and Ronald Berndt. *Art in Arnhem Land*. Melbourne and London: F. W. Cheshire, 1950: 4–6.
[2] McCarthy, Frederick D. 'The String Figures of Yirrkalla'. In *Records of the American and Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford, Volume 2: Anthropology and Nutrition. Parkville, Vic.: Melbourne University Press, 1960: 415–511; 427.

articulates with local mythic narratives concerning Wuyal, the Dhuwa honey ancestor.

The Gunapipi, Djungguwan and Nguḻmark ceremonial complexes all relate to events at Mirrarmina, and involve significant quotients of secret-sacred or 'inside' men's ritual. By contrast the Wäwilak-Wuyal cycle, while still having religious content, was considered 'outside' or public. While 'dancing with strings' occurs as part of men's secret-sacred practices (and is probably what McCarthy was referring to when he recorded that 'men make some figures on the ceremonial grounds when enacting *Wawilak* sisters rituals'), it is also seen in public ceremonial contexts (Fig. 9.1). Both in the historical record and my own contemporary fieldwork, women also 'dance with strings'. I was first made aware of the connection between the making of string figures and 'dancing with strings' through my fieldwork (in January 2009).

The Wäwilak sisters myth

The events that occur at the sacred well at Mirarrmina are the main focus of the Wäwilak sisters myth as it was recorded by Warner in Milingimbi in the late 1920s and the Berndts in Yirrkala in 1946–47.[3] After a long journey the two sisters stop and camp at this waterhole, where unbeknownst to them, lives the great snake Yuḻunggur. The elder sister who was pregnant (and in some versions already has a child) has just given birth, and intermittently discharges afterbirth blood that runs into the sacred well. (Details vary in different tellings of the myth, even by the same informants, in particular the roles of the younger and elder sister.) Yuḻunggur is disturbed by the blood, specifically the smell of it.[4] He/she comes out of the well, spitting water into the sky: 'He hissed. This was to call out for rain.'[5] The sisters build a bark hut for shelter: 'They did not see the great python lying there watching

[3] Warner, W. Lloyd. *A Black Civilization: A Social Study of an Australian Tribe*. New York and London: Harper and Brothers, 1937: 250–59. Berndt, Ronald M. *Kunapipi: A Study of an Australian Aboriginal Religious Cult*. Melbourne: F. W. Cheshire, 1951: 18–32.
[4] Berndt, *Kunapipi*, 1951: 21. Warner, *A Black Civilization*, 1937: 252. Berndt, Catherine H. 'Monsoon and Honey Wind'. In *Échanges et Communications: Mélanges Offerts à Claude Lévi-Strauss à L'occasion de Son 60ème Anniversaire*, edited by Jean Pouillon and Pierre Maranda. Vol. 2. The Hague and Paris: Mouton, 1970: 1306–26; 1310. In all three accounts emphasis is placed on 'the smell of blood' being the thing that disturbed Yuḻunggur.
[5] Warner, *A Black Civilization*, 1937: 253.

them.'[6] They then take it in turns to dance and sing in order to stop the rain that is now pouring down, and once they finally see the snake, to keep Yuḻunggur at bay.

This is a significant sequence in the narrative, as it links the actions of the Wäwilak sisters in the mythical past with the actions of contemporary ritual celebrants in the present. The songs and dances the sisters perform to ward off the snake in the myth constitute the repertoire for the ceremonies performed in consecration of that myth. The sisters sang all the songs of the Djungguwan, Gunapipi and Nguḻmark ceremonies in increasing order of sacredness (power or strength), beginning with the outside garma songs sung in the main camp. It is in this context that the Wäwilak sisters are said to dance holding string figures. As Berndt relays:

> So the *wirlkul* [i.e. the younger sister] began to dance, to hinder the Snake's progress. She moved gracefully, shuffling her feet, swaying her body from side to side, and holding in her hands feathered string from which she made cats-cradles as she danced. This particular dancing is called *keiweijun*, for as the girl danced she called out *kei'wa! kei'wa!* (Go away! Go away!).[7]

As 'the rain continued and came down harder and harder', the sisters' desperation increased. 'They decided that they must sing something even more powerful, more taboo, and deeper within the ceremonial camp of the men … They sang Yurlunggur and menstrual blood.'[8]

> The Wauwalak took it in turns to dance; when the younger sister danced, the Snake stopped; but when the older one continued, [attracted by the blood] she came forward again. So the younger girl danced longer than the other, and as she swayed from side to side the intensive activity caused her menstruation to begin; then the Python, smelling more blood, came forward without hesitation.[9]

The sisters and their children are swallowed by the snake, regurgitated and swallowed again. The Wäwilak were Dhuwa, as was the snake. Yuḻunggur had in effect eaten his own. In the symbolism of the myth swallowing or 'eating' is also a metaphor for sexual intercourse, so that this action is equivalent to incest. An

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[6] Warner, *A Black Civilization*, 1937: 253.
[7] Berndt, *Kunapipi,* 1951: 22. The term wirrkuḻ which means 'a young childless woman' is used to refer to the younger sister; the term gungman which means 'a woman who has a child/children' is used to refer to the elder sister.
[8] Warner, *A Black Civilization*, 1937: 254.
[9] Berndt, *Kunapipi,* 1951: 23.

altercation ensues between Yuḻunggur and serpents from surrounding clan areas over the propriety of what he has done—with all the snakes standing up high in a sky of darkening clouds, their argument unleashes storms of lightning, which brings on the regional north-west monsoon.

In 1946 Mawalan made sculptured figures of the Wäwilak for the Berndts' collection (Fig. 9.2).[10] The elder sister (or gungman), on the left, is identified by her full, elongated 'fallen' breasts (the result of breast feeding), compared to the budding breasts of the younger sister (or wirrkuḻ) on the right, who wears a matjka, chest harness or breast girdle, made of 'ochred bush string' (i.e. probably d̲awu).[11] Originally, both sculptured figures also wore a bulkuwulku or chaplet (a wreath for the head), made of feathered string, with a hanging pendant terminating in 'wild-honey wax and seagull feathers'.[12]

Conventionally, matjka are made of multiple loops of string bound together along one section of their length: the hank of multiple loops separated into two, cross over at the front of the body, while the bound section acts as a brace at the back—as seen on the child in these stills from the 1948 film footage (Fig. 9.3). McCarthy collected a number of matjka on the Arnhem Land Expedition. The two examples in Figures 9.4A and 9.4B were collected in Yirrkala. As documented by the Berndts, in both western and eastern Arnhem Land matjka were worn by young girls as a marker of the onset of puberty, specifically as part of ritual adornment marking first menstruation.[13] The word 'matjka' is also the Yolngu term for string figures. McCarthy collected a string figure of a matjka (Fig. 9.5).

The mixing of afterbirth/menstrual blood with fresh water, as occurred initially in the well at Mirarrmina, and then through the rain that falls, are the basis for the painted patterns on the figures. As reported by the Berndts the design on the lower

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[10] Illustrations of these figures were first published in Berndt, R. M., and C. H. Berndt. 'Sacred Figures of Ancestral Beings of Arnhem Land'. *Oceania* 18 (4), 1948: 309–28. For description of the figures see pages 314–17.
[11] I have not examined these sculptures but it is likely that the ochre colour of the matjka is because it is made of d̲awu, rather than it being painted with ochre.
[12] Berndt and Berndt, 'Sacred Figures of Ancestral Beings', 1948: 315.
[13] Berndt, Ronald M., and Catherine H. Berndt. *The World of the First Australians*. Sydney: Ure Smith, 1964: 153, 155.

half of the figure of the younger sister represents the flow of menstrual blood inside her body (the diagonal cross lines), and uterus (the dominant uprights). A pattern of vertical lines depicts menstrual blood 'running down her legs'.[14] (Obscured on the figure by the pubic apron it can be seen in the Berndts' annotated diagram (Fig. 9.6)).

In 1948 Mawalan organised the performance of 'part of [a] Wawilak Sisters Ceremony', for the Expedition visitors. Described by Bob Miller as 'a special make-up for the photographers', it was recorded on film.[15] A ceremonial ground with two djuwany poles representing the Wäwilak sisters was set up, as for a Djungguwan, and several dances were performed re-enacting the sisters' dancing to drive away Yuḻunggur. As recorded by McCarthy, the body design of yellow and red ochre vertical stripes extending down the thighs, with which some of the dancers including Wandjuk were painted for this performance, represented the menstrual blood of the elder Wäwilak (Figs. 9.7 and 9.8).[16] (As noted earlier, the roles of the elder and younger sisters change around in different accounts of the story.)

The djuwany poles used in this performance were collected by Mountford, and illustrated in the first volume of the *Records* of the Expedition on 'Art, Myth and Symbolism' (Fig. 9.9). The lower half of the pole representing the younger sister has the same design as on the sculptured figure collected by the Berndts—identified this time, as reported by Mountford, as 'the water in the sacred well of *jurlungurr*.' On the upper half of the figure parallel vertical lines represent 'the water flowing into the well.'[17] The curving '*kunja:lili*' (gunyalili) boomerang pattern/motif—a feature of the painted designs on both sculptured figures—is seen on the pole representing the elder sister, identified here by Mountford as afterbirth blood.[18] The lines of dots in the design on the upper parts of both poles,

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[14] Berndt and Berndt, 'Sacred Figures of Ancestral Beings', 1948: 316.
[15] Setzler, Frank M. 'Diary. Australia 1948, Vol. III', 26 August 1948. Papers of Frank Maryl Setzler, 1848–1973. MS 5230, NLA. Miller, Robert R. 'Diary. Book II', 26 August 1948. Papers of Robert Rush Miller, 1947–1951. MS 10053, NLA.
[16] McCarthy, F. D. 'Diary 5. Yirkalla Diary No. 2 and Oenpelli', 27 August 1948. Papers of Frederick D. McCarthy: MS3513/14/5. AIATSIS.
[17] Mountford, C. P. 'The Story of the Expedition'. *In Records of the American-Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 1: Art, Myth and Symbolism. Carlton, Vic.: Melbourne University Press, 1956: 437.
[18] Mountford, 'Volume 1: Art, Myth and Symbolism', 1956: 437.

and which reiterate the curved line of the boomerang design on the sculptured figures—'small scars' called *'kapu:wa:pa'* (gapu wapa) or 'water painting'—represent the rain made by the python (see Fig. 9.6).[19] Some of the same design elements are seen in the 1946 bark by Mawalan, *At Muruwul, home of the Yulunggul Python*, also collected by the Berndts (Fig. 9.10).

'Girls twisting their breast girdles, making string figures: and men with erect penes'—the Goulbourn Island Love Song cycle

The role of string figures as an 'attribute' of the Wäwilak associated with maturing female sexuality and power—the advent of menstruation—is recapitulated in the Goulbourn Island Love Song cycle that Ronald Berndt recorded with Mawalan in 1946–47. While the register of the song cycle is secular, it correlates closely with religious or sacred imagery and symbolism, adumbrating the major themes found in the Wäwilak myth. The same elements appear: snakes/penises, huts/vaginas, water, menstrual blood, monsoon rain, matjka and string figures (see Fig. 9.11). The snake and cabbage palm motifs from Mawalan's *At Muruwul*, and the design representing menstrual/afterbirth blood seen in the sculptured figures and djuwany poles, are reiterated in this drawing by Mawalan and Wandjuk illustrating the Goulbourn Island cycle.

It has been argued that the relationship between the religious and secular, or sacred and profane, in Yolngu society is best thought of as a continuum, as opposed to the binary division between the two that tends to regulate Western thought.[20] Berndt characterises the Goulbourn Island cycle, as having a 'semi-religious or sacred aura', due to the content it shares with the Wäwilak sisters myth.[21] These song cycles were performed openly in the main camp largely as entertainment rather than as part of a ritual cycle. The way imagery or symbolism is shared or maps across the two genres illustrates how imbricated the religious and the secular are in Yolngu culture—such that the potential for both readings or registers, I would suggest, exists simultaneously. Berndt argues that the popularity

[19] Berndt and Berndt, 'Sacred Figures of Ancestral Beings', 1948: 316.
[20] See Morphy, Howard. *Ancestral Connections: Art and an Aboriginal System of Knowledge*. Chicago and London: University of Chicago Press, 1991: 78–81.
[21] Berndt, Ronald M. *Love Songs of Arnhem Land*. Chicago: University of Chicago Press, 1978: xv. He characterises all the love song cycles in this way.

of songs—and here he is referring to both the love song cycles and the ritual song cycles—depends on the hearer's familiarity with their '"story" value', the ability of the listener to identify where the ideas in the songs fit meaningfully in a context which provides value for them.[22] Given the intertextuality of these cultural forms, one can imagine how both the sacred and profane could coexist in the mind of the observer/participant. Berndt argues that in the Love Song cycles they actually reinforce each other:

> What we have is a kind of illusory screen which appears to heighten sexual attractiveness, but in doing so strengthens religious feeling. … The signals that are provided not only enhance the physical appetite but implicitly support religious ideology and values.[23]

Berndt recorded 26 songs in the Goulbourn Island cycle, describing a series of events. In preparation for the monsoon rain and floods, people have built stilted huts around a large billabong. After the first storms of the season have passed, with the billabong now full of fresh water, people start to resume their activities, moving around outside. It is a relaxed time, and at this point (Song 9 in the cycle), young girls start making string figures using their breast girdles or matjka. Their breasts undulate with the movement of their hands. 'Twisting the string, leaning back on the forked rails of the hut', they sway their buttocks with seductive intent, as they watch the 'Goulbourn Island men with their long penes'.[24] 'We flutter our eyes at them as we twist the strings [say the girls]'.[25] Having only just reached puberty these girls are beginning to menstruate for the first time. In the next song 'they sit modestly with one heel pressed against the vulva … When they move their feet, the blood drips through the planks of the hut's floor into the water below and is washed away.'[26] In the following songs in the cycle, the young girls meet the Goulbourn Island men among the cabbage palms for sex: 'For they are ours—it is

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[22] Berndt, *Love Songs of Arnhem Land*, 1978: 47.
[23] Berndt, *Love Songs of Arnhem Land*, 1978: xv.
[24] With the setting of the story situated at a distance from Yirrkala (in western Arnhem Land, near Goulbourn Island), the people and the events described, Berndt argues, are given a foreign 'exotic' flavour that heightens the erotic ('stimulatory') attraction of the narrative. i.e. the 'long penes' of the uncircumcised Goulbourn Island men being different to the circumcised east Arnhem Landers having a titillating appeal. Berndt, *Love Songs of Arnhem Land*, 1978: 54.
[25] Berndt, *Love Songs of Arnhem Land*, 1978: 57–58. See Song 9, including Berndt's commentary following.
[26] Berndt, *Love Songs of Arnhem Land*, 1978: 58. See Song 10, and Berndt's commentary.

for this that they make string figures … [the men say]'. Intercourse encourages the girls' menstrual flow: 'Blood flowing like water … Always there that blood, in the cabbage palm foliage … Sacred blood flowing in all directions …'.[27] Berndt sees these songs as representing 'the core' of the cycle.[28] While, as Howard Morphy argues, the sexually explicit language of Berndt's translation gives 'far too literal an interpretation' to the poetic imagery of the original Yolngu texts, this does not alter the general thematics of the narrative.[29]

In the 'texts' I have looked at—both objects and songs—string figures are directly associated with female sexuality, specifically the sacred sexual potential of young women, and menstrual blood. This symbolic link has a metonymic dimension enabled by the flexible materiality of string: the matjka (chest girdles) that are worn by the younger sister/young women, who use them to make string figures (also called matjka). String figures are used to both attract men (as in the Goulbourn Island cycle), and keep them at bay (as when the Wäwilak dance with string figures to repel Yuḻunggur). In this respect, as instruments of the female principle with which they are associated, I suggest that string figures can be seen to have power, or märr. (This was confirmed to me by Joe Gumbula in an interview. See Ch 10: 12–13.)

The story of Matjka-wuma and the Wäwilak-Wuyal cycle

McCarthy recorded the Yolngu Matha term for string figures as 'maitka-uma'/'maidka-uma' (his transcription of matjka-wuma). This is a compound term, combining matjka, meaning string and things made with string (including string figures and chest harnesses), and wuma, a verb meaning to make or do.[30] The section of the Wäwilak myth relating to string figures, as told to McCarthy, which he recorded as the story of Matjka-wuma, involves the sisters' journey through country on their way to Mirarrmina, ending precisely when they reach the sacred

[27] Berndt, *Love Songs of Arnhem Land*, 1978: 60–61. See Songs 13 and 14. For the full cycle of songs covering this episode, see Songs 9–15 on pages 57–64.
[28] Berndt, Ronald M. *Three Faces of Love: Traditional Aboriginal Song-poetry*. Nelson Australia, 1976: 51.
[29] Morphy, Howard. 'Re-Reading Ronald Berndt: Exploring the Depths of His Yolngu Ethnography'. *Anthropological Forum* 19 (1), 2009: 73–97; 83–85.
[30] The function and meaning of matjka-wuma as a compound noun + verb was explained to me by Frances Morphy, pers. comm. 21 October 2010.

well. Both Warner and Berndt give only an outline sketch of this earlier part of the myth. The origin point of the sisters' journey is vague: 'the southern inland', 'the far interior', 'somewhere south in the "Bush."'[31] (The Berndts preferred to locate Wäwilak country as somewhere inland along the Roper River.) The path of their travels is equally vague—generalised as heading north towards the Arafura Sea.[32] Along the way, we are told that they named the various places where they stopped, and the plants they collected and animals they hunted for food. As glossed by Warner:

> On the way they killed iguana, opossum, and bandicoot for their food. They also gathered some bush yams (ippa). When they killed the animals, they gave them the names they bear today; they did the same for the yam. They gathered all the plants and animals that are in the Murngin country today. They said to each thing they killed or gathered, 'you will be maraiin by and by.'[33]

The story of Matjka-wuma fits with this general narrative template. It begins at Mudhawa/Mayawa on Buckingham Bay, where the sisters make string from the froth on wild honey.[34] They then make the figure of a frill-necked lizard. McCarthy's wording here suggests that the Wäwilak sisters are the first to make string—that they invent it as such.

> Maitka (string) came from the two Wawilak sisters: at Mudawa: at Buckingham Bay: they saw all the honey & made string from it. They made a string-figure of the Frill-lizard out of it.[35]

Continuing on their travels they make 'a record in string of all the animals, plants and other things they saw, as well as their own activities.'[36] The sisters travel from one place to another, making figures of the things that they see and do at each of

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[31] Warner, *A Black Civilization*, 1937: 248, 250. Berndt, *Kunapipi,* 1951: 19.
[32] In 1950 the Berndts mapped the last part of their journey, moving in an easterly direction from along the Liverpool River in the west to their final destination on the Woolen River. Elkin, A. P., Catherine Berndt, and Ronald Berndt. *Art in Arnhem Land*. Melbourne and London: F. W. Cheshire, 1950: inside back cover.
[33] Warner, *A Black Civilization*, 1937: 251.
[34] As explained by Djiniyini Gondarra. Interview with Djiniyini Gondarra, Darwin, 28 August 2012.
[35] McCarthy, F. D. 'Arnhem Land Expedition Diary No. 7. String-figure Techniques. Yirrkala', 1948. Papers of Frederick D. McCarthy: MS3513/14/6. AIATSIS.
[36] McCarthy, 'The String Figures of Yirrkalla', 1960: 427.

these places. The myth as McCarthy recorded it consists in effect of a list of names: of plants, animals, etc. associated with particular places.[37]

The opening sequence of the Matjka-wuma story suggests an intersection with the Wuyal myth, the subject of Wandjuk's bark painting *String Figure dreaming place* (see Figs. 4.5A, 4.5B and 4.5C). Wuyal is sometimes referred to as the honey ancestor. I was told versions of this popular legend a number of times during the course of my own fieldwork. In the manner of Rudyard Kipling's *Just So Stories* it could be titled, 'How the mayawa got his frill neck.'

In the story, as told to McCarthy by Wandjuk, Wuyal is out looking for sugarbag—his iconic 'culture-hero' activity. He follows the flight of a bee/bees to a tree where they nest. He chops down the tree which falls to form a creek. He collects the honey in his dilly bag. He then sees another bee and follows it. (The territory covered in Wuyal's journey and the location of the final denouement vary in different versions of the story.) In this version Wuyal's journey begins at 'Djerrowa' on the western side of Melville Bay—'string figure dreaming place'. He travels south to 'Anjobwi' near Caledon Bay, and then north again to a creek on the eastern side of Cape Wilberforce—at the tip of the thin spit of land which leads to the Bromby Islands off the mainland in the far north-east. It is here that Mayawa hears Wuyal chopping, and comes along to see what is happening. Mayawa (the frill-necked or blanket lizard) is in human form at this time (he is a man). He sees the honey that Wuyal has collected, and steals some from his dilly bag. Eating greedily, he gets a splinter of wood that was floating in the honey caught in his throat. He starts running around in pain, grimacing, trying to dislodge the splinter, but he cannot. Gradually he starts turning from a man into a lizard. He climbs a tree. And he 'remained a frill-lizard ever afterwards.'[38]

[37] It is generally understood that in the myth the sisters were in fact conferring names on these things as they encountered them, and so 'in essence bringing them into being' as part of the Yolngu world. Caruana, Wally and Nigel Lendon, 'Wititj the Olive Python and the Wagilag Sisters'. In Caruana, Wally and Nigel Lendon, ed. *The Painters of the Wagilag Sisters Story 1937-1997*. Canberra: National Gallery of Australia, 1997: 9.
[38] McCarthy, 'Diary 7', 1948. See Fig. 4.5A for full text of this story.

It is only in their later writings that the Berndts drew attention to the intersection between the Wäwilak sisters and Wuyal. In his work in Yirrkala, Ronald Berndt claimed to have collected the whole of the Wäwilak myth comprising the 'inside' cycle of 'some hundreds of songs,' and the 'outside' cycle of songs which, he writes, 'continue the story and reveal many aspects of the myth.'[39] In 1978 (in his book on the *Love Songs*) Berndt published a schematic diagram of the interrelationship of all the song cycles he recorded at Yirrkala (Fig. 9.12). In the diagram he includes 64 songs belonging to the 'outside' 'sacred (non-secret)' Wäwilak-Wuyal cycle as a separate complex—34 in the 'bush' series and 30 in the 'seaside' series.[40] If records of these still exist, they are embargoed in the Berndt papers until 2020.

The most developed account of the correspondences between the Wäwilak sisters myth and the Wuyal song cycle is given by Catherine Berndt in her 1970 article 'Monsoon and Honey Wind', based on her work with women in Yirrkala, Milingimbi, and on Elcho Island, between 1946 and 1964. In it she gives an evocative description of Wuyal:

> He has boomerang legs … and fastened over most of his body are tufts of wild cotton or downy white birds' feathers. On his arms and legs are bracelets of leaves, and a forehead band of kangaroo claws covers his eyebrows. … He travels with a kind of skipping motion, singing, and pausing every now and then to dance. [In the song cycles] … the focus shifts to the long baskets he wears suspended from both shoulders, and to the honey and bees inside them: the bees are singing too (humming), and at intervals he taps the side of the baskets (like the sound of clapping sticks).[41]

At Yirrkala in 1948 Mountford documented in his diary a basket of the kind made for collecting honey worn by Wuyal (Fig. 9.13]). The painted figures possibly depict Wuyal, his female companion (sometimes said to be one of the Wäwilak women), and his animal familiar the rock wallaby/kangaroo.

As conveyed in Catherine Berndt's account, the Wuyal song cycle contains particularly beautiful imagery. Her transcription emphasises the episodic form of

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[39] Berndt, *Kunapipi,* 1951: 19.
[40] Of a total of 1,097 song verses recorded in 1946–47—which Berndt terms individual songs in his published transcriptions of the song cycles—586 remained unpublished. Warner's lengthy account given in *Black Civilization*, of the ritual performed for each of the Djungguwan, Gunapipi, Ngulmark and Maṉdiyala ceremonies, provides the best record of dances/songs in the Wäwilak cycle.
[41] Catherine Berndt, 'Monsoon and Honey Wind', 1970: 1311–12.

the cycle as a song-sequence—a series of scenes rather than a narrative.[42] Whereas the Wäwilak myth explains and ensures the coming of the wet season, the Wuyal cycle is associated with a time of the year just after the predominant south-east trade winds of the dry, before the north-west monsoon breaks, when a wind called in the cycle the 'honey wind', brings 'dark clouds, and *dua* rain from the southern inland':

> The 'honey wind', the wind from the *mareiin* (sacred) bees that live in the *mareiin* stringbark tree by the *mareiin* pool. Wudal sends it northward to the coast. … It is the time when … honey is flowing so plentifully that people must eat fast to avoid wasting any. This wind, therefore, 'belongs to the honey and the bees.'[43]

There are a number of links between the Wäwilak sisters myth and the Wuyal song cycle—a 'patterning of cross-references' as Catherine Berndt describes it.[44] There is firstly a 'biographical' link between Wuyal and the Wäwilak sisters. Like the sisters, Wuyal is said to have come from Wäwilak country. In some versions of the Wäwilak sisters myth he travelled with them on their journey. And from the other perspective, Wuyal was sometimes travelling with his sister/two sisters, sometimes identified as the Wäwilak sisters.[45] He is variously cited as the clansman with whom the elder sister had incestuous relations before departing Wäwilak country (and whom she became pregnant to) or alternatively, as being in love with the younger sister.[46] McCarthy recorded that the Wäwilak were Wuyal's wives.[47] In terms of the larger cosmology, as Roy Marika explained in 1970, for the

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[42] Catherine Berndt, 'Monsoon and Honey Wind', 1970: 1311.
[43] Catherine Berndt, 'Monsoon and Honey Wind', 1970: 1313.
[44] Catherine Berndt, 'Monsoon and Honey Wind', 1970: 1316.
[45] Berndt and Berndt. *The World of the First Australians*, 1964: 212. Catherine Berndt, 'Monsoon and Honey Wind', 1970: 1314–15. Morphy, *Ancestral Connections*, 1991: 118. These same characters (Wuyal and his female companions) are known by different names in different versions of the story. In the version Warner recorded in Milingimbi the character of Wuyal is identified by the name Ure, which itself was another name for Bamapama/Bamabama, a 'crazy man' trickster figure. 'He is no good and is a friend of those two Wawilak women.' Warner, *A Black Civilization*, 1937: 545–46, 556–57. See also Wan̲ambi, Gundimulk, Wolpa Wan̲ambi, and Gawirrin Gumana, 'The Marrakulu Story'. In Caruana and Lendon, *The Painters of the Wagilag Sisters Story*, 1997: 142–43. Mountford, 'Volume 1: Art, Myth and Symbolism', 1956: 289–92.
[46] Berndt, *Love Songs of Arnhem Land*, 1978: 28. Wan̲ambi et al., 'The Marrakulu Story', 1997: 142.
[47] McCarthy, 'Diary 7', 1948.

Rirratjingu the Djang'kawu are associated with the sunrise, Wuyal and the Wäwilak sisters are joined together in their association with the sunset.[48]

In the record of the Wäwilak myth, the pre-eminence given to the events at Mirrarmina has obscured the earlier part of the story of their journeying through country, which links Wuyal and the Wäwilak, honey, bees and string—a link of particular importance in north-east Arnhem Land. The Wäwilak share attributes with Wuyal. Both carry stone spears with them to chop out the wild honey from stringybark trees: 'Like Wuyal, the two Wawilak sisters also travelled from place to place hunting and chopping down trees in search of honey.'[49] Both make string. The Wäwilak use it to make string figures that they dance with, Wuyal made bush string 'twining feathers into it, and wrapping it round the shafts of his stone spears' and perhaps for dancing too.[50] Both Wuyal and the Wäwilak sisters are associated with the kangaroo—in the song cycles of both there are episodes involving hunting kangaroo or rock wallaby, chased by fire.[51] The cross-referencing or intertextual mapping of the two stories onto each other is plain in the symbolism and imagery of the Djungguwan ceremony, as it was performed at Gurka'wuy in 1976.

Djungguwan at Gurka'wuy: 'Same, but a little bit different'[52]

As seen in the last chapter, the symbolism of bees and honey—attributes of Wuyal—were prominent in the Marrakulu Djungguwan held at Gurka'wuy in 1976: the malka ceremonial rope representing the path of flight of honey bees—'the white down is like the white foam on honey and also the "white bees" inside

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[48] Dunlop, Ian. 'Yirrkala 1970—Council Meeting.' (Unpublished transcript of Council Meeting filmed on 16 July 1970.) Translated by Wandjuk Marika, 1976: 50.

[49] Hutcherson, Gillian. *Gong-Wapitja: Women and Art from Yirrkala*. Canberra: Aboriginal Studies Press, 1998: 55.

[50] Catherine Berndt, 'Monsoon and Honey Wind', 1970: 1312.

[51] In Warner's record of the Ngul̲mark ceremony, at the beginning there is a sequence in which kangaroos dance—'because those two old women named them in their dance. The two old women tried to catch them but they ran away'. As commented on by Howard Morphy, this episode links to the Marrakulu version of the Wäwilak myth in which 'the rock wallaby, chased by fire, always manages to escape the huntress'. It also links with the sequence in the Wuyal song cycle in which 'flames burn through the country, destroying the undergrowth and driving out kangaroos and other edible creatures', which Wuyal then hunts. Warner, *A Black Civilization*, 1937: 312–13. Morphy, *Ancestral Connections,* 1991, p. 119, n. 1. Catherine Berndt, 'Monsoon and Honey Wind', 1970: 1313.

[52] Williams, Nancy M. *The Yolngu and Their Land: A System of Land Tenure and the Fight for Its Recognition*. Stanford, CA: Stanford University Press, 1986: 40.

the nest'; the dancers carrying the malka, shaking bundles of leaves in their hands, 'are the honey bees, wings whirring'.[53] This ceremony was evidently not based on the climax of events in the Wäwilak story that occurred at Mirarrmina, the sacred well, as affirmed by Gundimulk Wan̲ambi (daughter of Dun̲d̲iwuy, leader/headman of the Gurka'wuy Djungguwan). Commenting on Mawalan's painting *At Muruwul, home of the Yulunggul Python*, she made the following remarks:

> when the Snake ate the two Sisters. We [the Marrakulu] don't paint the part of the story with the snake in it … we sing that line, that track, all the bits and pieces of *gardayka* [stringybark tree], that's the one that we sing.[54]

The distinction Gundimulk makes between 'the part of the story' the Marrakulu deal with, as opposed to that the Rirratjingu are responsible for, is a reflection of the patterned map of difference and relationship expressed through the songlines—the 'architectonic idea' of Aboriginal culture as Stanner put it. However, it also reflects, as Catherine Berndt found, that in north-east Arnhem Land Wäwilak mythology is tailored to the demands of local belief: assimilated with pre-established local narratives, interpolated with a local cast of characters—ancestor beings active in the area, in this case Wuyal.

In the film of the 1976 Djungguwan (and accompanying script notes), and in the commentary of other witnesses, it is clear that the exploits of Wuyal are of major importance in the myth cycle being celebrated. The two stories, of the Wäwilak and Wuyal are joined and melded in the ritual architecture of the ceremony. The molk (ceremonial ground) refers not primarily to the shape of the snake falling on the ground, as it does in ceremonies held in other places at other times, but to the impression left by the sacred stringybark tree (gad̲ayka), having been chopped down, falling and impregnating the ground with honey:

> Where the tree fell it made the imprint of a great Gundi Molk ceremonial ground. Honey impregnated this ground, bees flew up across the land. Part of the fallen tree became a great hollow log which journeyed out to sea, forming the Gurka'wuy river as it went.[55]

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[53] Williams, *The Yolngu and Their Land*, 1986: 41. Dunlop, Ian. *Djungguwan at Gurka'wuy: Film Script and Notes*. Lindfield, NSW: Film Australia, 1990: 87.
[54] Wan̲ambi et al., 'The Marrakulu Story', 1997: 143.
[55] Dunlop's voice-over narration in Dunlop, *Djungguwan at Gurka'wuy: Film Script and Notes*, 1990: 87.

Du<u>n</u><u>d</u>iwuy Wa<u>n</u>ambi says that Mayawa [the ancestral frill-necked lizard/man] is the one who chopped down the tree, 'or Wuyal … whoever … Wuyal or Ganydjalala [the ancestral kangaroo/woman]'[56] Or the tree could have been chopped down by the Wäwilak themselves—Ganydjalala was 'sometimes said to be one of the Wawilak women'.[57] Howard Morphy, who was undertaking fieldwork at the time, was also present at the ceremony, which he describes in *Ancestral Connections* (1991).[58] He reports how in the journey being re-enacted, the Wäwilak sisters and a cast of other ancestral beings were engaged in 'two key activities, the collecting of wild honey (*yarrpany*) and the hunting of rock wallaby (*dulaku*)'.[59] The poles placed on the ceremonial ground, were said to represent among other things, the Wäwilak women and 'the stringybark trees that were cut down in their search for honey.'[60]

While the Rirratjingu might claim, as outlined in the last chapter, that they introduced the Wäwilak sisters myth into north-east Arnhem Land, this view is not necessarily shared by the other clans in the area. In 1948, Wandjuk stated that string figures were introduced from the western side of Arnhem Land, presumably accompanying the introduction of the Wäwilak sisters myth, and a similarly recent innovation. Narratjin Maymuru (Yirritja Manggalili clan) demurred, stating that 'string figures had always belonged to the people of Yirrkala'.[61]

In the Gurka'wuy Djungguwan the Wäwilak sisters are said to be travelling inland from Trial Bay, heading south to Ngilipidji. This journey is in the opposite direction to the trajectory taken in the dominant recorded form of the narrative: from south to north, from the inland to the coast. As Morphy writes: 'The direction of movement is important, since it differentiates the mythology of this ceremony and of the owning clan, the Marrakulu, from the myths recorded by Warner and Berndt.'[62] Across a large area of Northern Australia, parallels or accords can be

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[56] Du<u>n</u><u>d</u>iwuy Wa<u>n</u>ambi in Dunlop, *Djungguwan at Gurka'wuy: Film Script and Notes*, 1990: 41–50.
[57] Morphy, *Ancestral Connections*, 1991: 118.
[58] See Morphy, *Ancestral Connections*, 1991: 84–86, 118–22.
[59] Morphy, *Ancestral Connections*, 1991: 118–19.
[60] Morphy, *Ancestral Connections*, 1991: 120.
[61] McCarthy, 'The String Figures of Yirrkalla', 1960: 423.
[62] Morphy, *Ancestral Connections*, 1991: 118.

drawn between the Indigenous religious narratives of local cultural groups. Due to local differences within a broad overarching similarity in the symbolism of the ritual cycles performed in the region, the Berndts have characterised the Wäwilak story (of the Sisters/Mother and the Snake) as a 'transition myth' or 'hinge story' between the cultures of western and eastern Arnhem Land. They recognise the Wuyal cycle as being particularly important in the interpretation of Wäwilak mythology in eastern Arnhem Land: 'a kind of eastern translation or transformation'.[63]

In the Djungguwan at Gurka'wuy, a song was singled out in the narration of the film as particularly important, because as Du<u>nd</u>iwuy explained, 'it gives today's people a special sense of closeness to the Wäwilak sisters themselves':[64]

> In the song the Two Sisters come to the Gundi Molk area. They carry hair string decorated with feathers and with this they begin to make cat's cradles. The younger sister makes a breast girdle to announce her approaching womanhood, as young girls do today. …
>
> The Wawilak come into their Gundi Molk
>
> Everything made glorious with feather string
>
> They decorate their skin with scars of fire
>
> Everything made beautiful.[65]

The young initiate on whom the film concentrates wears a matjka made of feathered string like that worn by the younger sister (Fig. 9.14). His face is painted with spots, like the faces of the sculptured figures of the two Wäwilak sisters made by Mawalan: the 'water painting' 'scars' from the rain made by the python here representing 'flowers of the Wa<u>n</u>ambi tree … bubbles of Djarrka, the water goanna, and bubbles from the sea waves.'[66]

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[63] Berndt, Ronald M., and Catherine H. Berndt. *Man, Land and Myth in North Australia: The Gunwinggu People*. Sydney: Ure Smith, 1970: 228. Catherine Berndt, 'Monsoon and Honey Wind', 1970: 1324–25.
[64] Dunlop's narration citing Du<u>nd</u>iwuy Wa<u>n</u>ambi in Dunlop, *Djungguwan at Gurka'wuy: Film Script and Notes*, 1990: 63.
[65] Dunlop, *Djungguwan at Gurka'wuy: Film Script and Notes*, 1990: 63–64. Narration, and song verse in italics.
[66] Dunlop, *Djungguwan at Gurka'wuy: Film Script and Notes*, 1990: 71. See also Morphy, *Ancestral Connections*, 1991: 130.

A cross-referencing of patterns: string figures and clan designs

The 'patterning of cross-references' that Catherine Berndt spoke about between the Wäwilak and Wuyal, could also be looked at in terms of a 'cross-referencing of patterns'. In 1948 Mountford collected bark paintings relating to the Wuyal myth. In the painting illustrated in Figure 9.15, Wuyal is depicted carrying 'his stone-headed spear and spear-thrower in one hand, and three boomerangs, *kunilili*, in the other.'[67] As part of Wuyal's ancestor activities he had used boomerangs as a tool in naming country: 'he went with these two *gunyalili* threw them, and then these two boomerangs named all the places.'[68] The gunyalili boomerang pattern/motif seen in the painting in Figure 9.16 is a distinctive feature of the iconography relating to Wuyal. Mountford also collected a wax figure of 'the boomerang man' Wuyal, with this design painted on the front and back (Fig. 9.17). It is a feature of Du<u>n</u><u>d</u>iwuy Wa<u>n</u>ambi's painting of Wuyal on the verso of the 1968 Yirrkala Bark Petition—requesting the new mining town of Gove be named Nhulunbuy (i.e. the name given to the area by Wuyal) (Fig. 9.18 and see also Fig. 8.14B). And it continued to feature in more recent works, such as *Wuyal and Dhulaku (Euro),* 1996–97 (Fig. 9.19).[69] The curving gunyalili 'boomerang motif'—the shape of two boomerangs placed back to back—is the same as that on the figures and poles representing the Wäwilak sisters made by Mawalan in the 1940s and in his painting *At Muruwal* (see Figs. 9.2 and 9.6–9.10).

On the penultimate evening before leaving Yirrkala, when McCarthy was finalising details about the string figures with Wandjuk, he collected some new designs including 'the little sacred boomerang from Trial Bay—Blue Mud Bay area', *Gurjalili* [Gunyalili]/*Small Boomerang* (AASEAL #62), a men's figure (Fig. 9.20).[70] However, the figure Ga<u>l</u>iwa<u>l</u>i/*Two Boomerangs* (AASEAL #32) collected earlier

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[67] Mountford, 'Volume 1: Art, Myth and Symbolism', 1956: 292.
[68] Wa<u>n</u>ambi et al., 'The Marrakulu Story', 1997: 142. 'This is the same Yolngu who travelled through Nhulunbuy. And this [design on the chest] is the boomerang he threw, and then he named all the places, Lombuywuy, Galuruwuy, Birritjimi, Dimbukawuy, naming all these places with these boomerangs *gunyalili.*' See also Isaacs, Jennifer. 'Honey in Art from Northern and Central Arnhem Land'. *Artlink* 19 (4), 1999: 38–40.
[69] See also the *Djuwany* figures (Marrakulu spirit ancestor people), which share other obvious characteristics with the two Wäwilak sisters. Caruana and Lendon, *The Painters of the Wagilag Sisters Story*, 1997: 151, pl. 101.
[70] McCarthy, 'Diary 5', 6 September 1948.

from Ngarrawu, is a better match for the gunyalili motif (Fig. 9.21).[71] In January 2009, one of my few male correspondents, Yikaki Maymuru (b. 1953), son of Nänyin and Milyin Mununggurr (Ngarrawu's sister), told me his father had said there was a relationship between string figure patterns and clan designs used in body painting and to decorate artefacts: 'When you look at the art … will find a lot of these string figure diagrams in them.'[72]

In the Donald Thomson collection at the Museum of Victoria there is a bark painting of a body decoration based on a repeating diamond pattern, the Gupapuyngu clan design representing the Yirritja honey ancestor niwuḏa, worn in the Ngärra ceremony.[73] Thomson was told by his informants that the ancestor being had this design on his own body. It was not painted on, 'he carried it on his own skin'.[74] While the diamonds in the pattern are alternately filled with cross-hatching and spots, representing dry wax and eggs or bee bread respectively, he records that rather than (or as well as) being a representation of the hive, the diamond design itself (the grid of yellow lines in the painting) was based on a string pattern that the ancestor being held 'like a cat's cradle' while dancing.[75] As the painting referred to is restricted, to illustrate this design I am using a previously published photograph taken by Donald Thomson on the last day of a Ngärra ceremony, of men with body painting including the niwuḏa Yirritja honey ancestor design (Fig. 9.22). Joe [Dr Joseph Neparrnga] Gumbula drew my attention to photographs taken by Warner in Milingimbi of men painted with the same body design (including Warner's chief informant Harry Makarrwala), dancing while

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[71] McCarthy noted in the *Records* that this boomerang was used for ritual defloration in the Gunapipi ceremony. McCarthy, 'The String Figures of Yirrkalla', 1960: 452. See Berndt, *Kunapipi,* 1951: 67–68. In one of the interpretative drawings related to the Gunapipi that Berndt collected, there is a boomerang shaped ground structure or form called *jilparindji* or *kalawal*, commemorating the boomerang used in the mythological event of the Mungamunga (the amorous daughters of the 'Creative Mother' that are often associated with the Wäwilak sisters) being 'opened' for coitus.

[72] Interview with Yikaki Maymuru, Yirrkala, 20 January 2009.

[73] Donald Thomson Collection: DT 47. Museum Victoria. I am grateful to Lindy Allen for drawing my attention to this work. While resident at Gäṯji, in December 1936 Thomson made two trips to Gupapuyngu country around Arnhem Bay and Buckingham Bay. These are the most likely occasions on which this bark was collected.

[74] Donald Thomson Papers, File #14 'Ceremonies – Mintji – General'. Museum of Victoria.

[75] Donald Thomson, collection label, DT 47, Donald Thomson Collection, Museum Victoria. For a discussion of the diamond motif used in Yirritja moiety clan designs see Morphy, *Ancestral Connections*, 1991: 169–76.

holding string in their hands as part of a Ngärra ceremony.[76] (These are also restricted, but as with the bark painting, I was able to view them.)

McCarthy recorded that in Yirrkala string figures were used by men in ceremony—contexts from which women were excluded. However, he suggested that the making of string figures by the women nevertheless connected them to the 'tribal mythology' incanted in the men's secret-sacred rites.[77] The relationship between string figure designs and clan designs, and the function of string figures as a hinge between the 'inside' world of men's ceremonial law and the 'outside' world of the women, was adumbrated by Joe Gumbula. As he explained, because they do not participate in that part of the law, the women make in string the designs that the men paint/have painted on them in ceremony.[78]

Dancing with strings

In the historical record there are occasional references to observations of women dancing with strings (as opposed to this being described as an action of mythical beings in the telling of a narrative, or in songs). These references are sparse in number and brief in detail, often made in passing, and quite enigmatic, like the quote from Elkin which begins this chapter, or the Berndts' broad summary statement: 'North-eastern and western Arnhem land women may dance holding cat's cradles or lengths of string.'[79]

One such observation was made by the Berndts at an Ubar ceremony at Oenpelli (Gunbalayna) in Kunwinjku country, western Arnhem Land:

> The resonant sound of the *ubar* gong comes clearly across the plains near the East Alligator River: the Mother is calling men to the sacred ground. In the main camp women dance, each holding in her hands an endless piece of string, a cat's-cradle such as young girls use, and calling 'Gaidbaa! Gaidbaa!' in answer to the beat of the *ubar*.[80]

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[76] Warner, W. Lloyd. 'Mortuary ceremonies and associated activities, community portraits and rock art in the Milingimbi and Oenpelli regions of Northern Territory', 1926–29. Pictorial Collection: WARNER. W01. BW: N2948.31, N2948.33, N2948.34. AIATSIS.

[77] McCarthy, 'The String Figures of Yirrkalla', 1960: 427. 'As they make the figures the women are thinking not only of a particular animal but of its significance in the Wawalik sisters' saga.'

[78] Joe Gumbula, comment at presentation, Australian National University, Canberra, 18 July 2014.

[79] Berndt and Berndt. *The World of the First Australians*, 1964: 321–22.

[80] Berndt and Berndt. *The World of the First Australians*, 1964: 234–37.

In their major study on the Ubar rite they provide a bit more detail:

> The women go to the edge of their camp and begin to dance, a skipping dance backwards and forwards, with heads bowed and hands held forward, holding in their fingers an endless piece of string.[81]

The dominant religious mythology of western Arnhem Land was based on the creative mother Waramurunggundji and the Rainbow serpent Ngaljod. The main ritual object in this ceremony, the ubar log or drum, was a combined mother and snake symbol (notably easily assimilated to the Gunapipi ritual and the Wäwilak mythology on which it is based). In central and eastern Arnhem Land, its ritual symbolic counterpart was the uwar drum used in the Ngul̲mark ceremony.

In Warner's record of a Ngul̲mark performed in Milingimbi, the women reply to the sound of the drum at the beginning of the ceremony with the same call as in the Oenpelli Ubar ceremony: 'Kait-ba! Kait-ba!', although here they are carrying digging sticks. The sound of the drum is the sound of the serpent as well as the voice of the Mother. The response of the women, the call of 'Gaidbaa! Gaidbaa!'/'Kait-ba! Kait-ba!' is in part an invocation for protection. As explained by one of Warner's informants:

> The women get up and dance around like those two [Wäwilak] women did before when the rain fell down … The women calling out 'Kait-ba! kait-ba!' is what they said in trying to dance and keep Muit back.[82]

This is the same call made by the sisters when they are dancing to ward off the serpent Yul̲unggur—'Kei'wa! Kei'wa!'—in the narrative of the Wäwilak myth outlined by the Berndts that begins this chapter. [83]

Ronald Berndt commented that during performances of the Love Song cycles at Yirrkala:

> Women would sometimes get up to dance, at one side. … In the Goulburn Island dancing, women might hold lengths of jungle twine, making string figures (appropriate to the songs) as they danced—just as the Goulburn Island girls did in the songs.[84]

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[81] Berndt, Ronald M., and Catherine H. Berndt. *Sexual Behaviour in Western Arnhem Land*. Viking Fund Publications in Anthropology 16. New York: Viking Fund, 1951: 131–32.
[82] Warner, *A Black Civilization*, 1937: 313–14.
[83] For another version of the myth recorded by the Berndt's in which the same call appears see Berndt and Berndt. *The World of the First Australians*, 1964: 213.
[84] Berndt, *Love Songs of Arnhem Land*, 1978: 47.

Berndt's comment here suggests that not only was 'dancing with strings' the appropriate action to accompany some songs, but that particular string figure designs were made to accompany particular songs.

Dancing with strings at Yirrkala

On my first field trip to Yirrkala in January 2009, I interviewed Nyangungu Marawili on the porch of her house, with her daughter (Djarpirr Mununggurr) acting as interpreter. Djarpirr put to her mother what she saw as my central question: 'You want to know what matjka really is and meaning to it.' Nyangungu's response was to tell me about 'dancing with strings'. 'They use the matjka for dancing … like this side to side with string. Munyuku, Warramiri. … to use matjka, it's for the dancing as well'.[85]

As explained by Nyangungu and Djarpirr, the Yirritja Warramiri and Munyuku clans danced with strings at funeral ceremonies. These dances, which may have in the past been restricted as part of men's mortuary ritual, had become public: not only were women able to view the dancing, they participated in it. Forming two lines facing each other (on either side of the coffin presumably), the dancers accompany the body from its arrival at the funeral ground. 'They can use those strings/matjka to bring that body out': moving the body along/moving along with the body until it is 'placed in the proper area.' They told me that two different dances are used for this purpose: muthali (duck) and mä<u>n</u><u>d</u>a (octopus), both important totems for these clans. Djarpirr said that she had only seen this 'dancing with strings' at Galiwin'ku, not at Yirrkala. (Elcho Island being Warramiri clan country.)

In notes accompanying the illustration of the octopus raŋga I discussed in Chapter 8—with 'lengths of wool being its tentacles, stretching out in all directions'—Elkin et al. gave a gloss of the relationship between muthali and mä<u>n</u><u>d</u>a (see Fig. 8.11). The mä<u>n</u><u>d</u>a lived in an underwater cave in the sea around Cotton Island in the English Company Islands, in Warramiri country ('for the sea, too, is divided among the clans')—its dreaming place. Near this cave, sticking up out of the sea is a black

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[85] Interview with Nyangungu Marawili and Djarpirr Mununggurr, Yirrkala, 21 January 2009.

rock, to which, according to the story, muthali flew from the inland in Ritharrngu country, to make her nest. 'Not liking the freshwater billabong, she came to the sea, and laid her eggs in this nest. There she lived with the *manda*, and on her eggs are marks representing her particular string chest girdle, which she wore as young women do to-day,' they wrote.[86] It is notable that here again there is a connection with the matjka chest girdle.

In 2010 Dipililnga Bukuḻatjpi (a Warramiri women living in Yirrkala), as well as confirming the inherent link for Yolngu between string figures and dancing with strings provided further information about the Warramiri associations of muthali. Dipililnga explained that most Warramiri clan totems are from the sea, except muthali, the duck that flew from the inland. Muthali is particularly related to Warramiri mothers/activated through the Warramiri mother-line relationship. A Warramiri mother's children are called yothu muthali or the duck's egg. The muthali dance is performed by the mother's Warramiri clan to mark the birth and at the death of her children, who themselves belong to Dhuwa clans. In Dipililnga's case her children are Rirratjingu. While still regularly performed on Elcho Island, Dipililnga knew of the muthali dance being performed once only at Yirrkala—'a long time ago'—at the funeral of one of the daughters of Wandjuk Marika and his Warramiri wife Gotjiringu Bukuḻatjpi.[87]

On the accompanying video (see Video 15—Muthali and mäṉḏa, Yirrkala and Biranybirany, 2009) I have compiled excerpts of field footage demonstrating the way the string is held and the movement of the hands in these two dances. In the interview session with Nyangungu and Djarpirr in January 2009, Nyangungu holds the string in the same way for both dance movements: using the configuration known as *Opening A* (see Fig. 3.8). Djarpirr uses *Opening A* when demonstrating muthali, but for mäṉḏa she uses a simple doubled loop of string, hooked on each thumb, stretched between the hands. When demonstrating these dances at Biranybirany in August that year, at first Nyangungu uses a figure she identified as *Gurrumaṯji/Magpie Goose*, that she had just made and happened to have on her

[86] Elkin et al., *Art in Arnhem Land*, 1950: 36.
[87] Interview with Dipililnga Bukuḻatjpi, Yirrkala, 4 June 2010.

hands, to demonstrate the action used in the mä<u>n</u><u>d</u>a dance, and then uses *Opening A* when demonstrating muthali and mä<u>n</u><u>d</u>a again.

There is a recognisable difference in the hand actions accompanying each dance. In the muthali dance the hands, held parallel on the horizontal plane in front of the body, rotate independently of one another joined by the string. One could think of this as tracing out a figure eight (in three dimensions): each hand rotates away from and then towards the body in an anti-clockwise direction, but turn-about, so that when one hand is moving away from the body the other is returning in the opposite direction. This action could be continued standing still in the one place, but its inherent dynamism infers a processual movement along the horizontal plane (x-axis), in either a left or right direction. (Djarpirr demonstrates in Video 15—Muthali and mä<u>n</u><u>d</u>a: Clip 1—begin 00:00:12.) As seen in this footage, in the mä<u>n</u><u>d</u>a dance the hands, sometimes together and sometimes in alternate actions, loop up (along the vertical y-axis) and forward, reaching away or out from the body (along the z-axis), and then back towards it. We can see how this action too could be directed to move either left or right (along the x-axis), as well as in a forward motion, to guide the body into place as described. The sounds Nyangungu makes to accompany each action are another distinguishing feature: the '<u>d</u>atj, <u>d</u>atj, <u>d</u>atj' sound of mä<u>n</u><u>d</u>a, the octopus and the 'gah, gah, gah, gah' sound of muthali, the duck (see Video 15—Muthali and mä<u>n</u><u>d</u>a: Clip 3).

In these demonstrations, the two dances are not distinguished by the identity of the string figure held on the hands—the configuration of the strings as either 'octopus' or 'duck'—but rather, by the action of the hands. There is no figure for muthali recorded in the Yirrkala collection, but there is for octopus: a quadrupled loop of string with one full twist, held on the hands. This figure is small in size (Fig. 9.23). Nyangungu and Djarpirr emphasised the importance of the use of coloured strings for the performance of the dances: strings of red, white and blue wool—the colours of the Warramiri clan. The use of coloured wool as an alternative for Yirritja possum fur string along with the use of coloured textiles, both of which were first sourced through trade contact with the Macassans, has fostered the expression of clan identity through colour coding or 'branding'.[88] (In this instance, it was suggested that these colour choices developed from clan associations with colour in the landscape: the red, white, and blue of the Warramiri reflecting the colours of coral, octopus and sea.)[89]

The Yirritja Warramiri **mä<u>n</u><u>d</u>a/octopus** *dance*

I was keen to see and record this 'dancing with strings', and so when I returned to the field in 2012 I actively pursued it, by commissioning a performance of the *mä<u>n</u><u>d</u>a/octopus* dance. This, as might be expected, involved a sequence of introductions and negotiations over an extended period, and a couple of attempts. The senior partners in the brokerage were Djerrk'ngu and Ranydjupi Yunupingu, both of whom had been working with me in different capacities. I first discussed the idea with Djerrk'ngu who said I should speak to Bawuli Marika: that she and Nartjina would do the dance for me. Bawuli was open to the proposal, and it was through her that the other participants became involved. On the first attempt, what would be needed had not been adequately thought through. We rescheduled for the next day. Bawuli organised some men to provide the manikay accompaniment: specifically men who knew the '<u>d</u>atj' song. I borrowed a yidaki from the Art Centre. It was late afternoon, and we decided to go to Shady Beach. As well as the performers, both Djerrk'ngu and Ranydjupi were on hand (Fig. 9.24).

My filming as well as the performance was in the first instance directed by the leading songman (Banggil Wa<u>n</u>ambi of the Marrakulu clan): he organised the mise-en-scene, and where I should stand. The men sat on the beach looking out to sea, the women danced in front of them. There was a rise in level from the shoreline to the foreshore where the men were sitting. Starting close to the shoreline, the women were partly hidden behind a crest of sand, coming into full view as they danced forward up onto the foreshore. The performance can be divided into two movements. In the first the women dancers began in a kneeling position, holding a loop of string between their hands above them at head height. Then with their

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[88] The sources of wool and its use by Yolngu in the past has not been explored as thoroughly as has the use of textiles. See references in Hamby, Louise. *Containers of Power: Women with Clever Hands*. Richmond, Vic.: Utber & Patullo Publishing, 2010: 184, 186–87.
[89] Discussion with Ranydjupi Yunupingu, Wallaby Beach, 21 September 2012.

hands in front of them on the ground they progressed slowly by moving one hand forward at a time followed by the knee on the same side, sometimes bringing both knees into line, before moving forward again with the other hand. With the sea behind them, it looked like they were emerging from out of the water. The action of their hands tethered together did suggest to me the kind of peristaltic wave-like propagation of an octopus's locomotion (crawling) along the sea floor: in which 'one muscle mass acts as an effector of movement while the alternate muscle mass provides support for that movement.'[90] The sequence finished as it began with the three dancers raising their arms to hold the string aloft at head height. After a break, the sequence was repeated, moving forward from their current location. I then asked them to start again from the beginning, and they walked back to their starting point, and the sequence was again repeated twice. The second movement was performed standing up: the hands moving now in unison together, up and out from the body, down and back, in a loop, elaborating on the rhythm of the feet. (The same action as performed by Nyangungu that I described earlier.) This sequence was again repeated a number of times (see Video 16—*Mäṉḏa/Octopus* dance).

The Yirritja Gupapuyngu niwuḏa/honey ancestor dance

In discussing Warner's photographs of men dancing with string as part of a Ngärra ceremony in Milingimbi, Joe Gumbula had demonstrated the actions in this dance, holding a loop of string in the *Opening A* configuration (the same as that used for muthali). Joe described the dance as involving the raising and lowering of alternate legs, and he demonstrated the accompanying movement of the hands, held tethered together by the string in front of the body, rotating around a central point (Fig. 9.25).

Before returning to Yirrkala in 2012, I had stopped off in Darwin to speak with Rev. Djiṉiyiṉi Gondarra, a Dhuwa moiety Djambarrpuyngu man, and important leader of the Elcho Island Community. He said there were three Yirritja clans that danced with strings, as in the muthali dance for example: Warramiri, Munyuku, and

[90] Kier, William M., and Kathleen K. Smith. 'Tongues, Tentacles and Trunks: The Biomechanics of Movement in Muscular-hydrostats'. *Zoological Journal of the Linnean Society* 83 (4), 1985: 307–24; 307.

Ritharrngu. He also mentioned the 'dance about the wild honey' performed by the Yirritja Gupapuyngu–Daygurrgurr clan (Joe Gumbula's clan), the Dhaḻwangu from Gäṉgaṉ and the Gumatj. This dance while using the same movement of the hands as in the muthali dance was, he said, done without string. Or, as he later clarified, he had only seen it done without string.[91] Joe Gumbula confirmed, that it could be and was performed without string—the action of the hands being the important, distinctive feature of the dance: 'recognise as Gupapuyngu … which ceremony are you performing … know it straight away.'[92] The other difference between them it would appear is in the stance of the performers. As opposed to the upright stance of the niwuḏa dance, with legs being raised and lowered, Djiniyini demonstrated the way muthali was performed sitting in a crouched position low to the ground. He used a simple loop of string in his hands, making the point that no figure as such was made (see Video 17—Muthali and niwuḏa, Darwin, August 2012).

Conclusion

Whereas in the historical record all references to and witnessing of dancing with string is associated with the Dhuwa Wäwilak myth, in my contemporary fieldwork, it is found singularly in Yirritja contexts: the Warramiri/Munyuku/Ritharrngu muthali and mäṉḏa dances, and the Gupapuyngu–Daygurrgurr/Dhaḻwangu/Gumatj clans' honey ancestor (niwuḏa) dance. Occasionally, dancing with string by Dhuwa clans was mentioned. Ranydjupi Yunupingu described how Galpu/Rirratjingu/Djambarrpuyngu 'sing matjka song, and dance like this—side to side with string'. She held the string in the *Opening A* position and rotating around the waist, moved her hands from side to side, but without the distinctive torsion of the string between the hands seen in the muthali/honey ancestor dances.[93] Barrapu Yunupingu (Ranydjupi's half-sister) mentioned to me on another occasion that she remembered 'Nami's second mother [Milyin] and Ranydjupi's mother singing and dancing with string—Djapu song.'[94]

[91] Djiniyini Gondarra, Darwin, 28 August 2012.
[92] Joe Gumbula, Canberra, 10 July 2013.
[93] Ranydjupi Yunupingu, Wallaby Beach, 21 September 2012.
[94] Barrapu Yunupingu, Yirrkala, 1 January 2009. These were possibly Marakulu songs as they were Djapu women who 'should have been' Marrakulu. Their mother was betrothed to a Marakulu man who was killed by Wonggu, after which she was married to one of Wonggu's sons.

In both the historical record and my own contemporary fieldwork, the evidence supports the conclusion that the movement of the hands, rather than the configuration of the string as a particular figure, is what characterises the dance being performed, along with the dancer's stance or body posture and movements as a whole. The two configurations in which the string has been held in the demonstrations/dances I have documented—as a simple loop, doubled, held as in *Position 1*, or with the strings crossing between the hands as in *Opening A*—do not constitute string figures as such, as they have been conceived historically, but are starting or Opening positions. Given that I have documented examples of both options being used seemingly interchangeably—and that string need not even be used—the way the string is held appears to be incidental to the movement performed, within the defining context of the overall performance situation.[95]

However, *Opening A*, I would argue, is the more kinaesthetically logical or appropriate configuration for performance of the muthali/niwuḏa movement (the multiple loops of string binding the hands together, provide tension for the opposing rotational movements), and the doubled loop of string is similarly preferable for the movement of the hands in mäṉḏa. The way a particular person at a particular time chooses to hold the string for the purposes of demonstration may be the thing that is incidental. Expanding on this logic, it may be the case that these two ways of holding the string and connecting the hands that I have recorded are also in a sense 'incidental': simplified, expedient forms that have now become the norm replacing more complex designs used at one time in the past/by some people.

In the historical record there are only two references to dancing with strings outside of the Arnhem Land region that I am aware of. In fieldwork conducted in the late 1970s among the Alyawarra near Barrow Creek in Central Australia, ethnomusicologist Richard Moyle documented women's *awulya* ceremonies (a cognate term for the *yawulyu),* in which the participants dance with loops of wool

[95] *Opening A* was used for the muthali dance by Nyangungu and Djarpirr, and for the niwuḏa dance by Joe Gumbula. Nyangungu also used *Opening A* for mäṉḏa/Octopus, where others preferred a doubled loop of string. Djiniyini used a loop of string to demonstrate muthali, although earlier did the motion of making *Opening A*.

or hair string held between their hands. In the *atihirra* (budgerigar) *awulya*, the dancers hold a loop of string 'taut between the hands in front of their bodies, moving it in slow slanting movements to the left and right' (Fig. 9.26).[96] In a brief comment made in *The Australian Aboriginal* (1925) Herbert Basedow, evocatively conjures up an image of women dancing with strings, it would seem in a similar manner. The reference is to observations made across a sweep of Northern Central Australia, including the Katherine, Victoria, and Daly River districts. The women there, he writes, dance with:

> skeins of string stretched between the thumbs of their hands, which they sway to and fro like the bow of a fiddle. Although this manoeuvre does not produce a sound, it is here mentioned because the movement takes place in perfect rhythm and in unison with the singing which is going on; and one is reminded of a modern conductor using his stick.[97]

In Moyle's and Basedow's descriptions of women dancing with strings, emphasis is placed on the movement of their outstretched arms tensioned by the length of string looped between the hands, 'sway[ing] to and fro', 'in slow slanting movements to the left and right.' There is no discussion of patterns or designs formed with the string.

We might consider that these two things, making string figures and dancing with strings, are separate activities, belonging to different categories. However, there is evidently a strong connection between them in the Yolngu mind, as recorded in myth, and as in Djarpirr's statement to me: 'They can make a lot of like animals out of matjka. … instead of using just to play with the string to use matjka, it's for the dancing as well.'[98] With reference to the last chapter, it would appear that the use of the one same material—string—is the significant link that connects them.

[96] Moyle, Richard M. *Alyawarra Music: Songs and Society in a Central Australian Community*. Canberra: Australian Institute of Aboriginal Studies, 1986: 59, n. 15.
[97] Basedow, Herbert. *The Australian Aboriginal*. Adelaide: F. W. Preece and Sons, 1925: 373.
[98] Interview with Nyangungu Marawili and Djarpirr Mununggurr, Yirrkala, 21 January 2009.

Chapter 10
One continuous loop

Introduction

The functionality of the loop is the conceptual basis of string figure making—it is what makes the art of string figures possible. A loop—defined as a path or line that begins and ends at the same point—must turn (at, at least two and potentially many points), so that it can join up with itself. (Thinking of the circle as an example of a loop—there are turns or changes of direction at every point.) In string figure making, while the loop of string remains a single element, 'looping' the string around the fingers turns or changes its direction, differentiating individual sections of the string as separate 'factors' that can then interact with each other. This differentiation is the job of the 'opening', as it is called. The opening takes the unitary loop of string, and turning it around the fingers creates separate elements from which, only then, can the action of making the figure—essentially a weaving process—take place.

By analogy, so far in this thesis I have constructed an opening. I have differentiated my subject into a series of different factors, treated in turn in separate chapters. In this final chapter, I begin to weave them together to make a figure.

The pleasure of watching 'speed and dexterity' in the making of string figures has been commented on by many.[1] The point when a resolved pattern emerges from a seeming tangle of strings produces a 'marvellous' effect—the excitement witnessed by Kathleen Haddon on Mer in 1914 at the demonstration of *Lighting*, for example. The transformation of the string from one figure to the next in a sequence of moving images led one field researcher and his Kwakiutl collaborators, to give string figures the nickname 'Indian TV'. While these attributes of string figures are commonly recognised, they have particular resonance in the context of Yolngu cultural aesthetics.

[1] Maude, H. C., and H. E. Maude. 1938. *String-Figures from the Gilbert Islands*. Pages 1–72 first published as a Supplement to the *Journal of the Polynesian Society* in three instalments, Vols. 45–47, 1936–1938. *Memoirs of the Polynesian Society* 13. Wellington, NZ: The Polynesian Society, 1958: 1.

The relationship between Yolngu string figure designs and Yolngu art is unusually direct. Many of the string figure designs, the diamond patterns in particular, appear as elements of miny'tji designs in paintings (including clan designs). Considering the disparate visual styles of the art produced by other groups with documented string figure repertoires, many containing the same patterns as in the Yirrkala repertoire, this alignment is significant (Fig. 10.1). I explored the connection between string figure designs and clan designs in Chapter 9. Here I want to discuss other aspects of Yirrkala string figure style that could also properly be termed 'aesthetic'.

Transformation has a central role in Yolngu cosmology, as in many cultural traditions. The activities of the waŋarr ancestor beings in making the world consists principally of the transformation of one thing into another: the possum fur string that is transformed into the sand hills of Djarrakpi in the Manggalili narrative of the koel cuckoo for example; the boy who turns into a sea eagle/osprey, his mothers who turn into brolgas who then turn into anthills in the Maḏarrpa story of Djeṯ. The re-formation of the string from one thing into another through the transformation of one pattern into another is an apt correlative of this potential.

In his report McCarthy includes a page of images of the manipulations used in the repertoire (Fig. 10.2). These images depict stages in the making of figures: the patterns of string formed between two participants, the characteristic postures and action of the *Navajo Movement* and 'feeding the loops through' after the *Mouth Pick-up*, for example.[2] The aesthetic dimension of the process of making was obviously something that struck McCarthy, and that he became attuned to, even if he did not recognise it in this way as such.

In the first part of this chapter, focusing on the mesh designs and loop designs, I analyse the characteristic styles of movement (associated with particular

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[2] As noted by Maude and Sherman many of the images of unidentified figures in the final section of McCarthy's catalogue, are also stages in the making of figures 'that McCarthy happened to photograph'. Maude, Honor C. and Mark A. Sherman. 'The String Figures of Yirrkala: A Major Revision'. *Bulletin of the International String Figure Association* 2, 1995: 87–187; 178.

manipulations or manoeuvres) found in the Yirrkala repertoire. Through combining excerpts from the 1948 film footage taken on the Expedition with my own contemporary video footage, I describe a Yolngu 'feeling' for string.[3]

This leads into a discussion of the relationship between string figures and the 'aesthetics of brilliance' in Yolngu art as elaborated by Howard Morphy. Building on the work of Donald Thomson, Morphy has argued how the visual 'brilliance' or bir'yun created as a sensory effect by the fine cross-hatching that covers the surface of Yolngu paintings (particularly sacred paintings) and recognised by Yolngu as a manifestation of ancestral spiritual power, is an aesthetic effect that operates cross-culturally.

> Basically it is an effect which transcends particular cultural contexts. The shimmering effect of the cross-hatching, the appearance of movement, the sense of brightness are all attributes of Yolngu art that can be experienced independently of any other knowledge about Yolngu paintings.[4]

I want to reverse the direction of Morphy's thesis. He argues that an aesthetic effect, the significance of which is culturally relative and specific to Yolngu, can be widely appreciated outside of that context. I want to take an effect that is widely appreciated (as much as the practice of string figure making is itself), and argue that it has a culturally relative and specific significance to Yolngu.

In the second part of this chapter, I discuss the different uses that string figures had in Yolngu culture in the past, as related to me in fieldwork interviews. Analogous to the way that the one loop of string can be used to make lots of different figures, the practice of string figure making can be used for lots of different purposes or ends. As Djin̲iyin̲i Gondarra put it, there is 'a lot of different format that is happening here'. Gondarra, citing the educationalist Paolo Friere (who was influential in Arnhem Land in the 1970s as well as elsewhere), described string figures as 'Yolngu pedagogy': a Yolngu form of education—'string education'.

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[3] I have made a number of video compilations. While references are made in the text to specific clips, I recommend the relevant video be watched through separately as a whole. The notes accompanying the listing of 'Film and Video Material' in Volume 2 identify the sequences.

[4] Morphy, Howard. 'From Dull to Brilliant: The Aesthetics of Spiritual Power among the Yolngu'. In *Anthropology, Art and Aesthetics*, edited by Jeremy Coote and Anthony Shelton. Oxford: Clarendon Press, 1992: 181–208: 202.

He specifically cited Friere's radical concept of education as the building of capacity based on the experience and existing local knowledge of the people —'you start where the people are', as opposed to education being a hierarchical program of abstract 'universal' learning, imposed from the outside.[5]

Djiṉiyiṉi told me that he himself, 'learnt inside': 'Every person initiated in sacred ceremony had to learn a knowledge of string figure making inside.' His discussion with me was about 'how young girls and men are taught outside'. It was nevertheless, he said: 'Deep knowledge—very very serious […] Not just a game … Very important. I don't know why people stopped using it.'[6]

Yirrkala string figure style: a Yolngu feeling for string

In my technical analysis of the collection I identified two distinct technique cultures operating in the mesh designs. While questions of historical origins or influence are not of interest to this study, it is noteworthy that the Western Pacific technique culture does not appear to have superseded the Oceanic in the Yirrkala repertoire, as Maude suggested was generally found to be the case. The two technique cultures function in part as alternatives, but they are also found in association with each other. Some individual figures or sequences of figures in the repertoire combine movements associated with each: for example, the *Parrotfish* sequence combines the *Navajo Movement* with the *Caroline Extension*. More generally, both are integral to the system considered as a whole. The relationship between the two technique cultures, as between the mesh and ground designs in the repertoire, changes with the perspective taken. They can be seen as operating independently, or in contrast to one another, or interacting with one another.[7] Both are equally elements of what constitutes Yirrkala string figure style.

Film footage taken on the 1948 Expedition was returned to the community in 2010. A series of subject-oriented short films was made, including one of the string figure material, titled 'String Puppets' (Video 1—1948 Film). The footage in this

[5] Interview with Rev. Djiṉiyiṉi Gondarra, Darwin, 28 August 2012.
[6] Interview with Rev. Djiṉiyiṉi Gondarra, Darwin, 28 August 2012.
[7] This is how Morphy describes the relationship of geometric and figurative elements in Yolngu paintings. Morphy, Howard. *Ancestral Connections: Art and an Aboriginal System of Knowledge*. Chicago and London: University of Chicago Press, 1991: 151.

film is presented largely in the form it was received by the Mulka Centre—compiled with minimal editing: titles, credits and a dubbed-in sound track. While the original film—some colour and some black and white—is in basically good condition, as in the Howell Walker footage in the NGS archive, there are a high number of 'splices', and contiguous segments are not necessarily in sequence.[8] Presumably left over from the process of making the four official films produced by the Expedition for the National Film Board, the footage is fragmented and jumbled.[9] It is nevertheless possible, through matching them with McCarthy's records, to identify the figures being made.

In contrast to McCarthy's textual description of string figure making as a set of rote step-by-step instructions, the film documents string figure making as a dynamic process. It describes aspects of making overlooked by McCarthy: interactions between collaborative partners, the mimetic play involved in the animation of figures, the role of display. It demonstrates the embodied action involved: recording how things are done in a way written directions cannot. It shows the kinaesthetic logic of different technique sequences: capturing the syncopated rhythmic pulse of repeated actions, followed by the hiatus of a complex exchange of loops. These attributes of movement, that I am calling string figure style, is my focus in this section.

Repetitive rhythms and clever manoeuvres (Video 18—Technique 2)

The 1-diamond and 2-diamond Oceanic figures end with a sharp and flamboyant rotation of the hands (see Video 18—Technique 2: Clip 1)**.** Otherwise, the technical manoeuvres that stand out in the Yirrkala repertoire are the 'clever' Melanesian style 'swapping' movements associated with the Western Pacific technique culture. As in, for example, the 2-diamond and 4-diamond designs where the figure is placed on the ground and picked up again, with different fingers inserted into different loops (using the *Melanesian Rotation* and *Wrist Move* respectively) (see

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[8] Harris, Joshua. 'Hidden for Sixty Years: The Motion Pictures of the American-Australian Scientific Expedition to Arnhem Land'. In *Exploring the Legacy of the 1948 Arnhem Land Expedition*, edited by Martin Thomas and Margo Neale. Canberra: ANU E Press, 2011: 239–5; 244, 246.

[9] There appears to be one piece of film that is repeated, and played backwards. In it, Wandjuk is using industrially produced string, like that he used in the photographs taken by McCarthy on the last day of the Expedition's stay in Yirrkala, i.e. suggesting this footage was taken on a separate occasion to the rest.

Video 18—Technique 2: Clips 5, 6 and 9). The method of weaving used in the 3-diamond figures, similarly progresses through swapping the loops onto different fingers (the *Melanesian Weave*) (see Video 18—Technique 2: Clips 7 and 8). In the *Mokuy–Yolngu* suite figure, as we have seen in field footage of Mulkun making this figure, the crossing strings of the interim 2-diamond design are picked up by the mouth forming a double loop, through which the loops held on each index finger are fed, and then returned (to the same finger).[10] This movement, that I am calling the *Mouth Pick-up*, is recorded in McCarthy's photographic documentation and the film footage taken in 1948 (see AA§1 Figs. 7 and 8; see also Video 18—Technique 2: Clips 10 and 11).[11]

These types of manoeuvres can be contrasted with lengthy sequences of repetitive rhythmic action, common to figures belonging to both technique cultures, in which the figure is woven on the loom of the hands through the ordering of which finger picks up which string, one step at a time. As, for example, the *Yolngu Weave* sequence used in *Water Goanna*, *Water Buffalo* and the *Mokuy* suite of figures in the *Goanna Family* tree as discussed in Chapter 6 (see AA§1 Plate 1; see also Video 4—Demo B, begin 00:02.53; and Video 5—Demo C, begin 00:02.19). As there are shorter alternative methods for achieving the same outcomes that could be used and are used elsewhere, these sequences are retained, I would argue, for their kinaesthetic appeal.

Twisting the strings (Video 19—Technique 3)

Repeated twists in the strings have been recognised as a unique characteristic of the Yirrkala repertoire. When added to the ends of diamonds as in #34A *Two Stingrays* (in the *Goanna Family* tree), they are made through an action in which the same two strings are picked up, extended and released, turn and turn about, by 5 (the little finger). The rhythm of this action and the evident pleasure to be had from it is captured in the 1948 footage of Wandjuk (see Video 19—Technique 3:

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[10] This procedure, and the figure itself, has been recorded elsewhere, specifically in Melanesia. See for example Noble, Philip D. *String Figures of Papua New Guinea*. Boroko, P. N. G.: Institute of Papua New Guinea Studies, 1979: 133–34. Catalogue number 79: *Red Pandanus Fruit*.

[11] Two images of the mouth pick-up are included in the section at the end of the catalogue of figures. As Maude and Sherman note, many of the images of these 'unknown' figures are in fact stages in recorded designs.

Clip 1). The same technique is used in the figure #101E *Crocodile,* the final stage in the *Parrotfish* sequence—here adding twists to the ends of a 4-diamond design (with wrapped centre crossing). This is one of the men's figures collected in the final days McCarthy was in Yirrkala. There is film footage of Wandjuk making *Crocodile* also, again using the same rhythmic action to add twists (see Video 19—Technique 3: Clip 2).

This same design—also titled *Crocodile*—was collected by Shepherdson from Yolngu in the Milingimbi area in the 1930s (see Fig. 3.28). It is important to note that the addition of twists to the ends of designs, as a unique feature of the Yirrkala (or broader Yolngu) repertoire, is only possible with figures with an open structure in which the *Caroline Extension* is a necessary and intrinsic part of achieving the final design, as opposed to the closed structure of figures made using the Oceanic method.

Continuing on from *Two Stingrays* to make *#34B Two Stingrays and Two Young Ones,* a further diamond is added to each end of the design. The *Mouth Pick-up* used in the *Mokuy* suite is again employed here, only now the whole of the figure is fed through this double-loop structure, one half at a time (see Fig. 8.20; see also Video 18—Technique 2: Clips 10 and 11 for *Mouth Pick-up*). (The same manoeuvre is used in the continuation of the Oceanic style figure #44A *Hungry women* to #44B *Yam*.) While the *Mouth Pick-up* move has been documented in other repertoires, the use of this manoeuvre to add diamonds to the end of designs appears to be unique to Yirrkala.[12] The two technique sequences incorporated in this figure, the simple, repetitive and rhythmic action of twisting the strings, and the showy, complex and 'clever' manipulation involved in adding diamonds to the end of the design, define different characteristic aspects of Yolngu string figure style.

Rather than coming at the end of the making process, there are figures in which twists are inserted at the beginning. This is done, as McCarthy recorded, by simply

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[12] If as Maude and Sherman say that the addition of twists to the ends of diamonds in #34A is 'a feature unique to Yirrkala', it follows that the addition of further diamonds to the end of that design would be similarly unique. Maude, Honor C. and Mark A. Sherman. 'The String Figures of Yirrkala: A Major Revision'. *Bulletin of the International String Figure Association* 2, 1995: 87–187; 111.

rotating the finger holding the particular loop of string you want to add twists to. Examination of the technique trees shows how the optional addition of twists in this manner is used to create variations on a design to which different identities are attached. See for example the Western Pacific 3-diamond design #9 *Macassan Man* (AA§4 Plate 8 and AA§4 Fig. 7), and variants of the Oceanic 4-diamond designs (with wrapped centre crossing) #10 *Scorpion*/#43 *Rock Lobster* and #14 *Centipede* (AA§7 Plate 12). It is notable that many of these subjects have characteristics not only aptly described by the formal twists in the design as 'iconic' signifiers (i.e. spines and scales), but perhaps also by the action of making them. Following this line of thought, in the 1948 film footage Wandjuk is putting the cackle in the kookaburra's laugh, the sting in the ray's tail, and the scales on the crocodile's back through the repetitive cranking action of adding twists.

In the loop designs, figures are differentiated from each other by the various combinations and permutations of swapping loops between the digits and twisting of the strings (see AA§9 Figs. 1 and 2). The addition of twists creates torsion and increases the overall tension in a design: in some cases setting it like a spring (literally). In some of these designs—those beginning with openings on the little fingers in particular—the addition of twists or the 'winding' of the figure creates a palpable tension, as seen in the footage of Mulkun making *Dakul/Stone Axe* (see Figs. 7.8A and 7.8B; see also Video 19—Technique 3: Clip 3).

Judy demonstrated a number of different actions for adding twists to loop designs: in making a design very similar to #99 *Two Shovel Spears*—picking up the loop of string off the finger, rotating and then replacing it; in making #98 *Cross-shoulder Strap* or *Matjka*—rotating both hands and the fingers in unison. Judy also made three figures not recorded by McCarthy using a novel technique. *Maranydjalk/Stingray*, *Marritjkala/Manta Ray* and *Djanda/Goanna* or *Water Goanna* were all made by Judy using her feet to anchor the string, while she plied the twists into it using a winding action (Fig. 10.3; see also Video 19—Technique 3: Clips 4–8).

Movement, mimicry and mimesis (Video 20—Technique 4)

As in the forms of the designs, in the movements accompanying them, there is a mixture of the abstract and the figurative—on the one hand, the technical movements of making and on the other, movements that imitate the subjects of the figures. In my fieldwork, one of the first things I noted was that string figures are never still. Even when the final pattern of a supposedly 'fixed' design is arrived at, the hands move to keep the figure tensioned in order to display the design, and even if no specifically imitative movement is involved, to animate it or keep it 'alive'.[13]

While not a dominant feature of the Yirrkala repertoire, there are more examples of action or moving figures than the three specifically identified by McCarthy. It is useful to make a distinction between two different types of movement in the figures McCarthy listed.[14] #50A&B *Ibis* and *Ibis Flying into a Tree* is an action figure in the sense Ball defined it, in that the figure changes state through the effect of the movement (Fig. 10.4). (Similar figures in the repertoire include #51A&B *Flying Fox/Mangrove Crab Escaping* and #45A&B *Baby Being Born/Baby Born*.)[15] #58 *Man and Woman Copulating* and #180 *Sawing Wood*, on the other hand, are figures animated by movement, but the movement does not produce any permanent change in the figure (Fig. 10.5). (Handy termed these 'progressing' and 'sliding' figures, respectively.)[16]

Another figure of this later sort in the Yirrkala repertoire is #157 *Caterpillar Crawling on a Twig*. As far as McCarthy's documentation goes, this could be a static design. But as can be seen from the video footage it is dynamic and in constant movement (see Video 20—Technique 4: Clip 1). The movement of the figure is a

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[13] During my first stay in Yirrkala over Christmas and New Year of 2008–09 Kirrily Schell, a graphic designer working as artist-in-residence with the Mulka Centre, told me about the technique used in animation known as 'drawing in threes': that even when a character is still you draw it three times—so that the slight differences between the drawings keep the image 'alive'.

[14] McCarthy, Frederick D. 'The String Figures of Yirrkalla'. In *Records of the American and Australian Scientific Expedition to Arnhem Land*, edited by C. P. Mountford. Volume 2: Anthropology and Nutrition. Parkville, Vic.: Melbourne University Press, 1960: 415–511; 417.

[15] The term 'Mattjur' that McCarthy recorded as meaning 'Ibis' the YMD records as 'Flying Fox'. This suggests there has been a mix-up in the titling of the figures. Hence #50A&B are more likely *Flying Fox* and *Flying Fox Flying into a Tree* and #51A&B *Ibis/Mangrove Crab Escaping*.

[16] Handy, Willowdean Chatterson. *String Figures from the Marquesas and Society Islands*. Bernice P. Bishop Museum Bulletin 18. Honolulu, Hawaii: Bernice P. Bishop Museum, 1925: 6.

pronounced mimetic attribute, essential to its iconic identity—the caterpillar crawling. Watching the figure being made, no part of the process is without inherent movement however—even the closed hand that captures the string at one point is active in compressing the figure before its release.

When making *D̲aŋgultji/Brolga*, Nyangungu and Nonggirrnga moved their arms up and down mimicking the flapping of the brolga's 'wings', and they would mimic its call—'dolk, dolk, dolk' ('when they starts flying—that's how they make noise').[17] Wandjuk makes the same actions accompanying a similar (but not technically identical) figure in the 1948 film footage. And when making the figure of a crab, he uses his index finger to mimic the pincer movement of the crab's claw. When Nonggirrnga made the figure *Biyay/Goanna*, she habitually moved her right and left hands back and forth alternately, mimicking the leg movements of the animal (see Video 20—Technique 4: Clips 2–7).

Most creatures share the bilateral symmetry of the human body—the movement of our hands doubles as the animal moving (its feet, its wings). Through this sort of 'body double' mimesis, the body of the maker and their actions are incorporated as part of the image or schema of the string figure—they become the thing being depicted. Parallels with the body are drawn more directly in depictions of material culture and human actions: as in the figure *Bathi/Dilly Bag* for example which is suspended from the neck as traditionally worn; or the figure of *Man and woman copulating*, held at one end on the toes (Fig. 10.6). For Djin̲iyin̲i Gondarra the *Goanna 1* figure represented the heart of a person, beating. He demonstrated how it could be used in telling a story—for example, about the victim of a witch doctor taken out into the bush—showing that the person was still breathing '… his heart is just pumping a little bit.'[18] Held at chest height, manipulated by rotating the hands, the play of the string figure as heart beating, is doubled through implication by the beating of Djin̲iyin̲i's own heart (see Video 20—Technique 4: Clip 8).

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[17] Nyangungu and Nonggirrnga Marawili and Djarpirr Mununggurr, Biranybirany, 15 August 2009.
[18] Interview with Djin̲iyin̲i Gondarra, Darwin, 28 August 2012.

In my observation, string figure making is a kind of theatre: with the whole body as its means, and the larger physical world, its three dimensions and cardinal points, as stage and backdrop. Analysed in previous chapters as isolated graphic schema, it is obvious how in the 'performance' context the meaning of figures is influenced by factors extraneous to the pattern or design itself.

The aesthetics of brilliance

To recap Morphy's argument: bir'yun is the shimmering effect of the finely cross-hatched lines that cover the surface of a painting. Deployed specifically for sacred paintings called likanbuy miny'tji, the 'brilliance' or 'brightness' of the effect understood to be an emanation of the waŋarr realm, is one of the things that endows the painting with spiritual power. Brilliance, brightness or shininess generally, as in natural phenomena like refractions of light off water and the sun's rays, lightning and rainbows and as qualities of natural substances such as fat, blood and feathers, are similarly valued for this sense of their connection with ancestral power. Morphy quotes from Thomson's field notes to explain the idea:

> *bir'yun* is the flash of light—the sensation of light that one gets and carries away in one's mind's eye, from a glance at *likanbuy miny'tji* … it is the sensation of light, the uplift of looking at this carefully carried out work. They see in it a likeness to the *wangarr* …[19]

I argue that string figures, or more specifically string figure making, produces parallel effects to bir'yun in painting: the 'flashes' of movement produced in the process of making (Wandjuk adding twists), and the 'brilliance' (or as I described it earlier 'marvellousness'), 'the uplift' of that moment when a design is finally revealed. Bir'yun is associated by Yolngu with positive emotions, again according to Thomson's record: '[the light makes] the heart go happy, [makes] it smile.'[20] My video of 'Making and not making … *Miyapunu/Turtle*' demonstrates that feelings of joy and 'light-hearted happiness' accompany the successful completion of this figure, for example (see Video 7—Making and not making … *Miyapunu/Turtle*).

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[19] Donald Thomson unpublished field notes 4 October 1937. Cited in Morphy, *Ancestral Connections*, 1991, 194.

[20] Donald Thomson unpublished field notes 4 October 1937. Cited in Morphy, *Ancestral Connections*, 1991, 195.

My argument is not that the experiential effects of making string figures and observing them being made are directly equitable with the bir'yun of sacred ancestral power as such. Rather, I am suggesting that these aesthetic effects are recognised through, and make sense to Yolngu in relation to, bir'yun. All clan paintings are said to possess bir'yun, but as Morphy explains Yolngu make a distinction between sacred likanbuy paintings and bulgu paintings, that contain clan designs but appear in open contexts. 'Bulgu paintings', he writes, 'are a subordinate category of paintings to likanbuy, one stage further removed from the waŋarr ancestors.'[21] String figures are not only executed in a different medium, but belong to a different genre again. While they might exploit analogous effects, the impact of these is influenced by the different contexts in which they are commonly found, and the different ends to which they are addressed.

McCarthy recorded that while used in ceremony by men, in general the making of string figures was considered a women's preserve. As noted previously, he suggested they provided a potent 'link between the women and the tribal mythology'. He saw this link as being a matter of 'content': 'As they make the figures the women are thinking not only of a particular animal but of its significance in the *Wawalik* sisters' saga.'[22] I am arguing that this link is also made through the aesthetics of practice.

As discussed in Chapter 9, p. 304, clan designs are said to come directly from ancestor beings—they had these designs on their own skin, as well as making them out of string while dancing. And, as was explained to me by Joe Gumbula, whereas men have the designs painted on their bodies (during ceremony), women make the designs in string.[23] On a separate occasion he elaborated on the significance of string figures in the spiritual lives of women. Boys first have clan designs painted on for circumcision/initiation on the cusp of adolescence. This is the time when girls begin to become proficient at string figure making.

> This is the other story about women who play the strings … other stories, behind the stories. It's the dhuyu. Dhuyu is sacred. You are not allowed to

[21] Morphy, *Ancestral Connections*, 1991, 195.
[22] McCarthy, 'The String Figures of Yirrkalla', 1960: 427.
[23] Joe Gumbula, comment at presentation, Australian National University, Canberra, 18 July 2014.

> play in front of elders; not allowed to play or perform in public in the eyes of elders/authorities/leaders. You'll play it somewhere else … The ladies will do this. When they play, they become a woman. They use that to become a woman. Everything that first happens to young girls, that's what I'm calling woman … When the breasts comes out. Its to build their relationship with their body, emotional and spiritual strength (you know). The patterns are giving you energy, giving you more power to grow … physically, spiritually … to become a leader later on. Men have their leaders and ladies have their leaders. Playing with the strings—it is part of life, and its part of, you know, exercise. You are chosen as a leader because of touching these raki—because of the bodily, emotional and spiritual wisdom, given from the ancestors. That's what its all about.
>
> It's a spiritual and cultural thing as well … it's an art, making the string for ceremony, weaving baskets, armband … it's the work that's involved in getting ceremony happening … women is the authority to the whole of that work.
>
> The string contains märr, power. You have to capture the beautiness. That's märr. You can say it in different ways. I believe märr is something that is very important when you play … It's not actually playing … playing is not the right word. You actually perform, you enact a form of something … This is the lead up to womanhood. [24]

The rights of passage boys and girls undergo prepare them for a role as productive members of a society—this training in making string figures could, in this context, be seen as a skills training: in making string itself, and all things made with string—string bags and other forms of weaving, armbands, pubic covers—all those uses imagined by the Nyapililngu which would have had economic value in Yolngu society. As Gumbula says: it's an art and it's work.

The concept of bir'yun blurs the line between these two categories. To go back to that first quote from Thomson: 'it is the sensation of light, the uplift of looking at this carefully carried out work.' The fine cross-hatching that produces the effect of bir'yun in painting is the product of work: a labour of careful repetitive rhythmic measured gestures. Thomson implies that (understanding of) the effort involved in the process is implicit in the appreciation of its effect—(in a sense) it is its 'power'. At the same time as we experience the effect, we read its source.

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[24] Interview with Joe Gumbula, Canberra, 13 July 2010. I have restructured the edited transcript of this interview with Joe Gumbula to give the sense of what he was saying a more concise form.

Writing in the 1970s on Jackie Winsor's 'wound and bound forms' Lucy Lippard identified the power of the work involving a kinaesthetic sense of the energy involved in the process of its making—a visual reading of and bodily identification with 'the process of repeatedly unravelling … the process of repeatedly binding.'[25] Rather than bir'yun being a purely optical phenomenon, I argue that the fine cross-hatching of Yolngu painting also engages this kinaesthetic sense. As a performance practice the kinaesthetic element of string figure making can be directly observed. Fingers flashing with the repetitive rhythms and complex manoeuvres of Yirrkala string figure style, produce the bir'yun of string figures.

In the 1948 footage, after weaving the figure of *Stingray*, Wandjuk moves it across his thighs repeatedly, seeming to play with the visual effect of the patterns of string interacting with their own shadow cast from the sun (Fig. 10.7). It leads me to imagine string figures made using white-feathered raman or possum fur burrkun, and then mobilised through dance in ceremony (as in the Octopus dance): 'everything made beautiful'.

A string education: Yolngu pedagogy

> To discover our relationship with the land, people, animals, related through … by string …[26]
>
> Djiṉiyiṉi Gondarra, 2012

Djiṉiyiṉi Gondarra reiterated to me the role of the Wäwilak sisters in bringing string figures to Arnhem Land. One of their pedagogical functions, he said, was to instruct about marrying according to the right skin relationship, through rules about who could make string figures with whom (in a similar manner to the series of provisions on this subject that McCarthy had recorded).

> The point about string figures … taught people to marry right way. Before them [the Wäwilak sisters]—all over the place. That is what the story [the Wäwilak sisters myth] is about after all—and they taught this with the string.

[25] Lippard, Lucy. 'Jackie Winsor'. (First Published in *Artforum*, 12 (6), 1974). In *From the Center: Feminist Essays on Women's Art*. New York: Dutton, 1976: 202–09.
[26] All of the following information and quotes are taken from one interview with Djiṉiyiṉi Gondarra in Darwin on 28 August 2012.

Djiṉiyiṉi described string figures as a visual (visuographic) communication system something akin to writing.[27]

> Every single person know—every one that grow up must learn the string patterns, and learn their relationships with the land and people through the string …

String figures, by his description, were both a form of knowledge and a technique for knowledge transfer. A way of telling 'stories', not through words 'mouth to mouth', but through visual 'symbols':

> Visual is a very important power. When they are really educated properly … they know what the story is … Patterns as signs and symbols.

He suggests that as with painting, the 'educated person' understands the story, whose it is and what it is about, through visual recognition of the designs. He listed string figures along with the message stick, sign language and painting as the major forms of traditional knowledge reproduction.

Discussing the narrative recorded by McCarthy of the list of places and animals seen and collected by the Wäwilak sisters, I asked him about its status as a 'creation myth': were the sisters actually creating the animals and plants, or through 'naming' them bringing them into the cultural world? He replied:

> No, they were seeing something already there. They know what that animal is. That animal had a name and a moiety. What they [the Wäwilak sisters] were doing was creating the story and design about them with the string—for the purpose of education.

String figures were another form for telling the stories through which Yolngu cosmology is transmitted: 'stories about the land, the people, the forest, different animals, birds, reptiles …' And in this they were multi-purpose. In the same way images are used in conventional pre-school education as visual anchors: string figures were used to teach children about the world. Mavis and Judy demonstrated

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[27] At Cape Bedford in North Queensland, Roth recorded that string figures were called *kápan*, which 'signifies in addition any cut or mark'. He goes on to explain that this term was also used for the newly acquired skill of reading and writing taught by the missionaries:

> When these Cape Bedford blacks were first taught by the missionaries to read and write, and told that certain letters indicated certain sounds, and that a collection of such letters represented corresponding objects and ideas, they got into the way of speaking of words, letters, writing etc., as kapan, a term which they still use.

Roth, Walter E. 'Games, Sports, and Amusements.' *North Queensland Ethnography*, Bulletin No. 4. In *The Queensland Aborigines*, Facsimile Edition. (Originally published by the Queensland Government, Brisbane, 1902.) Vol. 2. Carlisle, Western Australia: Hesperian Press, 1984: 11.

their use in this context: pointing out to me the 'teeth' of the spider, and the 'floppy ears' of mayawa/frill-necked lizard, and showing me how the tadpole turns into a frog. They were used for telling children 'bedtime stories'.

Learning through imitation, the children would then make the figures themselves. Djiniyini recalled that young boys, as part of their initiation, were tested on their ability to make the figures accompanying the story of Weṯi and Murruk. Initiates and their families were not allowed to drink water before the final ceremony. Afterwards, as a test of knowledge, the initiate had to make all the figures in the story of Weṯi /Wallaby and Murruk/Cockroach before they and their families were allowed to drink again. In this story the Wallaby and Cockroach have an argument: Murruk runs to all the billabongs and urinates in the water—making it salty; but before Murruk can get to them Weṯi goes around and collects the water in his pouch, and after the dry season (when the water in the billabongs is low and salty), he puts the water back.[28] This can be seen as a form of memory training. These sequences—including the far longer Matjka-wuma version of the Wäwilak sisters myth—could themselves have functioned as mnemonic devices.[29]

The task of learning to make string figures can be linked to standard educational development goals. As Steiner educator Ann Swain has written:

> String games work to develop skills that can be transferred into motor agility, literacy and numeracy. The dyslexic child is supported to move from the tangible to the abstract, to learn fluid sequences through tactile and proprioceptive senses, which readies them for the world of written expression—the one they find so incomprehensible![30]

When I visited Garrthalala in 2010 the primary teacher at the school, Multhara Mununggurr, demonstrated how string figures could be used to teach concepts in the current maths curriculum relating to direction: up, down, over, under. At a more advanced level they have been used by other teachers to model mathematical 'problem solving':

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[28] I cannot locate a source for the Yolngu matha spelling of Murruk/Cockroach—this is my best approximation.
[29] In a way similar to song cycles. See Warner, W. Lloyd. *A Black Civilisation: A Social Study of an Australian Tribe*. New York and London: Harper and Brothers, 1937: 252, n. 5.
[30] Swain, Ann, 'Introduction'. In Taylor, Michael. *Finger Strings: A Book of Cats Cradles and String Figures*. Floris Books, 2008: 7.

> Algebra isn't about 'A squared plus B squared equals C squared.' It's about representation of pattern. With string figures, patterns are made real: One movement of the one hand—or even finger—creates a change in the pattern. Children see the logic because they literally see it … To know how to manipulate string is to know how to solve a complex mathematical equation. Or create a computer program. Or build a bridge.[31]

The function of string figures as a form of ethno-mathematics is the subject of a recently published book by Eric Vandendriessche (the result of his PhD research). As Kerin Chemla comments in her preface to the volume: the nature of string figure repertoire as knowledge systems and the capacities that are exercised in their generation and memorisation, are key questions of importance.[32] The investigation of these questions in the specialist areas of educational theory and the cognitive sciences, as with mathematics, is beyond the scope of this thesis. Nevertheless it is apparent, as I argue through my research, that expert string figure makers, rather than simply having memorised a compendium of different figures and how to make them, have a conceptual analytical understanding of the relationship between figures, the effects of certain manipulations or operations, and the possibilities for exploration and development of repertoire through these.

Men's knowledge/women's knowledge

McCarthy had been told that there were different figures that belonged to the men and women respectively: 'The men make some figures on the ceremonial grounds when they are enacting the Wawilak sisters' rituals. The women make their figures amongst themselves.' Given McCarthy's presumptions he conceived this to mean that there were specific designs representing specific subjects that belonged to either men or women respectively. On his penultimate evening in Yirrkala McCarthy collected three figures supposedly 'made by the men only' from

[31] Murphy, James R. 'String Theory: Can Cat's Cradle Help Save Our Schools?' *The Wall Street Journal*, 17 September 2012. James R. Murphy is a now retired New York high school maths teacher (and a Native American). See his book Murphy, James R. *Murphy's String Figures: Teaching Maths with String Figures*. Creative Space: Independent Publishing Platform, 2008; and his website *Torus Flex*, http://www.torusflex.com.

[32] Chemla, Kerin, 'Preface'. In Vandendriessche, Eric. *String Figures as Mathematics? An Anthropological Approach to String Figure-Making in Oral Tradition Societies*. Studies in History and Philosophy of Science 36. Switzerland: Springer, 2015: vii–x; vii.

Wandjuk. One of these he had however collected earlier from Ngarrawu under a different name.[33]

The section of the Wäwilak sisters myth that McCarthy recorded from his Rirratjingu informants follows the path of the two sisters before they reach the sacred waterhole of Yuḻunggur at Mirrarmina. At each stop on their journey, they make string figure designs of whatever they see at that place: this includes plants and animals, their own activities and a visiting Bayini Prau.[34] McCarthy was unsure what incidents in the myth were depicted in string figures by the men and which by the women.[35] By his count he had collected 74 out of 92 figures mentioned in the story, from women, Ngarrawu mainly.

As Morphy contends 'the emphasis in Yolngu culture is more on the restriction of meaning than it is on the restriction of form'.[36] Yolngu cultural narratives ('dreamtime stories') such as the Wäwilak sisters myth have different levels of interpretative meaning. As he took down the narrative McCarthy, for example, recorded different 'inside' men's names to the 'outside' women's names given for many of the figures in the myth. We can presume from this, and the investigation of 'how string figures mean' that has been undertaken in this thesis, that the same string figure patterns or designs could operate across the two contexts. Another way of conceiving of the relationship between 'inside' restricted, 'men's knowledge' and 'outside' open, 'women's knowledge' in Yolngu culture, as discussed in the last chapter (Chapter 9, p. 292), is as one continuous loop.

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[33] The design #75 *Two Women with Carrying Bags* identified by Wandjuk as a 'men's figure', was collected from Ngarrawu as #34B *Two Stingrays and Two Young Ones.* The other two figures were #62 Gunyalili/*Small Boomerang* that I discussed in Chapter 8, and #73 Garanangga/*Mythical Snake* which I make reference to in the conclusion to this chapter.

[34] McCarthy records a Macassan Prau in his catalogue of figures, but in the myth it is a Bayini Prau that is seen approaching. The Bayini feature in Yolngu story as mythical spiritual beings, possibly based on seafaring visitors that preceded the Macassans. McIntosh, Ian S. 'Missing the Revolution! Negotiating Disclosure on the Pre-Macassans (Bayini) in North-East Arnhem Land'. In *Exploring the Legacy of the 1948 Arnhem Land Expedition*, edited by Martin Thomas and Margo Neale. Canberra: ANU E Press, 2011: 337–54.

[35] See McCarthy's record of the myth and his discussion of this issue. McCarthy, 'The String Figures of Yirrkalla', 1960: 425–27.

[36] Morphy, Howard. 'What Circles Look Like'. *Canberra Anthropology* 3 (1), 1980: 17–36: 32.

The use of string figures in men's ceremony continues on Elcho Island today. Dipililnga had been uneasy about our planned trip to Elcho, as she had heard that the men didn't want women and children making string figures. I was told by Daisy Gondarra the Cultural Advisor at Shepherdson College, the local school, that the teaching of string figures had recently been stopped due to the men's feelings on the matter: 'The men didn't like it because they dance with the strings in ceremony.'[37] Rather than being a blanket ban however, Mavis Ganambar's view was that it was more like a moratorium on the activity when men's ceremony was on, and for a month or two afterwards, until 'it cleared'.[38] There were different understandings of the matter.

As discussed in the last chapter, in the Wäwilak sisters myth/ritual cycles string figures are particularly associated with the passage from girlhood into womanhood, with the onset of menstruation. From the men's perspective this has a religious/sacred/erotic dimension. For women, I found this connection also had a more practical significance—another example of Djiṉiyiṉi 's Yolngu pedagogy or 'string education', in this case 'sex education'. As Djarpirr Mununggurr told me in 2009:

> There are a lot of things especially for women that are involved in the strings. I can hear … [I remember them saying i.e. the women elders who taught string figures at the Yirrkala school]: 'Even though you [don't know] it now … these things will happen to you.[39]

Among the figures collected by McCarthy there are several that could obviously be used for this purpose: the generic 2-diamonds design #2 *Two Vulvas/Penis and Vulva*, #158 *Man and Woman Copulating* (also called *Two Women Menstruating*), #57 *Menstrual Blood of Three Women*.

In my final session with Judy, her daughter Evelyn and Mavis on Elcho in 2012, prompted by an image in Maude and Sherman's 'Major Revision' of #158 *Man and Woman Copulating*, Judy made this figure, which she followed with *Lap of a Woman* or *Vagina* (not in the AASEAL record) (Figs. 10.8A and 10.8B). This was accompanied by some amusement and it sparked a conversation continued in

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[37] Field notes: 12 September 2012.
[38] Field notes: 17 September 2012.
[39] Workshop/interview with Djarpirr Mununggurr, 17 January 2009.

semi-hushed tones about string figures and 'women's business', and the figure #57 *Menstrual Blood of Three Women* in particular. When Judy's grandson approached he was told to go away, that this was for women only.

As discussed in Chapter 5, p. 210, #57 *Menstrual Blood of Three Women* begins with *Opening A* (AA§9 Figs. 3A and 3B). Twists are then added to the loops on each digit. As was explained to me by Mavis the configuration of the strings made from *Opening A* represents the normal body of a woman, and the twists represent pain.

> Mavis: Just like this—that's the normal.
>
> Evelyn: That's just the normal body of a woman.
>
> Evelyn: When our body aches a lot this twist tells the pain—more twists, more pain. … And when we have lots of twists that's lots of pain—like baby pain, period pain, any sort of pain in our body.

At the end of the session Evelyn summed up**:**

> Only ladies talk about that part of string. Only ladies are allowed to tell and also to let only girls know—how to make string and what's the story behind that string.
>
> Because when they grow up they will in real life, they will learn and remember that when they were kids they used to do that string thing. Then they will understand … guess this is maybe the part that my grandmother or my mother or my great-great-grandmother was teaching me, and now I've got that pain. So she can understand when she grows up to be young lady. She knows already something about that string. There's a story in that string. Or when she has that relationship with a man, she knows.[40]

[40] Workshop/interview session with Judy and Evelyn Garrawurra and Mavis Ganambarr, Galiwin'ku, Elcho Island, 14 September 2012.

Conclusion

> Most of the choir and furniture of heaven and earth are regarded by the Aborigines as a vast sign-system … He moves, not in a landscape, but in a humanised realm saturated with significations.[41]
>
> W. E. H. Stanner, 'Religion, Totemism and Symbolism', 1965

> Looking at the mounted figure titled *Garanangga/Mythical Snake* (Field no. 173C, AASEAL#73) Rarriwuy said exasperatedly—'that's not a mythical snake, that's an actual snake from up North, yellow tree snake …'[42]
>
> Rarriwuy Marika, 2008

I have in this thesis tended to describe the Yolngu concept of the 'outside' using terms such as the everyday or the mundane to contrast with the esoteric 'inside' world of restricted meaning and experience. I want to qualify this, to correct the impression that the 'outside' world of Yolngu is the same as the everyday world, as I for example, experience it. In a way this is a banal point—asserting the fact of cultural difference. But it is significant for how what is being made in the practice of Yolngu string figure making is understood.

One of my aims early on was to re-document the collection—to confirm the identity of figures and methods of making. Contemporary memory of the historical repertoire was limited, and as I have established these things were not necessarily 'verifiable' in the way I had thought. My aim shifted to confirming the titles or names McCarthy recorded for the figures: standardising his Yolngu orthography and correcting his English translations. Djerrk'ngu Yunupingu (b. 1945) worked with me on this. Where animals and plants were concerned this process often involved the difficult and fraught task of cross-cultural species identification. Djerrk'ngu would attempt to explain to me just what bird or reptile the Yolngu term referred to, typically by describing where it was found and its behaviour. Her description would often move between natural history and cosmology: where it was found in the natural world would slip into comments regarding its place in

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[41] Stanner, W. E. H. 'Religion, Totemism and Symbolism'. In *Aboriginal Man In Australia: Essays in Honour of Emeritus Professor A. P. Elkin*, edited by Ronald M. Berndt and Catherine H. Berndt. Sydney: Angus and Robertson, 1965: 207–37; 227. As cited in Williams, Nancy M. *The Yolngu and Their Land: A System of Land Tenure and the Fight for Its Recognition*. Stanford, CA: Stanford University Press, 1986: 42.

[42] Interview with Langani, Rarriwuy and Kathy Marika, Melbourne, 16 October 2008.

narrative and myth or 'religion', as for example in her description of the subject of AASEAL #154 Wurraṉ/*Diving Duck*—which we identified as a darter or snakebird.[43] Djerrk'ngu explained that this bird would dive into the water, and sometime later, come up in a different place:

> [They] Like diving … nhawi, nhawi [what is it?]—I forgot his name—too big—I forgot his name—they usually singing a song … Dhaḻwangu people singing a song. *About that darting bird.* They sitting down sometimes, sitting on the tree, and flap his wings … wait to sunshine come to shine them. They sometimes dive in and they're looking for fish and they got it inside the water … nhawi, nhawi … another yaku [name]. Very important, the people singing that song.[44]

Another day, looking at the sequence AASEAL 91A-C *Diving Duck*/*Waterhole or Billabong*/*Tree to which the Ducks Fly*—Djerrk'ngu again extemporised, 'Open their wings to dry and cry out. Sacred Gäṉgaṉ tree [i.e. tree at Gäṉgaṉ is sacred] to Gupapuyngu and Dhaḻwangu [Yirritja clans]'.[45] One of the raŋga poles collected by Berndt illustrated in Chapter 8 was 'Diving Duck Tree' (see Fig. 8.11 c).

> The carved apex is the bird's head, while the main design on the barrel commemorates its adventures; a billabong and splashing water, the tree upon which it perches, the water shaken from its feathers, a fragment of seaweed which fell from its beak on to the sacred site.[46]

Wurraṉ, the darter or snakebird, common across the top end of Australia is found throughout the continent, including in Canberra.[47] It can be seen on Lake Burley Griffin diving down to catch fish which it brings to the surface to swallow whole, sitting on a rock with its wings opened out to dry in the sun, just as Djerrk'ngu described. My point is, that as I observed again and again during my fieldwork—in this and other activities—for Yolngu the world can be 'enchanted' with significance as a result of the narratives they carry with them, and through which they experience their world (Figs. 10.9 and 10.10). This impacts on how we understand

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[43] Morris, Ian. *Kakadu National Park, Australia*. Archerfield, Queensland: Steve Parrish Publishing, 1996: 136. In 2012 I had illustrated guide books to assist with the process of identification.
[44] Interview/workshop with Djerrk'ngu Yunupingu, Yirrkala, 30 August 2012.
[45] Interview/workshop with Djerrk'ngu Yunupingu, Yirrkala, 3 September 2012.
[46] Berndt, Ronald M., and Catherine H. Berndt. *The World of the First Australians*. Sydney: Ure Smith, 1964: 371.
[47] Goodfellow, Denise Lawungkurr. *Birds of Australia's Top End*. Parap, Northern Territory: Scrubfowl Press, 2001: 33–34.

the practice of Yolngu string figure making—what is being 'represented', or rather as Joe Gumbula described it, 'performed' or 'enacted'.

In the conclusion to Chapter 4 I criticised the parallel McCarthy drew between the number of different figures he had collected and the tally of different species collected by the other scientists on the Expedition. The point being he had collected a 'long series' of specimens, and failed to analyse what constituted a 'species' distinction in this case. My semiotic analysis of the repertoire—of 'how' the Yirrkala string figures mean—concluded that the one pattern or design could be made using different methods and have multiple meanings or identities. I found that although from an analytic perspective the repertoire constitutes a mixed system of pure and iconic signs, the dominant explanation of the meaning of any design is made in terms of its iconic identity.[48] While discounting 'realism' in the designs themselves, the presumption of my analysis is ontologically realist—it still treats the string figures as a 'picture gallery' of the 'real' world, something like a list of species.

In my fieldwork I observed that the actuality of something—the reality of a thing—is often cited by Yolngu as evidence of its maḏayin (sacred) or 'otherworldly' status, proof of events in the waŋarr realm. Djarpirr, for example cited the existence of rocks identified as the nest of Djeṯ at Yilpara as proof of the truth of the story about the boy who turns into a bird. 'It's true what happened—the nest of the Djeṯ and the Damala is still there at Yilpara (Baniyala) [and the] Old tree where they were sitting under.'[49] In Yolngu culture the material world and the spiritual world are imbricated one within the other—they support each other—forming one continuous loop.

[48] As Morphy has pointed out in considering the mechanism of representation, a distinction can be made between the nature of a sign (the relationship between signifier and signified) and how that relationship is interpreted. See Morphy, 'What Circles Look Like', 1980: 17–36; 19, 27–31.
[49] Djarpirr Mununggurr, Biranybirany 15 August 2009.

Conclusion

In Yirrkala, McCarthy set out to compile as 'comprehensive and detailed' a record of the Yirrkala string figures as possible. The significance of the collection was above all, for him, its size. In the catalogue published in the *Records* of the Expedition he listed a repertoire of 213 different figures. McCarthy's collecting was 'systematic' in the 'blanket approach' sense of the term, but he was not able to analyse his data in any considered way.

In this thesis, I analyse the Yirrkala string figure repertoire as the result of a system of production, rather than as a collection of individual objects encountered in the field. In the first instance I undertake a technical analysis to understand the 'system' structuring variation in pattern and design in the repertoire. On top of this I apply a semiotic analysis: looking at both technique (or process) and form (or visual image) as 'systems' in which 'marked' difference operates to distribute meaning (or identity) across the repertoire. From this analysis, supported through the experience of my contemporary fieldwork, I conclude that the figures operate (from an etic analytic perspective) as a mix of iconically motivated and arbitrary or 'pure' visual signs. Developing on Howard Morphy's analysis of the 'meaning system' of Yolngu painting, I argue that the broad and fluid multivalent nature of the identification of many of the designs in the repertoire is a product of the Yolngu way of reading images: in the play between 'looking like' and 'seeing as'. I also document cases in which meaning is produced through the durational flow of movement.

In this thesis I have situated string figure making within the broad span of Yolngu culture. I argue that in Yolngu cosmology the everyday and the 'special' or sacred form one continuous loop. Women provide the string that is used by men in restricted ceremony. String figures, while associated with the women's sphere of activity (and the functional uses of string in that realm), are linked to the varied uses of string in ceremony and on ceremonial objects, and to the practice of 'dancing with strings' (or 'making string figures while dancing') in ceremony. These different practices are all linked through the materiality of raki or string. String is seen as containing or being a conduit of märr or spiritual power: and I have argued that the movements of making string figures—the flashing of fingers followed by the revelation of a design—can be viewed as a corollary of the bir'yun or brilliance of ancestral power. String figures or matjka are particularly associated with the 'coming of age' of young girls, who traditionally at the time of first menstruation wore a matjka or chest girdle, which (in myth and song) would be used to make string figures. The practice of string figure making was a form of physical, mental and spiritual exercise for young girls in preparation for their role as women:

> Playing with the strings—it is part of life, and its part of, you know, exercise. You are chosen as a leader because of touching these raki—because of the bodily, emotional and spiritual wisdom, given from the ancestors.[1]

Historically, string figure repertoires have been conceptualised in terms of the published catalogues of figures, based on the field records made by collectors. I propose that string figure repertoires are best understood, in the first instance, through analysis of the system of relationships that structure a corpus, and the identification of the particular characteristic techniques or technique sequences used to elaborate it. Certainly, analysis of the Yirrkala repertoire shows that the standard practice of organising catalogues of figures (and in effect categorising them), according to the particular opening used, is wrong-headed and misleading.

From Jayne onwards (for the purpose of tracing connections between different populations), commentators emphasised identification of the methods used by any group as of more importance than a comparison of the final figures produced. However, this aspect—what I am calling string figure style—was never explicitly described by collectors. In the work of Honor Maude for example, her broad knowledge of regional Pacific styles remains embedded in the text of her instructions for the repertoire she recorded, and occasional comments. To access her knowledge of style these texts would need, in effect, to be 'deciphered'. The reluctance to describe style—'the motor habits of a people'—was due in part to the belief that this could only be done meaningfully through a rigorous application of

[1] Interview with Joe Gumbula, Canberra, 13 July 2010.

the 'comparative' method: which meant waiting until more data was obtained, in fact waiting until the whole field was mapped.

But the style of a people is not formed or experienced as a comparative exercise: they do not have access to the whole field. In this thesis I describe and document the characteristic manoeuvres ('operations' or 'procedures') used in the repertoire that define Yirrkala string figure style as a movement practice. In my analysis I have used some comparative tropes to articulate differences within the repertoire, but the repertoire itself I treat as a closed system with a phenomenological or experiential reality of its own. My description and documentation of the structure of the repertoire and the movement language through which it is produced is one of the major achievements of this research project, I suggest akin to the retrieval of a spoken language. This would not have been possible without the 'memory work' of the contemporary women makers, or the 'revision' of McCarthy's records undertaken by Maude and Sherman, but in the first place, it would not have been possible without the collection itself.

The work of anthropologists like McCarthy, and others of his era, is often referred to negatively as 'salvage ethnography'. The term suggests an alignment with the colonialist project—acceptance of the belief that Aboriginal people were 'dying out' and that their culture needed to be recorded 'before it was too late'.[2] The 'museum as storehouse', if undoubtedly based on colonial power and mastery, was a broader concept:

> Through the process of collecting, classification, storage and publication the essential 'wholeness' of other cultures could be preserved and 'fixed' for future reference.[3]

The idea was that these collections would form the basis for further research: for unknown research questions. The reconnection of this collection with its source community (the descendants of McCarthy's original collaborators) has been a two-

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[2] Peterson, Nicolas, Lindy Allen, and Louise Hamby. 'Introduction'. In *The Makers and Making of Indigenous Australian Museum Collections*, edited by Nicholas Peterson, Lindy Allen, and Louise Hamby. Carlton, Vic.: Melbourne University Press, 2008: 1–26; 11.

[3] Urry, James. '"Facts" to Argument. Structure and Function in the History of Ethnographic Writing in the British Tradition, 1890-1940.' In *Before Social Anthropology: Essays on the History of British Anthropology*. Harwood Academic Publishers, 1993: 41–60; 47.

way process. It has been essential to my effort to understand the collection, to make sense of it, and it has seen a revival of this aspect of culture in Yirrkala in significant ways.[4] The work of contemporary makers has now also entered the 'collection' as a record for the future—in my documentation, and quite literally through the string figure prints.

As the Expedition progressed, McCarthy revised his early opinion that the Arnhem Land Aborigines had almost completely abandoned their own ways of living, and he came to appreciate the 'richness' of their cultural life.

> It is obvious that the enriched tempo of social and ritual life, of art and music in Arnhem Land … has produced a creative attitude in all aspects of life of which the remarkable ability of Na:rau in the string figure craft is an outstanding example.[5]

While recognising other forms of Yolngu cultural production as art (i.e. bark painting) McCarthy categorised string figure making as a craft.[6] However, given that they were never accessioned into the Museum's collection McCarthy does not seem to have valued the mounted string figures as material culture objects of any sort. While he considered his work on the string figures more significant than the collection that was made of bark paintings; the mounted figures as a record of the final design to which the instructions for making referred were, it seems, in his mind, more like a field in a data set than objects of aesthetic value or contemplation.

McCarthy noted that his interest in string figures stimulated enthusiasm for 'the making of them' within the community, and that because of their work together, Ngarrawu was 'now regarded at Yirrkalla by her people as the most skilful

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[4] In May 2010 I filmed Dhalulu (Merrkiyawuy) Ganambarr-Stubbs teaching her daughter Siena to make string figures. This session developed as a response to a request for Dhalulu to show me the figures she could make. Sienna took to the activity, and later that year she initiated and led a string figure-making workshop for her school class held at the Art Centre. This is just one example of the inter-generational exchange and learning that took place prompted by my interest in the subject. See also documentation of the Borroloola School group's experience at Garma in 2010 (see AB§3 Fig. 3 and Video 21—*Journey on a piece of string*).

[5] McCarthy, Frederick D. 'String Figures of Australia'. *The Australian Museum Magazine* 12 (9), 1958: 279–83; 283.

[6] He labelled it an 'art' in the hands of Ngarrawu, in deference to her exceptional skill: the 'mastery of her craft'.

individual with maitka-uma'.[7] In subsequent exchanges between Yolngu and Balanda string figure making was not highly valued as a cultural expression. After McCarthy, no one wanted string figures from Yolngu. Other forms of traditional culture meanwhile have been leveraged into highly desirable art objects: bark paintings and larrakitj, and through the work of Louise Hamby, Margie West, Diane Moon and others, fibre arts.

At once a reprise of and homage to the historical collection of mounted figures, the etchings made in 2010 turned string figures into something with recognisable commodity value—the contemporary fine art print (a staple currency of the Art Centre in Yirrkala). This route, from what is generally recognised as a children's game to 'becoming art' could appear on the face of it to be quite simple—effected through the literal transfer from one medium into another: but that was simply a marketing device. Since the advent of post-conceptual contemporary art, if not before, string figures have been 'becoming art'.[8]

Printmaker Marie McMahon used an image of Ngarrawu in her work *Aboriginal land. Land rights, not mining,* first exhibited in 'The D'oyley Show' at Watters Gallery in Sydney, in 1979 (see Fig. x). This is the same image McCarthy used in his remodelling of the museum displays in the 1950s (see Figs. 4.10 and 4.11).[9] An example of how McCarthy's work in Arnhem Land translated into the broader culture, McMahon's image was intended as a statement of solidarity between European Australian women and Aboriginal women, mediated through the shared practice of 'handiwork'.[10] The advent of feminism and the women's art movement which began to aesthetically revalue women's traditional crafts allowed Marie

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[7] McCarthy, Frederick D. 'Diary 5. Yirkalla Diary No. 2 and Oenpelli', 7 September 1948. Papers of Frederick D. McCarthy: MS3513/14/5. AIATSIS.

[8] See Marcel Duchamp 'making string figures' in Maya Deren's unfinished experimental film *Witch's Cradle*, 1943. https://www.youtube.com/watch?v=NkMfRVaA6fs, accessed 15/02/2016.

[9] Interview with Marie McMahon, Sydney, 24 October 2011. McMahon's recollection is that she sourced the image from a publication. She does not remember having contact with the Museum about the image. However, the same plate from Roth that is in the museum display was reproduced in the catalogue which accompanied 'The D'oyley Show'. Women's Domestic Needlework Group. *The D'oyley Show. An Exhibition of Women's Domestic Fancywork*. Sydney: D'oyley Publications, 1979: 6.

[10] Women's Domestic Needlework Group, *The D'oyley Show*, 1979: 6. The section 'Aboriginaland' also includes quotes from McCarthy's 1955 *Australian Museum Magazine* article on 'Arnhem Land Baskets'.

McMahon to see string figures as a form of art and to incorporate the image of Ngarrawu in her work.

Post-object performance and ephemeral art practices, anti-form sculpture, systems and process art of the 1960s and 1970s, seriality (pop art and beyond), and collaborative and relational art practices of the 1990s (and their progenitors), have all contributed to string figures 'becoming art' through valorising a particular set of aesthetic and conceptual tropes that previously were unrecognisable 'as art'.[11] Developing over a similar time frame, Australian Indigenous art has come to be included (if not completely absorbed) within the mainstream of global contemporary art.[12] The collection of mounted figures itself can, I argue, be understood through and therefore 'seen as' contemporary art. This 'conceptual move' is supported by Yolngu ontology in which—as suggested by Djuwakan's print—past, present and future are seen as coexistent modalities (see Chapter 8, pp. 284–85, Fig. 8.21).

Another series of string figure prints was produced in 2013, that, along with the earlier series, were exhibited in the exhibition 'String Theory: Focus on Contemporary Australian Art' at the Museum of Contemporary Art in Sydney in 2013.[13] Two of the makers, Dipililnga Bukuḻatjpi and Djerrk'ngu Yunupingu, visited Sydney to present on their work, to an audience in the gallery (AB§4 Fig. 2).[14] After seeing the prints in this exhibition, Judith Ryan, curator of Indigenous Collections at the National Gallery of Victoria, bought an edition of the 2013 series, which was displayed in the Indigenous galleries at Federation Square in 2014. In early 2015, to accompany a solo exhibition of her paintings at 200 Gertrude, a space supporting emerging contemporary artists in Melbourne, Marrnyula Mununggurr ran a string figure-making workshop. The print-making project as a way of

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[11] For the art historical discourse on 'seeing and seeing as' developed with regard to the relationship between the identification and interpretation of artworks see: Danto, Arthur C. *The Transfiguration of the Commonplace: A Philosophy of Art*. Cambridge, Mass.: Harvard University Press, 1981: 1–2. Carrier, David. *Artwriting*. Amherst: The University of Massachusetts Press, 1987: 1–5.
[12] As notably expressed through the inclusion of Emily Kame Kngwarreye's *Earth's Creation* in the 2015 Venice Biennale main Giardini exhibition curated by Okwui Enwezor.
[13] See McKenzie, Robyn. 'The String Figures of Yirrkala'. In Barkley, Glenn. et al. *String Theory: Focus on Contemporary Australian Art*. Edited by Michael Fitzgerald. Sydney: Museum of Contemporary Art, 2013: 20–22 (AB§4 Fig. 3).
[14] We also took the opportunity while in Sydney to visit the collection in the Museum.

reconnecting with the legacy of the collection has fostered a 'remembering' of string figures as part of Yolngu cultural identity by the larger Yirrkala community and a broader audience, as well as by the women that were directly involved. This is expressed for example in the use of Dipililnga's *Damala's Nest* image as a logo to brand the recent redesign of the Buku website (Fig. y).[15]

> Because its part of our life. Playing with the string is part of our life. It's in here, it's in here (gesturing to heart).[16]
>
> Djarpirr Mununggurr paraphrasing her mother Nyangungu Marawili

> Primitive they may not be, as we know them now, … but vividly human, and a challenge to the common humanity in each of us, they cannot cease to be.[17]
>
> John L. Myres, 'Foreword', to Kathleen Haddon's *Artists in String*, 1930

The practice of string figure making continues in other Aboriginal communities, besides Yirrkala.[18] Information on Indigenous string figures is often included in displays in regional Aboriginal cultural centres.[19] A selection of mounted figures from the collections made by Tindale are on display in the Aboriginal Cultures gallery of the South Australian Museum. Recently Ken Edwards compiled a bibliography of all the published sources on Australian Aboriginal String Figures (some 46 pages) published by ISFA Press.[20] More original historical records, such as the photographs taken by Caroline Tennant-Kelly at Cherbourg in the 1920s, continue to come to light.[21] There is a job to be done, for a string figure scholar and enthusiast, in bringing this material together—to update and revise Davidson's continental survey by filling-in the blanks on the map. Through reconnecting these historical records with contemporary communities it may be possible to understand (as movement culture and meaning system) the types of local variation that occur/occurred within this pan-Aboriginal culture trait. As an ephemeral

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[15] The design has been used as an informal logo since 2014. Will Stubbs pers. comm. 17 February 2016.
[16] Interview/workshop with Djarpirr Mununggurr, Yirrkala 17 January 2009.
[17] Haddon, Kathleen. *Artists in String. String Figures: Their Regional Distribution and Social Significance*. London: Methuen, 1930, viii.
[18] See for example, Hodgson, Robin. *Peppimenarti Basketmakers*. Nakara, NT: R. R. Hodgson, 1988.
[19] As in the Warradjan Aboriginal Cultural Centre in Kakadu National Park for example. Emily McKenzie pers. comm. 14/02/2016.
[20] Edwards, Ken. *String Figure Bibliography of Australian Aboriginal and Torres Strait Islander Peoples*. Pasadena, California: ISFA Press, 2011.
[21] Tennant-Kelly, C. *The Caroline Tennant-Kelly Ethnographic Collection: Fieldwork Accounts of Aboriginal Culture in the 1930s.* DVD. Brisbane: The University of Queensland, 2011.

performance practice string figure making often went 'unseen', and it is a little-known, and even less well-appreciated aspect of Australian Aboriginal culture: it's a 'story' that is yet to be told.

The real meaning of string figures is in the making of them (see Video 22—Yirrkala string figure style). The 'extended mind' hypothesis defines the process of human cognition as a 'constitutive intertwining of brains, bodies and things'. In this scenario as Malafouris and Renfrew have put it 'the implications of removing or damaging a part of the world, equals that of removing or damaging a part of the brain.'[22] This idea is recognised through UNESCO's 'Memory of the World' project. But as we know the brain is plastic, different neural pathways can be constructed to compensate for the loss of others. The brain, like the world, changes (Fig. z).[23] Finding ways of working to foster the continuation of this tradition is a compelling challenge.

String figures were seen from the beginning as something of worth, and something worth keeping. They are variously described as 'fascinating', 'charming', 'agreeable', and adding 'joy to life'. Haddon rationalised the 'scientific' study through the argument that 'in ethnology, nothing is too insignificant to receive attention.'[24] Whatever scientific import might be attached to them, my sense is that the real motivation of the study was the same for all, and for all time: they are pleasurable and they are interesting. To quote D. S. Davidson:

> For the dolts there is the simple type of figure; for the brilliant, a potentially unlimited source for mental exercise and amusement; for the experimentalist, a fruitful field for development with the discovery of new and interesting patterns as a reward; for the artist, an opportunity for keen personal satisfaction in the meticulous execution of difficult figures; for the

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[22] Malafouris, Lambros, and Colin Renfrew. 'Introduction. The Cognitive Life of Things: Archaeology, Material Engagement and the Extended Mind'. In *The Cognitive Life of Things: Recasting the Boundaries of the Mind*, edited by Lambros Malafouris and Colin Renfrew. Cambridge: McDonald Institute for Archaeological Research, 2010: 1–12; 7.

[23] In Yirrkala as elsewhere, the predominant 'digital' games played by children today involve the mobile phone.

[24] Haddon, A. C. 'Introduction.' In *String Figures and How to Make Them*, by Caroline Furness Jayne. (First published as *String Figures. A Study of Cat's-Cradle in Many Lands*. New York: Charles Scribner's Sons, 1906). Reprint edition. New York: Dover, 1962: xi–xxiii; xi.

> skilled entertainer, an extensive repertoire with which to delight an audience.[25]

For me the most pleasing and pleasurable, and interesting, aspect of string figures is that they express cultural difference, not just through the characteristic differences in designs between repertoire, but through their relationship to different logical systems tied to the different kinaesthetic 'motor habits' of a people: differences of 'style and procedure—distinctive openings, manipulations extension and releases.'[26] Everywhere it's the same, and everywhere it's different: two hands with five fingers each (and other body parts), and a continuous loop of string.

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[25] Davidson, D. S. *Aboriginal Australian String Figures*. (Originally published in *Proceedings of the American Philosophical Society* 84 (6), 1941: 763–901.) Reprint edition. Carlisle, Western Australia: Hesperian Press, 2006: 768.
[26] Lane, Barbara. 'On String Figures: A Protest'. *American Anthropologist* 65 (4), 1963: 910–11; 911.