



NEW ZEALAND JOURNAL OF ARCHAEOLOGY



This document is made available by The New Zealand Archaeological Association under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

To view a copy of this license, visit
<http://creativecommons.org/licenses/by-nc-sa/4.0/>.

Moa-hunters and Maoris: A Critical Discussion of the Work of Roger Duff and Later Commentators

Harry Allen

Anthropology Department, University of Auckland

ABSTRACT

Duff's ideas on the origin and development of a distinctive New Zealand Maori culture were first published 40 years ago. This paper reviews Duff's writings on the subject and discusses the theoretical models of cultural change which he invoked to order and explain the evidence then available. The differences between Duff's views and those of later commentators are examined and are found to be of less significance than is sometimes claimed to be the case.

Keywords: MOA-HUNTER, MAORI CULTURE, EVOLUTIONARY MODELS, ADAPTATION, AGE-AREA THEORY, CULTURE HISTORY.

INTRODUCTION

In a recent major review of New Zealand prehistory, Davidson (1984: 9) concludes that despite the heightened archaeological activity of the last few decades, this has not produced a really satisfactory framework in which to comprehend the newly won data. While some new developments in general archaeological method and theory have been quickly applied by professionally trained archaeologists in New Zealand (Davidson 1984: 2), it would seem that fundamental reconsiderations of theories about overall development sequences and processes in New Zealand prehistory continue to make little progress.

A commonsense view of New Zealand prehistory suggests that much of it is derivative, being

... continually ... influenced by changing interpretations of prehistory in Europe, America and the Pacific, with allegiances to first one and then to another area (Green 1972: 33).

It will be the contention of this paper that many of the basic theoretical ideas held by archaeologists about the origin and development of a distinctive New Zealand Maori culture are more a response to local, than to foreign influences. They were first published within an archaeological framework some 40 years ago by Roger Duff and have been little altered since. This has been the case despite the new advances in archaeological method and theory elsewhere in the world or the importation of some of them into New Zealand by various overseas or locally trained archaeologists.

THE BACKGROUND TO DUFF'S CONCEPTUAL SCHEME

The conservative and parochial themes of New Zealand prehistory have affected the efforts of archaeologists to produce a scientific account of the development of Maori culture in a variety of ways. While these themes have sometimes provided a foundation for the archaeologist's efforts, they have at other times forced the archaeologists to take up opposing positions. They have also been a factor in promoting popular misinterpretations of the archaeologist's findings. Some of these themes preceded Duff by nearly a century.

Particularly important was the notion that New Zealand prehistory could be divided into Moa-hunter and Maori periods.

Since Haast's work in the 1870s, it had been thought that the earliest human inhabitants of New Zealand preyed on the moa and had probably caused their extinction. Haast argued on a number of grounds, such as site stratigraphy, the absence of polished stone adzes, Maori traditions of recent arrival, and the virtual absence of references to the moa in these traditions, that the "Moa-hunters" were autochthonous palaeolithic people, "belonging to a different race from the present native inhabitants of these islands, [who] had passed away together with the different *Dinornis* species long before the Maoris settled here" (Haast 1871: 67).

In the 80 years between Haast's article and the publication of *The Moa-hunter Period of Maori Culture* (Duff 1977 [1950]), many solutions for the problem of the relationship of the moa-hunters and the Maoris were proposed. Observations from ethnology, oral traditions, and physical anthropology were woven into these theories.

Percy Smith reworked collections of traditions to produce a chronology of settlement which consisted of the discovery of New Zealand by Kupe in A.D. 950, settlement by Toi in A.D. 1150, and finally, in A.D. 1350, the arrival of the Great Fleet from Hawaiki with the Tainui, Te Arawa, Takitimu, Mataatua, Aotea, and other canoes.

Elsdon Best suggested that the original settlers of New Zealand were Melanesians or a mixed Polynesian-Melanesian folk. These were the Mouriuri discovered by Toi on his arrival.

... as many of these newcomers took to themselves aboriginal wives, a people of mixed origin was the result—namely the Maori folk of New Zealand. As time went on these mixed folk became strong in numbers, quarrels arose between them and the Mouriuri people, and finally the latter were attacked and harassed until exterminated. We are told that some sought refuge in the interior, and in forest areas, ... while some went and settled at the Chatham Islands ... (Best 1974[1924]: 29).

While the details of various schemes were matters of vigorous debate amongst the authorities, Melanesians, moa-hunters, the initial settlers of New Zealand, and the nineteenth century indigenous inhabitants of the Chatham Islands took on a composite identity in the minds of many people.

Skinner, using museum and ethnological studies of Maori material culture, suggested that it was possible to divide New Zealand into eight culture areas which could be grouped into two principal cultures, with the *Northern Culture* in the North Island and a *Southern Culture* in the South Island and the Chathams (Skinner 1921, 1923, 1924).

He identified the Southern Culture with that of the Morioris of the Chatham Islands and the Otago Maoris at the time immediately preceding the arrival of the Europeans, but thought it did not differ in any of its elements from the culture of the Moa-hunters (Groube 1968a: 6). Skinner was adamant, however, that the Southern Culture was East Polynesian in origin.

Initially Skinner thought that the Northern Culture was closer to that of the Western Pacific, particularly Melanesia, and was probably older than the Southern Culture (Skinner 1921: 76). Later, he rejected the idea that Maori decorative art had been influenced by Melanesian art forms but continued in his belief that Northern art with its distinctive curvilinear designs represented an ancestral form of Polynesian art and was therefore older than the rectilinear art of the Cook Islands and the Southern New Zealand Culture (Skinner 1924: 241).

The presence of simple untanged adzes in the North Island and their rarity in the south was considered to be further evidence in favour of the Northern Culture being the oldest, fitting in as it did with Heine-Geldern's hypothetical sequence of cultures worked out for South-east Asian archaeology. Heine-Geldern suggested that there had been an early wave of Melanesian peoples associated with round-sectioned adzes followed by a later wave of Austronesians who possessed the quadrangular-sectioned adze (Heine-Geldern 1932).

Teviotdale was able to show the association of Polynesian adzes, harpoon points and fishhooks, with moa bones at numerous South Island sites. Like Skinner, he believed the Moa-hunters were Polynesian in origin and he discussed the virtual absence of descriptions of moas in recent Maori traditions as proof of the antiquity of moa-hunter sites (Teviotdale 1932: 81-120). The early archaeological evidence, however, only offered a partial solution to the problems concerning the age of the Moa-hunter sites and the relationship of the Moa-hunter and Maori cultures.

WAIRAU BAR AND ITS IMPLICATIONS

Duff's excavations of 36 human burials with associated grave goods, which included moa bones, moa egg "water bottles", stone adzes, fishhooks and a variety of ornaments and necklace pieces, at Wairau Bar between 1942 and 1952 offered a major opportunity to define the culture and cultural affinities of the Moa-hunters archaeologically (Duff 1977: 22-66).

Wairau is a large (6 ha) and complicated archaeological site situated on a narrow boulder bank where the Wairau River enters the sea, not far from the city of Blenheim. The presence of hut fireplaces led Groube to suggest that it may have been a village site (Groube 1964: 66 and 68) and the existence of extensive but discrete areas of burials, cooking and midden dumping, stoneworking and "living" supports this opinion. A midden layer of cockles and pipi, including moa bone, dog, seal and fish bones, covered some of the burials. Between 1956 and 1977, a further eight burials were discovered and a series of dates published (see Table 1).

TABLE 1
RADIOCARBON DATES FROM WAIRAU BAR (Trotter 1977: 349-354)

1956 Results	Y204 charcoal	935 ± 110 B.P.
	NZ 50 Duplicate of Y204	850 ± 50 B.P.
1974 Results	NZ 1838 Moa bone	590 ± 60 B.P.
	NZ 1837 shell	680 ± 50 B.P.
	NZ 1835 Human bone (Burial 42)	780 ± 90 B.P.

Duff was able to define the Moa-hunter period of Maori culture as being characterised by ornaments (stone reels, "whale-tooth" pendants), tanged adzes, minnow shank fish-hooks, harpoons and the virtual absence of greenstone (Duff 1977: 108-232).

Duff inferred from the location of the site and its contents that the moa-hunters did not practise agriculture at Wairau, that the residents had not been cannibals, and had probably lived in peace with their neighbours as, with the other Moa-hunter "camps", Wairau Bar was not fortified or capable of fortification (Duff 1947: 283).

He was, however, not able to define the later Maori culture archaeologically beyond noting that it was that "found and described by Cook and the early voyagers in the late seventeen and early eighteen hundreds, particularly in the North Island" (Duff 1947: 283).

The age of the remains was a difficult archaeological problem as Duff freely admitted.

The weakest feature of the hypothesis of this Moa-hunter period as advanced here is the impossibility of demonstrating its greater age by direct stratigraphic methods. No Moa-hunter layer, for instance, has yet been shown to underlie a layer of the culture here called Maori. At best the comparison (in the South Island) is between sites revealed by the abundance of moa bones as Moa-hunter, and sites historically known to be recent, for instance the Ngai-tahu sites of the Kaikoura coast, Kaiapohia, Banks Peninsula, and Murdering Beach (Duff 1977: 20).

So although Duff was able to reverse the chronological order of Skinner's scheme, he could not demonstrate this archaeologically. Instead, he had to use complicated arguments involving the presence of tanged adzes and moa bones to confirm an early date.

The evidence that moas had become extinct in New Zealand in the distant past depended on the absence of references to them in collections of nineteenth century Maori traditions.

Traditions ... may be interpreted in different ways but my interpretation of the numerous recorded traditions of the moa is that they revolve around a few incidents of pre-Fleet times, It is possible, I think, that moas were extinct in the North Island before the Fleet arrived.

If this inference of the age of the moa is correct, it follows that archaeologists may regard deposits marked by the presence of moa bones as the oldest human sites in New Zealand (Duff 1947: 283).

For the adzes, Duff was able to draw on information from nearly half a century of ethnological surveys in the Pacific, carried out by Buck, Burrows, Emory and others from the B. P. Bishop Museum and Skinner's work at the Otago Museum (see Fig. 1).

The most numerous and important finds were the 207 stone adzes recovered (64 from the burials, 143 from the midden area). These not only make it clear that the Moa-hunter Maoris migrated from Eastern, rather than from Western, Polynesia, but pinpoint the dispersal centre as the Society Islands ...

Eastern Polynesia is distinguished from Western by the presence of adzes with a deliberately provided lashing grip or tang (Duff 1950: 79).

Although the adzes demonstrated cultural relationships with Eastern Polynesia, they could not show the chronological relationships. Duff used an age-area hypothesis to overcome this difficulty.

Turning to recapitulate the order of the diffusion of various adze types within Eastern Polynesia ...

The obvious assumption is that the order of dispersal from Eastern Hawaiki must be in accordance with their present pattern of dispersal, namely that the types which travelled farthest left earliest Thus the great majority of adzes known from the South Island ... represented various types of "tanged" adzes largely unknown in the North [Island] but matched with surprising exactness from the groups of Eastern Polynesia ... it was possible to argue that certain distinctive Southern types were, by the mere facts of distribution, from an earlier or different origin than the standardized Northern ones, and that the term Moa-hunter might be applied to this early Southern cultural period (Duff 1977: 9 and 138).

Elsewhere he noted,

The major and puzzling exception to this pattern of distribution has been the North Island of New Zealand. Here tangless adzes predominate ... the cross section is rounded quadrangular as in Fiji and Tonga (the "Walzenbeil" of Heine-Geldern) The Wairau site demonstrated that the Eastern Polynesian types, which are characteristic of the South Island, reached there in the earliest known New Zealand culture period This supports the hypothesis that Type 2B [simple, untanged, round-sectioned adzes] represents a local and comparatively late development originating in the North Island, (Duff 1950: 79).

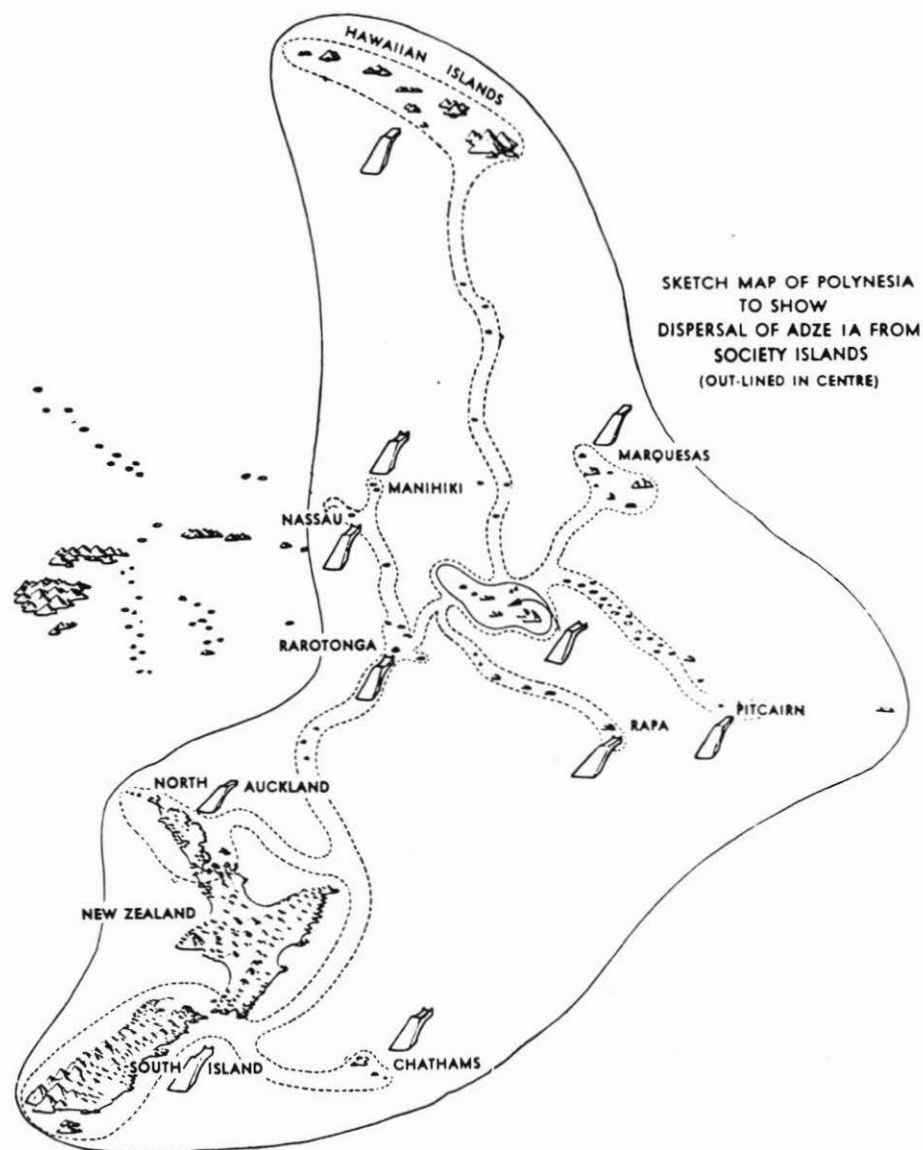


Figure 1: The dispersal of adze 1A (from Duff 1977).

INCORPORATION OF ELEMENTS FROM OTHER WRITERS

In order to explain the various movements through the Pacific that led to the arrival of the Moa-hunters in New Zealand and the subsequent development of Maori culture, Duff followed Buck in hypothesising a series of developmental stages that were common to island groups in marginal situations. These were,

- (i) discovery, first settlement and development in isolation over a period of more than 500 years.

- (ii) a brief period of sudden subsequent "invasion" from the Hawaiki, and
- (iii) a period of local development of not less than 300 years (Duff 1947: 282).

For Duff, New Zealand prehistory recapitulated these stages of development.

In Duff's scheme, the first people to arrive in New Zealand, like the first people to enter the Pacific, were Polynesian voyagers who, according to Buck, lacked domestic animals, the pig, dog and fowls, and domestic plants such as sweet potato, taro, yams, and the gourd. Duff argued

We may regard some disturbance at the centre as a prerequisite for these outward movements which we may liken to the dropping of a great stone in the centre of a pond. The impulse for the first billowing out of energy from these centres was doubtless the arrival of the Polynesians in their new island world, i.e., Buck's Early Polynesians, 5th to 11th century A.D. The first explorations were so thorough that the major groups in each area were all settled at that time, New Zealand's discovery by tradition dating back at least 1,000 years . . . (Duff 1977: 281).

Duff thought that the Moa-hunters represented that portion of New Zealand's original East Polynesian migrants whose culture remained largely static, and reminiscent of its tropical origins. The South Islanders, from their more marginal and isolated position, retained the ancient elements of their culture longest.

From the appearance of similar cultural items at the northern tip of the North Island and the Chathams, the culture is seen, not to be a local collateral of Maori culture but the survival of its earliest stage (Duff 1947: 287).

Later Duff suggested that the Moriori culture of the Chatham Islanders also represented a "time-stayed survival of early Maori culture" (1977: 213).

In the North Island canoes continued to arrive and Maori culture began to develop.

If it be asked what was taking place in the North Island at this time (say 1000-1300 A.D.) I would suggest that the prototype Moa-hunter culture began to develop rapid local modification in the direction of modern Maori culture The most obvious explanation for this different rate of change is that the North Island was continually receiving new immigrants, recorded and unrecorded, right down to the Great Fleet migration of 1350 A.D., while the South Island from its marginal position was off the main migration stream. Nothing provides a more obvious stimulant for cultural change than the increase, intermixture, and movement of population (Duff 1977: 246).

Elsewhere, Duff added,

The general reason for this divergence of culture is clear enough. No culture can stand still but must perpetually renew itself by transmission. Variation is inherent in this transmission One general tendency can, however, be noted, i.e., the tendency for this spontaneous change to proceed at a faster tempo in central areas than in marginal areas (Duff 1947: 282).

Duff's second stage was marked by the arrival of the Great Fleet in the North Island. Again the impetus for this event was the same all over the eastern Pacific, i.e., Buck's idea of a wave of change associated with the introduction of domestic animals and plants from the west, and of sweet potato from South America.

The movement culminated in New Zealand with the arrival in the mid-fourteenth century of the canoes of the *Fleet*. The number of immigrants was small but, doubtless from their *mana* as introducers of the taro and kumara, they exercised an influence out of all proportion to their numbers (Duff 1947: 281).

While Duff could state in 1950 "Tradition is emphatic that food plants were not introduced until the Fleet migration (1350)" (Duff 1950: 73), six years later he was less sure,

suggesting that root crops may have been introduced "sometime between the Toi and Fleet migrations" (Duff 1977: 24).

The role of the Great Fleet in initiating or speeding up change in the North Island is not clearly spelt out. The time after its arrival is the beginning of Duff's final period, the stage of local development.

The Fleet arrival in 1350 did not so much introduce the new culture which we now know as Maori culture as mark the final cessation of contact with Polynesia, and accelerate the already well marked trend of local change (Duff 1977: 246).

... Contact with tropical Polynesia virtually ceased after this migration ... and the next five centuries, up to the arrival of the Europeans, represented a period of local culture development, culminating in the culture and people we have come to know as Maoris (Duff 1947: 282).

Duff's use of the Great Fleet to introduce cultivated root crops, and hence initiate a major period of economic and cultural change sits uncomfortably with his contention that Maori culture is the product of local development.

The Moa-hunter phase of Maori culture, as isolated and defined here, is in my opinion clearly distinct from pre-European Maori culture, although it is probably ancestral to it. ... Moa-hunter culture merged insensibly and unconsciously into Maori culture, indeed *became* Maori culture, and that in the isolated South Island the time lag of this process was more marked (Duff 1977: 6 and 194).

Duff's stages of colonisation and local development were linked with Smith's canoe chronology:

the Moa-hunters were Polynesians from the migrations of Toi (1150 A.D.), Kupe, or earlier, and this formed part of Buck's Early Polynesian wave from Tahiti, who by his account had no cultivated food plants to bring to New Zealand (Duff 1977: 23).

Duff used Smith's chronology and traditional accounts of Polynesian migrations to shore up the shaky archaeological foundation for his theories. In 1950 he would not have been able to put forward any theory if he had to rely on archaeological information unaided by ethnology and traditional history. As late as 1957 Duff could point out that New Zealand was the only place in Polynesia where culture periods could be identified (Golson 1957: 277).

If Duff's intention was to use archaeological and ethnological data to extract New Zealand prehistory from the confusion created by the traditionalists, and at one point he describes his approach as being "politely anti-traditionalist" (Duff 1977: x), his use of Smith's ideas here compounded rather than resolved these difficulties. The traditionalists viewed replacement as the mechanism of culture change in New Zealand, arguing that Maori culture arrived fully formed with the Great Fleet. Duff, by contrast, argued that once initial colonisation had taken place Maori culture developed for local reasons. Subsequent arrivals of people and food plants speeded up these developments but were lesser elements in the overall process of change. The popular understanding of the association of the Great Fleet with the abrupt arrival of Maori culture, however, was, and remains, extremely strong. Once Duff mentioned the Great Fleet, the subtleties of his argument were overshadowed by the alternative view.

LATER COMMENTARY ON DUFF

With one exception (Groube 1967: 10-14), subsequent commentaries on Duff's theories have generally attacked them in a piecemeal fashion, selecting one part for criticism, another for praise according to each author's immediate needs.

The discovery of early human burials associated with whale-tooth pendants, fish lure shanks, and tanged adzes at Maupiti in the Society Islands (Emory and Sinoto 1964: 143–160), and Moa-hunter sites in the North Island of New Zealand (Golson 1959: 44) are described as having been predicted by Duff's theories and therefore are considered confirmation of them (Groube 1968a: 9; Leach 1976: 5). On the other hand, Emory and Sinoto (1964: 157) argue that the Maupiti burial is older than A.D. 900, because it should antedate the settlement of New Zealand. In terms reminiscent of Duff's original argument, they claim:

Because the forms of the artefacts differed from the historic Tahitian forms and were so nearly identical to those artefacts which the earliest settlers of New Zealand buried with their dead, they confirmed an East Polynesian derivation of the archaic Maori culture and identified this site as the earliest thus far excavated in the Tahitian area (Emory and Sinoto 1964: 143).

Among other lines, Duff's assumption that the present day geographical distribution of adzes in the Pacific reflected the chronological order of their dispersion is described by Groube as a "commonsense ... argument, that ... can hardly be disputed", one that has proved "to be a useful and predictable chronological model for Pacific prehistory" (Groube 1968a: 9). Groube has subsequently sought to test Duff's model, using continuous and discrete adze variables and modern taxonomic statistical methods, in order to generate an alternative history based on the adze evidence.

Groube and Chappell conclude:

The regions classically differentiated by ethnologists, such as Melanesia, Western Polynesia and Eastern Polynesia are clearly differentiated. Only the elongated cluster of sites from early and late sites in New Zealand fall out of the geographical pattern The generally accepted chronological relationships dart about the model in various directions. The trend of the New Zealand sites however, appears to be along a time axis, the earliest sites (Archaic) most like East Polynesian assemblages, the later sites predominating adzes closer to West Polynesian and Melanesian forms

The prehistoric lessons from the final model are not many (Groube and Chappell 1973: 178–9).

Continued attempts to extract historical information from spatial and taxonomic relationships show that the era of comparative ethnology, a subject so familiar to Duff, is not entirely over in the Pacific.

Duff's use of the Fleet and its attendant chronology has occasioned considerable criticism (Green 1974: 14; Golson 1959: 66; see Sullivan 1979: 92–99 for a discussion). Examination of Maori traditions, and empirical and statistical studies of Polynesian navigation have thrown doubts on the existence of any "Great Fleet" even if the possibility of initial settlement through deliberate voyaging is again gaining vogue (Irwin 1980: 328).

Golson reworked Duff's theories in terms which distinguished between replacement (diffusion) and local development (invention) as different mechanisms of cultural change, a distinction that was well drawn in contemporary discussions about European archaeology.

The key question in New Zealand culture history is whether the differences between Moa-hunter and Maori are the result of spontaneously generated culture change within New Zealand itself or whether they were sparked off by influence from overseas. Maori traditions supply the occasions when such outside influence might have arrived: from central Polynesia in the centuries preceding and culminating in the Fleet, or, more suspectly from Melanesia with the Maruiwi (Golson 1957: 282–3).

Golson and Gathercole (1962: 173) exaggerate the importance of the Fleet in Duff's theories when they argue that:

Duff has consistently sought to explain the cultural differences between the Moa-hunters . . . , and the protohistoric Maori . . . , in terms of the fusion of two variants of Polynesian culture introduced at different times.

They somewhat unkindly lump Duff in with the traditionalists. As with Green (1974: 14), they saw an answer to the question "Multiple origins or cultural isolation?" as central to an understanding of New Zealand prehistory. Despite the Fleet, Duff was more an isolationist than a polygenist.¹

Green (1972: 20) draws attention to the fact that, in arguing that Moa-hunters became Maori agriculturalists following the introduction of domesticated root plants with the Great Fleet, Duff had incorporated a model of economic change into his theory of the development of Maori culture.

There is, however, no evidence that Duff was aware of Childe's (1936) argument that major changes in technology and sociopolitical organisation could be expected to accompany a change from food gathering to food production. The differences between Moa-hunters and Maori agriculturalists were not expressed in these terms, even though they were implied in the nomenclature Duff adopted.

Duff mentions that the introduction of food crops into the Pacific may have upset the balance of chiefly or tribal power in Hawaiki, and was a probable cause of migrations. He stops short of arguing that the introduction of kumara, taro, yams and the gourd into New Zealand transformed the existing hunting and gathering culture (1977: 17).

Instead he saw the Fleet and the new crops as stimulating or spurring on changes that were already underway. He pictures the new immigrants as having an influence out of proportion to their numbers because of "their *mana* as introducers of the taro and kumara" (Duff 1947: 281).

Again it was Golson who reformulated Duff's ideas in the light of contemporary archaeological debate. By changing the names of the accepted divisions of New Zealand prehistory from Moa-hunter and Maori periods to Archaic and Classic phases, Golson reemphasised that Duff's division was based on artefact typology, not economy. This alteration removed the implication, present in Duff's terminology, that the two phases were separated by a major economic change (Golson 1959: 36).

Except for Green (1970 [1963]: 11-12), New Zealand archaeologists, since Golson, have seen the two phases of New Zealand prehistory as being "Neolithic" in both the technological and economic sense and have interpreted any changes as ones occurring within this single stage of economic development. This point is discussed by Green (1972: 20 and *passim*).

Groube discusses the unresolved tension that exists in Duff's theory between his use of the Fleet to bring food plants and his emphatic conclusion that Maori culture developed out of a Moa-hunter antecedent. Groube argues that the Fleet was an unnecessary frill to the straightforward argument that Maori culture was the result of the modification of Moa-hunter culture following separation from the Polynesian homeland and subsequent development in isolation (Groube 1967: 20). Groube notes that by A.D. 1350 when the Fleet was supposed to have arrived, Maori and Central East Polynesian forms of weapons, adzes and fish-hooks had diverged. If the Fleet brought any of the Central East Polynesian forms, these could be expected to show up in the archaeological record in New Zealand. In the absence of any such evidence it must be concluded that the Fleet immigrants adopted local weapons, adzes and fish-hooks immediately on their arrival. For this reason it was necessary for Duff to have the "*kumara* arriving with the 'Fleet' or at the time of the Fleet,

as there was nothing else the Fleet migrants could bring" (Groube 1967: 20; the same argument is used to deny the existence of the Fleet in more recent works: Groube 1968b: 142-3; Green 1974: 4).

However, it is incorrect to suggest that the late arrival of kumara in Duff's scheme was unnecessary to the major archaeological argument. The Fleet traditions and the late introduction of food plants were necessary to connect the New Zealand evidence with Buck's stages of Polynesian dispersal and development. Duff used Buck's ethnological model to create a historical framework in which the limited archaeological data available for New Zealand and the Pacific could be presented in a manner that gave his conclusions about the age and affinity of the Moa-hunter culture some plausibility.

CULTURE-HISTORICAL MODELS

Within the context of a wide ranging and idiosyncratic inquiry into stadial models and evolutionary change, Groube discusses Duff's division of New Zealand prehistory into Moa-hunter and Maori periods and argues,

Despite his use of the word "period" [Duff's] conceptualisation of New Zealand prehistory was actually a simple stadial model:

- (i) Moa-Hunter period (or phase);
- (ii) Unknown culture change;
- (iii) Maori culture (1769) (Groube 1967: 8)².

He continues

The model proposed by Duff isolated two "peaks" of development in a cultural continuum which showed remarkably little evolutionary progression (Groube 1967: 11).

Groube then goes on to state that the adaptive and stylistic changes Duff demonstrated occur within a single level of cultural achievement, the Neolithic or Formative. Because New Zealand prehistory and the periods Duff isolated within it have minute regional and chronological dimensions, it should be regarded as forming "a regional sequence . . . within the East Polynesian sub-area of the Polynesian (or perhaps Oceanic) culture area" (Groube 1967: 12). Groube concludes

In some respects Duff's model of New Zealand prehistory corresponds to a simple time chart with either end of the short time span defined by distinct assemblages. On the other hand Duff's model is closest to the "regional sequence" proposed by Willey and Phillips, divided into phases and sub-phases (Groube 1967: 12-13).

Willey and Phillips, authors of the influential text *Method and Theory in American Archaeology*, describe their approach as "culture-historical integration" (Willey and Phillips 1963: 5). Theirs was a fully archaeological approach to organising the prehistoric evidence for an area using sequences of archaeologically defined assemblages of artefacts or other traits to link sites and develop a relative chronology of change.

Different approaches to the study of culture history in the wider sense are listed by Bennett (1953: 212-220). He groups them under two headings, distributional studies (culture area, co-tradition, kulturkreis, age-area, linguistic and physical-anthropological approaches) and chronological studies. Of the latter he adds that there are "studies directed towards the establishment of absolute or relative sequences in specific sites or areas as a

basis for extension of these to cover larger regions". Only Bennett's chronological studies are archaeological and correspond with the culture-historical integration described by Willey and Phillips.

Culture history then can be used to describe a specific archaeological method, or any one of a whole range of studies which aim to produce comprehensive statements about an area's prehistory.

By describing Duff's model as being closest "to the regional sequence proposed by Willey and Phillips", Groube is using Duff to explicate what follows when Willey and Phillips' archaeological approach to culture history is used to organise the New Zealand archaeological evidence. It cannot be argued that Duff was a culture historian in this specific sense of the term.

Ignoring the eclectic and composite nature of Duff's theories and reducing them to an archaeological sequence imposes attributes that were not present in the original work. The presentation of the material in periods related directly to Duff's ethnological concerns and were historically grounded in the studies of tradition, archaeology, and ethnology carried out in New Zealand and the Pacific prior to 1946. Like Heine-Geldern before him, Duff defined his periods in terms of adzes (and ornaments) rather than assemblages. At one point Duff states "the term Moa-hunter follows the practice in *culture-phase* designation of coining a label of contrast" (Duff 1977: xii) while Golson notes that Duff "deals with not only archaeological but also ethnological and traditional evidence" and continues

His survey as a result lacks the precision needed for basic comparison between the two presumed phases of the same culture (Golson 1959: 65-6).

Later schemes proposed by Golson and Green were consciously culture-historical in form as their work was directly influenced by Childe and Willey and Phillips.

Many historians classify their data into sequences of periods, stages or ages. Where one draws the lines, i.e., divides an area's prehistory into a sequence of this type, does not depend on personal preference or on the empirical evidence (Groube's "indices of change") but on one's selection of relevant data and the method chosen to organise it into phases or stages. In addition, these sequences of taxonomically-defined (and therefore static) entities must be related to some model of cultural dynamics in order to explain the variations in the evidence so revealed. The method of organisation chosen will be closely linked with the historian's view of the way change is thought to have occurred in the past. An example is Duff's preoccupation with the study of adze types and their distribution. These taxonomic and distributional studies take on an historical dimension only when they are discussed in combination with Duff's age-area and marginal survival theories.

The approaches of the ethnologists, physical anthropologists, traditionalists and archaeologists who carry out these types of study differ in terms of the subjects of study, the methodology used, and the theories of change adhered to.

Duff used ethnological, traditional and archaeological data and organised these data into a sequence of two cultures or periods. His sequence shared many similarities with ones put forward by Smith or Best who used traditional or racial evidence. However, the differences between Duff and Smith or Best go beyond the fields of evidence they used and extend to the models of change they invoked to explain their data. Smith and Best used a model of cultural or racial replacement while Duff, following Buck, and like most subsequent New Zealand archaeologists, preferred one of gradual, local development.

COLONISATION MODELS AND ADAPTATION IN ISOLATION

Duff, Golson and Green have all used an implicit model of constant change to explain the development of Maori culture, as Groube points out.

In his reconstruction of New Zealand prehistory Duff clearly prefers a concept of relatively constant and slow culture change: Golson similarly, seems to prefer a relatively constant rate of change and Green's model, with its complex, stage by stage progression through New Zealand prehistory, is built around the concept of slow and relatively constant culture change. This theme, present since the publication of Buck's "Evolution of Maori Clothing" (1926) is clearly consistent with a thesis of slow adaptation to new environmental circumstances (Groube 1967: 24).³

Groube, however, creates some confusion when he denies that this commonly held model of culture change is evolutionary.

Golson's model of New Zealand prehistory is, like Duff's *stagal* and makes no serious implications of cultural evolution (Groube 1967: 14).

Groube's point is to alert us to the fact that because all New Zealand prehistory can be accommodated within a single social, technological and economic stage we should not expect the degree of change exhibited in the archaeological record to be very marked.

It is true that the concept of evolutionary change in archaeology is usually reserved for those transformational changes that accompany shifts from one epoch, age or stage to another.

Groube continues,

. . . the type of change by which Duff envisages the transformation of the Mōa-hunter assemblage into the Classic Maori assemblage is not evolutionary change in the Thomsen sense of "progressive evolution from rude and simple to more efficient and complex" but "chance-determined" or "non-adaptive" change This type of cultural change is clearly analogous to genetic drift (Groube 1967: 9).

If we look at the process of change Duff invoked, i.e., the mutation of culture inherent in its transmission from one generation to another, then it is clear that Duff's model of local development follows an alternative form of evolutionary argument, one that is quasi-biological in nature.

Duff's colonisation model, which involves primary and secondary centres of origin and waves of dispersion interrupted by periods of local development in isolation, shares similarities with certain bio-geographical theories about the origin and dispersal of new species. It is traceable back to chapter 12 of Darwin's "Origin" (Craw 1980: 81-2) which also deals with oceanic islands. If development in isolation is assumed to mean directional adaptation, then such a model can easily be transformed into one of progressive evolution, as Green has more recently argued (1970: 50-1).

The Darwinian model of biological change in isolation explains variations in terms of differential reproductive success through the process of natural selection. By contrast, the development of cultural variation in isolation is explained in terms of increasing adaptation to the local environment until the culture reaches a state of equilibrium with its surroundings. This approach, which combines aspects of functionalism and environmental determinism, is non-Darwinian, being similar to the deductive evolutionary theories of Herbert Spencer (see Burnham 1973: 93-104).

The Fleet in Duff's theory was not a major mechanism or trigger of change but a means of dispersal. Local development in isolation was the central mechanism of change in both Duff's and Buck's theories. Because Duff and Buck thought in terms of two waves of

dispersion, their models had two colonisation components, initial settlement and a later Fleet, in order to get people and all the necessary props to the right locations across the entire Pacific Ocean so that the drama of local development in isolation could then unfold.

If New Zealand archaeologists after Duff no longer needed the Fleet, it was because they adopted a model of the history of colonisation and cultural development in the Pacific which required only a single wave of dispersion, through long distance voyaging, followed by isolation after initial settlement to explain the emergence of cultural differences from island to island (Green 1974: 18).

During the 1960s and 1970s, the analysis of the relationships of Polynesian languages by R. Green, and Pawley (see bibliography in Clark 1979) was used to provide a model of colonisation that served as an alternative historical framework for the Pacific. As with Duff's use of Buck's ethnological scheme, this model was used to organise scattered pieces of archaeological evidence into a plausible historical scenario (Green 1974: 6-11; Bellwood 1978: 117-132).

Pawley and Green discuss how this *radiation* model was invoked to explain the formation of linguistic subgroups in Polynesia.

The model posits an initial period of unified development undergone by a localised, homogenous language community, followed by a period of geographic expansion, leading to the creation of dispersed, isolated daughter communities which would develop independently from the time of dispersal (Pawley and Green 1984: 138).

The end result of using this model, as opposed to earlier discredited diffusionist or wave models, was to create a family tree of Pacific language subgroups which showed patterns of resemblances and differences amongst these languages. Geographic isolation was taken by linguists to be the main cause of language divergence. The degree of difference exhibited by subgroups was thought to be an indication of the time that had passed since separation had taken place (see Fig. 2). While the radiation model has now been modified to accommodate the present understanding of historical events in the Pacific (Pawley and Green 1984: 138-9), it has been much used by workers in Pacific linguistics since the 1950s.

This model in linguistics, like Duff's ethnological scheme, was quasi-biological in concept, positing centres of origin, dispersal, and then separate development through geographic isolation or some other isolating mechanism. Pawley relates the process to Ernst Mayr's biogeographic theories of speciation.

I have used the expression 'linguistic speciation', likening the divergence of linguistic traditions to the divergence of biological populations (Pawley 1981: 293).

Recently Clark has cautioned that,

The translation of linguistic facts into historical hypotheses always involves certain extralinguistic assumptions but many times these are not made explicitly (Clark 1979: 252).

Biggs, in complaining that the archaeologists were over-enthusiastic in their use of linguistic data in the reconstruction of Polynesian prehistory, noted

... if languages can mix, then the unambiguity of the family-tree model for linguistic prehistory cannot be maintained Linguistic subgrouping does have historical implications, although they are not directly applicable to population movements The dilemma's horns can only be avoided by assuming that some Polynesian areas have been settled more than once

It follows that any simplistic view of Polynesian settlement passing from A to B to C in a sequence which never retraces its steps will be false We may feel confident that there have been many cases of contact and secondary settlement which have left no obvious linguistic traces (Biggs 1972: 145, 146, 149).

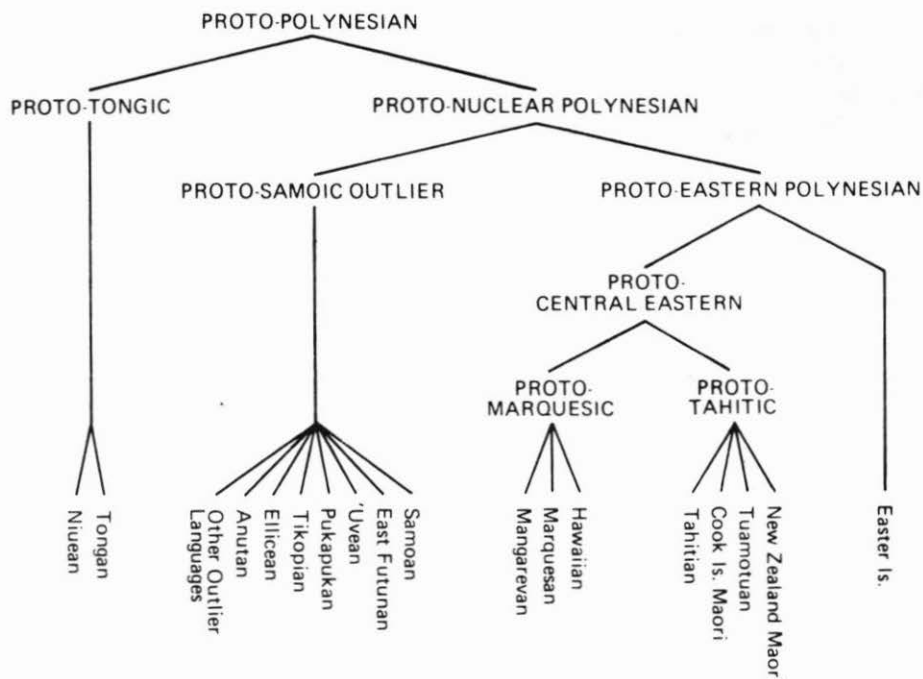


Figure 2: The subgrouping of the Polynesian languages, and their putative sequence of divergence from Proto-Polynesian (from Kirch 1984).

It is only recently that sufficient archaeological information has been available for the Pacific to enable the differences between the radiation model in linguistics and the archaeological picture to be explored. Irwin, following Davidson's criticisms (given at the 1976 Nice conference) of the use archaeologists had made of the linguistic model (Davidson 1981: 100–101), states that the archaeological evidence and dates relating to the movement of people from west to east in Polynesia were not in parallel with the pattern of linguistic subgrouping. He continues,

One theory able to accommodate the evidence is that language and some elements of material culture diverged within the context of continuing communications . . . Isolation in Western Polynesian prehistory was a selective kind and occurred among interacting populations (Irwin 1980: 327).

Green too now advocates that it is "archaeology and not linguistic evidence which furnishes the best guide to the early settlement history of Fiji and West Polynesia" and continues "the model which the present archaeological evidence fits best is no longer one of successive developments in isolation often used by myself and others in the past" (Green 1981: 144). Current conclusions about West Polynesian prehistory still derive some of their content from the linguistic work that has been carried out, and they have benefited from being able to compare the linguistic and archaeological models. On the other hand, archaeological studies have clearly reached that stage of development where the evidence can be presented independently of models of Pacific colonisation derived from other sources. Kirch has recently criticised the orthodox scenario for East Polynesian settlement, arguing that the time is right for a careful re-evaluation of the evidence upon which it is based (Kirch 1986: 22).

He concludes,

Thus, as Green has eloquently argued, a regional concept of adjacent Samoan, Tongan and Lau archipelagos—with an interlinked dialect chain—has come to replace the simplistic idea of a single Polynesian homeland. The orthodox scenario, in which the Marquesas represent *the* Eastern Polynesian homeland, may yet come to the same fate. Certainly the linguistic evidence does not run counter to the idea that there was a more extensive East Polynesian *homeland region*, which could well have incorporated the Society and Cook groups in addition to the Marquesas (Kirch 1986: 36).

Whether such a diffuse idea as a homeland region, in which human groups maintained social relationships despite great ocean distances, is compatible with a model of cultural change involving centres of origin and divergence through geographic isolation and local adaptations remains to be seen (Fig. 3).

CONCLUSION

Although Duff's work in New Zealand prehistory was not solely restricted to archaeological data, it can be argued on a number of counts that it is essentially similar to subsequent syntheses put forward by Golson (1959) and Green (1974).

Firstly, later authors still had to have recourse to ethnological or linguistic reconstructions in order to get humans across the Pacific and to New Zealand before the New Zealand part of the model could come into operation. Secondly, as in Duff's scheme, ethnohistory rather than archaeology was still necessary to define the Maori cultural phase fully (see Golson 1959: 66–70 and Green 1974: 37; Groube 1964 has criticised this aspect of Golson's and Green's work).

Thirdly, while the Moa-hunter or Archaic phase of Maori culture was, by this later time, defined in terms of a recognisable archaeological assemblage, adzes and ornaments still loomed large in the field evidence. Finally, the major differences between Duff and the later authors seem to revolve around the jettisoning of the traditions and the Fleet as no longer necessary to date or explain subsequent changes in the prehistory of New Zealand. Certainly the Fleet is still the most often criticised aspect of the older view of New Zealand prehistory (see Green 1985: 293).

Thus Duff, Golson, and Green (1974) are linked by their use of a composite and eclectic methodology and implicit adherence to a quasi-biological model of evolutionary change to explain the development of Maori culture through adaptation or, at least, constant change in isolation (Groube 1967: 24–5).⁴

Duff's work, and that of Golson (1959) and Green (1974) should be seen as culture-historical in the wider sense of the term. However, if we wish to restrict the term in archaeology to the imposition of a system whereby sites and their contents are linked through sequences of archaeologically defined assemblages of artefacts or other traits as proposed by Willey and Phillips, then with the exception of Green's "Prehistoric Sequence of the Auckland Province" (1970 [1963])⁵, the culture historical approach in archaeology has never been systematically applied to the New Zealand situation.⁶

Groube has commented that,

Despite the complexity of Duff's synthesis of ethnological, archaeological, and traditional data, it remains basically unchallenged as the most ably presented and conceived reconstruction of New Zealand's prehistory. For the first time a theoretical framework comprehensible to field-workers in New Zealand and Polynesia was presented and supported, if not from an array of empirical proofs, at least by a number of telling arguments derived from an extensive knowledge of Polynesian and New Zealand material culture (Groube 1968a: 10).

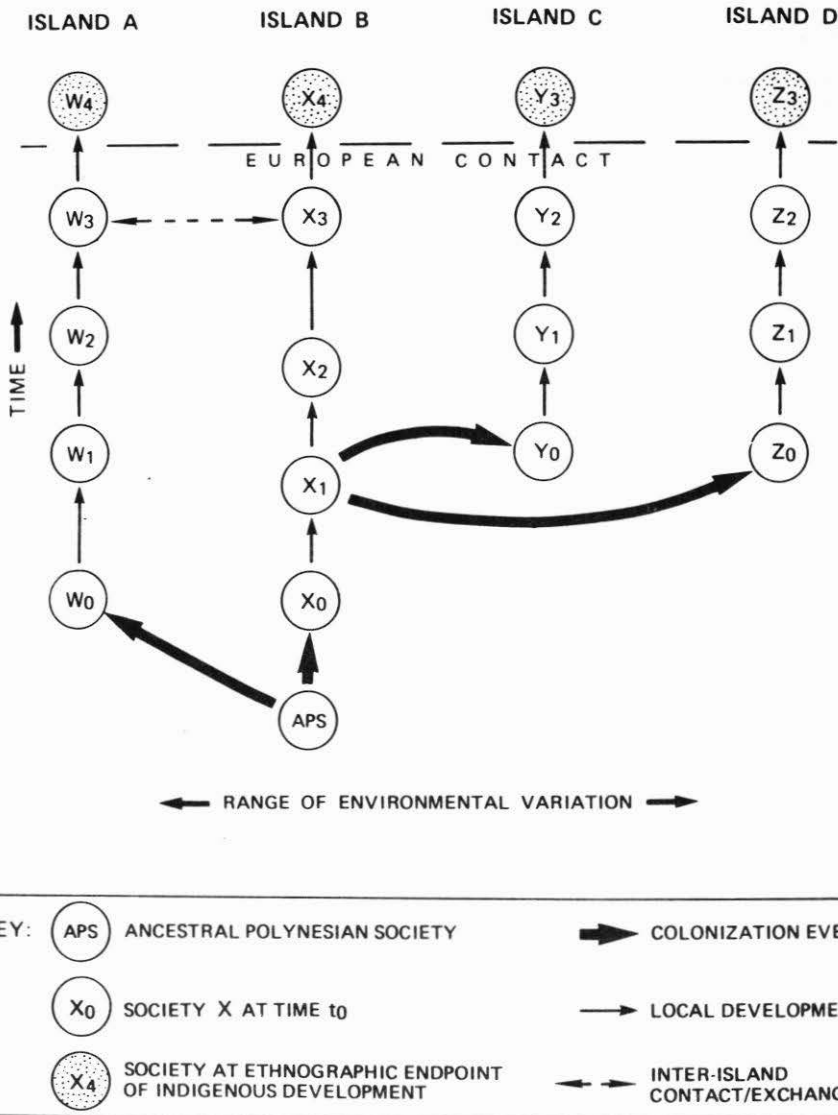


Figure 3: The differentiation of Polynesian societies from a common ancestral society (from Kirch 1984).

However, if Duff's ideas continue to hold sway in discussions of New Zealand prehistory, this seems less the result of their timelessness or ultimate veracity than that many contemporary archaeologists have found it necessary to present their evidence in similar terms. There has been an implicit acceptance of Duff's theoretical arguments and underlying model of change. Where archaeologists have argued the difference, this has often been in terms of the empirical evidence while the theoretical foundation, which Duff borrowed from Buck, has continued largely unquestioned.

NOTES

1. Polygenists, in this context, are authors who explain the development of Maori culture in terms of the mixing or replacement of peoples of different race or origin, e.g., Melanesians and later Polynesians. Such "diffusionists" might also be "evolutionists" if the arrival of later immigrants was held to represent an advance in cultural development.

2. It is interesting that Groube (1967: 8), Golson 1959: 66-7), and Green (1974: 30) all feel the need to posit an unknown period of change between their earlier and later cultures (Archaic and Classic Maori). Yet, the archaeological approach they have chosen isolates periods of cultural stability by its nature. All change therefore has to occur in the instant that divides one part of the sequence from the next. Groube articulates his discomfort with this approach by advocating the use of a strophic instead of a stadial model "because it emphasises the points of change rather than the platforms of conservatism" (Groube 1967: 22).

3. Kohl (1984: 130) discusses the preference of archaeologists for models which emphasise gradual, adaptive change over those involving abrupt transformations of the social order. He quotes Adams who argues that even where archaeologists admit the existence of external events or influences (such as Duff's use of the Fleet) these are thought of as triggering progressive increases in changes which are assumed to have a smoothly unfolding internal inevitability of their own.

4. Groube (1969: 10) argues that the commonsense "adaptation theory" with its implications of "simplicistic gradual change" cannot be sustained in the face of any comprehensive examination of the archaeological record in New Zealand.

5. Green's "Sequence" represents a unique attempt to link sites and discern a sequence of phases of culture using a range of archaeological traits including middens, fortifications, pits and portable artefacts. When, following extensive criticism (Groube 1967: 14-22), Green abandoned this comprehensive attempt to organise the data, his approach reverted to one very similar to Golson's and Duff's (cf. Green 1974).

6. I am not sure if this comment can be extended to include the more recent work in the Chatham Islands, the Wairarapa, and the South Island.

ACKNOWLEDGEMENTS

I would like to thank Iola Penny and Kati Kereszturi for typing this paper and Andrew Pawley, Roger Green and the journal referees for comments.

Figure 1 is reproduced with the permission of the Government Printer and Figures 2 and 3 with the permission of Cambridge University Press.

REFERENCES

- Bellwood, P. 1978. *Man's Conquest of the Pacific*. Collins, Auckland.
- Bennett, W. C. 1953. New World Culture History: South America. In A. L. Kroeber (Ed.), *Anthropology Today*, pp. 211-255. University of Chicago Press, Chicago.
- Best, E. 1974 [1924]. *The Maori As He Was*. Government Printer, Wellington.
- Biggs, B. 1972. Implications of linguistic subgrouping with special reference to Polynesia. In R. C. Green and Marion Kelly (Eds), *Studies in Oceanic Culture History Vol. 3*, pp. 143-152. Pacific Anthropological Records 13. B. P. Bishop Museum, Honolulu.
- Burnham, P. 1973. The explanatory value of the concept of adaptation in studies of culture change. In C. Renfrew (Ed.), *The explanation of culture change: models in prehistory*, pp. 93-104. Duckworth, London.
- Childe, V. G. 1936. *Man Makes Himself*. Watts, London.
- Clark, R. 1979. Language. In J. Jennings (Ed.), *The Prehistory of Polynesia*, pp. 249-270. Australian National University Press, Canberra.
- Craw, R. 1980. Two biological frameworks: implications for the biogeography of New Zealand. A review. *Tuatara* 23: 81-114.

- Davidson, J. 1981. The prehistory of Western Polynesia. *Journal de la Société des Océanistes* 37: 100–110.
- Davidson, J. 1984. *The Prehistory of New Zealand*. Longman Paul, Auckland.
- Duff, R. 1947. The evolution of native culture in New Zealand: Moa hunters, Morioris, Maoris. *Mankind* 3: 281–291, 313–322.
- Duff, R. 1950. Moas and man (part 2): The Wairau Moa-hunter site. *Antiquity* 25: 72–83.
- Duff, R. 1977 [1950, 1956]. *The Moa-Hunter Period of Maori Culture*. 3rd Edition. Government Printer, Wellington.
- Emory, K. P. and Sinoto, Y. 1964. Eastern Polynesian burials at Maupiti. *Journal of the Polynesian Society* 73: 143–160.
- Golson, J. 1957. New Zealand archaeology, 1957. *Journal of the Polynesian Society* 66: 271–290.
- Golson, J. 1959. Culture change in prehistoric New Zealand. In J. D. Freeman and W. R. Geddes (Eds), *Anthropology in the South Seas*, pp. 29–74. Thomas Avery, New Plymouth.
- Golson, J. and Gathercole, P. 1962. The last decade in New Zealand archaeology. *Antiquity* 36: 168–174 and 271–278.
- Green, R. C. 1970 [1963]. *A Review of the Prehistoric Sequence of the Auckland Province*. Second Edition. Auckland Archaeological Society Publication 1 and New Zealand Archaeological Association Monograph 2.
- Green, R. C. 1972. Moa-hunters, agriculture, and changing analogies in New Zealand Prehistory. *New Zealand Archaeological Association Newsletter* 15: 16–39.
- Green, R. C. 1974. Adaptation and change in Maori Culture. Preprint from G. Kuschel (Ed.), *Ecology and Biogeography in New Zealand*. 44p. W. Junk, The Hague.
- Green, R. C. 1981. Location of the Polynesian homeland: a continuing problem. In J. Hollyman and A. Pawley (Eds), *Studies in Pacific Languages and Cultures in honour of Bruce Biggs*, pp. 135–158. Linguistic Society of New Zealand, Auckland.
- Green, R. C. 1985. Review of Janet Davidson: "The Prehistory of New Zealand". *Journal of the Polynesian Society* 94: 90–3.
- Groube, L. M. 1964. Settlement Pattern in Prehistoric New Zealand. Unpublished M. A. Thesis, Anthropology, University of Auckland.
- Groube, L. M. 1967. Models in prehistory: A consideration of the New Zealand evidence. *Archaeology and Physical Anthropology in Oceania* 2: 1–27.
- Groube, L. M. 1968a. Notes on New Zealand archaeology. Unpublished typescript, Department of Anthropology, University of Auckland.
- Groube, L. M. 1968b. Research in New Zealand prehistory since 1956. In I. Yawata and Y. H. Sinoto (Eds), *Prehistoric Culture in Oceania*, pp. 141–149. B. P. Bishop Museum Press, Honolulu.
- Groube, L. M. 1969. From Archaic to Classic Maori. *Auckland Student Geographer* 6: 1–11.
- Groube, L. M. and Chappell, J. 1973. Measuring the differences between archaeological assemblages. In C. Renfrew (Ed.), *The Explanation of Culture Change: Models in Prehistory*, pp. 167–184. Duckworth, London.

- Haast, J. von 1871. Moas and moahunters. *Transactions of the New Zealand Institute* 4: 66-90.
- Heine-Geldern, R. 1932. Urheimat und früheste Wanderungen der Austronesier. *Anthropos* 27: 543-619.
- Irwin, J. 1980. The prehistory of Oceania: colonisation and cultural change. In A. Sherat (Ed.), *Cambridge Encyclopedia of Archaeology*, pp. 324-332. Cambridge University Press.
- Kirch, P. V. 1984. *The Evolution of the Polynesian Chiefdoms*. Cambridge University Press, Cambridge.
- Kirch, P. V. 1986. Rethinking East Polynesian Prehistory. *Journal of the Polynesian Society* 95: 9-40.
- Kohl, P. 1984. Force, history and the evolutionist paradigm. In M. Spriggs (Ed.), *Marxist Perspectives in Archaeology*, pp. 127-134. Cambridge University Press, London.
- Leach, B. F. 1976. Prehistoric Communities in Palliser Bay. Unpublished Ph.D. thesis, Anthropology, University of Otago, Dunedin.
- Pawley, A. 1981. Melanesian diversity and Polynesian homogeneity: a unified explanation for language. In J. Hollyman and A. Pawley (Eds), *Studies in Pacific Languages and Cultures in honour of Bruce Biggs*, pp. 269-310. Linguistic Society of New Zealand, Auckland.
- Pawley, A. and Green, R. 1984. The Proto-Oceanic language community. *Journal of Pacific History* 19: 123-146.
- Skinner, H. D. 1921. Culture areas in New Zealand. *Journal of the Polynesian Society* 30: 71-78.
- Skinner, H. D. 1923. *The Morioris of Chatham Islands*. Memoirs of the Bernice P. Bishop Museum 9(1). Honolulu.
- Skinner, H. D. 1924. The origin and relationships of Maori material culture and decorative art. *Journal of the Polynesian Society* 33: 229-243.
- Sullivan, A. 1979. Theories about the early occupation of New Zealand. Maori Studies Section, Department of Anthropology and Maori, Victoria University, Wellington.
- Teviotdale, D. 1932. The material culture of the Moa-hunters in Murihiku. *Journal of the Polynesian Society* 41: 81-120.
- Trotter, M. 1977. Moa-hunter research since 1956. In R. Duff, *The Moa-Hunter Period of Maori Culture*, pp. 348-375. Government Printer, Wellington.
- Wiley, G. R. and Phillips, P. 1963 [1958]. *Method and Theory in American Archaeology*. Phoenix Books, University of Chicago Press, Chicago.