Journal of Pacific Archaeology – Vol. 11 · No. 1 · 2020

– ARTICLE –

Hinterlands, Heartlands and History: dynamic landscapes in New Zealand archaeology

Karen Greig[1*] and Richard Walter[1, 2]

ABSTRACT

Core-periphery models have been widely used in archaeology. The core implies centrality and richness; the periphery encompasses ideas of distance, disconnection, marginality, and challenge. The approach is most useful in urban studies but less appropriate in societies with less well defined social and economic hierarchies, and few technological or economic dissimilarities such as pre-contact New Zealand. In this study we explore the usefulness of the concept of hinterland to understand New Zealand history and show how trajectories of change occurred across the entire social landscape. High mobility, low population density and extreme environmental and climatic diversity shaped circumstances where heartland-hinterland relationships were fluid and easily subverted. Working at different scales, we show how places transitioned across the heartland-hinterland continuum in response to socio-cultural, historical, economic and environmental processes. In New Zealand heartland-hinterland relationships were temporally dynamic and contingent rather than emerging from fixed principles of geographic resource distribution and accessibility. This is usefully modelled as raindrops on a pond.

INTRODUCTION

There is a growing interest in 'hinterlands' in archaeological studies of social complexity. This interest has emerged as a counter to the core-periphery oppositions that have had widespread applications in world archaeology. Core-periphery models developed in social geography with theoretical input from Western world systems and dependency theories (Champion 2005). The core implies centrality and richness; the periphery encompasses ideas of distance, disconnection, marginality, and challenge. The approach is most useful in urban studies where such dichotomies are often clearly defined. It may not be as appropriate for describing relationships between communities with less well defined social and economic hierarchies, and few technological or economic dissimilarities (such as in pre-contact New Zealand) (Kuusela *et al.* 2018: 766). Core-periphery studies tend to focus on the core with less attention given to processes of social, economic and political activity in the peripheries and how these may differ from the core (Kahn *et al.* 2016: 197). Hinterland studies turn their focus away from the core and explore how trajectories of change occur across the entire social landscape. This is particularly relevant in New Zealand where cores are rarely long-lasting or well defined either spatially or conceptually.

Usefully, some recent studies have explored conceptions of 'hinterland' that move beyond geographic theoretical frameworks and recognise multiplicity and interconnectivity; '… hinterlands are thus both physical and metaphysical, immediate and distant, and exist as a multiplicity of threads that are intrinsically interconnected' (Damgaard 2009: 85). We see potential in this approach in New Zealand which has a short time span of human occupation, but one that encompasses major changes in the socio-political (Marshall, 2004, see also Ballara 1998) and environmental domains (Holdaway and Jacomb 2000, McWethy *et al.* 2010). Damgaard's (2009) paper advances a 'pebble in the pond' analogy which identifies a nuclear zone from which '… analysis expands like rings in water to include the full geographic regions related to the site'. Although he recognises that there are temporal changes in relationships the model is anchored to a central geographic and demographic locale (Damgaard 2009; Fig 10.1). We propose that the long-term history of New Zealand can be characterised as displaying rapid, spatially discontinuous and discrete, short-lived fluctuations in economic and social patterns of organisation, and rapid environmental transformation. This is a model that can be best visualised as multiple pebbles, or raindrops, falling on a pond; a metaphor that captures the dynamic diachronic perspective more effectively. Figure 1 illustrates the serial and spatially discontinuous nature of change in New Zealand history. Each drop can be thought of as a heartland, but it is ephemeral and disappears as the ripples expand and are themselves overlapped by new drops, ripples and interference patterns. In the following paper we draw on four examples

1 Southern Pacific Archaeological Research, School of Social Sciences, University of Otago.

2 School of School Sciences, University of Queensland.

*Corresponding author: karen.greig@otago.ac.nz

Submitted 6/10/19, accepted 3/4/20.

to explore the utility of this model and the way in which it highlights the fluid and rapidly changing nature of New Zealand's social, economic, political and landscape history. We suggest that a 'raindrops on a pond' metaphor is a useful starting point for archaeologists interested in studying social history in New Zealand.

PRE-CONTACT NEW ZEALAND SOCIETY

New Zealand was colonised by a significant influx of migrants over a period of decades from a central East Polynesian homeland commencing in the early half of the fourteenth century (Walter *et al.* 2017) but clearly following a phase of exploration and discovery (e.g., Graves and Addison 1995, see also Irwin 1992). Some scholars interpret the radiocarbon evidence as supporting a model of first settlement in the last decades of the twelfth century (Wilmshurst *et al.* 2008, Wilmshurst *et al.* 2011). The direct evidence of human settlement prior to the 1300s is equivocal, but by 1320 the evidence is widespread and extensive; hence the argument for a wave of migration (Walter *et al.* 2017). New Zealand is situated at the southern apex of the Polynesian triangle. It had no terrestrial mammals before human arrival, other than two species of bat, and bird taxa evolved to fill the range of terrestrial niches. Notable bird species include now extinct megafauna, such as moa, eagles, swans and geese, and flightless birds such as ground parrots and kiwi (Worthy and Holdaway 2002). Continental geological process resulted in the formation of a range of high quality and readily accessible stone resources ideal for tool manufacture (Sheppard 2004). The climate however is temperate, rather than tropical, limiting the productivity of the imported tropical plant crops (Barber 2004, Furey 2006).

Fundamental Ancestral Polynesian social structures, as reconstructed using the comparative method (Kirch and Green 2001), were brought to New Zealand and persist (in modified form) in contemporary Maori society. These include, for example, kinship structures, social relations, and ritual and religious concepts (Reilly *et al.* 2018). Although these social structures remained relatively stable, settlement patterns and regional centres changed radically over the short duration of New Zealand history (Anderson and Smith 1996, Jacomb *et al.* 2010, Walter *et al.* 2006).

Figure 1. Raindrops on a pond; a metaphor for history. © Can Stock Photo Inc. /Babar760

CHANGING HEARTLAND-HINTERLAND RELATIONS

The archaeology of New Zealand demonstrates the variable nature of heartland-hinterland relationships. We use 'heartland' here as an alternative to terms like 'core', 'centre', 'central place' as it better fits the New Zealand historical setting. In New Zealand heartlands are ephemeral; they appear suddenly and change rapidly but are not always associated with centres of demographic concentration, or of political power. Nor do they display evidence of long-term development – as is seen in studies of urbanisation for example. Heartland-hinterland systems in New Zealand were underpinned by a wide variety of different economic, ideological and political contingencies. Hinterlands could expand and contract, and continue to have relevance in some social, or behavioural sense after the heartland had disappeared. None of the systems were strongly bounded. We show the diversity of heartland-hinterland histories in four examples.

Murihiku

Southern New Zealand or Murihiku provides a first example of changing heartland-hinterland systems (Figure 2). In the immediate post-colonisation phase of New Zealand history, the east coast of the South Island, including the cold, temperate southern coastlines, was a major focus of human settlement (Anderson 1989: 120–140). This is the region that had a particularly high density of moa and sea mammal populations (Smith 2005, Worthy 1990, Worthy and Holdaway 2002). Attracted by these easily won high-energy food sources, large sedentary settlements were established on many of the major river mouths. These were connected to wider exchange networks that spanned the country – including the horticultural regions of the north (Leach 1978, Scott 2008, Walter *et al.* 2010). Small, scattered settlements in the inland hinterlands of southern New Zealand were associated with hunting or industrial procurement. The Hawksburn moa hunting and processing site is one example (Anderson 1989: 144–147). The Hawksburn site is located 140 km inland from the east coast of Otago at an elevation of 660 m. It consists of a series of small hut sites, ovens and midden dumps located within a 2700 m² zone of stone tool discard. The stone tools are predominantly silcrete blades, broken blades, flakes and manufacturing debitage. These tool scatters include two spatially discrete, functional categories; tool fabrication and moa butchery. The midden contains a very high den-

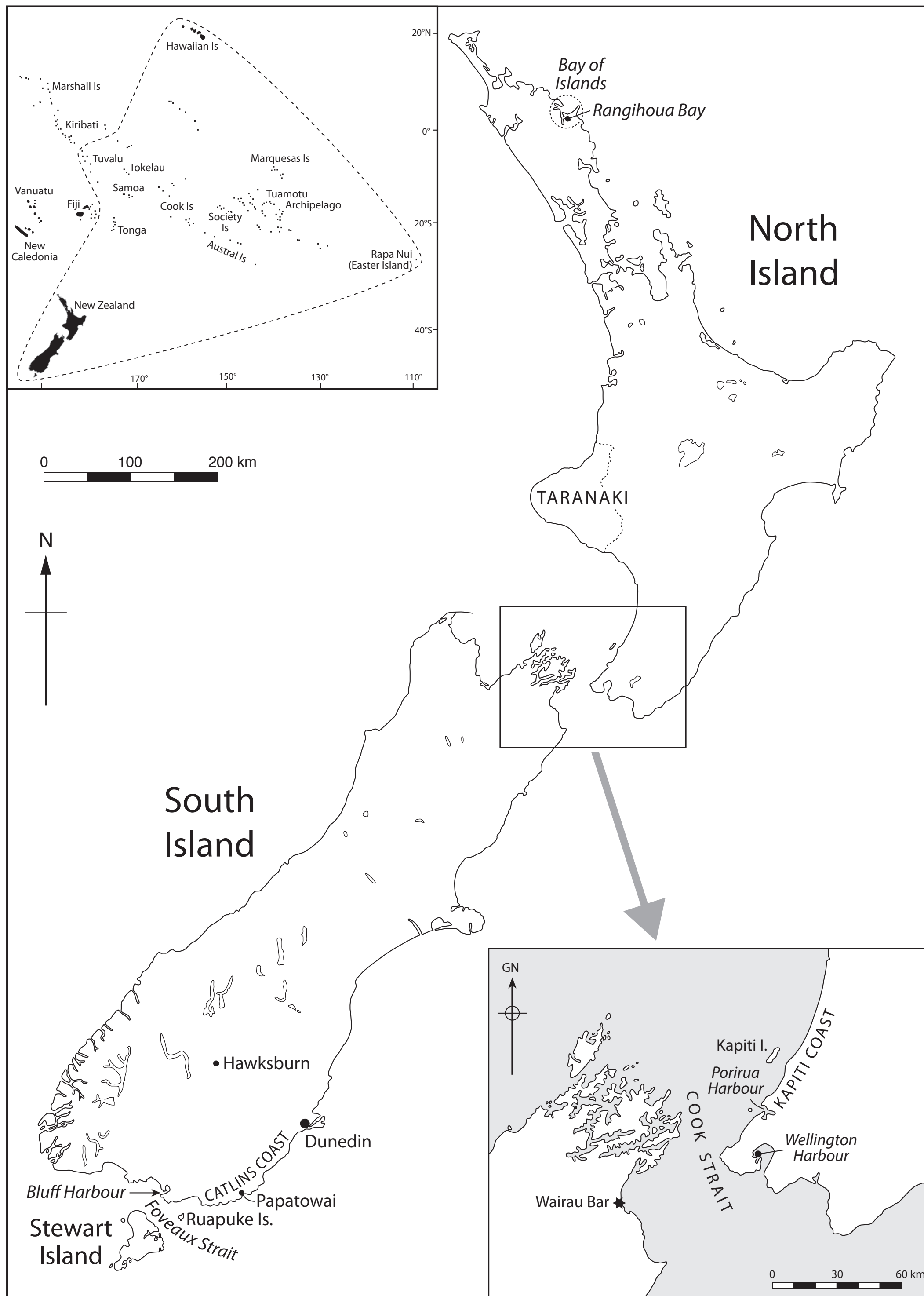

Figure 2. Map showing key locations mentioned in the text.

sity of moa bone and this comprises butchered remains of a small number of complete individuals, which may have been hunted close to the site. It also contains the remains of a large number of birds without marginal parts, suggesting that these individuals were hunted and part-butchered in distant hunting zones before being brought to Hawksburn for processing or consumption. The site has been interpreted as a place where moa were butchered and processed. The intention may have been to transport meat down the Clutha River to the east coast. This pattern fits the model of heartland-hinterland relationships structured around natural resource distribution patterns.

In the Southern New Zealand settlement zone certain hinterland regions were particularly susceptible to changes in resource distributions. The Catlins Coast and Dunedin region were major centres of occupation and activity during the first century of settlement (Hamel 1982, 2001). There the sites included large, rich villages with abundant evidence for moa hunting and sea mammal exploitation. In the Catlins the best described of these sites is Papatowai. Excavations have taken place at Papatowai since the 1930s when it was first described as a 'large moa-hunter camp' (Hamel 1977, 1982, Lockerbie 1953, Teviotdale 1938). The river mouth site contains extensive midden remains with a strong emphasis on seal and moa hunting. Smith (1985: 162) estimates that the site might have contributed as much as 45% of the meat weight at the site. The site also contains a wide range of stone tools and examples of some of the most iconic early East Polynesian artefact forms such as whale tooth pendants and necklace reels, as well as a perforated moa egg. To the south, Foveaux Strait was settled by 1350 and more than ten sites on either side of the Strait, have been radiocarbon dated to the early fifteenth century (Jacomb *et al.* 2010: Table 3, Figure 2). The southern coastline has been well surveyed (Greig and Walter 2017) but not as comprehensively dated as many northern coastlines. Nevertheless, and despite representing the most extreme cold and inhospitable climate on mainland New Zealand, the record strongly suggests that Foveaux Strait was settled as early as any part of the country (Jacomb *et al.* 2010: 33). While the settlement zones in the Catlins and Dunedin region were thriving, Foveaux Strait operated as a viable hinterland zone and small sites associated with fishing, birding, and stone extraction and reduction, are well represented along the coasts (Greig and Walter 2017, Jacomb *et al.* 2010). Once moas and sea mammals were extinct or locally extirpated, however, the heartland-hinterland pattern changed. The southern hinterland zone was no longer linked though resource networks to the large sites and resource centres in the Catlins and Dunedin region, and Foveaux Strait experienced a period of massive population decline (Jacomb *et al.* 2010). The Catlins and Dunedin region became hinterlands in their own right, supporting small-scale and possibly transitory settlements, while population centres moved to the north (Jacomb *et al.* 2010, Walter *et al.* 2018).

After centuries of being either devoid of population or in an earlier hinterland relationship with centres to the north, a major transformation occurred in Foveaux Strait in the early nineteenth century (Coutts 1972). With the arrival of whalers operating out of North American or Australian ports, and increased shipping into Australia, Foveaux Strait, and especially Bluff Harbour, emerged as one of the country's major trade centres. Maori populations increased there, drawn by the opportunities for trade with whalers and for ships using the southern shipping lanes into Australia (Hall-Jones 1976, McNab 1913). By as early as 1813 Maori potato gardens up to 40 hectares in size were observed in Bluff (Sinclair 1990: 16). During the 1840s the great warrior chief Tuhawaiiki established a major commercial centre on Ruapuke island where he dominated the Bluff Harbour and Foveaux Strait trade (Hall-Jones 2003), as the Nga Puhi chiefs had dominated trade with European shipping out of Kororareka in the north (Belich 1996: 198). Here the transition from abandoned hinterland to social and economic heartland was driven by global economic forces and the accidents of location – the encroachment of the international whaling industry and the fact that the fastest routes from Europe to Australia followed the wind belts south of New Zealand making Bluff Harbour an ideal way point.

Kapiti Coast

The Kapiti Coast in the early 1800s provides an interesting contrast to Murihiku. Here the establishment of a heartland-hinterland system was driven, at least initially, by indigenous Maori politics not by economic or environmental factors. The Kapiti Coast on the west coast of the lower North Island appears to have been settled by the fourteenth century but there is no archaeological evidence to suggest it ever supported large, dense populations before 1800 (Brooks, Jacomb & Walter 2016). The late pre-contact record appears to represent the transient or short-lived activities of fairly mobile groups moving along the coastlines. It was a hinterland zone, probably serving largely as a transport route, between tribal heartlands to the north in South Taranaki and south around Porirua and Wellington Harbours. In the early nineteenth century major political upheavals in the North Island saw the rise of a number of ambitious political leaders, of which the best known was Tuhawaiiki's great northern rival the Ngati Toa warrior chief Te Rauparaha. From an initial base in Kawhia Harbour where his people were under threat from tribes to the north and east, Te Rauparaha had ambitions to expand his sphere of influence into the Lower North Island and Upper South Island (Burns 1980, Te Rauparaha and Butler 1980). To facilitate this he exploited the strategic location of the Kapiti Coast as a staging point from which he could dominate Cook Strait – the strait separating the North from the South Island. He established a stronghold on Kapiti Island which became a military, political and symbolic centre, and the settlement patterns of the Kapiti Coast changed. On the mainland a series of small coastal settlements were established, along with a number of other fortified strongholds including those associated with his nephew the warrior chief Te Rangihaeata. Pit and terrace complexes were also constructed representing the expansion of horticultural activities to support the new population. The coast became part of a semi-militarised landscape; the military and political centre was located on Kapiti Island and the newly established settlements of Ngati Toa and related hapu on the mainland were tied together by a single loosely aligned confederacy of tribal factions (Carkeek 1978).

Wairau Bar

Southern New Zealand and the Kapiti Coast provide examples of the ways in which physical structures such as resource distribution patterns, global trade pressures and political strategy can underpin the development, and restructuring, of heartland-hinterland relationships. Wairau Bar in the Upper South Island is an example of a place where ideological factors may have played some role in these processes. Wairau Bar is the best known example of New Zealand's settlement phase – sometimes referred to as the 'Archaic' (Brooks *et al.* 2009, Duff 1942, Duff 1950, Jacomb *et al.* 2014). It is a habitation site of at least 11 hectares occupied for up to a century (Brooks *et al.* 2011). It contains a vast and diverse assemblage of East Polynesian style artefacts which, when first investigated, provided the most compelling evidence for New Zealand having been settled directly from tropical East Polynesia (probably the Cook Islands or Society Islands) (Duff 1950). It became identified as the New Zealand type-site for the East Polynesian 'Archaic' (Golson 1959). Stone tools from the site derive from geological sources across the entire country suggesting that Wairau Bar lay at a nexus within a wide area communication network (Walter *et al.* 2017: 364). It also lay 200 kilometres from the high quality argillite sources of D'Urville Island and the Nelson region that were amongst the most favoured materials in the early period (14th to early 15th century) adze industry (Best 1977, Prickett 1989). Wairau Bar produced an assemblage of many hundreds of fine quality argillite adzes, and preform reduction floors at Wairau Bar suggest they were finished on site and possibly manufactured for export through inter-regional exchange networks. As well as moving finished goods into the exchange systems, Wairau Bar may also have been providing services of an ideological nature to hinterland communities (Walter *et al.* 2017).

The site contains a burial ground with some of the richest grave goods found in any New Zealand site. Stable isotope analyses of individuals buried at Wairau Bar, show that some of the individuals were born in tropical Polynesia (Kinaston *et al.* 2013). The earliest cluster of burials includes individuals buried with elaborate grave goods and personal adornments typical of the East Polynesian 'Archaic' in sites from the Cook Islands and French Polynesia (Golson 1959). Other individuals buried at the site appear, on the grounds of Strontium isotope ratios, to have spent most of their lives in New Zealand, but not close to Wairau Bar (Kinaston *et al.* 2013). A large cooking feature and associated faunal remains attest to large-scale ceremonial activities taking place at the site. These features lie within 40 m of the first burial group and comparisons have been made to the tangihanga death ceremonies of modern Maori society which draw participants from distant locales. It has been argued that Wairau Bar, with its direct connections to the homeland in Polynesia, may have had a ritual or ideological significance for first and second generation New Zealanders (Walter *et al.* 2017). As is common today in Maori society, some of the later burials may represent individuals who came back to Wairau Bar later in life, or after death, for burial.

Wairau Bar, along with the other large fourteenth century river mouth villages of the South Island's east coast, was abandoned with the demise of moa populations. Located on a barren spit Wairau Bar reverted to a hinterland status that it retained for the next 450 years until European arrival. In the 1840s a river mouth settlement, with at least three hotels, grew up there to serve shipping up the Wairau and Opawa Rivers into the new settlements of Marlborough. Once more Wairau Bar became an important place providing services to a wide hinterland (McIntosh 1977). But this situation was short-lived when the settlement was abandoned following a major earthquake in 1855 (Holdaway 2016).

Northern New Zealand

The complex structuring role of social, economic, ideological and political forces that can operate at different scales to support the emergence of heartland-hinterland relationships is well demonstrated at Rangihoua Bay in the northern Bay of Islands.

Rangihoua Pa, a stronghold of Nga Puhi chiefs in the early 1800s, occupies a headland in the centre of the bay. At the time, the Bay of Islands was occupied by many small related tribal factions with a number of powerful chiefs but there was no single economic or political centre (Ballara 1998: 61). The Hohi mission station was established in 1814, partly on invitation from one of the most powerful Nga Puhi chiefs Ruatara. The mission was situated on land below Ruatara's pa, Rangihoua and placed under its protection (Salmond 1997).

The Hohi mission was the first permanent European settlement and one of the earliest missions in the South Pacific. It became a community of around 25–30 European men, women and children. It was a household mission where the missionaries lived as families 'displaying the model of the Christian ideal' (Middleton 2013: 164). The missionaries were not self-sufficient and relied on the pa for protection and basic items of food (Middleton and Smith 2014). The pa was a centre of Maori social and political life, and the chiefs gained prestige and power from their association with 'their Pakeha' (Salmond 1997). Conversely, the mission was on the frontier of British expansion – the extreme hinterland of the British Empire – and was dependent upon its Maori patrons for survival. Nonetheless, their presence gave Europeans a toehold in New Zealand. Rangihoua Bay was a place where the social networks of two cultures overlapped and for a brief moment in history, it became the centre for two interdependent heartland-hinterland systems. The first was indigenous; association with Europeans and their trade provided influence to the occupants of Rangihoua over the surrounding area. The

second was colonial. Protected by Ruatara and his people, the Hohi mission became a fleeting, yet stable, place of contact for European activities in the south seas.

CONCLUSION

In the case of New Zealand, high mobility, low population density and extreme environmental and climatic diversity shaped circumstances where heartland-hinterland relationships were fluid and easily subverted by historical processes. Heartland-hinterland relationships were temporally dynamic and contingent rather than emerging from fixed principles of resource distribution and accessibility. We have argued that the best visual metaphor for New Zealand's short but complex history is 'raindrops on a pond'. In this visualisation the multiple drops represent a series of events which have an effect upon a wider landscape. The events themselves are not necessarily tightly anchored to place and can be replaced quickly by new events and their wider influences. This is a simple metaphor, but one that reflects the dynamism and complexity that characterises New Zealand's short history. Furthermore, it is consistent with the patterns of Maori oral history and tradition which do not follow the linear trajectories of European accounts. Instead they are anchored to time and place, and narratives coalesce around specific events and individuals. These narratives overlap in time and space and sometimes mix myth and history (Tau 2003: 18). They can be both contradictory and mutually reinforming in different contexts but always relevant (Anderson *et al.* 2014: 44). Applied as part of a landscape framework, we suggest that the metaphor of 'raindrops on a pond' may serve as a useful device for informing future archaeological studies of social change.

Acknowledgements

We acknowledge Summer Moore and Nick Belluzzo, Organisers of the Rethinking Hinterlands in Polynesia Symposium at the 2019 SAA Conference in Albuquerque for inviting us to participate. We would like to thank them, as well as Thegn Ladefoged and Jennifer Kahn, the Symposium discussants, for their comments on the presentation and on the subsequent drafts. Les O'Neill provided the map and we are grateful for the useful comments and suggestions of two anonymous referees.

References

Anderson, 2014. Speaking of Migration, AD 1150–1450. In: Anderson, A., Binney, J. and Harris, A. (eds). *Tangata Whenua: An Illustrated History.* Auckland, Bridget Williams Books, pp. 42–67.

Anderson, A. 1989. *Prodigious Birds: Moas and Moa-hunting in Prehistoric New Zealand*. Cambridge, Cambridge University Press.

Anderson, A. and Smith, I.W.G. 1996. The transient village in southern New Zealand. *World Archaeology,* 27: 359–371.

Ballara, A. 1998. Iwi : the dynamics of Maori tribal organisation from c. 1769 to c. 1945. Wellington, Victoria University Press

Barber, I. 2004. Crops on the border: the growth of archaeological knowledge of Polynesian cultivation in New Zealand. In, Furey, L. and Holdaway, S. (eds.) *Change Through Time – 50 Years of New Zealand Archaeology.* Auckland. NZAA Monograph, 26: 169–192.

Belich, J. 1996. Making peoples : a history of the New Zealanders, from Polynesian settlement to the end of the nineteenth century. Honolulu, University of Hawai'i Press.

Best, S.B. 1977. The Maori adze: An explanation for change. *Journal of the Polynesian Society*, 86: 307–337.

Brooks, E., Jacomb, C. and Walter, R. 2009. Archaeological Investigations at Wairau Bar. *Archaeology in New Zealand,* 52: 259–268.

Brooks, E., Jacomb, C. and Walter, R. 2016. Final report on preconstruction archaeological investigations, MacKays to Peka Peka Expressway, Kapiti Coast, Southern Pacific Archaeological Research, Report Series, No. 171, Dunedin.

Brooks, E., Walter, R. and Jacomb, C. 2011. History of excavations at Wairau Bar. *Records of the Canterbury Museum*, 25: 13–58.

Burns, P. 1980. *Te Rauparaha, a new perspective*. Wellington, Reed.

Carkeek, W. 1978. *The Kapiti coast: Maori history and place names*. Christchurch, Capper Press.

Champion, T. 2005. Centre and Periphery: comparative studies in archaeology. New York, Routledge.

Coutts, P.J.F. 1972. The emergence of the Foveaux Strait Maori from prehistory: A study of culture contact. Phd, University of Otago.

Damgaard, K. 2009. A Palestinian Red Sea Port on the Egyptian Road to Arabia: Early Islamic Aqaba and its Many Hinterlands. In, Blue, L, Cooper J., Thomas, Ross and Julian Whitewright (eds.). Connected Hinterlands Proceedings of Red Sea Project IV Held at the University of Southampton, September 2008. *Society for Arabian Studies Monographs,* 8: 85–97.

Duff, R. 1942. Moa-hunters of the Wairau. Canterbury college, Christchurch, N.Z. *Canterbury Museum. Records*: 1–42.

Duff, R. 1950. *The Moa Hunter Period of Maori Culture*. Wellington, Department of Internal Affairs.

Furey, L. 2006. *Maori gardening: an archaeological perspective*. Wellington, Department of Conservation.

Golson, J. 1959. Culture change in prehistoric New Zealand. In, Freeman, J.D. and Geddes, W.R. (eds.) *Anthropology in the South Seas.* New Plymouth. Avery, pp. 29–74.

Graves, M.W. and Addison, D.J. 1995. The Polynesian settlement of the Hawaiian Archipelago–Integrating models and methods in archaeological interpretation. *World Archaeology,* 26: 380–399.

Greig, K. and Walter, R.K. 2017. Southland Coastal Heritage Inventory Project: Summary of Outcomes, 2012–2017 and Priorities for Future Work, 2018–2023, SPAR Report Series, Dunedin, Department of Anthropology and Archaeology, University of Otago.

Hall-Jones, J. 1976. *Bluff Harbour*. Bluff, Southland Harbour Board.

Hall-Jones, J. 2003. King of the Bluff : the life and times of Tuhawaiki (Bloody Jack). Christchurch, Kiwi Publishers.

Hamel, G.E. 1977. Prehistoric man and his environment in the Catlins, New Zealand. PhD Thesis, University of Otago.

Hamel, G.E. 1982. South Otago. In, Prickett, N. (ed.) *The First Thousand Years*. Palmerston North, The Dunmore Press Limited, pp. 129–140.

Hamel, G.E. 2001. *The Archaeology of Otago*. Wellington, Department of Conservation.

Holdaway, B. 2016. *The Wairau and its Forgotten Capital*. Blenheim, Self Published.

Holdaway, R.N. and Jacomb, C. 2000. Rapid extinction of the moas (Aves : Dinorinthiformes): Model, test, and implications. *Science*, 287: 2250–225

Irwin, G.J. 1992. T*he prehistoric exploration and colonisation of the Pacific*. Cambridge, Cambridge University Press.

Jacomb, C., Holdaway, R., Allentoft, M., Bunce, M., Oskam, C., Walter, R. and Brooks, E. 2014. High-precision dating and ancient DNA profiling of moa (Aves: Dinornithiformes) eggshell documents a complex feature at Wairau Bar and refines the chronology of New Zealand settlement by Polynesians. *Journal of Archaeological Science,* 50: 24–30.

Jacomb, C., Walter, R. and Jennings, C. 2010. A Review of the Archaeology of Foveaux Strait, New Zealand. *Journal of the Polynesian Society,* 119: 25–59.

Kahn, J.G., Kawelu, K., Wichman, V., Carpenter, A.B., Moore, S. and Hunt, T. 2016. Understanding variability in the hinterlands: settlement and subsistence in Miloliʻi, Kauaʻi, Hawaiian Islands. *Archaeology in Oceania,* 51: 196–213.

Kinaston, R.L., Walter, R.K., Jacomb, C., Brooks, E., Tayles, N., Halcrow, S.E., Stirling, C., Reid, M., Gray, A.R. and Spinks, J. 2013. The first New Zealanders: patterns of diet and mobility revealed through isotope analysis. *PLoS One,* 8: e64580.

Kirch, P.V. and Green, R.C. 2001. *Hawaiki, Ancestral Polynesia*. New Yprk, Cambridge University Press.

Kuusela, J.-M., Nurmi, R. and Hakamäki, V. 2018. Unhierarchical and Hierarchical Core-Periphery Relations: North Fennoscandian Trade Network from the Middle Ages to the Post-Sixteenth Century. *American Anthropologist*, 120: 765–780.

Leach, B.F. 1978. Four centuries of community interaction and trade in Cook Strait, New Zealand. *Mankind,* 11: 391–405.

Lockerbie, L. 1953. Further excavation of the Moa-hunter camp site at the mouth of the Tahakopa River. *Journal of the Polynesian Society*, 65: 13–32.

Marshall, Y. 2004. Social Organisation. In, Furey, L. and Holdaway, S. (eds.) *Change Through Time – 50 Years of New Zealand Archaeology*. Auckland, NZAA Monograph, 26: 55–84.

McIntosh, A. 1977. *Marlborough : A Provincial History*. Christchurch, Capper Press.

McNab, R. 1913. *The old whaling days; a history of southern New Zealand from 1830 to 1840*. Christchurch, Whitcombe and Tombs Limited.

McWethy, D.B., Whitlock, C., Wilmshurst, J.M., McGlone, M.S., Fromont, M., Li, X., Dieffenbacher-Krall, A., Hobbs, W.O., Fritz, S.C. and Cook, E.R. 2010. Rapid landscape transformation in South Island, New Zealand, following initial Polynesian settlement. *Proceedings of the National Academy of Sciences of the United States of America*, 107: 21343–21348.

Middleton, A. 2013. Missionization and the cult of domesticity, 1769–1850: Local investigation of a global process. In, Spencer-Wood, S. (ed.) *Historical and Archaeological Perspectives on Gender Transformations*. New York, Springer, pp. 149–170.

Middleton, A. and Smith, I.W. 2014. Daily Life at Hohi Mission Station: Archives and Archaeology. *'Takoto te Pai!' Bicentenary Reflections on Christian Beginnings and Developments in Aotearoa New Zealand*: 87–109.

Prickett, N.J. 1989. Adzes of Nelson argillite from the far north of New Zealand–the Auckland Museum collection. *Archaeology in New Zealand*, 32: 135–46.

Reilly, M., Leoni, G., Carter, L., Duncan, S., Paterson, L., Ratima, M.T. and Rewi, P. 2018. *Te kōparapara : an introduction to the Māori world*. Auckland, Auckland University Press.

Salmond, A. 1997. *Between Worlds. Early Exchanges between Maori and Europeans* 1773–1815. Auckland, Viking.

Scott, C. 2008. A cost-surface analysis of the exchange of obsidian in prehistoric New Zealand. *New Zealand Journal of Archaeology,* 29: 57–87.

Sheppard, P.J. 2004. Moving Stones: Comments on the archaeology of spatial interaction in New Zealand. In, Furey, L. and Holdaway, S. (eds.) *Change Through Time: 50 Years of New Zealand Archaeology.* Auckland. New Zealand Archaeological Association Monograph, 26: 147–168.

Sinclair, K. 1990. *The Oxford illustrated history of New Zealand*. Auckland New York, Oxford University Press.

Smith, I.W.G 2005. Retreat and resilience: Fur seals and human settlement in New Zealand. In, Monks, G.G. (ed.) *Exploitation and Cultural Importance of Sea Mammals.* Oxford. Oxbow Books, pp. 6–18.

Smith, I.W.G. 1985. Sea mammal hunting and prehistoric subsistence in New Zealand sea mammals. In, Sutton, D.G. (ed.) *Saying so doesn't make it so: Papers in honour of B. Foss Leach.* Auckland. New Zealand Archaeological Association Monograph, 17: 76–108.

Tau, T.M. 2003. *Nga pikituroa o Ngai Tahu: The oral traditions of Ngai Tahu.* Dunedin, University of Otago Press.

Te Rauparaha, T. and Butler, P.S. 1980. *Life & times of Te Rauparaha*. Martinborough, Alister Taylor.

Teviotdale, D. 1938. Further excavations at the moa-hunters' camp at Papatowai. *Journal of the Polynesian Society,* 47: 27–37.

Walter, R. and Reilly, M. 2018. Nga Hekena Waka: Migration and Early Settlement. In, Reilly, M., Duncan, S., Leoni, G., Paterson, L., Carter, L., Rastima, M. and Rewi, P. (eds.) *Te Koparapara: An Introduction to the Maori World.* Auckland. Auckland University Press, pp. 65–85.

Walter, R., Buckley, H., Jacomb, C. and Matisoo-Smith, E. 2017. Mass Migration and the Polynesian Settlement of New Zealand. *Journal of World Prehistory,* 30: 351–376.

Walter, R., Jacomb, C. and Bowron-Muth, S. 2010. Colonisation, mobility and exchange in New Zealand prehistory. *Antiquity,* 84: 497–513.

Walter, R., Smith, I.W.G. and Jacomb, C. 2006. Sedentism, subsistence and socio-political organization in prehistoric New

Zealand. *World Archaeology,* 38: 274–290.

Walter, R., Brooks, E., Greig, K. and Hurford, J. 2018. Excavations at Kahukura (G47/128), Murihiku. *Journal of Pacific Archaeology*, 9: 59–82.

Wilmshurst, J.M., Anderson, A.J., Higham, T.F.G. and Worthy, T.H. 2008. Dating the late prehistoric dispersal of Polynesians to New Zealand using the commensal Pacific rat. *Proceedings of the National Academy of Sciences,* 105: 7676–7680.

Wilmshurst, J.M., Hunt, T.L., Lipo, C.P., Anderson, A.J. and O'connell, J. 2011. High-precision radiocarbon dating shows recent and rapid initial human colonization of East Polynesia. *Proceedings of the National Academy of Sciences of the United States of America,* 108: 1815–1820.

Worthy, T.H. 1990. An analysis of the distribution and relative abundance of moa species (Aves: Dinornithiformes). *New Zealand Journal of Zoology,* 17: 213–241.

Worthy, T.H. and Holdaway, R. 2002. *The Lost World of the Moa*. Christchurch, Canterbury University Press.