

The Swiss Family Robinson Model: A Comment and Appraisal

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In their paper, The Swiss Family Robinson and the archaeology of colonisations, in Volume 1 of this journal, Birmingham and Jeans advocate adoption by Australian historical archaeologists of the American hypothetico-deductive method for investigating historic sites and propose a model of colonisation and development from which hypotheses can be drawn. In this paper by Damaris Bairstow, of Newcastle, N.S.W., it is maintained that historical archaeology is fundamentally inductive, that the archaeologist must first contend with the data from his or her site and reason from it to general theory. Although, therefore, the Swiss Family Robinson model may provide a framework for the history of colonisation and development, it is doubtful whether it or any model can be used to supply any valid hypothesis from which to deduce archaeological evidence.

In *The Swiss Family Robinson and the archaeology of colonisations*,¹ Birmingham and Jeans present two interlocking propositions. At a general level they advocate adoption by Australian historical archaeologists of the American hypothetico-deductive method; more specifically they propose a model for colonisation and development from which those hypotheses can be drawn. Since this is the first real attempt to grapple with the theoretical problems now facing historical archaeologists in this country, it cannot be allowed to go without comment. However, while the Swiss Family Robinson model may have application in understanding colonial history on an Australia-wide scale, the claims by the authors that the colonisation flow chart can be used for interpreting individual sites as well as the total economy may not be universally true. Australian historical archaeology is, and must be, *inductive*, formulating general theories from specific instances of data, rather than *deductive*, where individual cases are fitted into a general model.

This paper attempts to show the validity of this theoretically opposite position by specific studies of Australian colonisation and development, an inductive rather than a deductive approach. In general terms these studies offer support for the Swiss Family Robinson model, but they also reveal shortcomings in that model when applied to specific instances.

In the 1820s, two private 'colonies' were established in Australia: the Australian Agricultural Company was granted a million acres north of Port Stephens in New South Wales, and the Van Diemen's Land Company 500,000 acres in north-west Tasmania. In each case, because of the size of the grant and government policy, the land was taken up outside the established settled areas. In each instance, officers and servants were recruited in Britain and selected on the basis of skills thought to be needed to establish a colony in the 'South Seas', skills which Father Robinson happily combined in one person. Each company sent its settlers to Australia complete with stock, machinery and tools, such as the Robinson family were supplied with from the wreck. In all these instances, orientation was to the sea as the source of supply.²

For both the Australian Agricultural Company and the Van Diemen's Land Company, the first consideration was the 'safe anchorage'.³ The Australian Agricultural Company chose Carrington on Port Stephens, the Van Diemen's Land Company selected Circular Head, now Stanley. From these

bases, as with the Robinsons, initial reconnaissance was followed by longer journeys inland in search of better land for agriculture and grazing. The Australian Agricultural Company established Pindyanbah (now Bundabah) as a horse station, Telegraphy for sheep, Gloucester for cattle, Booral and Stroud for agriculture, 'shifts inland' paralleled by the Van Diemen's Land Company's establishments in the Hampshire and Surrey Hills, on the Middlesex Plains and at Woolnorth and the mouth of the Emu River. The shift culminated for the Australian Agricultural Company in the transfer of its headquarters to Stroud, leaving Carrington to serve only as the port. The isolation of and difficulties of communication between the Van Diemen's Land Company's inland grants precluded so final a move, though in 1829 there was talk of shifting headquarters to the Surrey Hills. Stanley, like Sydney, remained not only the port but also the capital of the colony.⁴

Like the Robinsons, each company established first its kitchen gardens and orchard. Land was cleared for wheat and maize. The basic alimentary needs of the settlers having been supplied, the Australian Agricultural Company tried exotic crops in the form of tobacco, cotton, sugar and even opium for the China trade, all evidence of an early environmental assessment of the area as sub-tropical. Not surprisingly, only tobacco proved successful for a time, until the advent of rust and blue mould wiped out all coastal tobacco growing in the 1870s. Brick and lime kilns were built and tan pits and shipyards, activities matched by the Robinsons. Even the Robinsons' paternal organisation was paralleled. Dawson, later Parry, was head of the Australian Agricultural Company's household, Curr of the Van Diemen's Land Company's. Beneath them ranked, in order, the company's officers (Mother Robinson) and servants (the four sons), between whom the work of the colony was divided.⁵

Whilst these experiences of the Australian Agricultural and Van Diemen's Land Companies can be fitted neatly into the Swiss Family Robinson model, some words of warning should be sounded lest the unwary be trapped by so catchy a theme. *The Swiss Family Robinson* was written at the height of the European optimism of the eighteenth and early nineteenth centuries parodied in Voltaire's *Candide*. Every day in every way we will all move inevitably towards Utopia and this in the best of all possible worlds. Although Birmingham and Jeans qualify this by reference to the depressions of the 1840s, 1890s and 1930s, Wyss' Arcadian

dream must of necessity pervade any 'model' based on his book. Indeed, it is a true guide to the mentality of early nineteenth century colonisers if not to the actuality of their situations.

More realistically, however, we must question the concept of inevitable progress implicit in the representation of the model as a 'flow chart'. Neither the Australian Agricultural Company nor the Van Diemen's Land Company flowed on to Utopia. After half a dozen years of constant calls on capital and lack of dividends, the disgruntled shareholders of both companies sought winding up. It was only with the development of trade in timber to the newly formed colonies at Port Phillip and South Australia that the Van Diemen's Land Company, established to grow fine-woolled sheep, became economically viable. The Australian Agricultural Company, founded with the same prime object, achieved financial security only with the development of its coal mines and the subdivision of its land in Newcastle and Warrah. Whilst it could be argued that these changes in direction are encompassed by Birmingham and Jeans in their model, that the 'unsuccessful outcome' of the first 'production system' led to the selection of a new production system,⁶ this in fact was not the case. In each instance, the profits which timber, coal and the sale of land afforded to the respective companies were reinvested in the original production system.

Much of the blame for the initial failure of each company lies in the fact that their 'production systems' were selected not after 'preliminary assessment' in the colony but according to the prejudices of the company's chief officer from time to time, usually an Englishman with little or no colonial experience (back to 'Colonists—skills and attitudes'⁷) or by the London directors. An example of this can be found in the history of the Australian Agricultural Company's flour mills. Robert Dawson arrived from England with the machinery for a four-horse mill, later to be described by his successor, Sir Edward Parry, as a 'miserable affair'.⁸ Dawson himself seems to have doubted its efficiency. Within a year of his arrival he had begun excavations for a tide mill,⁹ an example of English technology well adapted to the large tidal flows of the Suffolk coast or the Thames estuary but at Carrington the average rise and fall is only a metre. The experiment was abandoned, but not until new millstones had been dispatched from England to Port Stephens where they lay on the ground being 'too large to be moved by the machinery' available.¹⁰

In an endeavour to rectify the situation, Parry, in 1833–4, built a water mill at Stroud.¹¹ The result, in Australian conditions, was what might have been expected. Either there was insufficient water to turn the mill or it was flooded. Yet despite repeated requests from the colony, the London Board refused to allow the mill to be adapted to steam. This was done only after it was sold, in 1859, to Stephen Dark who operated mills at Dungog and Clarencetown and therefore had the necessary colonial experience and who forthwith commenced to instal a steam engine.¹² Unlike Father Robinson, the Company's officers were not omniscient. While this episode may be taken as an illustration of the 'learning phase' set out by Birmingham and Jeans, the policy of appointing only Englishmen to senior positions in the colony meant that the company was still learning when other colonists had reached a 'successful outcome.'

Another example was the disastrous experience of both companies in the initial subdivision and sale of their land. In 1840, the Van Diemen's Land Company, in London, encouraged the migration of tenant farmers in the face of contrary advice from Curr who by then had been fourteen years in Tasmania. Within three years, arrears of rent amounted to 12,500 pounds.¹³ In 1849, the Australian Agricultural Company advertised, in London, its scheme for the sale of farms at Port Stephens. Despite years of colonial experience and government regulations which required back lands to be taken in proportion to water frontages, purchasers were allowed to choose land at will and they chose, not

surprisingly, the best of the alluvial flats. Within eighteen months of their arrival, the first purchasers, many of whom lacked farming experience in Britain let alone in New South Wales, were described as 'fast disintegrating into a state of Poverty and Wretchedness'.¹⁴ Regardless of the failure of this scheme and the protests of the company's colonial officers, it was not until the latter half of the 1850s that a survey made in advance of sales ensured that some proportion of back lands was included in each farm. By that time, however, the prime areas had been sold.¹⁵

The decisions in each instance had been taken by the London directors who had little comprehension of the land in question. Dawson had written to London of the richness of the alluvial flats with their surrounding low hills lightly timbered with apple trees.¹⁶ The description failed to convey to men with English perception the broken nature of the country, the fact that the alluvial flats were few and far between. The 'grassy hills and knolls, resembling a neglected old park in England', the Surrey Hills with tall, straight trees 'a hundred yards apart', plains of several square miles without a single tree of which the Van Diemen's Land Company's surveyor had written¹⁷ were artificial grasslands, the product of aboriginal firing. Added to which the decisions taken in London seem to have been based more on the success of the Canada Company than on the realities of Australian colonial development.¹⁸ These episodes introduce a new feature, namely government at a distance, a feature not allowed for in the Swiss Family Robinson model.

English control of Australian enterprise was not limited to the two great pastoral companies. It forms an inherent part of Australian colonisation and development. It not only inhibited the learning process but to a large extent controlled it. Indeed, the first fifty or more years of Australia's history can be seen as a struggle between colonial enterprise based on colonial learning and experience and British controls which curtailed that enterprise. Australian merchants struggled with British import regulations and the monopoly on trade given by London to the East India Company. Australian pastoralists struggled to acquire land outside the limits on settlement imposed by London. Government at a distance was, indeed, an integral part of colonisation.

One further facet of Australian colonisation has largely been ignored in the Swiss Family Robinson model. There were neither aborigines nor convicts on Wyss' fictional island. Birmingham and Jeans attempt to overcome this by importing Crusoe's Man Friday, but this poses problems to which the colonisation model provides no answer. The Australian aborigines were not a subject people who could be exploited in the way Crusoe used Friday, nor was the Robinson family called upon to make the responses necessary to the running of a convict settlement. Newcastle, the first mainland settlement outside the Cumberland-Hawkesbury area is neither inland nor could it be described as 'a site with better resources'.¹⁹ Newcastle was chosen as a suitable place of exile, originally for Irish rebels, later for convicts who offended again in New South Wales. It had no agricultural potential and its three main resources, coal, lime and timber, were viewed more as a means of ensuring hard labour than as benefiting the parent colony.²⁰

In Wyss' fictional colony and therefore in the model of colonial development based on it, initial settlement is followed by exploration and the discovery of better land, agriculture leads to the development of industry based on agriculture until, the basic needs having been satisfied, the settlers are able to achieve what in modern political parlance is termed 'the quality of life' which for the Robinsons was the creation of a replica of European society in the South Seas. This suggests an inevitability of progress along the lines proposed by Rostow for the western economic world,²¹ a progression from our colonial origins to the complexity of today's society. Birmingham and Jeans have argued this for nineteenth century Australia as a whole but the historical archaeologist does not deal with Australia as a whole, only

with some small part of it. For the individual site or even the individual industry, progress may well have been halted, frozen or have occurred in a series of bursts interspersed with periods of stagnation.

The pastoral industry reached a 'successful outcome' by the 1880s. This was followed by spatial and social diffusion and reinforced by an education system based on the English public school tradition, by a rigid social system reflected in house parties, picnic races and the Royal Agricultural Society balls and by the apprenticeship system known as 'jackarooing'. Thus far the Swiss Family Robinson model has been followed faithfully²² but the production system had frozen. True, the introduction of electricity made a difference in the homestead and the woolshed but it was only with the combination of depressed wool prices and high labour costs in the late 1950s that the pastoral industry moved to 'developmental change' which has caused a revolution in the last twenty-five years. Over seventy years had elapsed between the Swiss Family Robinson model's second and third stages. The same attitudes can be found in other areas of inbuilt conservatism.

'By the mid-19th century, Australians were scouring the world for appropriate technology',²³ a process that would accelerate during the rest of the century. In the Newcastle coalfield, each major company, as it developed a new mine, imported the latest in overseas technology. The Australian Agricultural Company introduced double-acting cages in the shaft in its No. 2 Pit in 1861.²⁴ In 1863, steam haulage underground was used for the first time in the Coal and Copper Company's adits.²⁵ In 1865, the Scottish Australian Company installed steam haulage in a newly opened shaft mine, the engine being placed on the surface.²⁶ In 1870, the Australian Agricultural Company put the haulage engine underground.²⁷ Air compression engines were first used in the Scottish Australian Company's New Tunnel in 1875.²⁸ In 1877, when the Australian Agricultural Company converted its D Pit to an air shaft, Newcastle saw its first ventilation fan, a huge slow-moving Guibal.²⁹ The Wickham and Bullock Island Company fitted its newly sunk air shaft with the smaller Walker fan in 1888³⁰ and by the following year the Northumberland Coal and Land Company was using small, high-speed Schieles.³¹ In 1886, the Wickham and Bullock Island Company cut its levels so as to allow the use of a self-acting incline underground.³² The Newcastle Wallsend Company introduced endless rope haulage at its New Tunnel in 1889.³³ In 1887-8, the first all metal poppet head was erected by the West Wallsend Company³⁴ and in 1891 that company installed the first travelling screens.³⁵ The industry as a whole kept abreast of the times but not necessarily the individual mines. Mines may have opened with the latest in machinery but the capital outlay was such that the same equipment may well have remained in use for years, by which time, by the standards of the day, it was obsolete.

Not all mining companies could afford the latest and best. Long after the Australian Agricultural Company and the Coal and Copper Company were carrying coal by locomotives, the Co-operative Coal Company was using horse trams.³⁶ That was all it could afford. While the latest in technology was being installed at the large collieries, the Young Wallsend Company was building its first surface structures, even its engine base, out of locally cut timber and galvanised iron.³⁷ Yet the physical remains which the archaeologist will see of each of these sites will reveal, respectively, earthworks for locomotives and solid brick-built engine mounts and workshops. Both the Co-operative Coal Company and Young Wallsend were grossly undercapitalised. The latter fell victim to the 1890s depression; the former had collapsed by 1864. Each was taken over and the new proprietors injected capital to permit the introduction of new technology. Thereafter the two collieries can be fitted into the general model proposed but to interpret their physical remains only in terms of that general model is to deny them a most important part of their

history. One mine represents the first attempt at co-operative mining in the country. The other is an example of the optimism of the 1880s.

The personal attitudes of colliery proprietors also dictated what machinery might be installed. James and Alexander Brown—J. and A. Brown a forerunner of Coal & Allied Industries—as young men had won coal with picks and shovels while their mother carted it to the wharf at Morpeth with a horse and dray. In the years of their financial success they were prepared to install any equipment that would reduce costs and increase profit³⁸ but they saw no reason why their miners should have it better than they. Minmi, the major area of their activity, is pockmarked with the remains of air shafts which they sunk to avoid the cost of mechanised ventilation.

In the 1890s, Newcastle coal companies were scouring Newcastle for the equipment abandoned by the bankrupt mining companies. Second-hand equipment was purchased, indeed stolen, for use elsewhere. Colliery companies, as they moved from Newcastle to the South Maitland field, took with them any machinery still of use. For capital intensive companies, pick and shovel mining became uneconomic. The big company moved to a new field leasing its old mine to be worked on tribute by a small operator. The Wallsend Company's New Tunnel is a prime example. Once the largest producer of all, it became the Elermore Tunnel Colliery. In terms of the Swiss Family Robinson model, production methods which had been rejected by the larger colliery proprietors as 'unsatisfactory' were adopted by the small concerns. The model proposed makes no provision for retrogression yet it is the results of the latest stage of operations that the historical archaeologist will deal with on the site.

The historical archaeologist must first investigate his or her site. Doubtless the data revealed by that investigation could be slotted into the Swiss Family Robinson model but to do so would require *induction*, a choice, based on the archaeological evidence, of what part of the model is apposite. To rework existing studies 'in the light of a general historical model', as Birmingham and Jeans suggest,³⁹ would appear to require a similar inductive approach.

What Birmingham and Jeans advocate, however, is prior 'agreement on the general form of the historical process'. Armed with 'hypotheses derived from' this general form,⁴⁰ the historical archaeologist is to go into the field to investigate his or her site using deductive reasoning. This approach is to deny to historical archaeologists the one contribution to history that is within their capabilities to make, namely that they observe what is unhampered by any preconceptions as to what should have been, that they collect particular data, not to illuminate some preconceived hypothesis, but from which to formulate new hypotheses. *Deduction* is a means of testing hypotheses, not of formulating them. Only by *induction*, by reasoning from the particular data to general theory, can new hypotheses be formed. The historical archaeologist, because he or she is trained to deal with the particular rather than the broad spectrum, is in a unique position to make this contribution but he or she can make it only by inductive reasoning.

NOTES

1. Birmingham & Jeans 1983.
2. Bischoff 1832: 98-105; Dawson 1829: 8; Gregson 1907: I-III; Stieglitz 1952: 25.
3. Birmingham & Jeans 1983: 5.
4. Bischoff 1832: 115-29; Dawson 1829: 14-15, 37-8; Dawson 1830: III-V; Gregson 1907: V; Stieglitz 1952: 44; Jas. Macarthur to Colonial Committee 13/3/1828.
5. Bischoff 1832: 115, 123-4; Dawson 1829: 126-9; Gregson 1907: 33.

6. Birmingham & Jeans 1983: 6.
7. *ibid.*
8. Parry 9/1/1830.
9. Dawson to Court of Directors 1/8/1826.
10. Parry 9/1/1830, marginal note.
11. Parry to Court of Directors 5/12/1834.
12. Jack 1978.
13. Stieglitz 1952: 47.
14. Blane to Court of Directors 21/6/1851.
15. Ebsworth to Court of Directors 15/6/1850; Australian Agricultural Company copy conveyances.
16. Journal of a journey performed in the bush in search of the Australian Agricultural Company's Grant near Port Stephens 1826: B230, 233, 236, 294, 297, 300.
17. Bischoff 1832: 118–120.
18. Le Couteur 1978: 174, 221, 272.
19. Birmingham & Jeans 1983: 11, 5.
20. Turner 1980: 9–11.
21. Rostow 1971.
22. Birmingham & Jeans 1983: 6.
23. *ibid.*: 8.
24. *N.C.* 19/3/1862.
25. Keene 1863.
26. *N.C.* 27/5/1865.
27. Brown to Merewether 24/5/1870.
28. Lambton Colliery Report 24/11/1875.
29. *N.M.H.* 15/9/1877.
30. Wickham & Bullock Island Colliery Report October 1888; *N.M.H.* 25/10/1889.
31. *N.M.H.* 15/6/1889.
32. Wickham & Bullock Island Colliery Report 31/3/1886; *N.M.H.* 30/4/1886.
33. *N.M.H.* 21/10/1889.
34. *N.M.H.* 4/7/1888.
35. *N.M.H.* 28/1/1892, 1/3/1892.
36. Keene 1863.
37. *N.M.H.* 16/12/1887.
38. Turner 1968.
39. Birmingham & Jeans 1983: 14.
40. *ibid.*

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