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Vegecultures and the social–biological transformations of plants and people

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ABSTRACT

The social entanglements of vegetative reproduction are considered for three neighbouring tropical regions that are often considered to exhibit very different histories of plant exploitation during the Holocene: early and independent agricultural development on New Guinea; introduction of agriculture to Island Southeast Asia during the last 3000–4000 years; and, Australia as the 'hunter–gatherer' continent. Following recent reassessments that emphasise the commonalities of many plant exploitation practices across these three regions, the focus here is upon the shared vegetative disposition, or orientation, of people to plants. The intention is to provide insight on how people's awareness of the vegetative reproductive capacity of plants has been mutually constitutive for the production and reproduction of their social worlds, whether by groups ordinarily referred to as 'hunter–gatherer' or 'horticulturalist'.

1. Engagements of plants and people

The regions of Island Southeast Asia (ISEA), New Guinea and Australia are often characterized as having very different Holocene histories of plant exploitation: agriculture emerged independently in the New Guinea region (Golson, 1977; Denham et al., 2003; Denham, 2011); agriculture was brought into ISEA by Austronesian-speaking farmer-voyagers from Taiwan (Bellwood, 2005; cf. Donohue and Denham, 2010); and, people in Australia remained as hunter–gatherers, albeit, with some degree of plant management (cf. Jones, 1969; Jones and Meehan, 1989; Lourandos, 1997). Yet within these regions, communities across tropical Island Southeast Asia, New Guinea and northern Australia appear to share many aspects of a vegetative orientation, or disposition to their world that encompasses both the social and biological domains.

It is our contention that this shared vegetative orientation towards perennials has contributed to underlying commonalities in the ways people engage with each other, domesticate their landscapes, and (re)produce their sense of identity (Fig. 1). We argue that these commonalities are more fundamental, or primordial, than the apparent differences between groups in each of these three regions – whether they be classified as horticulturalist, sago cultivator or hunter–gatherer.

In this paper we view plants as central entities that facilitate change and transformation, rather than organisms that exist on the peripheries of human decision-making; where entire plant ecologies are continually emerging from an ongoing dialogue between people and the living world. This relationship can just as readily be seen as a world from which humans and their social worlds continually emerge via the material properties of plant life. What transpires from our consideration of plant management and manipulation strategies in Australia, Island Southeast Asia and New Guinea are the inherently social relationships evident between people and vegetatively propagated plants.

Entire social histories may be written into the long-term engagements between people and plants within a particular landscape. The biological properties of plants appear deeply woven into social lives expressed within cosmological understandings of the world; expressions of 'place' as historic records of land use; land tenure; rights of resource access (often expressed through kinship); ceremonial practices; and, as places linked to birth, death and the ancestors. Head et al. (2012) and Hall (2011) argue that Western philosophies have clearly demarcated and subjugated the role of plants in human life, reinforcing the nature–culture dichotomy and placing humans as social beings outside the natural world (Head

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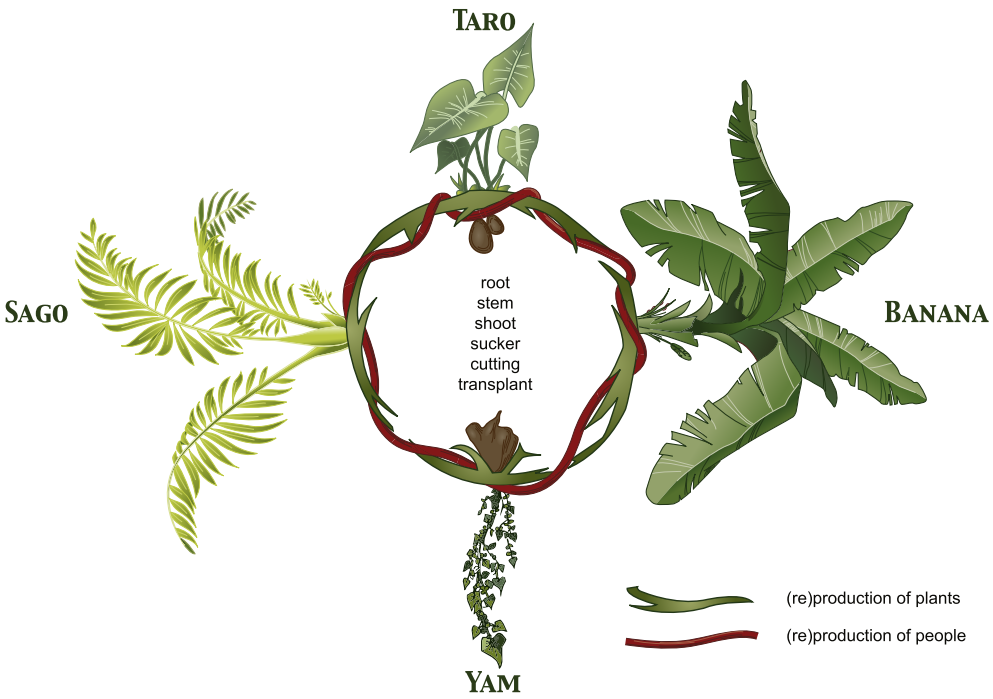

Fig. 1. In vegecultural worlds, people and plants are entangled by more than the economics of food gathering or of cultivation. From the material properties of plants, in this case, of long-lived perennials that may be managed vegetatively; human social life and plant life are co-constituted (image devised by Tim Denham following conversations with John Muke).

et al., 2012: 21). Head et al. (2012: 26) introduce us to the concept of *plantiness* as a way of refocusing our attention on the material properties of plants that involve their physicality and biological processes. In thinking about materiality, plants are rather unique in this regard because they are living organisms that transform during their life cycle. Trees, as well as many other perennials are also interesting in that they have lives that far exceed those of a human being. The ways in which human lives become enmeshed with these extended lifetimes is quite different to the rhythms of seeded annuals that live for just a year, transforming at the end of their lives into a dormant seed and remaining in that state until conditions are right for germination and the birth of a new plant.

Our discussion involves not just consideration of the food products of a particular plant or plants that are of economic interest, but of the actual physical properties of these plants as they co-exist with people, i.e. their *plantiness*. The preference for long-lived cultivars within polycultural systems of plant management – such as tuberous roots, multi-stemmed palms and tree crops – persists in many tropical communities, even when governments have pressured people to pursue the cultivation of short-lived annuals (e.g. Hynes and Chase, 1982; Kennedy and Clarke, 2004; Barton and Denham, 2011; Barton, 2012; Kennedy, 2012). Continued use of these plants alongside seeded annuals can reasonably be seen as resulting from a clear and rational, economic strategy of communities to insure against failure of a cereal crop like rice (see Barton, 2012). In the wet tropics rice is difficult to grow and may produce very poor yields (Barton, 2012). It is possible that rice may not even have been viable as a crop in this region without reliable fallback foods like yams, aroids and sago palms. The persistence of vegecultural strategies within this economic framework is often seen as a result of rational actors 'hedging their bets' against crop failure. The historic trajectory of rice to become a staple food though is much more difficult to explain. Why engage in such risky cultivation practices in the first place? Why replace high yielding food plants with high labour, low yielding rice (see Barton, 2012 for calculations of hill rice farming against alternatives)? We have argued elsewhere (see Barton, 2009; Barton and Denham, 2011; Barton, 2012) that the archaeological evidence of rice and its introduction into island Southeast Asia reveals an early, mid-Holocene introduction (c. 4800 cal BP) followed by abandonment for millennia until the relatively recent, historic past (Barton and Denham, 2011; Barton, 2012). Analyses of pollen and phytoliths from the highlands of interior Borneo continue to support this model showing no clear evidence for domesticated rice prior to 400 years ago (Jones et al., 2013, 2015; see also Paz, 2002). The historic data also show the uneven uptake of rice as a crop across the region, with many groups in Borneo being relatively small-scale cultivators of rice until the 1950s (e.g. Barton and Denham, 2011; Barton, 2012; Blench, 2013). Is this patchy uptake an evolutionary struggle of rice adapting via human induced cultivation into new environments, or might it also represent active resistance by people to this plant? How would people integrate an annual crop that dies, does not reproduce from the body of the plant and does not outlive humans into a vegecultural world? Might the existence of a very different world-view result in a slow, rather than fast, uptake of such a plant and its associated propagation systems?

We are arguing here that it is equally plausible that the social and material contexts of vegecultural practices created a resilience, or resistance, to the introduction of seed-based cultivation practices. In part, this resistance may be because many plants that are managed via vegetative propagation and other perennials represent more than just food; they are heritable property, often linked to apical ancestors that reinforce important lineages within particular communities and rights of access to resources (e.g. Brosius, 1986, 1991; Langub, 2007; Kennedy, 2012: 145). This observation raises questions about the past and of the ways in which people may have responded to the introduction of new plants and ways of doing things in prehistory. The adoption or rejection of some plants may not have been solely based on economic decisions, but may have also have been influenced by social structures and cosmological understandings of the world.

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