

**Aboriginal Principles
For
Sustainable Development
As Told in Traditional Law Stories**

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Abstract

Sustainable development has become an arena where people bring already existing political and philosophical outlooks to a debate characterised by fundamental dichotomies. This paper presents an analysis of ten Australian Aboriginal law stories to derive a range of principles for how the Nunggabarra people of Australia sustained their society against three such dichotomies: 'holism vs. fragmentation', 'strong' vs. 'weak' SD; and 'growth vs. no-growth' economy. The Aboriginal sustainability model is possibly the oldest we have some evidence of, with a successful track record of several tens of thousand years. It is a surprisingly 'realistic' model; neither representative of strong SD, nor does it give arguments to no-growth proponents. The paper argues against a common perception that modern industrialised societies cannot learn from indigenous societies: It is a matter of perspective. Although many practices and solutions are not viable for our time, we can learn from the principles and the governance models as a whole. The Nunggabarra society model provides a set of such principles, with a sustainability track record. Australia, therefore, has two models, the Aboriginal and the industrial, both implemented on a continent, which can be seen as a bellwether for the planet as a whole – a unique learning opportunity for the discourse on sustainable development.

Key Words: Sustainable society, sustainable development, strong sustainability, weak sustainability, steady state, story telling, indigenous knowledge, Australia, Aboriginal people, holistic.

Introduction

This paper derives and describes an Aboriginal ‘model for sustainable society’ and positions it in the current discourse on sustainable development. It is the first scientific attempt to use traditional indigenous knowledge for reconstructing the governance model of an Australian Aboriginal society from the time before the arrival of the British in 1788. The focus is on a single society, the Nhunggabarra people. This is a methodological choice, to allow reconstruction of the sustainability model as a whole, but there is nothing to suggest that the Nhunggabarra society was unique. There is much that is general of many Aboriginal communities across Australia, and also for other hunter-gatherer societies, but the purpose is not to generalise.

The Australian Aborigines sustained their societies on their island continent into our days for at least 40,000 years, possibly as long as 60,000 years. This makes their society model both one of the earliest we know and their sustainability record possibly the longest that we have evidence of. In contrast, the Western exploitation or *mining* (Diamond 2005) paradigm has brought Australian society to a perilous state in less than 200 years. Insights into how one of the Aboriginal peoples organised their societies to survive on a naturally fragile continent therefore has a value – also for societies today, because the Australian continent can be seen as a bellwether for the planet as a whole, which arguably is rapidly becoming more fragile. By deriving the governing principles behind the Australian Aboriginal *gardening* paradigm (Berndt, Berndt 1999) the paper aims to contribute to the reform stream in the sustainable development debate (as mapped by Hopwood *et al* 2005).

Gardening meets Mining

The Darling River is an Australian national icon, an ‘extraordinary river . . . with the finest water . . . and without which those regions would be deserts, inaccessible to and uninhabitable by, either man or beast,’ as the explorer Thomas Mitchell noted lyrically in his journal. Grass covered the riverbanks and huge river gums shaded and cooled Thomas Mitchell’s party that thirtieth day of May 1835. The age-old river gums are still there, but doomed, clinging precariously with their exposed roots to slumped naked banks. Mitchell saw ‘water being beautifully transparent, the bottom was visible at great depths, showing large fishes in shoals, floating like birds in mid-air’. (Mitchell 1839: vol 1:222). A different view meets a visitor today: A turbid stream filled with opaque silt, which allows no fish to breed and no light to penetrate to the plant life. Invisible poisonous run-offs from fertilisers, pesticides and herbicides fill the river. After 170 years of Western-style farming the Darling River flood plains are dying and the Aboriginal wildlife sanctuaries in the wetlands are no more. The photosynthetic activity of the plants is the main source of food in the food chain, but it is now so severely disrupted that

ecological experts regard the river as doomed. As the graziers were first to discover, Australian soils lose their organic and microbiological components very easily. The farms in the area had been flushing their soil into the Darling for a hundred years when synthesised nitrogen arrived on the scene in the 1960s; the result was to increase the rate of erosion even further. The land, degraded and meagre to start with, rapidly lost its biodiversity when synthetically fertilised; the soil became acid, unproductive and a large proportion of the fertilisers and chemicals ended up in the river system. The farmers then added pesticides and herbicides. The cotton industry is now completing the tragedy with new generations of fertilisers and pesticides. (White 1997, 1999).

Sustainable Development – Three dichotomies

The classic definition of Sustainable Development (SD) as ‘meeting the needs of present without compromising the ability of future generations to meet their needs’ was formulated in 1987 by the Brundtland report to the World Commission on Environment and Development (WCED). It promised to have identified a type of sustainable development that promoted both ecological sustainability and international justice, but it has fuelled debate ever since. Sustainable development has become an arena where people bring already existing political and philosophical outlooks to the debate (Hopwood 2005), characterised by tensions between the supporters of transformation versus status quo, between individual freedom and government control, between nature and development, North and South, etc.

This paper tests the derived Aboriginal model against three such dichotomies: ‘fragmentation’ vs. holism, ‘weak’ vs ‘strong’. SD; and ‘growth vs. no-growth’ economy, where the current Western model can be said to represent the first elements in the three dichotomies.

The holism vs. fragmentation dichotomy in the SD debate was formulated by A. Jones (1987), but the unease in the Western world with its own dominant paradigm, supported by the Judaeo-Christian world view, goes back at least to World War II: that nature is separate from humans; that humans have dominion over nature and that the natural sciences can explain nature by reducing the whole to its parts (Carley, Christie (2000:54ff). An attempt towards wholeness was visible in the Brundtland report, which discusses society’s social and economic sectors in relation to the physical environment. The question is: can sustainable development be achieved only when there is total harmony between social, economic and ecological requirements (Hediger 1997, Giddings et al 2002), which could be called the ‘holistic view’. Or can sustainable development be achieved when economy, society and nature are seen as operating independently of each other, what can be called the ‘fragmented’ view? The fragmented view is still typical for main stream natural science and dominant among corporations and many

governments. This is of concern due to the current dominance of the economic sector over both society and nature (Korten 1995). A call for holistic views is increasingly raised by scientists critical to how sustainable development is currently translated into practices, calling SD an 'oxymoron' (Sachs 1999) under a 'managerialist' paradigm, (Springett 2006) with 'reductionist' principles (Rios Osorio, et al. 2005, Springett 2006, Bagheri, Hjorth 2007, Rajeswer 2001), which only contribute to an increasing polarisation of the world.

The weak vs. strong dichotomy (see Table 1.) The weak form of sustainable development, WS, is generally associated with neo-classic economics (Hediger 1997, Pepper 1998, Devkota 2005, Klostermann et al 2006), which defines sustainability as achieving a non-declining per capita utility between inputs of three resource forms: Labour, capital and natural resources. The economist's perspective on sustainability is that natural and man-made capitals are substitutes and environmental problems can be overcome by financial capital through innovative investments in technology. Or, as formulated by the economist Solow 1992, 'sustainability does not require that any particular species of owl, or any particular species of fish, or any particular tract of forest be preserved', (cited in Devkota 2005). Strong sustainable development, SS, rejects the idea that natural and man-made capitals are substitutes. The only option is to aim for an acceptable balance between human society and the natural ecosystem. The balance is currently endangered and must be re-established. But what constitutes 'balance' is under considerable debate. According to the most extreme 'eco-centred' proponents (Hopwood et. al. 2005), nature has an intrinsic value in and of itself, which is not in any way compatible with the goals of development.

Table 1. Strong and weak sustainability. Adapted from Devkota (2005).

The growth vs. no-growth dichotomy can be said to originate from the first *The Limits to Growth* report to the Club of Rome in 1972 (Meadows et al.), which raised serious concerns for the future of mankind if the economic growth continued unabated. Their concern was, and still is, that the Western industrial economy functions as a giant open system, which utilises limited natural resources while polluting the environment and producing goods which end up as waste. This is in the debate often seen as the consequence of a neo-classic economy model applied by the main industrial economic powers.

An alternative to the neo-classic economist perspective, the 'steady-state' model, was developed by the economist Herman Daly (1996). It takes inspiration from physics, where steady state describes a situation where the flow of energy is constant and the increase of entropy in the system is negligible. In Daly's economic model it is the

throughput of matter/energy in the economic system that is to be kept constant. Daly insists that ‘steady’ does not mean static; the SSE model allows development in the form of qualitative improvement, i.e. new technical solutions or changes due to new knowledge. There is also a continuous renewal in the system through death and birth, depreciation and production. It is a no-growth model although Daly also acknowledges that the stocks of artefacts or people may occasionally grow temporarily as a result of technical progress that increases the durability and longevity of artefacts.

Sources and Method

The core data in this article come from a selection of law stories of the Nunggabarra, one of the Australian Aboriginal peoples. They were contributed by the custodian of the stories, the Nunggabarra elder, Tex Skuthorpe and published in Sveiby & Skuthorpe (2006).

The view on the Aboriginal stories among Westerners has undergone a considerable shift in the last decades. From having been seen as fairy tales for children in the 1800’s (Langloh-Parker 1978) perspectives have changed considerably; they are now used as sources by archaeologists (Flood 1999) and even referred to as ‘oral literature’ by some anthropologists (Berndt, Berndt 1999). Thousands of Aboriginal stories have survived until this day preserved through oral tradition. Although never written on paper a Nunggabarra Law story can – within certain limitations outlined below – be a more reliable source about how Aboriginal society was meant to function than anthropologists’ accounts. The anthropological primary research instrument, participant observation, struggles when the society under study has undergone dramatic changes, as was the case for Aboriginal Australia.

This is the value of the law stories for the purpose of the paper: they contain the rules that governed Nunggabarra society before the arrival of the English in 1788. The Aboriginal people had by then survived – in fact lived quite well – as hunter-gatherers isolated on their island continent for at least 40 000 years. Unlike hunter-gatherers societies in Africa and elsewhere they were never seriously influenced by the influx of other people and other cultures. The stories therefore open up a window, with a view back to the Palaeolithic era. In this article the window is used to explore their model for sustainability with arguably the longest proven track-record on the planet.

The methodological approach is to combine the Nunggabarra stories with as many different sources as possible: written sources, site visits and interviews. Wherever possible triangulation is used with at least three sources combined: a story, a written source and a visit to the site in the story. The most important other sources are the

journals by the first explorers, also archaeologists' accounts and some reports by anthropologists. Several visits to sacred sites add observations, pictures and field notes to the data.

Ten law stories and their meanings were analysed for this article. One story is presented in full, the Crane and the Crow story, which describes nine rules of behaviour relevant for the purpose of this article. Altogether, the ten stories contain 28 rules in total. A further 12 concepts have been inferred by Tex Skuthorpe and the author based on the stories and other written sources. See Appendix for the details.

Sustainable Development According to the Nhunggabarra

The totally 40 rules of behaviour and concepts derived from the stories have been classified as seven principles under one paradigmatic worldview and three categories referring to the elements of sustainable development discussed in this paper: ecology, society and economy. Below they will be discussed in more detail.

Table 2. Sustainability principles according to the Nhunggabarra.

First, however, a few words about the Nhunggabarra People, who once lived along the Narran and Darling rivers in the North-Western part of New South Wales, Australia.

The Nhunggabarra People

While we know fairly well the band organisation and nomadic life of the central desert-living Aborigines, very little is known, besides traditional tales, about how the Aboriginal societies in the relatively fertile Australian southeast lived before the Europeans disrupted their societies. It seems that people living along the rivers – like the Nhunggabarra – were probably living a more sedentary life. Their camps resembled villages according to the early explorer Thomas Mitchell (1839/1847). The communities were probably larger than the small bands of the desert and they moved only a few times during a year.

Analyses of various population estimates in Sveiby & Skuthorpe (2006) suggest that the Nhunggabarra and their 25 neighbouring communities may once have had a population exceeding 15,000, i.e. 500-1000 people per 'country' on an area approximately the size of Belgium. When the first explorer in the area, Charles Sturt, arrived in the area 1828 (Sturt 1983), a range of diseases unwittingly introduced by the English, were already taking a tragic toll; between 50% and up to 90% of the original Aboriginal population succumbed within a few years after the first settlement. Atrocities and massacres committed by the early white settlers completed the tragedy. (Butlin 1983, Reynolds 1981, Broome 2005). Today the original Nhunggabarra people have disappeared almost entirely

from their home country – their language is not spoken, and not even the name of their country remains in official records.

Paradigmatic World View: All are Connected

Aboriginal people considered themselves integrated with and part of the natural world. According to the Nhunggabarra the natural world was created during an era when the Ancestors travelled the universe. Their travels, their fights, adventures and hunting made imprints on the earth's topography and created the landscape at the time of creation, *Burruguu*. When the Ancestors had created the earth they went to the Milky Way in the sky, where they still live.

The Nhunggabarra held their Ancestors in great esteem, but they did not worship any gods – not even nature spirits. Instead, for them every rock and every land form, every plant and every animal had its own consciousness, just as people did. Everything was 'alive'. The earth that the Nhunggabarra walked on was the mirror of the Milky Way; their land was the explicit and tangible expression of their Ancestors' intangible world. Plants, animals, the soil, even the rocks had intangible counterparts in the sky, just like the people. Hence, every land formation and every creature on earth held meanings, which could be interpreted.

Ecological Principle: Keep All Alive

To the Nhunggabarra, the role of humanity was to maintain the world as it was at the Burruguu and to keep everybody and everything alive, including animals, vegetation, every feature of the earth, knowledge, even the Ancestors in the Milky Way. The Nhunggabarra had to continue to tell the stories, and perform the dances and the ceremonies, or else the animals, the earth and the Ancestors would die. When the Nhunggabarra performed the dances and ceremonies, painted the pictures, sang the songs and told the stories it was not 'art', 'religion' or trivial entertainment; it was 'work' and a lifetime commitment. It was to fulfil a mission to *keep all alive*.

The responsibilities were distributed among totem clans and family clans. If, for instance, the emu species was endangered, the emu totem clan would blame themselves and conduct ceremonies to find out the reason. They knew that if they failed to preserve the species, the intangible spirit of the emu would also disappear from the spirit world and, because of the interconnectedness of everything, all the Aboriginal people of the emu totem on earth would also die.

Neither the explorers, nor the settlers who came after them, realised that much of the land and the vegetation they encountered was to a large degree an Aboriginal artefact. The explorer Thomas Mitchell, who passed through the Nhunggabarra people's country in June 1846, described it in glowing terms:

I came to what seemed to me the finest region on earth: plains and downs of rich black mould, on which grew in profusion the panicum laevinode grass [wild millet grass], and which were finely interspersed with lines of wood which grew in the hollows, and marked the courses of streams; columns of smoke showed that the country was too good to be left uninhabited.

Some stories outline the rules for where and how areas were to be – or not to be – protected from hunting and other usage. Two trees felled in the river built a sanctuary for small fish and crustaceans. The rivers were full of such sanctuaries when the settlers arrived, and they were immediately removed to free up the waters for boat transports. With the sanctuaries also went the big fish and the huge fresh water lobsters, which only the earliest settlers got to marvel at.

The Aborigines used a wide range of tools for cultivation, the most visible and versatile being fire. Australian landscape is naturally fire-prone, and tens of thousands of years of burning changed the Australian landscape, both intentionally and unintentionally. The 'fire-stick farming' method (Jones R. 1969) that the Nhunggabarra and other Aboriginal people used with the intention to increase the amount of food available also allowed certain fire-resistant species to flourish while others diminished. The ash acted like manure and encouraged regrowth of eucalypts and of edible plant foods, such as millet grass, bracken roots and shoots and it enabled the grasses to grow to the benefit of grazing animals.

The Aboriginal view about the relation between humanity and ecology has been described as *gardening*, (Berndt and Berndt 1995:109). Kay Milton, who defines environment in a broad sense to include also the social and spiritual environment, calls the Aboriginal approach *perpetuating the environment* (ibid. 1995:p129).

Social Principle: Rule of Law

Aboriginal "law" all over Australia was a code of moral and social behaviour. The behavioural code was imprinted upon a child even before they could walk and it regulated life both in the community and between communities (Berndt, Berndt 1999 p.336ff). Its authority was unquestionable and considered to have been given to the Nhunggabarra at the Burruguu by the first *wiringin* (shaman, 'clever' man or woman), one of their Ancestors. The code provided a moral authority outside the individual and it was contained in the law stories.

Councils of elders convened in some areas to deal with inter-community issues, but formal courts did not exist.

Offences were recognised and carried both social sanctions and, in severe cases, penalties, which were carried out by the wiringins, who were the custodians of sacred law. Although the code was not a law in the Western sense the code's power over individuals' minds and behaviours was probably higher than the behavioural rules in our societies today, so the term 'Rule of Law' could be justified.

The law stories tell us the shared understanding of the norm: what it meant to be a 'proper' Nhunggabarra person.

They do not tell how the Nhunggabarra actually behaved. There must have existed non-ideal behaviour and non-ideal people, from naughty children to individuals committing serious offences. It is no longer possible to find out how common offences were, but what matters for the purpose of this article is what was considered to be the 'normal' behaviour.

The Crane and the Crow – A Nhunggabarra Law Story

Garraagaa, the crane was a great fisherman. He could catch many fish by hunting them out, with his feet, from underneath the logs in the creek. One day, when he had a great many on the bank of the creek, Waan, the crow, which was white at that time, came up and asked the crane to give him some fish.

The crane told the crow to wait until the fish were cooked but the crow was hungry and impatient. He kept bothering the crane, who told him to wait. Eventually the crane turned his back. The crow sneaked up and was just about to steal a fish, when the crane saw him, seized a fish and hit the crow right across the eyes with it. The crow felt blinded for a few minutes. He fell on the burnt black grass around the fire and rolled over and over in his pain. When he got up, his eyes were white and the rest of him black, as crows have been ever since.

The crow was determined to have his revenge. He waited for his chance and one day saw the crane fast asleep on his back with his mouth wide open. He crept quietly up to him and stuck a fish bone right across the root of the crane's tongue.

The crane woke up and when he opened his mouth to yawn he felt like choking. He tried to get the thing out of his throat and, in the effort he made a strange scraping noise – 'gah-

rah-gah, gah-rah-gah'. But the fish bone could not be moved and still the only noise a crane can make is 'gah-rah-gah' – the name by which he is known.

Maintenance of Story Integrity and Interpretation

A Nhunggabarra law story is constructed with several levels of meaning. These meanings do not come straight from the text and each adolescent had to extract the meanings as part of one's initiation into adulthood under supervision of the custodians of the stories. The meanings, therefore, remain hidden for non-initiated people – one of several safety mechanisms to ensure that knowledge was respected and treated with responsibility, (see Sveiby, Skuthorpe 2006). Tex Skuthorpe is the last of his people to have gone through the traditional education.

According to Tex Skuthorpe the Crane and Crow story contains twelve laws altogether. Nine of them are relevant for the purpose of this paper. The story also contains three laws related to the sacred level, which taught spiritual action and psychic skills, but they are beyond the purpose of this paper.

Social rule - Do not impose your view on others. Instead of giving the raw fish to the crow, the crane tries to force the crow to cook it first. The crane is the expert fisherman so he believes he knows best. It is an attempt to use his power of superior knowledge to influence the crow's behaviour. Instead he should have shown respect by letting the crow eat his fish in the way it wanted. To impose one's view on another person is an abuse of power.

Social rule - Share the knowledge. The crane does not share his knowledge about fishing. This is wrong: as the expert he should have shared the knowledge in order to enable the crow to independently feed himself. If the crane kept his knowledge to himself it would make the crow dependent on the power monopoly of the crane. The other reason is that if knowledge were individually owned and not shared it would disappear when the owner died. Knowledge belonged to everybody and the land.

Social rule - With knowledge comes responsibility. An expert is expected to fulfil a role for the whole community, not for oneself. As the expert fisherman, the crane should have been fishing for the whole community (represented by the crow), but he fulfilled the role only for himself and his own individual benefit.

Social rule - Split the roles. The crane performs three roles in the story: catching, cooking and dividing the catch. This is wrong. Work must be split up to prevent someone from taking ownership of a whole chain of knowledge. For this reason, the roles connected with fishing (net-making, trapping, catching, cooking), hunting (tracking, spearing, collecting and cooking), storytelling and many other activities were split among different people.

Ecological/Economical rule - Do not stay in one place. The crane exploits the fish in the river by fishing more than he needs. If he continues in this way the crane will deplete the stock of fish. This explains why the

Nhunggabarra had to live a nomadic life. If we move camp according to the seasons the resources will be at their prime at each place and we will find food with less effort. If, on the other hand, we become sedentary, we will give the breeding stock no time to recover, and we will very rapidly deplete the resources in this one place, we will break the links between land and story and begin losing the knowledge contained in the land.

Ecological rule - Do not deplete the breeding stock. If the crane stayed in one of the waterholes during the dry season, he would kill all the breeding stock in that waterhole and extinguish the whole species. This would endanger all the bigger fish, which depend on the same small fish on which the crane was feeding, so by depleting one piece of the food chain, one depletes the whole chain.

Social/Economical rule - Behave with responsibility towards other communities. By depleting one part of the food chain the crane was endangering animals also further downstream. The river flows into a lake, so if we live in a society where people behave like the crane, the animals and the birds in the lake would be affected by the loss of one species in the food chain. The river and the lake represent two different communities, so this value also describes the relationship with other communities; each community depends on responsible behaviour by the others.

Social rule - Punish only your own. The story ends with the crane choking on the fish bone that the crow had pushed into his throat. This was the crane's punishment for breaking the law. However, the crow did not have the right to punish the crane. No one except your own people was allowed to punish. So therefore the crow was also punished. This particular law stopped revenge behaviour. A pay-back or vendetta custom did not exist among the Nhunggabarra and their neighbours.

Social rule - If you break the law you carry the shame. The crow's eyes became white so everybody could see the shame the crow carries with him for breaking the law. The crane had to carry his shame in his voice for ever.

Summary of the Laws contained in the Crane & Crow Story

This story thus unites spiritual, social, economical and ecological rules of behaviours and their interconnection in a single, deceptively simple, format. It teaches the experts how to behave when one possesses the power that comes from supreme knowledge: Do not impose your view on others, but share the knowledge and remember that with knowledge comes responsibility. The law also regulates a process that prevents individual power monopolies: Split the roles. It teaches a behaviour which reduced environmental damage, do not stay in one place; and two other ecological rules, which teach responsible behaviour and prevent competition about natural resources, do not deplete the breeding stock and behave with responsibility towards other communities. Finally, if you break the law your shame will be visible, but you will only be punished by your own people even if your crime occurred in another country.

Social Principle: Respect

The Crane & Crow story displays a recurring theme in all the Nhunggabarra law stories, which can be summarised in one word: *respect*. The story tells us to respect the view points of others; particularly if we possess expertise; to respect the animals; to respect other societies; to respect nature. 'Respect' in the Aboriginal sense is an action, a verb. Respect permeated one's understanding of what it was to be a Nhunggabarra person. In the traditional Nhunggabarra society it started with a general respect for life itself.

Social Principle: Flat Power Structures

The law stories contain a wide range of rules, which prevent individuals from rising to absolute power. This shows that the Nhunggabarra society was not an egalitarian utopia populated by idealistic people with altruistic motives. On the contrary, the Nhunggabarra people appear to have understood power issues quite well; the existence of the rules suggest either that their first law-maker was a person with exceptional foresight (the Nhunggabarra view), or that the Nhunggabarra may at some point(s) in their history have experienced the consequences of criminality, power abuse, over-exploitation and war and had done the best they could to prevent them from occurring (an evolutionary perspective). If those rules were implemented, they should have prevented power abuse and given reasonable guarantees that individual concerns could be raised.

All have a Role

The Nhunggabarra had no leaders with positional powers and no roles for religious intermediaries like priests and clerics. The most experienced hunter would be respected as the leader of the hunt, but he would not order the other hunters to follow him; he merely made his decision known about the direction and target of that day's hunt. The other men would follow him, if that was their role. The same ideal would have applied to all organised activities involving several people: The Nhunggabarra person with a certain role had undisputed leadership and power in that field of knowledge, but at the same time they had to accept the leadership of others and be the follower in other knowledge fields. So every adult had both leader roles and follower roles – who had the leader role and who was the follower in a situation or discussion depended on each individual's level of peer-recognised knowledge. It is a form of leadership typical of hunter-gatherer societies on all continents (Barnard 1993, Service 1979). What is probably less recognised is that it is also found in knowledge intensive organisations today (Sveiby 1987) and recognised in literature as *shared leadership* (Pearce, Conger 2003).

The wiringin had several unique roles, and in that sense was the most 'powerful' person of the community. But he or she (there were also female wiringins) was not the tribal leader; their role was one of expert in psychic and spiritual matters and custodian of the spiritual law.

Social Principle: Build Community

The Nhunggabarra law stories prescribe several rules, which emphasise community and non-competitive behaviours, such as role splitting and anti-vendetta rules; processes such as knowledge-sharing, initiation and corroborrees (intra-community “parties” with educational content), and; values such as the emphasis on non-competitive behaviours and respect, (see Appendix for more details).

Keep Intercommunity Peace

More unusual for hunter-gatherer societies, is that the Nhunggabarra and their 25 neighbouring countries had developed a highly advanced level of cooperation, a community of communities or ‘cultural bloc’ (Berndt & Berndt 1999: 154). Several processes and legal institutions tied them together thereby increasing diversity, resource sharing while simultaneously reducing the risk of war. The processes are described in the stories; the marriage laws (one had to marry a person from another country) and the anti-vendetta principle (from the Crane and Crow story) must have been crucial peacekeeping mechanisms, and men’s 18 years educational journey (see below) ensured a high level of knowledge sharing. The *Big Buurra*, a gathering where everybody from all countries jointly conducted a live learning experience, further reinforced both diversity and commonality. This meant that, provided the Nhunggabarra did not break the law, they had a low risk of dying at the hands of other people, since war, as the rest of the world knows it, was unknown to them before the Europeans arrived.

Berndt & Berndt (1999: 37, 223), Kaberry (2004: 139) and Elkin (1977: 28) all agree: Personal deadly feuds must certainly have existed, but there were no European- or Asian-style wars deliberately designed to take over other countries or enemies on the Australian continent before the Europeans arrived. Land hunger as a motive did not exist in pre-European Australia and the anthropologists concur that the reason for it was the spiritual connection with the land, which made the idea of taking over another country completely meaningless.

Economic Principle: Intangible Economy

Aboriginal economy was entirely built on renewable resources (except for stone) and direct solar energy with very little in terms of tangible production and consumption. From a neo-classic economic viewpoint, therefore, they did not produce much of value except food and a few personalised tools; hence the Aboriginal peoples of Australia were long considered to have lived miserable lives. However, anthropological studies (Sahlins 1974) have shown that hunter-gatherers had developed economies that may have been poor in a material sense, but which allowed people to live a fairly easy and pleasant life. Procurement and preparation of food for Australian Aboriginal people was an everyday activity taking with an average of between two and five hours per person per day. There were seasonal fluctuations but, except during extreme droughts, it was not onerous work.

In 1993, Noel G. Butlin was the first economist to recognise that Aboriginal production was much more than food and tools – above all they produced services such as information, education, diplomacy, maintaining order, entertainment, feuds, art, and ceremonies for death and marriage. Butlin’s conclusion was that the Aboriginal pre-contact economy functioned rationally to cater for a high demand for services (intangibles) rather than material goods (tangibles). A simple calculation shows the possible extent of intangibles production in an Aboriginal economy, between eight and thirteen hours per 16 waking hours (50 – 80%) or roughly the same level as modern Western economies.

Knowledge = Primary Resource

Nhunggabarra and their neighbours invested considerable time in exchanging knowledge and transferring individual competencies and explicit knowledge both between countries and between generations. All Nhunggabarra men and women had to learn all animals, plants and skills, required to survive on their land and they had to extract all the meanings of all the law stories relevant for them as part of their education. Particularly the demands on men to learn were considerable. During, some 18 years, from around 14 years of age the men lived literally as ‘journeymen’, travelling around all 26 neighbouring countries to learn each others’ law stories, lands, songs, ceremonies, habits, resources and languages, and to build personal networks. After an investment of half their productive life, the men were finally considered adults at the age of 32 and capable to take on their role in society. The women were not required to travel for education, because they were considered mature at an earlier age and so they learned from the women, who married into the communities.

Summary of the Sustainability Model

Nhunggabarra society looks like a holistic structure, where every element supports the whole. With a spiritual belief that ‘all are connected’, the core value ‘respect’ follows naturally and ecosystem care is hence not only a matter of immediate survival, but also the reason for existence – the mission to ‘keep all alive’. Production of intangibles is how the mission is fulfilled and sticking to nomadic life is a main element in keeping the fragile Australian ecosystem in balance. Making individual know-how the decisive power factor, and keeping a tight rein on men’s ego-drive spreads leadership roles; building community also outside one’s own country keeps the peace and increases survival rates. The rules emphasise respect, individual responsibility and non-competitive behaviours and enforce behaviours such as collaboration, community building and care.

Discussion

Unlike many other hunter-gatherer societies the Australian Aborigines were active manipulators of their environment. As the rules in the Crane & Crow story and Appendix illustrate, the Nhunggabarra saw it as their obligation to care for their entire environment; the natural world, their society including those of their neighbours, the spiritual world and the economy. They cultivated their land, they invested time and efforts to increase food yields (Flood 1999) and considerable intellectual effort had gone into developing more elaborate societal rules and a more complex cosmology than found among other hunter-gatherer societies, (Barnard 1992). Archaeologists have also found wide-spread qualitative development in hunting technology across the whole continent (Flood 1999, Mulvaney & Kamminga 1991, Clarke 2003, Reynolds 1981). There was even limited population growth, visible in archaeological layers, (Lourandos 1997).

The Crane & Crow story shows that the Aborigines had learned that their methods could have negative effects, possibly because their methods had not always been benign. There is, for instance, the issue of the extinction of the Australian megafauna 20-30 000 years ago. Was the reason climate change, Aboriginal hunting and fires or all three? Aboriginal people refuse to accept 'the blame', but Flannery (1994) believes humans were at least partly instrumental.

Milton (1996) cautions against the 'environmentalist myth' that non-industrialised cultures are ecologically benign. She points out that some of them may live their lives in ways that are ecologically sound, but ecological balance is an incidental consequence of human activities. There are many reasons (low technology, low population, relative isolation etc.), beside sustainable practices, why they have a small ecological impact. As the Nhunggabarra law stories show, however, the Australian Aborigines learned from their interactions with the environment, because they had developed corresponding behavioural rules and also methods to convey this knowledge from generation to generation. They may have been oblivious to certain aspects of sustainability that were not important for them. They seem, for instance, not to have developed much in terms of methods for dealing with waste, probably because they used primarily renewable resources. In general, there was nothing incidental about their response to issues of importance for their long-term survival.

In general, scientists today are largely in agreement that the Aboriginal methods had achieved ecological balance on the Australian continent as a whole, Flannery (1994). It was a delicate balance, however, requiring constant human attention and care. The Australian Aboriginal model, therefore, gives an interesting contribution to the SD

debate. It is definitely not representative of weak sustainability WS, but it cannot be used as an ideal by SS proponents either. Assuming that slow population growth is compatible with Daly's (1996) 'occasional' growth condition mentioned earlier, the Aboriginal model, with its dependence on renewable resources Honkasalo (1998) and direct solar energy, therefore, might function as a practical example of a steady-state sustainability model.

For reasons of comparison, the Nhunggabarra model, derived in this paper, distinguishes economic, ecological, and social/spiritual elements, but for the Nhunggabarra such a classification would have been meaningless.

Instead, what stands out is the internal consistency; their approach to SD could even be termed 'strong holism', since it is based in a paradigmatic worldview, with humanity seen as totally integrated with both the spiritual and the natural world. Taken together, and if people conformed, the Nhunggabarra model therefore shows one alternative for how a holistic perspective on SD can be accomplished in practice – one that is clearly at odds with the Western industrial society.

Limitations

Stories are vulnerable compared to documents in one respect: oral tradition cannot guarantee word-by-word accuracy. This raises several critical issues. How authentic are the Nhunggabarra law stories? How can we know that they are not just a recent invention? How can we know that the interpretations are valid? There are some aspects that suggest a fair degree of validity. One is the message of the stories, which shows considerable similarities with comparative studies of hunter-gatherer societies in both Africa and Australia, (Barnard 1992, Service 1979). Another is that the Australian Aborigines, unlike the African hunter-gatherers, lived without much contact with the world outside Australia until quite late; the Nhunggabarra probably had no contact with white people before 1828. Since archaeological evidence shows a high level of cultural consistency as far back as 40 000 years (Flood 1999), therefore, it matters less how old the stories are measured in years. Even a young story probably reflects very old traditions and values quite well. A final guarantee was the elaborate system for maintaining consistency of the law stories that the Nhunggabarra had devised, including the intellectually challenging education in learning the meanings, which the custodians had to complete (see Sveiby, Skuthorpe 2006).

The method is qualitative and the outcome is a theoretical construction. Due to the nature of the data – traditional law stories – the generated model is a theoretical ideal; how the society was meant to function. This has one drawback: We will never know to what degree people actually conformed. The advantage, however, is that ideals are comparable; with other indigenous societies and with today's industrialised societies.

A further limitation is that the model is a construction from an outsider perspective – the Nhunggabarra people did not discuss their society in these terms. In the last three hundred years hunter-gatherers have experienced quite a career in the eyes of outsiders: from the ‘miserablest people in the world’ (according to Dampier, the first explorer to set eyes on Australia in 1688) to romantic ‘noble savages’ in the 1700’s; from being patronised as ‘primitive communism’ in the 1800’s, to be hailed as the ‘original affluent society’ in the 1900’s and as role models for the ‘knowledge nomads’ of the 21st century. The danger is that the results in this paper are more a function of the times we live in than of reality.

Implications for Today

The main argument against learning from old societies is that they were too different from the modern industrialised world. Jared Diamond has been criticised, by among others political scientist Thomas Homer-Dixon (2006), for referencing historical and old societies with dubious relevance for today, and this is a criticism that can be raised also against this paper. Also Karl Popper (1945/2002) argued that ‘open’ societies, such as Western democracies, cannot implement solutions from ‘closed’ societies, such as primitive societies. He claimed that they tended to be marked by their taboos and obligations, which exempted individuals from moral problems; there was never any doubt about how to act.

Indeed, crucial elements of the Nhunggabarra sustainability model are the opposite of the modern industrialised society with its corner stones of individual freedom, market economy and competition. Individual Nhunggabarra were not free to choose their roles in society; they had to marry foreigners; they knew no market; their trade was in form of exchange of gifts, and they were very careful to curb individual competition.

This article argues that learning from an ancient society is a matter of perspective. The differences between the Nhunggabarra and the Western world make many of their solutions unacceptable or unimaginable for us living today. They do not, however, make the underlying principles invalid. We can hardly return to nomadic life, but we can apply the principle behind it: to adopt a caring attitude towards the earth’s ecology. We cannot accept a law that forces us to marry only foreigners, but we can relate to the underlying principles: to increase diversity in society and to reduce the risk for war.

How could we as individuals make the Nhunggarra principles our own in order to sustain a world with market economy, competition and individual freedom of choice? Several concepts and principles are worthy of a discussion.

Australia as a pilot case. Perhaps the most important contribution to the SD discourse the mere existence of an Australian Aboriginal model for sustainable development. Unlike many (most?) of the untested models and theories proposed in the SD debate the Aboriginal model has a very long track record and many of the practices are still alive. It therefore has some legitimacy. The Aboriginal society also shows surprising similarities with the Australian industrial society; it was 'ruled by law', it cultivated the land; it had governance processes, trade, education systems and welfare practices. The Aboriginal economy was, like the Australian economy of today, primarily an intangible service economy with emphasis on knowledge as primary resource. It was even developing and growing, albeit slowly compared to the industrialised Australian economy of today. We therefore, have two models both implemented on the same continent – an opportunity for comparison and learning on society and continent level not existing anywhere else in the world. Due to its unique geography Australia is experiencing tangible effects of unsustainable agricultural and industrial practices a few years ahead of the rest of the world; fires, salinity problems and droughts have now reached such levels that society must react. The phase of denial is alive (eg Letnic 2000), but concrete actions are also undertaken to reintroduce practices learned from the first Australian model (eg. Ross, Pickering 2002). The debate in Australia and how the Australians of today learn from the collision between their two models, reform their society, therefore, is, for better and for worse, a pilot case for the world.

'Strong holism'. The recent debate on climate change has finally brought home the interconnectedness and the fragility of the planet's ecology. Just like Buddhist (Lamberton 2005) and Vedic (Rajeswar 2001, Saravanamuthu 2005) intellectual and spiritual traditions the Aboriginal model is holistic. That three of the oldest traditions on earth point towards a holistic perspective fully integrated with a spiritual worldview, 'strong' holism, is an important message for our times. It underscores the central role of the small but increasing population of scientists, who question the prevailing Western reductionist perspective on natural sciences; 'Reason is an insufficient guide to living our lives: put Einstein and Shakespeare in the same room', (Kauffman (2008b). Some, (Skowronski 2008), even dare to introduce spiritual issues in the SD discourse. The Aboriginal peoples had developed a world view, which seamlessly integrated microcosmos and macrocosmos and so guided their individual actions. Ever since science took over the explanatory prerogative from religion we have been expecting

the natural sciences to provide one with sufficient explanatory and visionary power to convince people of our times. We are still waiting.

The concept of roles. We are not born into them, like the Nhunggabarra, but also our Western world roles give us powers as well as responsibilities. The Nhunggabarra believed that they had a responsibility to care for the sustainability of their world. The implication of the Nhunggabarra principle for us living today is that individual freedom has a mirror image: *individual responsibility*. Can we, as individuals, begin to feel the same for our world in our roles as parents, teachers, workers, managers, politicians, etc? In a market economy the role as customer is the most powerful role of all and companies are quick to react to changes in buying patterns initiated by consumers. We already see a rapidly growing number of ecologically and ethically responsible consumers in the Western world and they are driving companies to invest ecologically – healthy signs. The powers we have in our roles as investors, workers and employees can also be put to use. What if those of us with the role as scientists would put survival of the planet as an overall mission to guide any research we are involved in? And what if those of us who have managerial roles would include sustainability of the world in our corporate mission?

Intangible consumption. That the ancient Aboriginal economy and today's industrialised economy are both catering for a high level of demand for services is illustrative. People from Palaeolithic times are closer than we may believe; they too knew that education, arts, entertainment, and care for the young, the sick and the elderly contribute to happy and comfortable lives – and they consumed accordingly. Despite twenty years of studies (Hamilton 2003) confirming beyond doubt that economic growth does not improve levels of happiness in a country, Western policy makers and corporate leaders continue to identify good life with increased availability of material products produced from non-renewable natural resources and services that rely on non-renewable energy sources. The service sector in most Western countries makes up around 75% of the economies. Apart from the transport sector, energy consumption and use of non-renewable materials in much of the service industries is not debated. The hospital and IT sectors, for instance, are huge energy and material consumers.

The Concept of Respect. The concept of respect does not carry much weight in Western thought patterns. Respect is still commonly perceived as deference to inherited status and traditional hierarchy; as driven by duty and honour and avoidance of shame; a means to avoid punishment. Respect is seen to encourage static and impersonal behaviour. Rarely do we regard respect in the Nhunggabarra terms: the glue of society; as a powerful means to create symmetry, balance, empathy and positive relationships between individuals. The value of respect could be a

positive balance on individual freedom; it does not require legal intervention, because it works on an individual level.

A vision would be that in the organisation of respect, employees are expected to respect the integrity of other employees' points of view and to not impose their own view on their colleagues. They are expected to respect the leadership role of other individuals and not try to compete for the position of another person. They are expected to accept the authority of knowledgeable people, but not to defer to people of mere positional power. Employees are asked to learn from customers and other stakeholders and to respect and appreciate the diversity of knowledge they provide. They are expected to respect other market players and not to behave dishonestly against them. They are actively discouraged from competing with each other. In an organisation of respect, leaders behave with a high level of respect for the integrity of their employees. They encourage all staff to treat their customers with respect and not to try to sell products and services of low value. The leaders respect nature and make sure that their products and services do no harm. In the society of respect, the speed limits in front of the school are obeyed. The person at the supermarket checkout is regarded with friendliness; the person blocking my way, with consideration; the young, the old and the sick are treated with humanity and care. Does such a vision have to be condemned as utopian?

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Principles ----->>>>	Care for Ecosy-stem	Rule of Law	Build Community	Keep inter-community peace	Respect	All have role on behalf of society	Non-hierarchical power structure	All are connected	Knowledge = primary resource	Economy of Intangibles
Rules and concepts from the stories										
Do not deplete the breeding stock (C & C story)	♦		♦	♦						
Punish only your own people (C & C story)		♦	♦	♦	♦					
Life-long, learner-driven education		♦		♦	♦	♦	♦	♦	♦	♦
Men's 18-year knowledge journey	♦			♦	♦		♦	♦	♦	♦
Tuckandee = "back-up" person in foreign country				♦	♦				♦	
Do not marry in your own community				♦		♦	♦			
Do not take your wife with force (=planned marriages)				♦						
If you break the law you will be punished		♦	♦	♦	♦		♦			
Our country ends where the story ends (= Fuzzy country borders)		♦	♦	♦	♦					♦
Buurras (gatherings with all neighbouring countries)		♦	♦	♦	♦		♦	♦	♦	
Marry only foreigners				♦		♦				
Care for the vulnerable = (widows, orphans and elderly)		♦	♦		♦	♦		♦	♦	♦
Corroborees = (community "parties" with educational purpose)			♦					♦	♦	♦
If you break the law you carry the shame (C & C story)		♦			♦					
You must not take resources by force from other countries		♦		♦	♦					

Principles ----->>>> Inferred concepts from other sources	Care for Eco-system	Rule of Law	Build Community	Keep inter-community peace	Respect	All have role on behalf of society	Flat power structure	All are connected	Knowledge = primary resource	Economy of Intangibles
No organised religion, no gods, no hell					◆	◆		◆		
Individual career: take on responsibility for functionality of community		◆	◆	◆	◆	◆			◆	
Tools and equipment made of natural materials - recyclable	◆								◆	◆
Intangible processes (Stories, ceremonies and dances) to keep all alive	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Ecological farming methods - 'eco-farming'	◆				◆				◆	
Natural medicine	◆							◆	◆	◆
Regulation of population	◆			◆						
Consensus decision making		◆	◆	◆	◆	◆	◆	◆	◆	
Men and women have different roles, which are equal		◆	◆		◆	◆	◆	◆	◆	
We are custodians of the land -not owners	◆	◆	◆	◆	◆		◆		◆	
Kinship rules to reinforce generosity and sharing		◆	◆		◆			◆		
Status from knowledge - no status in material wealth	◆						◆		◆	◆