The Savvy Savage

Fire, Proprietary Interest, and the Western Discourse on Aboriginal Ecology

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I hereby declare that the work herein, now submitted as a thesis for the degree of Masters in Aboriginal and Torres Strait Islander Studies at Charles Darwin University, is the result of my own investigations, and all references to ideas and work of other researchers have been specifically acknowledged. I hereby certify that the work embodied in this thesis has not already been accepted in substance for any degree, and is not being currently submitted in candidature for any other degree.

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Abstract

This essay reviews the history of the Western discourse on Aboriginal Ecology. It then applies genealogical narrative analysis to recent texts involved in the appropriation of Aboriginal ecological knowledge concerning fire. It identifies fire as a key metaphor in Aboriginal discourse and as a primary tool in Aboriginal management of natural resources. It shows that early Western representations of Aboriginal Ecology, in particular the application of fire, enabled and legitimated European colonisation of Australia.

It considers Western Ecology, and the attitudes to and management of the landscape that are based on it, to be the product of a peculiarly European intellectual heritage, transposed to Australia during colonisation. It suggests that the inherent flammability of the Australian bush required Western Ecology to adapt to the new environment, and to reevaluate the role played by fire in Aboriginal Ecology.

It examines the process through which Western Ecology now seeks to retrieve the Aboriginal ecological knowledge and praxis, erased during European colonisation, in order to stabilize that colony. It demonstrates that essential differences in the cosmologies upon which Aboriginal and Western Ecologies are based introduce problems for translating the former into the latter. It then considers the role of Aboriginal discourse in this process, in particular the increasing participation of Aboriginal producers in the Western discourse.

It shows that, by valorizing Aboriginal discourse as an authentic source of the required knowledge, Western scientific discourse has opened the way for Aboriginal authors to subvert Western discourse, to assert control over land, to create a space in which to reproduce their own discourse, and to exercise control over the ritual reproduction of their own subjectivity.
If they set fire to the corn, necessity will oblige me to drive them to a greater distance

(Governor Arthur Phillip 1788)
Introduction

The European colonisers of Australia altered their new habitat in ways that were not merely biological but also ideological. In utilizing its space and resources, the Europeans imposed a system of control over the landscape based on their agrarian tradition. They displaced not only the people who were already in possession of the land, but also their system of knowing and managing the landscape.

Attitudes to fire epitomize the differences between the two knowledge systems. Indeed, as the colony's first governor discovered (Phillip 1788 cited in Williams and Frost 1988:187), the radically different roles that fire plays in the two ecologies engenders conflict between them (Head 1992:135; Bowman and Vigilante 2001:42). On the one hand, the agrarian approach to managing fire is to suppress it (Haynes 1978); and on the other, the active deployment of fire as a land management tool has been critical in the successful colonisation of the continent by Aboriginal people (Jones 1969; Jones and Bowler 1980:6).

Notions about fire and its use by Aboriginal people, informed by Western ideologies, have played a central role in the successful colonisation of Australia by Europeans. However, the inherent flammability of the Australian landscape, along with the inevitable wildfire resulting from attempted suppression, has forced a reevaluation of these notions. In order to stabilize the natural environment in the wake of the latter colonisation, Western Ecology now seeks to retrieve knowledge of the system of land management that prevailed prior to European invasion.
This essay is a study of that process of retrieval, focusing specifically on recent efforts to apply Aboriginal ecological knowledge about fire to the management of the North Australian landscape. It shows that, while Western discourse continues to represent and appropriate Aboriginal Ecology in the interests of securing its own grasp of the Australian landscape, the more recent discourse concerning fire has opened the way for a counter-appropriation by Aboriginal authors seeking to reestablish Aboriginal control over the North Australian landscape.

The shift in Western attitudes to fire and the reevaluation of Aboriginal Ecology have been partly driven by the need to find an alternative to suppression as a strategy for dealing with the flammability of the Australian bush. It is also the result of the increasing influence on Western land management of the conservation ethos, an ideology that shares with agriculture a peculiarly Western concept of nature and the role that humans play in it. Aboriginal concepts of this ecological relationship are fundamentally different.

These differences not only present significant problems for the translation of one set of ecological knowledge into the other, but ensure that the Western discourse on Aboriginal Ecology is the product of an irreconcilable struggle between two ideologies for control over the land.

Western agriculture is no in situ adaptation to the Australian environment, but is instead the product of a technological trajectory that reached from the Southern Levant westward to the Antipodes (Wood 1969; McCorriston and Hole 1991; Diamond 1998). Agriculture regards nature as no more than 'a vast system of machines for man to use and modify as he pleases' (Passmore 1974:27), and shares with Western Ecology the Enlightenment paradigm that the key to controlling nature is perfect knowledge (Oelschlaeger 1991:105). In this sense, if no other, European colonisation has transplanted Western ideology onto the Australian continent.
Agrarian settlement is a territorial project – it is first and foremost about gaining control of the land (Wolfe 2000:131). Arguments to legitimate European settlement, and to refute Aboriginal ownership of the land, relied on European notions of the relationship between humans and the environment (e.g. Mitchell 1965:65-6). A key premise for the legitimacy of the European colonisation of Australia (Jones 1990:47) was Locke’s 17th century theory of property (Alvey 1987), wherein proprietary interest arose from agricultural labour effecting an increase upon natural productivity. In addition, the doctrine of *terra nullius* requires land to be alienable (Butt and Eagleson 1993:45), a property which refers to a perceived separation between humans and their natural environment. This separation is intrinsic to both the Cartesian nature embodied in Ecological Science (Passmore 1974:23; Cosgrove 1984:252; Tarnas 1991: 277, 350), and the Romantic Nature expressed in the notions of landscape (Allen 1997) and conservation (Rigsby 1981; Johnston 1985).

The concept ‘land’ is itself the product of a peculiarly Western ontology. Land is not a physical entity but a bounded space (Keen 1995; Sutton 1995; Williams 1986b), a quantity that Ingold calls the ‘lowest common denominator of the phenomenal world’ (1993:153). Control of land is, in effect, control of its economic resources. Settlement is not so much an adaptation to the Australian environment – to the plants, animals and ecosystems that Europeans found there – as a transformation of it. Agriculture was initially possible in Australia because there was a preexisting landscape configuration onto which it could be transplanted (Hallam 1975), a landscape that was reconfigured as the regime of regular Aboriginal burning that formerly maintained it was erased (Bowman 1998; Bowman *et al.* 2001).

Fire and Australia have been metonymous since long before European discourse began even to imagine this landscape. The Aboriginal colonists discovered a continent that had been on fire since it dried out in the Tertiary (Bowman 2000:273), and the Europeans who arrived some fifty millennia later (Roberts *et al.* 1994) found
it still burning (Bowman 2000). Whether Aboriginal people exacerbated wildfire (Horton 1982:237; Flannery 1994; cf Choquenot and Bowman 1998) or tempered its ecological impact (Bowman 2000:275), they deployed fire as a tool to procure food and, in the process, moulded the ecological landscape of Australia (Mitchell 1969:412; Leichhardt 1847; Grey 1841 cited in Hallam 1975; Thomson 1949a:17; Tindale 1959:42; Russell-Smith et al 1997). Although the ecological role of Aboriginal burning is well documented, Western discourse has yet to acknowledge the significance of fire for Aboriginal proprietary interest in the land.

The European attitude to fire in Australia, evident from the outset, persists today. It is considered destructive to crops (Phillip cited in Williams and Frost 1988:187) and property (Head 1992:135; Bowman and Vigilante 2001:42), and is a force to be feared (Wettenhall 1975; Pryor 2002; Summer Terror 2003). A recognition that attempting to suppress it leads instead to uncontrolled fires of greater intensity (Haynes 1985) has resulted in the strategy of reducing fuel loads through pre-emptive burning (Head 1992:134; Russell-Smith 1995:223). The term ‘control burning’ associated with this institutionalised practice (Gurig National Park Plan of Management 1987 cited in Langton 1999:18; Head et al 1992:134; Russell-Smith 1997:84) reflects the notion of exercising ‘power and control over the land’ (Head et al 1992:135) that underpins the Western approach to land management.

While control burning may be an effective strategy for hazard reduction, it contributes to the transformation of the Australian landscape. The periodicity, area and intensity of both wildfire and institutional fires have caused the fabric of Australia’s rich biodiversity to unravel (Russell-Smith et al 1997; Russell-Smith 2001; Gill 1997). Western ecological discourse attributes this biodiversity to pre-contact fire management, and nominates it as a legacy of Aboriginal habitation that should be conserved (Jones 1969:227; Bowman 2000:286)
The idea that the Australian landscape is the product of Aboriginal burning has long been part of Western discourse (Leichhardt 1847; Mitchell 1969; Hallam 1975). Just as explorers recruited Aboriginal guides in their quest for habitable country (Reynolds 1990), and settlers exploited the ecological possibilities created by Aboriginal praxis (Hallam 1975), the application of Aboriginal burning practices by Western land managers (Russell-Smith 2001; Bowman et al 2001) belongs to a long European tradition of exploiting Aboriginal knowledges, ecological and otherwise (e.g. Meehan 1982; Povinelli 1993; Bradley 1998; Horstman and Wightman 2001).

Were conservation to be achieved by imposing a fire management regime mimicking Aboriginal patterns of burning (Russell-Smith 2001; Bowman et al 2001), it would not thereby indicate a return to the pre-European status quo. To the contrary, as this essay will demonstrate through close analysis of the texts that advocate this approach, it would constitute an extension (rather than a reversal) of the colonial ideology, not only furthering the expropriation of Aboriginal land, but usurping Aboriginal subjectivity.

The legitimacy of the European occupation of Australia relies upon the pre-eminence of Western over Aboriginal ideologies, and specifically upon the superiority of agriculture over hunting and gathering (Mitchell 1965:333). It also presumes that Western Science provides a more valid reading of the landscape than Aboriginal myth (Grey 1841:224; Mitchell 1969:423). Yet, in a refutation of Grey’s prediction that this ‘ancient system’ would be ‘swept away’ after contact with civilisation (1984:223), ecologists now propose that the best way to manage Australian ecosystems, at least in North Australia, is to facilitate re-occupation of the land by its traditional Aboriginal owners (Whitehead 1999; Bowman et al 2001:76). Such a proposal undercuts fundamental colonial assumptions.
The central premise of this essay is that the Western discourse on Aboriginal Ecology is essentially paradoxical: simultaneously dispossessing Aboriginal people of their land yet requiring their presence to support the dispossession; seeking Aboriginal ecological knowledge yet excising it from its meaning; and reconstructing an Aboriginal Ecology while erasing the identity which arises from that relationship with the landscape. The essay further argues that Western discourse resolves those paradoxes by constructing an imaginary Aboriginal subjectivity. Aboriginal people are constrained to act within this surrogate Aboriginality in order to access the power of the dominant society.

Aboriginal Ecology is a discourse with a history, during which the representation of the relationship between Aboriginal people and their natural environment has undergone change. The term ‘Aboriginal Ecology’ has experienced a shift in meaning over the course of European occupation of Australia, from signifying the distribution of the Aboriginal population under the determining influence of the environment (Tindale 1940; Birdsell 1953; Peterson 1976b) to a broad concept that refers to the knowledges and paradigms within Aboriginal discourse that signify the relationships between individuals, land, society and myth (Hiatt and Jones 1988; Meehan 1982; Bradley 1997; Rose 1988).

Western Ecology is a discourse with a history of its own (McIntosh 1985), being the product of the scientific rationalism that blossomed during the European cultural revolution spanning the Renaissance and Enlightenment (Tarnas 1991). It relies on the same ontological separation between humans and the natural world that underpins the social theories of not only Locke, but also Hobbes and Rousseau. It shares common ground with that Romantic concept of an apotheosised Nature in which modern Western people ‘find their essential meanings’ (Jeans 1983:171). For many, Ecology is synonymous with Nature conservation (McIntosh 1985:6; Nash 1989).
Aboriginal Ecology, on the other hand, is an authenticity (Mac Cannell 1973) staged in Western discourse, a staging that entails the erasure of an Aboriginal population and their ecological praxis from the Australian landscape, the transposition of a European Ecology, and the reconstruction in Western paradigms of an Aboriginal Ecology to augment maladapted settlement. An authentic Aboriginal Ecology may well exist, but it has removed to the 'back regions' (MacCannell 1973; Cohen 1988), and is accessible only to the initiated (Yibarbuk 1998:2), to those who possess the metaphoric keys. An authentic Aboriginal Ecology cannot be known to Western discourse, and its quest is the ecological equivalent of Crick's (1995) anthropological tourism.

The concept 'Aboriginal Ecology' implies that Aboriginal people interpret their relationship with the environment through paradigms that correspond to those of Western Ecology. Ecological paradigms, however, do not necessarily refer to any Aboriginal concept of that relationship. Moreover, while Western Ecology treats knowledge as content-based, revealed and objective, Aboriginal knowledge is represented in Western discourse as being performative, given and relative (Christie 1991; 1994).

There has been an attempt in recent texts (Rose 1988; Bradley 1998) to represent Aboriginal Ecology through Aboriginal rather than Western paradigms – paradigms that refer to subjectivity, sociality, spirituality and morality rather than the narrower biological focus of Western Ecology. Such texts are both postmodern (Marcus and Fischer 1986), in that they endeavour to democratise the discourse (Fairclough 1992:202), and postcolonial, in that they try to subvert the dominant ideology (Huber 2001). The significance of these texts, however, lies not in their representation of Aboriginal Ecology per se, but in their role as highly influential interdiscursive (Fairclough 1992:47) precedents for other texts which determine fire management practices in North Australia (eg Bowman et al 2001; Russell-Smith 2001), scientific texts with an otherwise determinedly modernist bent. This trend to democratise the discourse is indicative of a struggle for control of not just the discourse but the land and the associated subjectivity of its inhabitants.
From the brief outline of the discourse on Aboriginal Ecology above, it is apparent that this essay views the discourse as not merely a series of spoken and written texts but 'a place where relations of power are actually exercised and enacted' (Fairclough 1989:43), where 'individuals come to speak .... themselves into being through speaking the discourses that enable the particular institution' (Poynton and Lee 2000:5). The institutions of relevance here are European colonialism and Western Ecology. The intention is to examine the role that the Western representation of Aboriginal Ecology plays in the ongoing processes of the European colonisation of Australia.

This essay takes a critical rather than an exhaustive approach to the history of the discourse on Aboriginal Ecology, in that it aims to expose hidden connections (Fairclough 1989:5), contradictions in the term itself, and its inherent instability. In its isolation of Ecology as a Foucaultian discourse, the analysis is 'archaeological' (Danaher et al 2000:98). In its exploration of a network of related texts which produce 'meanings and effects in the real world', especially from an historical perspective, the analysis is in Foucault's sense 'genealogical' (Carabine 2001:268; Foucault 1991a). The method is modelled on Fairclough's Critical Discourse Analysis, a method concerned with the 'the nexus of power and knowledge, [and with] investigat[ing] how persons engage with various ways of knowing as they participate in the social relations appropriate to specific institutions' (Poynton 2000:33).

This approach to the Western discourse on Aboriginal Ecology is also informed by Bishop's reading of contemporary Tibet as a conscious construct of Western narrative (1989). Bishop (1989) traces the development of this construct through several centuries of Western literature, identifies a series of Western ideological stages in its development, and refers the product to Western imagining. Recent analyses (Schell 2000; Dodin and Räther 2001) have examined the reappropriation of this Western representation by Tibetans for their own political purposes.
The analysis identifies the reductive approach of Western Science as a significant barrier to the translation of Aboriginal ecological knowledge. It recognises that a reductive approach to textual analysis is similarly unlikely to arrive at an authentic (MacCannell 1973) meaning for Aboriginal Ecology (Sperling 2001:324), not just because of Lacanian sliding between a Western signifier and an Aboriginal signified (Cohan and Shires 1988:157), but because meaning is reproduced anew within each and every enactment of the discourse.

Rather than pursue a definitive or objective truth, therefore, this essay produces a reading in the sense that Barthes demonstrated in his rewriting of Balzac’s Sarrasine (Barthes 1974; Silverman 1983). The texts co-opted in this re-inscription are chosen because of their participation in the construction of the labile meaning of Aboriginal Ecology, and their fragments are sutured (Cohan and Shires 1988:162) into a narrative engine with which to lay siege to this semantic edifice. The analysis targets those features of the various texts which help foreground each text’s role in furthering this narrative. The rewritten narrative eludes conclusion; the text remains open, further perpetuating the myth.

The essay begins with a review of the emergence of Aboriginal Ecology, demonstrating that it is a construction of Western discourse, noting its shift in meaning, and identifying significant principles developed during this early stage that are influential upon later texts. The essay then traces the emergence of a specific derivative discourse, the Western discourse on Aboriginal Fire Ecology. It is in this context that the discourse formulates concepts such as Aboriginal selfhood and spirituality, and identifies fire as the key metaphor coding for the relationship with and responsibility for the land.
An analysis of contemporary texts follows this review, an analysis that aims to expose the participation of these texts in the struggle for control over land and subjectivity. The first texts analyzed are by two ecologists (Bowman and Russell-Smith) whose writings have imparted much of the theoretical momentum to contemporary fire management in North Australia. Their texts demonstrate the broaching by Ecology of what, until then, had been the province of explorers and anthropologists: the relationship between Aboriginal people, landscape and fire. These texts are simultaneously modernist – relying on the empirical and reductive paradigms of hard science, and postmodernist – seeking to democratise the discourse.

The analysis then turns to texts by two anthropologists (Rose and Bradley) who seek to represent Aboriginal Ecology through Aboriginal rather than Western paradigms. Their texts place emphasis on the paradigms of Aboriginal ecological discourse rather than its ecological content. Though post-colonial in intent, these representations are nevertheless a re-construction within a dominant symbolic order, and they are included in the analysis to enable this influential element of the discourse to be isolated.

The conflicting modernist and post-modernist tendencies in subsequent ecological texts can then be more readily recognised. They are clearly evident in the next two texts, by authors (Andersen and Bowman) who adhere rigorously to the reductive methods of Western Science. The comparison drawn between these texts, which propound respectively the merits of Western and Aboriginal sciences, facilitates the clarification of the dilemma that encumbers Western efforts to access Aboriginal ecological knowledge.
Finally, the essay examines three texts by an Aboriginal ecologist who straddles both traditional and scientific points of view. The analysis pays close attention to the variation in style and focus of these three texts in an attempt to deduce the respective influence of their co-authors, and thereby the extent to which the texts are expressions of Aboriginal or Western discourse. In other words, whether they represent the expression in Western discourse of an authentic Aboriginal Ecology or of an Aboriginal Ecology staged in Western discourse, or indeed the co-option of Western discourse for counter-colonial purposes (Danaher et al 2000:104) and the strategic manipulation of variant representations (Barnett 2001:303-5).

Essential to the argument advanced in this essay is the notion that the application of Aboriginal knowledge for Western land management objectives refutes the fundamental premise legitimating European colonisation of Australia. In Aboriginal discourse, the right to burn country is the ultimate expression of the rights to use resources. The ecological interdependence that manifests as the responsibility to look after country corresponds to the European legal trope of ownership. It is within this relationship between society and land that an Aboriginal person derives their sense of self. The Western discourse on Aboriginal Ecology creates an alternative subjectivity for Aboriginal people, and this subject position is contingent upon the power of the dominant society. In the representation of Aboriginal knowledge about fire, this power manifests as control over the land and its natural processes.

Western discourse at first comprised merely the objective representation of Aboriginality by Western authors. Increasingly it has included an Aboriginal perspective, initially reflecting an anthropological curiosity about the 'native's point of view', but more lately through an appropriation of the discourse by Aboriginal authors. Aboriginal participation in the discourse provides the opportunity to regain control over land, and consequently the reproduction of Aboriginality. This participation, however, constrains Aboriginal authors to act within subject positions and landscapes imagined and appropriated by non-Aboriginal Australians.
The dialogue, or dialectic, between the Western and Aboriginal discourses on Ecology exhibits one of the key properties that Foucault observed adhering to the exercise of power, and that is, that the activity of a colonising discourse necessarily creates its own opposition (Danaher et al 2000:95). Further, the subjugated discourse is not docile, but instead resists colonisation by re-appropriating the subject positions constructed within the dominant discourse (Danaher et al 2000:144-5) in order to reassert control over both the land and the reproduction of its own subjectivities.

The free use here of the term 'Aboriginal Ecology' warrants some qualification. Aboriginal Ecology is a concept with broad scope, whose specific meaning varies from text to text – from the ecological dynamic of an Aboriginal population, to the ecological knowledge held by Aboriginal people. Although this diverse meaning has become naturalized (Fairclough 1992:67), its meaning is not at all natural but is instead the product of Western discourse. There are as few as four uses in the literature of the actual term Aboriginal Ecology (Peterson 1976b:57; Stanner 1979b:73; Rowse 1990:136; Brockwell et al 1995:43), but the significance of the concept is far greater than this infrequent appearance of the term itself would suggest. This broader significance may be appreciated from texts where 'ecological' metaphor coincides with Aboriginal studies (eg Tindale 1940; Birdsell 1953; Thomson 1939, 1949a; Warner 1969). The most important attribute of Aboriginal Ecology for the present discussion is its role in the colonisation of Australia – not just the ecological adaptation to Australia by Aboriginal colonisers (Jones and Bowler 1980), but the appropriation of that adaptation to enable and legitimate their supplanting by agrarian Europeans.
The Western discourse on Aboriginal Ecology, especially as it refers to fire, is ostensibly a domain of reconciliation – of Western and Aboriginal authors cooperating in the production of an image of Aboriginal people as responsible ecological agents. The narrative that follows takes a more critical view, and construes this discourse as an expression of an ongoing colonial struggle for ecological possession of Australia. It is therefore fitting for this narrative to begin with an overview of the role that fire and agriculture played in legitimating the colonisation of the continent by Europeans.
Section One

Historical Review
Chapter One

Aboriginal Ecology and Proprietary Interest

The explorer Thomas Mitchell witnessed Aboriginal people making claim to ownership of specific land (1969:183, 268) and thereby ordered his men to neither trespass nor take animals that were living there (1969:183-4, 268). He argued that Aboriginal people had a proprietary interest in the 'grass' and 'the kangaroos' because these were the product of their 'considerable labour' (Mitchell 1969:306). He was the first European to associate proprietary interest with their purposeful use of fire:

Fire, grass, kangaroos, and human inhabitants, seem all dependent on each other for existence in Australia; ... the native applies that fire to the grass at certain seasons, in order that a young green crop may subsequently spring up, and so attract and enable him to kill or take the kangaroo with nets (Mitchell 1969:412).

However, Mitchell distinguished between their ownership of the animals and their ownership of the land on which their animals grazed, land he described as 'open and available in its present state, for all the purposes of civilised man' (Mitchell 1965:333), a distinction which refers to the 'state of nature' underlying John Locke's theory of property (Alvey 1987:3-10). Locke had argued that, whereas the 'fruits' and 'beasts' provided by the 'spontaneous hand of Nature ... belong to mankind in common' (Locke cited in Powell 1978:46), and people 'acquire a property in ... as much of the wild fruit, killed, caught, or tamed, [and] as many of the Beasts [they] gathered' (Locke cited in Jones 1990:47), a proprietary interest in land itself derives
from an investment of labour in that land (Locke cited in Head 2000:62). More specifically, ownership of land accrues from an investment of agricultural labour:

\[
\text{As much Land as a Man Tills, Plants, Improves, Cultivates, and can use the Product of, so much is his property. He by his Labour does, as it were, inclose it from the common (Locke cited in Williams 1986a:121) (sic).}
\]

Mitchell’s characterisation of Aboriginal people as ‘free denizens of uncultivated earth’, lacking attachment to any specific land because they prefer it ‘unbroken’ (1965:65-6), demonstrates his intellectual debt to Locke. As Surveyor-General, Mitchell spoke on behalf of many others engaged in ‘the mechanics of land alienation’ (Ryan 1996:161), but his opinion was not shared by all. Edmund Eyre, expressing the views of the Colonial Office in his role as the Protector of Aborigines in South Australia (Reynolds 1987:70, 100, 117), rebutted this popular view when it was aired in a letter published in the Australian Register newspaper that stated ‘it would be difficult to define what conceivable property rights were ever enjoyed by the miserable savages of South Australia, who never cultivated an inch of the soil’ (anon cited in Ryan 1996:159). In response to this letter, Eyre quoted John Dunmore Lang’s opinion that

while Aboriginal cultivation is non-existent, tribes and individuals within these tribes consider portions of the land as their own for hunting purposes. Thus, Lang argues, ‘the difference between the Aboriginal and the European ideas of property in the soil is more imaginary than real’ (Eyre cited in Ryan 1996:159).

The distinction between Aboriginal and European land use signified by cultivation enabled the latter to justify their dispossession of the former (Reynolds 1987:74, 133). However, even where the distinction was blurred, European rights prevailed. Mitchell’s contemporary, George Grey, argued that Aboriginal people not only sustained themselves by working the land with fire (Grey 1841 cited in Hallam 1975:12, 14), but possessed a depth of ecological knowledge which equipped them
for survival in Australia in a fashion superior to Europeans (Grey 1984:220). Grey was nevertheless comfortable in his assertion that European claim to the land was not only right but inevitable, an assertion based not on deductive reasoning but on the prevalent teleological faith in a divinely ordained supremacy of European civilisation (1984:223).

Such representations play a key role in the legitimisation of European expropriation of land. The doctrine of *terra nullius* ('land of no-one'; Butt and Eagleson 1993:22) implied by Mitchell’s representation of the land as uninhabited (Mitchell 1965:159; Baker 1997:176) – in the face of considerable evidence to the contrary – rendered Aboriginal people legally invisible in the cadastral landscape, even though their presence had firm ecological foundations. James Cook drew a similar distinction:

> These people live wholly by fishing and hunting, but mostly by the former, for we never saw one Inch of Cultivated land in the whole Country (Cook 1893:320) (sic).

The shift in legal discourse marked by the High Court Mabo decision that overturned *terra nullius* (Butt and Eagleson 1993) some two centuries after Cook, acknowledging an Aboriginal reading of landscape, occurred contemporaneously with an equivalent shift in Ecological discourse. These shifts appear to suggest a democratization of both legal and ecological discourses, an opening of their production to the influence of authentic Aboriginal discourse.

However, as the following historiography of variant representations of Aboriginal Ecology shows to the contrary, the shifts reflect less an increasing contribution from Aboriginal discourse than the increasing significance assigned to Aboriginal fire ecology in the Western construction of the Australian landscape.
Chapter Two

The Emergence of the Western Discourse on Aboriginal Ecology

The Explorers

The Dutch saw only ‘poor, naked people walking along the beaches; without rice or fruits, very poor and bad-tempered’ (van Diemen cited in Schilder 1988:103). The English buccaneer William Dampier called them ‘the miserablest People in the World’ who ‘differ but little from Brutes’ (1986:312), thereby coining the paradigmatic explorer’s pejorative (eg Short 1991:23; Simpson 1973:26; Ryan 1996:3; Hughes 198748; Hills 1991:26; Williams 1990:53; Mulvaney 1990:6; Stanner 1979c:149; Allen 1997:34) and epitomising ‘the contempt felt for primitive peoples by many ... Europeans’ (Mulvaney, 1990:6). Cook, a century later, drew instead from ‘a well-established tradition of ... sympathy and respect for primitivism’ (Williams 1985:43,44) when he described the ‘Natives of New Holland’ as ‘far more happier than we Europeans’ (Cook 1893:323), an ideological shift that Mulvaney attributes to the publication of Rousseau’s Social Contract (Mulvaney 1990:6).

The views of Dampier and the Dutch evidently aligned with those of Thomas Hobbes (Mulvaney 1990:4, 6) when he described an existence dependent on nature as ‘solitary, poor, nasty, brutish and short’ (Hobbes cited in Nash 1989:14), unlike Cook whose writings clearly display an eye for the nobility of the savage (Mulvaney 1990:6). Rousseau is often credited with inventing the concept of the ‘Noble Savage’, but to the contrary he shared Hobbes’ view and thought primitive men incapable of virtue (Hall 1973: 24, 36). In fact, the Noble Savage was a creature of Romantic myth, grafted from the myths of classical Greece. European explorers found the hard
primitive life admired by the Greeks among the warrior tribes on the islands of the Great Southern Ocean, and in particular the Australian Aborigines. The contrast between theirs and the soft life of the Europeans was seen to demonstrate the decline in the quality of life that accompanied civilisation (Short 1991:22), noted by Cook (1893:323) and to which Rousseau referred (Hall 1973).

Failing crops pressed upon the early colonists the realisation that Aboriginal people were not, as they were themselves, verging on starvation (Williams 1988:198), and that the Aboriginal 'economy' might be more complex than first imagined (Williams and Frost 1988:190). It became apparent that this non-agricultural 'race totally incapable of civilisation' possessed an 'astonishing' degree of 'art and cunning' that enabled them to succeed where Europeans struggled (Williams and Frost 1988b:201). The 19th century explorer, John Lort Stokes, recognized the depth of Aboriginal ecological knowledge and skill:

They acted as guides to the explorers, shewing them where water could be found, giving every information in their power, and supplying them with crabs ... [and] they found their way in the bush without having any apparent means to guide them (1969a:391).

In this earliest of direct references to Aboriginal ecological knowledge, Stokes valued it primarily for its utility to Europeans:

Nothing could be more unwise than the hostility shewn to the natives by the first settlers, as from them we must always calculate on learning much that is useful and valuable, with regard to the productions of the country; a knowledge which would otherwise consume much time to acquire (1969a:400).

European explorers drew heavily on this knowledge (Reynolds 1991). Leichhardt sought out Aboriginal people because he 'wished very much to induce them to become our guides' (1847:503). He also followed their footpaths through difficult
terrain to favourable locations (Leichhardt 1847:444, 495-6, 530), and interpreted fires not only as signs of Aboriginal presence but as beacons by which to navigate (Leichhardt 1847:470, 508). Furthermore, explorers interpreted frequent fires as indicating dense human populations and, in turn, pointing the way to fertile country (Reynolds 1990:128):

> Natives, crows, and kites were always the indications of a good country (Leichhardt 1847:443).

Explorers were interested primarily in ‘the localities ... best adapted for the purposes of cultivation or grazing’ – localities ‘equally valued ... by the natives themselves as places of resort or districts in which they could most easily procure food’ (Eyre cited in Reynolds 1990:128-9). Closely observant of Aboriginal subsistence – an interest motivated partly by his own survival and partly by a naturalist’s curiosity – Leichhardt (1847) paved the way for modern ethno-ecology (eg Russell-Smith 1997), and began the systematic appropriation of Aboriginal ecological knowledge for the benefit of Europeans colonising North Australia (eg Russell-Smith et al 1997).

Mitchell’s military-style expeditions depended on Aboriginal people for neither food nor guidance and, although he encountered numerous Aboriginal people, he characterised the land he was surveying as ‘still without inhabitants’ (1965:159). George Grey, on the other hand, attributed high Aboriginal populations in south-western Australia to their practice of regularly burning the coastal swamps to promote growth of an edible species of rush (1841 cited in Hallam 1975:12,14; Rose 1996:75). Grey is among the first to interpret Aboriginal land management as agriculture.
Like Mitchell, however, Grey writes as if the usurpation by Europeans of Aboriginal Australia were predestined, and their ecological knowledge and skills not the result of adaptation but the work of an 'Infinite wisdom' which had brought now 'a civilised community' to sweep away their 'ancient system' (Grey 1984:223). By the mid-19th century, European interest in the landscape, although still in the process of claim, had begun to presume ownership, and not only were Aboriginal people seen to pose a physical threat to the survey process which substantiated that claim, but Aboriginal habitation of the land was beginning to clash with prospective European proprietary interest.

The discourse adjusted its representation to suit. Subsequent explorers' journals manifest an indifference to Aboriginal Ecology except where it aided their quest, such as by leading them to water (eg Stuart 1865; McKinlay 1866; Cadell 1868; Lindsay 1889). Initially conceded an interest in the land, at least so far as they managed its production of fruits and beasts, Aboriginal people were to be now disenfranchised legally by being detached ecologically, a device apparent in Gregory's journal.

Far from owners of the land, Gregory portrays Aboriginal people as having scarcely any interaction with it at all, apart from setting it on fire, scavenging for mussels and scratching crude drawings on rocks. He represents Aboriginal people as threatening, directly by endangering the lives of expedition members and livestock, and indirectly by opposing the legitimacy of the European claim to the land. A threat to more than just the expedition, Aboriginal people opposed the march of colonisation. By representing them as virtually non-existent, Gregory erases them textually and, by constructing them as a physical threat when they do make an appearance, he is justified, for reasons of self-defence, in effecting this erasure with deadly force (1981:119, 161).
Fire is a recurrent symbol through which Gregory signifies Aboriginal opposition. The frequent references to 'grass' – a hundred in the first thirty pages of his account – reflect the primary motive of Gregory's exploration, that is, to discover resources for land-hungry pastoralists, but the need to feed the expedition's large mob of horses and sheep imposed continual constraints on his travel. The primary constraint on the availability of feed was in fact the barren and stony nature of the country and the rank quality of the grass itself (Gregory:1981:102) but, by repeatedly referring to the grass having been 'burnt by the blacks' (eg Gregory 1981:155), Gregory depicts Aboriginal people using fire to oppose the legitimate processes of colonisation.

Fire became a symbol for the European struggle with both Australia and the Aboriginal people who set fire to it in the process of claiming it as their own. Fire was the tool with which Aboriginal people reproduced the landscape and which made it possible for Europeans to take it (Hallam 1975:65). As Magellan sailed into the Pacific Ocean naming Tierra del Fuego for the campfires he saw on the islands' beaches, as Pieterszoon and King coasted past distant spiralling smokes, as Mitchell and Leichhardt stumbled upon smouldering campfires and manicured grasslands, as Mitchell, Gregory and Stuart defended their camps against natives trying to burn them out (eg Stuart 1865:416-7), and as Gregory and Stuart drove their exotic livestock through a charred landscape (eg Stuart 1865:374, 480), fire came to be inscribed in the discourse as a metonym for the relationship that existed between the Australian landscape and the people the Europeans found already living in it.

Although earlier colonial discourse acknowledged Aboriginal knowledge and the pivotal ecological role that Aboriginal fire played, it was not until the 20th century that Europeans began to take notice of what Aboriginal discourse itself had to say. And as the explorers seemed finally to exhaust the incognita of the Australian continent, a new landscape emerged onto which to project Western imagination, an Aboriginal landscape based on radically different ecological paradigms.
During the early 20th century, anthropologists continued the pioneering discourse initiated by the explorers. Aboriginal people figured even more prominently in the landscape, a landscape that was mythological rather than cadastral. It was a landscape in which myth played a key role in determining material outcomes, and it is in this early anthropological discourse that the notion first appears that it is through the medium of the Creation myths that Aboriginal people exercise ecological agency.

The enduring influence on Aboriginal Ecology of the pioneering anthropologist, Baldwin Spencer, relates to his emphasis on myth: the creation by mythical Ancestors of the landscape, its plants, animals, humans and spirit beings, all the relationships between these, including the laws, ceremonies, totems, songs, languages, iconic images and symbolism, and indeed the myths themselves (Spencer 1928). Spencer established the view of Aboriginal myth as the medium between humans and the power of Creation, a medium which provides people with the means to effect ecological outcomes.

Myth constitutes the symbolic order through which Aboriginal people engage with, interpret and find meaning in the natural environment. Spencer’s mentor, James Frazer, had argued that magic, religion, and science were three successive evolutionary stages through which humanity passed in its efforts to influence the workings of nature (Jones 1988:11). Frazer held that, while humans through science develop ‘techniques based on correct notions of cause and effect’, and through religion seek to propitiate and conciliate the superhuman beings who rule the world, magic is an attempt ‘to act directly on nature without recourse to divine intervention’. According to Frazer, magic is, however, ‘a spurious art because it is based on misconceived notions of cause and effect’ (Jones 1988:11). These divergent
notions of causality constrained Western efforts to represent Aboriginal Ecology as capable of effecting pragmatic outcomes and, as will be discussed later, present a significant obstacle to the translation of Aboriginal into Western Ecological discourse.

Traveling with a buggy carrying all his food and independent of local resources, Spencer portrayed the environment through which he traveled and in which Aboriginal people subsisted as fecund (1912:466-9). The effect was to characterize Aboriginal existence as secure, an existence where scarcity could be addressed simply by removing from one site to another. This notion, that a nomadic economy is a fitting and successful response to a fertile and diverse environment (Spencer 1914:26-7) is not new, but Spencer is the first to detail this relationship and to link so closely the environment with a leisured and affluent stone-age economy (Spencer 1928:791; cf Meehan 1982; Sahlins 1972).

Like Leichhardt in the same country fifty years earlier, Spencer attributes the size and health of the Aboriginal population to a rich environment, although he positions ecological factors such as this as secondary to mythically sanctioned social mores in determining ‘the life of a native’ (Spencer 1914:341-2). The anthropologists Lloyd Warner and Donald Thomson, whose work followed on from Spencer’s, likewise present myth as an agency that determines ecological outcomes through the medium of social structures.

Warner describes the relationship between people and the environment as one of ‘bilateral reciprocity’. For the Murngin – the Northeast Arnhemlanders whom Warner studied and who refer to themselves as Yolngu – not only is human society profoundly influenced by environmental factors, but the cycles of nature – notably the seasonal and reproductive cycles – are in turn controlled by people through ritual practice (Warner 1969:394, 396).
In Warner’s reading of Murngin Ecology, society and nature are analogues of one other. The Wawilak myth lays down the parameters of the relationship between society and nature, and between the internal institutions of society (Warner 1969:391). These relationships between people and nature find ‘concrete expression’ in totemic species (Warner 1969:391). Warner observes that the Murngin possess an extensive knowledge of their environment, and although they interpret the natural world through paradigms based in myth, their practical knowledge and its pragmatic outcomes demonstrate that their Ecology has validity in the real world (1969:368).

Warner suggests therefore that there may be a different reading of the ecological landscape than that provided for within Western ontology, and that Murngin society demonstrates the success of this alternative scheme of ecological knowledge. In this scheme, Aboriginal people exercise control over the natural environment through a system of ritual signification that links the natural, social and spiritual dimensions of their existence (Warner 1969:400).

Thomson was the first to classify Aboriginal knowledge as ‘ecological’ (1949a:13). Even here, however, the primary form of ecological agency is the mythical power, Marr, which drives the economy through which Aboriginal people regulate their interaction with the environment (Thomson 1949a:37, 41). The idea that people have the capacity to intervene in natural processes, that is, that they possess ecological agency, is a key principle in the Western discourse on Aboriginal Ecology. It is the basis upon which authors differentiate, for instance, between the ecology of kangaroos and Aboriginal people, and between Aboriginal people as ‘part of nature’ and as agents of ecological change. For example, Cook’s Aborigines lacked agency in or ownership of their environment, whereas Mitchell’s set fire to it and, according to Jones (1969; 1985:182), were ‘farming’ and thereby demonstrating, under Locke’s tenets, a proprietary interest in the land.
Thomson uses fire to demonstrate how the social economy regulates ecological agency:

The actual burning of the grass is directed by the old men of the clan, or by others who have an hereditary right (1949a:17).

He describes Aboriginal people using fire to produce environmental change rather than food *per se*. Thomson terms the resulting food a ‘yield’, fire being merely the device for harvesting a surplus which already exists, and thereby does not credit Aboriginal people with a capacity to increase it. The organization of the society prevents the loss of this already available surplus (Thomson 1949a:18-19), and it is through the nexus between Ancestral myth and social structure that Creation mythology serves a function that is fundamental to Aboriginal Ecology (Thomson 1949a:18).

The ritual firing of country is ‘traditional’, not in the sense of being a social convention but in reproducing the activities of ‘ancestral culture heroes’ (Thomson 1949a:20). ‘Tradition’ typically refers to ‘those beliefs and practices that have been handed down from generation to generation’ (Ewins 1998:3 cited in Stacey 2001:4), and presumes that ‘an unchanging core of ideas and customs is always handed down from the past’ (Handler and Linnekin 1984:273 cited in Stacey 2001:4). This use of the term indicates the persistence of earlier representations of primitive peoples, and is a perception rooted in social Darwinism and aligned with ‘the creation of ‘a creature on the periphery of civilisation’ (Miller 1994:59 cited in Stacey 2001:4): the Other that is the Savage (Lattas 1992). Thomson, however, uses ‘tradition’ to mean a practice ‘backed by a long period of trial and error’, and ‘appropriate to the area and to the season’ (1949a:19), an interpretation at odds with his assertion that the traditions were ‘laid down by ancestral culture heroes’ (1949a:19).
Thomson also introduces the concept of the 'seasonal life table' (1949c:7), the precursor of the Aboriginal 'seasonal calendar', a concept that has become the conventional metaphor through which to represent an Aboriginal perspective on the natural world (eg Chaloupka 1981:162; Altman 1987:25; Brockwell et al 1995:44; Morris 1996:6). At the heart of this Aboriginal metaphor, however, is a peculiarly Western one, calendar, a metaphor that in turn refers to lunar and solar cycles and to a linear concept of time (Allen H:1997). Jones remarks upon the incongruity between the Western 'calendar', based on 'amplitude and phase angle of ... harmonic sine curves' (1980a:126), and the Aboriginal concept of seasonality based on Barra, the northwest monsoon, who 'clenches a dilly-bag between his teeth like a warrior going into battle' (1980a:111).

The term calendar was first attached to the Aboriginal system of classifying ecological knowledge not by Thomson but, forty years later, by the traditional owners and the manager of Kakadu National Park (Alderson et al 1980:41; Haynes 1991:64), a demonstration of the readiness of Aboriginal discourse to incorporate naturalised Western representations of Aboriginality. The coercive power of Western over Aboriginal discourse, evident in the Western discourse on Aboriginal Ecology, is the principal concern of this essay, and is a theme that will be revisited in later discussion.

The representation of Aboriginal people as conscious and knowledgeable ecological agents has been a work in progress since Europeans first set eyes on Australia. Spencer, Warner and Thomson furthered this representation by identifying Aboriginal belief in a direct causal link between Ancestral mythology and ecological reality. By the mid-20th century, these relatively few authors had produced a
discourse whose representations of Aboriginal Ecology were to be rendered even more complex and problematic by the voluminous text produced during the next fifty years, a corpus which demonstrates the capacity of text to construct, in a concerted manner, a pervasive and credible yet imaginary subjectivity. It is through the creation of such subject positions, charged with the authority (Danaher et al 2000:153-155; Foucault 1991b) of the dominant discourse in which they are produced, that Western discourse exercises its coercive power over Aboriginal discourse.

The relationship of Aboriginal people with their natural environment has been one of the major elements in the portrayal of the Australian landscape within Western discourse (eg Grey 1841 cited in Hallam 1975; Leichhardt 1847; Healy 1989; Allen C 1997). European colonisation was enabled by the ecological dimension of this relationship, specifically by the knowledge that Aboriginal people had acquired in the process of their adaptation and which guided explorers (Reynolds 1990), and by the landscape architecture that the Europeans found and which they acknowledged to be the product of Aboriginal ecological praxis (Mitchell 1969:412) and into which settlement was transplanted (Hallam 1975:9). This essay contends that Western discourse continues to prevail upon Aboriginal ecological knowledge in order to substantiate European colonisation of the Australian continent and, in doing so, expropriates not only the landscape but the Aboriginal subjectivity contingent to it.

Anthropological discourse portrayed Aboriginal subjectivity as being formed within the context of the relationship between people and the landscape, a relationship that produced effective outcomes in the real world but, in Aboriginal discourse, was formulated through paradigms that were mythological in basis and therefore
beyond the ambit of a Western Ecology premised upon Baconian-Cartesian notions of causality (Oelschlaeger 1991:86, 105; Riedl 1984:72). The paradigmatic shift required for the translation of Aboriginal ecological knowledge into Western discourse means that any subject positions contingent upon that knowledge are affected. The translation therefore also entails the loss of significant meaning attached to the referents within Aboriginal discourse.

The Western representation of Aboriginal ecological knowledge continues the colonial discourse (Danaher et al 2000:103) by contributing to European control over the landscape and its natural processes, notably fire. The aspect of Western discourse that is specifically concerned with effecting European control over - and therefore proprietary interest in - the landscape, and which is also implicated in the creation of the human subjectivity that arises from that landscape, is Ecology. More recently, the Western discourse on Aboriginal Ecology has become an area of intense contestation, especially as Western (Rose 1988; Bradley 1998) and Aboriginal (Langton 1998; Yibarbuk and Cooke 2001) authors challenge its fundamental assumptions. The struggle for control of the discourse is, it is argued here, an extension of the struggle for land and identity. It is important, therefore, to trace the changes in the Western discourse as its presumptions about Aboriginal Ecology came under challenge. In addition, in order to appreciate the role of the discourse as a place where power is exercised and contested, it is also instructive to consider how it constructs subject positions in the context of the relationship between humans and land.
The Ecological Shift in the Discourse

One characteristic apparent in the discourse thus far is the proliferation of paradox: the land as barren or fertile; the existence of the people as miserably poor or abundantly carefree; the Nobility or Ignobility of the Savage, and savage as opposed to civilised society. It is also apparent that these shifts in the representation of Aboriginal Ecology are not simply unilateral. For instance, the mode of Aboriginal subsistence described by the Dutch navigators and Dampier — an impoverished struggle in a land ‘without rice or fruits’ — was transformed by Cook into a toil-free existence under the sponsorship of a beneficent Nature; and whereas Cook had denied Aboriginal people any influence over their environment or agency in the production of food, Mitchell described their deliberate use of fire to mould the landscape and promote increase in the plants and animals used for food. Mitchell did not extend this ‘labour’ to a proprietary interest in the land, although Eyre and Grey did; and whereas Grey considered that the savage customs by which Aboriginal people were ‘enthralled’ bound them ‘in a hopeless state of barbarism’ (Grey 1841:217), Spencer, Warner and Thomson regarded this complex of myth and ritual as the agency through which they regulated their economic relationships with the natural environment. This marked the introduction of a more complex approach to the representation of Aboriginal Ecology.

It is Steward’s (1937) text on the prehistoric societies of the American Southwest (Orlove 1980:238), contemporary with those of Warner and Thomson, that is credited with prompting the shift from an ethnological focus on ‘social organisation’ to an ‘ecological perspective’ (Lewis 1982:45). While Australian ethnologists generally may have been slower to adopt the methodology that Steward termed ‘cultural ecology’ (Chris Healey pers comm; Milton 1996:44), Tindale and Birdsell (Tindale 1940; Birdsell 1953) were already applying in an Australian context what is known today as Ecological Anthropology. Their approach is clearly one of environmental determinism, the notion that, by analogy with the Darwinian model
of genotype evolution, environments shape cultures (Milton 1996). Tindale’s (1940) map is a snapshot of the continent, taken at the moment prior to European contact, of a supposed correlation between ‘tribal distributions’ and ‘physiographic and ecological controls’. Tindale’s environmental factors include ‘mountain ranges, divides, rivers, general ecological and plant associational boundaries, microclimatic zone limits, straits and peninsulas ... [and] permanent waters’ (Birdsell 1953:173), whereas Birdsell later limited his attention to a single environmental variable, ‘the biotically effective quantity of rainfall’ (Birdsell 1953:177).

Tindale defines the ecological status of Aboriginal people in what is, in effect, an ideologically rich and densely intertextual (Kristeva 1984:59) précis of the discourse to date:

Without technical aids other than spear, boomerang, fire and canoe, the Australian aborigine has had relatively little power to transgress barriers set by ecological and geographical position. Living, as he often does, near the borderline between adequate nutrition and starvation, his personal skill and his very detailed knowledge of nutritional sources in his own territory are often the only assets separating him from starvation and thirst. With feeble resources for transport and restricted means for preservation of food, he is limited in his wants by the immediate availability of the primary stuffs of life, water, firewood, vegetable foods and game (Tindale 1940:149).

Three points are worth noting about this passage. Firstly, Tindale characterises Aboriginal people as lacking ecological agency. Secondly, he resurrects the view, expressed by Dampier (1986:312), Carstenz and Coen (Schilder 1988:93, 103), that Aboriginal existence amounts to a very tenuous hold on the land. Thirdly, he credits Aboriginal people with possessing a body of ecological knowledge that enables them to subsist despite their limited material technology, a subsistence that is based on a ‘harvest’ strategy rather than an agrarian strategy of seeking to increase natural yield.
The distinction drawn by Tindale and others (e.g., Lourandos and Ross 1994) between European and Aboriginal subsistence strategies reflects different concepts about the relationship between humans and their natural environment (Jones and Meehan 1989:133 cited in Lilley 2001:81). The key difference of interest here is that between an objective and a subjective point of view. The Western perspective is that of res cogitans, the Cartesian 'disembodied mind, standing outside nature' (Oelschlaeger 1991:86-87). Western Ecology views nature as object.

The Western discourse portrays Aboriginal Ecology as not drawing this separation between nature and humans. For example, Warner's informants told him that humans occupy a position in the 'natural economy' that is the equivalent of other creatures such as kangaroos (1969:138). Similarly, Rose describes the Ngārinman view of the natural world as a 'sentient cosmos' (1988:383) maintained through the responsible actions of 'people, other animals and other categories of beings' (1988:379). Moreover, the cosmos comprises not simply ecosystems, but 'living creatures, including humans' interrelated through a system of kinship (Jones:1991:35).

This notion that Aboriginal concepts of nature are subjective appears also in text attributed to Aboriginal authors. In the analysis of one of the texts analyzed below (Bunganiyal's 'unsolicited narrative' in Bowman et al 2001), the prominent inclusion of the narrator's persona suggests that the subjective element is, as Jones puts it, a 'key concept within Aboriginal thought' (1991:35). Similarly, Bradley's informants interpreted the antics of a bush turkey as the spirit of their deceased kin calling out in annoyance at their setting fire to the country in which he lived (1997:75). Yibarbuk identifies 'the fulfillment of social and religious needs' as an important motive in Aboriginal land management (Yibarbuk et al 2001:326).
The analysis below seeks to demonstrate that this highly significant subjective element is erased during the translation of Aboriginal ecological knowledge into Western text, with a consequent loss or distortion of meaning. However, the discourse also impinges upon other aspects of Aboriginal subjectivity: the sense of self and subject positions actually held by Aboriginal people themselves. If, as Jones asserts, people are ‘fathered by the essence of the land itself’ (1985a:202), then colonial dispossession of land removes the basis for an Aboriginal person’s individual, social, and - as indicated above, ecological – identity. The textual erasure of subjective identity within Western scientific discourse has the effect of depicting the land as unoccupied, and therefore available for legitimate claim. Western discourse goes even further, however, by creating new subject positions for Aboriginal people to occupy, a subjectivity necessarily modeled upon imaginary creatures like the Noble Savage.

Western discourse credits European explorers with the discovery of Australia, but discovery also entails the construction of a knowledge base about the continent, and this is a project to which Aboriginal knowledge contributes. A feature of the Australian landscape that could not be ignored, as much as those claiming it for the Crown might on occasion try, is its prior inhabitation. Indeed, the relationship of Aboriginal people to their natural environment is consistently a paradigm through which Western discourse constructs a representation of the landscape itself. In constructing this Aboriginal Ecology – this relationship between Aboriginal people and the Australian landscape – the discourse creates subject positions. The capacity of the discourse to coerce Aboriginal people into conforming to this constructed subjectivity in order to access the power of the dominant society is discussed in greater detail during the analysis below.
An illustration of the discourse simultaneously constructing landscape and subject positions can be found in Schrire's accounts of her archaeological work along the north-western rim of the Arnhem escarpment (1984b). Schrire reconstructs the behaviour patterns of the Aboriginal people who had lived on the Alligator River floodplains and adjacent stone country. She sieves her archaeological data through two interpretive filters: an *ethnographic present* based on Aboriginal people living nearby, and an *ecological past* (White 1969:45).

These are both constructions. The *ethnographic present* refers to 'some notion of a pristine traditional society unsullied by contact with the culture of the observers' (Davidson 1988:19), a notional society which Schrire constructs from a combination of her own observations and early-contact texts produced by Leichhardt, Spencer, McKinlay and Thomson. The *ecological past* is, in a similar vein, the *ecological present* extrapolated back in time with the help of theoretical modelling of climatic change and the changing geomorphology of the region (eg Schrire 1982:1-7).

The intense archaeological exploration of the area was inspired not by Schrire's discoveries but by 'the discovery of uranium deposits in the Alligator Rivers Region' (Allen and Barton 1989:20), whereby the discourses already converging on this landscape – those of Aboriginal people and Western scientists – were joined by other discourses, those of mining, conservation and land rights (Jones 1985b:v; Allen H 1997:141). The landscape within which the concept of Kakadu National Park is conceived – the Arnhem Land Plateau, its escarpment and deep cut river valleys, savanna and freshwater floodplains – in this way serves as a 'node within a network' (Silverman 1983:22), a transitory moment to which the meaning of Aboriginal Ecology is referred. Such convergence around specific landscapes makes these landscapes highly significant texts in their own right.
Schrire fleshes out her landscape by describing its features in terms of what would make them attractive to human inhabitants (White 1967:426). Schrire thereby shifts the perspective from what Pratt, a critic of ethnography, terms the ‘scientific position of ... an observer fixed on the edge of a space, looking in and/or down upon what is other’, to the ‘subjective experience ... spoken from a moving position already within or down in the middle of things’ (1986:32). Schrire describes Aboriginal people as actors, requiring active transitive verbs (underlined):

At Oenpelli the Kakadu camped out near the billabong. During the Dry, they would gather up their food in the evening and walk up the hill to sleep in the rock shelters away from mosquitoes. They hunted and ate a large variety of game-wallabies, bandicoots, fowl, fish, ducks, flying foxes and snakes. The women gathered roots, water lilies and fruits, but apparently did not collect mangrove-mudflat shells (White 1967:431).

Although the evolution of the landscape takes place over hundreds of human generations, Schrire maintains human continuity by referring to the subjective experience of living individuals:

In a single lifetime, people must have seen their former estates disappear beneath the waves. ... One has therefore to regard the plain as a labile ecosystem within which foraging strategies shifted and adapted through time (Schrire 1984b:71).

The ‘foraging strategies’ are the particular aspect of this ecological interaction in which Schrire is interested, because the archaeological traces which individuals leave when foraging in their environment are the data which her text interprets. The landscape becomes humanised through repeated textual association: a ‘denuded and relatively impoverished plain’ is transformed into the ‘primary focus of prehistoric economic activities’ (Brockwell et al 2001:368) supporting some of the highest populations in pre-contact Aboriginal Australia (Meehan 1982:14; Schrire 1982:24).
Brockwell et al (2001) subsequently reinterpret Schrire’s model from a ‘fresh perspective’ which ‘shifts ... attention away from the ecological rationale ... and focuses instead on the cultural rationale’ (2001:376). In doing so, they enhance the meaning captured by the concept, Ecology. Basing their analysis largely on an ethnographic account of the seasonal round of one Badmardi family over a diverse range of habitats, they describe the migration as focusing not on the ‘descent to the wetlands’, but on the ‘return to the top country’ (Brockwell et al 2001:376):

Seasonal migration thus needs to be understood as a strategy that selects from among the possibilities for material provisioning according to the correspondences that can be made between those possibilities and the wider concerns of life ... Seasonal migration expresses an exploration of the other possibilities that ecology creates in human affairs (Brockwell et al 2001:376).

Brockwell et al (2001) argue that, when the Badmardi described their seasonal round to an ethnographer (Chaloupka 1981), they were speaking not literally but in a symbolism which encoded their cultural priorities, whereby migration was a strategy in which ‘material provisioning’ was but one possibility, the ‘governing criteria’ being instead ‘attachment and responsibility to country and engagement with neighbours and partners’ (Brockwell et al 2001:376). In the landscape of the escarpment lay the ‘political and religious strength’ of the Badmardi, no less than did that of the swamp country people reside in the floodplain (Brockwell et al 2001:376).

Similarly, when describing the Gidjingarli, living at the mouth of the Blyth River, Jones refers the identities of four communities to the landscape:

the Matai people, named after the red and orange flower of the Woolly-but gum tree (E. miniata) which is a dominant tree on their estates; the Marauwuruba people, named after the distinctive mangrove tree of their land; the Gulala, taking their name from the long beach which fronts their land, and the Anbarra, whose name means literally the ‘mouth of the river’, and whose estates straddle the estuary mouth of the Blyth River (Jones 1991:22).
Noting that ‘these small but tightly defined human groups took their names from some dominant or distinctive feature of their landscape’, Jones identifies ‘two levels of self-identification, according first to social and then to ecological criteria’ (Jones 1991:22). Thus, according to Jones, not only do Aboriginal conceptions of the landscape involve ‘a seamless integration of natural and cultural factors’ (1991:22), but Aboriginal people conceive of themselves through metaphors drawn from the landscape. In other words, Aboriginal discourse conceives of the landscape as a semiotic matrix within which is constructed individual and social identity.

Brockwell et al (2001) establish a concept of Aboriginal Ecology that extends beyond Western ecological parameters, such as the spatial distribution of a population, to include ‘political and religious’ concerns. Schrire similarly suggests that Aboriginal Ecology has broader scope:

Aboriginal ... perception of resources is intimately linked with their views on creation and identity as regards the land, its yield, and its monuments. Sites may be both mundane elements in a rational landscape - high caves, deep holes, and shaded shelters - as well as points in a cognitive landscape or markers in a mythic world (1984b:88).

Hiatt and Jones (1988:10) and Bradley (1997:76) also describe an Aboriginal ecological discourse extending beyond the boundaries of natural world. One Western discourse that affirms the mythical power of landscape is the 18th and 19th century discourse on the Sublime (Clute 1984; de Bolla 1989). Sublime landscapes were ‘declared the great forces of nature, the hand of the creator’ and were places in which people ‘could commune directly with God and feel the unity of Divine purpose and human insignificance’ (Cosgrove 1984:185). The 19th century explorer Stokes’ description of the Victoria River landscape demonstrates how deeply it shaped discourse within the 19th century:
the moon above the hills in all its glory ... the long looked for river, rippling and swelling, as it forced its way between high rocky ranges ... the moon rising and spreading the whole before us like a panorama, made the scene so unusually exciting (1969b:40)

the ship lying surrounded by lofty rocky heights, that towered above her masts till they appeared mere sticks ... the comparative insignificance to which she was reduced by the elevation of the hills around (1969b:48).

Schrire's description of the West Arnhem landscape demonstrates its continuing influence in the 20th century:

The plateau is wild, rugged, and faulted ... The edge of the plateau is marked by the escarpment, a dramatic series of buttresses that rise 25-250m above the plain, with sandstone cliffs glowing like ochred battlements at dawn and dusk (1984b:69)

Along outliers and the edge of the escarpment and into plateau valleys, scores of shelters attested to recent and ancient use ... Red, gold, and white paintings glowed from the walls (1984b:81).

Outliers that stand like sentinels (1982:5).

Picturesque descriptions of landscape like these expose an ideological indebtedness to this discourse which 'draws upon and transcends traditional enlightenment considerations of nature (Cosgrove 1984:226).

It was stated above that Western discourse has looked to Aboriginal discourse to abet the European colonisation of Australia, initially to guide exploration, then to enable settlement, and more lately to bolster management of the ecosystems whose control is the essence of a Baconian approach to the Australian natural environment (Oelschlaeger 1991:105). The West Arnhem escarpment is a landscape upon which many potent discourses converge (eg Allen and Barton 1989:20; Jones 1985b:v; Allen H 1997:141), and Schrire's reconstruction refers not only to its material inhabitation by Aboriginal people, but also to the Aboriginal discourses that address the mythic.
power arising from ‘the processes and phenomena of the external world’ (Cosgrove 1984:230; Jones and White 1988; Haynes 1991:69). In addition to material considerations, therefore, Schrire’s reconstruction of an Aboriginal Ecology may be also a response to that ‘widespread yearning among non-Aboriginal Australians to draw on the strength and insights of Aboriginal attachments to the land’ (Head 2000:214). In other words, the Western discourse on Aboriginal Ecology may be abetting European colonisation not just through the securing and legitimating of control over the land, but in anchoring a Western identity to it (Relph 1976:6; Jeans 1983:171).

Schrire’s text is included here only to demonstrate the manner in which Western discourse constructs Aboriginal Ecology – the landscape, its inhabitants, and the relationship between them; it is not suggested that the Aboriginal subjectivity she constructs is itself especially significant. Schrire’s technique of modeling Aboriginal ecological behaviour has been adopted by other texts engaged in exploring both the ecological and the ethnological aspects of this relationship, and in particular in the recent concentration of this activity in texts dealing with fire in the North Australian landscape, some of which are analyzed below.

The reconstruction of Aboriginal fire ecology has produced a broad suite of representative images encompassing the burning practices of Aboriginal people, their impact on the environment, and their knowledge about fire and its meaning within Aboriginal society. It could be seen to follow a chronological series, and its data to include paleo-ecological evidence (Horton 1982), the chronicles of explorers (Fensham 1997), oral histories and contemporary practices (Russell-Smith 2001). However, this reconstruction of Aboriginal knowledge about fire is more than just historiography because, in both Aboriginal and Western discourse, fire is highly significant in defining the relationship of people to the land. Two aspects to this significance are of interest here.
The first concerns the significance of fire to proprietary interest in land, and the shift from the earlier view that, because the Australian landscape was uncultivated it was therefore available for legitimate claim by Europeans (Mitchell 1965:333), to the quite contrary notion that the firing of the land by Aboriginal people constituted farming of it by them (Jones 1969), a notion with clear implications for their interest in it. Although Aboriginal people through their active use of fire to manipulate the landscape and promote an increase over natural yield invest the equivalent of Locke’s cultivation in land (Jones 1990:47), this has not yet been taken to constitute a legal ground for their proprietary interest (Butt and Eagleson 1993). This praxis is, however, central to a proposal by ecologists that land be returned either to the control of Aboriginal people (Whitehead 1999; Bowman et al 2001), and to an argument that Western Ecology embrace a conservation ethos toward the landscape based on Aboriginal ecological paradigms (Rose 1988). The second aspect concerns the construction of Aboriginal subjectivity. This was discussed briefly above, and will be expanded upon later.

The evolving representation of Aboriginal Ecology is the product of a dialogue between the multiple discourses converging on this landscape, a dialogue that negotiates and contests the subject positions arising from and laying claim to the land. Aboriginal Ecology – and especially that aspect concerned with fire – is directly implicated in the assertion of ownership of the land and in the control of its material and semiotic resources. It is thus ‘a place where relations of power are actually exercised and enacted’ (Fairclough 1989:43) and through which ‘individuals come to speak ... themselves into being’ (Poynton and Lee 2000:5). It is therefore more than mere history: it is discourse and, moreover, it is a discourse that has gathered momentum during the last two decades to culminate in a series of texts whose significance for land ownership and Aboriginal subjectivity are the focus of the analysis which follows. Before proceeding to this analysis, however, it may be helpful to examine the metaphors upon which it is founded.
Chapter Three

The Emergence of the Western Discourse on Aboriginal Fire Ecology

Fire is one of the most potent metaphors in the discourse on Aboriginal Ecology. In Western discourse, fire means warmth and light, hearth and safety, but its alternative connotations of danger and destruction, uncertainty and the darkness beyond are among the colony's earliest impressions. Governor Phillip wrote:

They certainly are not pleased with our remaining amongst them, as they see we deprive them of fish, which is almost their only support; but if they set fire to the corn, necessity will oblige me to drive them to a greater distance (Phillip cited in Williams and Frost 1988:187).

Irrespective of whether Aboriginal people were trying to starve the settlers out or the Governor's corn was planted in the path of fire lit for other reasons, fire is one of the earliest symbols of the conflict generated by European colonisation, a conflict which persists two centuries later:

a tourist operator called the police to Mitchell Plateau in the 1980's when landscape burning by a traditional owner threatened his infrastructure (Bowman and Vigilante 2001:42).

For Aboriginal people, the right to burn country is the ultimate expression of ownership (Nancy Williams pers comm). Some early settlers appreciated the role that fire played in bringing order to the space inhabited by Aboriginal society, a significance noted by the author of an early orthography:
Kalla Fire; a fire; (figuratively) an individual's district; a property in land; temporary resting place;

Kallabudjor Property in land;

Kallai Denoting a knowledge of localities; familiar acquaintance with a range of country ... also used to express property in land ... (Moore 1884b:39 cited in Hallam 1975:43).

In the West Arnhem language Kunwinjku, the metaphor fire links individuals with their kin, with their totems and with their dreaming:

A child also learns that fire, and flames (birlino), or in some areas fire-drills (kundjakkorl) may represent important distinctions. These are related to but separate from the dreamings which pass in the father's line and the groups are defined in respect of matri-lines. In the study area there are five of these matri-totems commonly recognised: kunrak (fire or flames), kundjakkorl (firesticks), kunwardde (stone), kundayarr (pandanus), kundung (the sun, which also signifies time); djoned (march fly); kurrumulmul (a thin stemmed swamp paperbark) (Yibarbuk 1998:2).

Yibarbuk's reference to 'the secret of fire' (1998:1) indicates the radical position that this metaphor occupies in the Kunwinjku symbolic and social orders. Both 'secret' (from the Latin secretus, separate), and its synonym mystery (from the Greek mustikos, initiated person), refer to a 'hidden meaning', something 'arcane' and thereby 'understood by few' (Concise Oxford). Jones describes the significance of fire in terms of its being one of the 'core associations dealing with country and people' (1991:35). Yibarbuk declares this association to be not just conceptual, but existential:

in our traditional knowledge ... it is a thing that brings the land alive again. When we do burning the whole land comes alive again - it is reborn (1998:1).
Jones notes that the polysemic sets 'tree/firewood/fire/hearth' and 'camp/ground/dirt' are common among Australian Aboriginal languages, and, furthermore, identifies the elements 'fire-drill' and 'hearth', occurring in Ybarbuk's semantic set above, as metonyms linked with the concepts 'language', 'name', 'custom' and 'tradition' (Jones 1991:34). In other words, fire is a key conceptual metaphor (Lakoff and Johnson 1980:4) linking Aboriginal people with country. Not only is fire fundamental to Aboriginal identity, it is central to the relationship with—or, more specifically, control over and ownership of—country.

There had been some early recognition of the significance of fire in the ecology of Australian Aboriginal people, notably by the French navigator Vancouver who was the first to observe that it was central to their management of natural resources (Horden 2000:327), and subsequently by Mitchell (1969), Thomson (1949c) and Tindale (1959). However, Jones' coining of the catch-phrase 'fire-stick farming' moved it into the foreground of the Western discourse on Aboriginal Ecology. Jones' choice of the term 'farming' poses a direct challenge to the notion of Aboriginal people as passive slaves of the environment, in contrast to the impact of agricultural or industrial man, who is seen as the master of nature, the initiator of ecological change (1969:224).

... parasitic on the landscape, ... only using the resources of the land and not working it, not putting anything back (1980b:10).

Jones' distinction here between hunter/gathering and agriculture focuses on these as respective strategies to manipulate or respond to the availability of resources. In contrast to a dependence upon a beneficent Nature (Cook 1893:322), Jones depicts Aboriginal ecological capabilities as at least equal to the Europeans who supplanted them (1980a:25). The key to this elevation in the ecological status of Aboriginal people in Western discourse is the evolving European perception of fire. Fire has
been variously described as the ‘first great force employed by man’ (Stewart 1956 in Gould 1971:14), ‘man’s first extra-corporeal muscle’ (Jones 1969:228), and as the ‘tool’ which initiated the agricultural ‘revolution’ (Lewis 1982:49, 65). Jones identifies fire as one of the three tools possessed by Australian Aboriginal people which ‘propelled man on his evolutionary trajectory’ (1980:6).

Hiatt and Jones consider fire to be a key element in the ecological arsenal that enabled the successful adaptation to the Australian savanna by ‘colonists ... from the coastal swamps of South East Asia’ (1988:1). They suggest that, ‘through firing the country in a systematic way in hunting or to clear the ground for easier travel’, the first colonists transformed the environment (Hiatt and Jones 1988:2). They also suggest that their environmental impact during this early phase included ‘the rapid extinction of more than a third of the existing land fauna’ (Hiatt and Jones 1988:2), a representation which more recent discourse has considered adverse to Aboriginal interests and tried to revise (Langton 1998).

By calling fire a ‘tool’, Jones signifies its role in conscious and intentional manipulation of the environment. This representation of Aboriginal ecological behaviour is at odds with those of Thomson (1949a:17) and Tindale (1959:42) wherein ecological change resulted only incidentally from Aboriginal hunting and foraging. Whatever the states of mind that produced it, the legacy left by the Aboriginal colonists poses a conundrum for their Western successors (Jones 1969:227). Bowman argues that there is no doubt about ‘our responsibility to conserve’ this legacy (1998:404), and that this requires the application of a fire management regime similar to that prevailing when Aboriginal people occupied and fired the landscape (Russell-Smith et al 1997). This essay will show that the conundrum is not, as Jones suggests, ‘what do we want to conserve?’ (1969:228), but the social implications of reconstructing this regime of fire management.
Jones suggests that not only do Aboriginal people fire country with specific purpose but that this burning is systematic (Jones 1985). Moreover, the burning is not simply exploitative and intended to produce an immediate result such as flushing out small game (cf Haynes 1991:67), but is predictive and carried out with 'ecological knowledge of the long-term consequences of their use of fire' (Bowman 1998:385). Fire thus takes on an intellectual dimension, ecological knowledge rather than simply ecological praxis, although 'ecological' falls far short of the full scope of meaning attached to the concept in the discourse on Aboriginal Ecology:

They set fire to it in order to curate it, to look after it (Jones 1985:204).

Just as the concept 'fire-stick farming' extends the significance of fire to associate it with praxis that is informed, strategic and leading to an increase in food supply in contrast with mere opportunism, so too does 'curate' extend its meaning to include 'looking after' the landscape in contrast with solely exploiting it. It is apparent that Jones intends 'curation' as an extension of the 'farming' metaphor, since he associates curative fire with an overall practice subsumed under the rubric 'horticulture', or as his informant put it, 'all the same garden' (1985:204).

Western notions of agriculture do accommodate the use of fire as an ecological tool: 'Welsh hill shepherds' use fire to promote pasture (Jones 1969:226). Also, Western agriculture provides for 'looking after' the landscape: it is implicit in the term 'sustainable agriculture'. Although 'fire-stick farming' and 'curation' are both innovations in the discourse on Aboriginal Ecology, they therefore sit comfortably within conventional ecological thinking. However, 'curate' has a potential for meaning which exceeds 'looking after', and it is apparent from the context in which Jones uses 'curate' that he refers to this wider network of meaning. The full potential of this metaphor for the discourse on Aboriginal Ecology can be appreciated by considering the contexts in which its etymon, cura, was applied in Latin: in religion, in medicine and in farming (Cassell's New Latin Dictionary 1964).
In its religious sense ‘curate’ signifies a member of the clergy, and is used in the context of institutional religion rather than landscape, although Nature (capitalised and apotheosised) has religious – or at least philosophical – connotations. This usage implies that spiritual motives may underlie Aboriginal ecological praxis, and Haynes, whose text is discussed below, clearly attaches religious significance to the curation of landscape with fire by Aboriginal people (1985; 1991). According to this reading, Aboriginal Ecology concerns the relationship between humans and not only the natural world but the supernatural as well. Rose (1988), discussed later, describes one such concept of Aboriginal Ecology. Moreover, Aboriginal cosmology may fail to draw the distinction between the natural and the supernatural that is fundamental to Western scientific thought (Hiatt and Jones 1988:10; Bradley 1997:76), suggesting that the two differ in their perception of causality and consequently of ecological agency. The significant problems posed by this difference for the translation of Aboriginal ecological knowledge into Western discourse forms a key element in the analysis that follows.

The medicinal connotation of ‘curate’ is also evident in Haynes (1985; 1991), where he introduces the notion of Aboriginal land management as a cure for the destructive effects of Western fire management on Central Arnhem Land forests of Cypress Pine, *Callitris intratropica*. The notion of returning landscapes to traditional Aboriginal management to cure or protect them from the damage caused by wildfire is a prominent theme of recent ecological text, and especially that produced by Russell-Smith and Bowman. It is especially in this context that Aboriginal ecological knowledge is being appropriated to serve the objectives of Western land management.

This reading of Aboriginal Ecology as an agrarian equivalent is not universally accepted. Gould argues that the subsistence strategies employed by the Aboriginal people of Central Australia fail to qualify as agricultural on several counts, in particular that, although they harvest staples, they do not accumulate surpluses,
cultivate, build earthworks or enact fertility rites (1971:23). Furthermore, fire is the only agency through which they intervene in natural ecological processes, and they are apparently unaware of its ecological role, and deploy fire for no more than immediate outcomes and with often unintended and undesirable consequences (Gould 1971:23).

Although thereby not qualifying Aboriginal subsistence strategies as agrarian, fire is nevertheless highly significant for Aboriginal people. Despite their showing a 'casual' attitude to the setting of fires in the landscape, Gould cites various applications of fire which demonstrate its importance for their survival: to clear overgrown wells, to clear spinifex campsites of snakes, to obtain firewood, to roast meat, to hunt, for warmth, for signalling, for illumination, and in ceremonies (1971:16-21). In addition, Gould refers to the 'symbolic value' of fire in the Western Desert, to mythology describing its introduction, and to totemic rituals in which fire plays a role (1971:17).

Gould (1971), like Jones (1969), is often cited as a seminal text in the development of theory about the ecological role of fire in the Aboriginal landscape. Although Gould (1971) denies that fire plays any role in ecological agency, insofar as Aboriginal people conscious manipulate the landscape toward longer-term outcomes, his text further demonstrates the persistent attention given by Western discourse to the ceremonial aspects of fire.

Conceptualising Aboriginal use of fire as 'farming' entails a shift not only in how Europeans interpret Aboriginal relationships with land but in the concept of farming itself, a shift with implications for how Europeans view their own ecological strategies. Hallam points out that European concepts of farming are based on cereal production, which is just one 'specialised mode among the wide gamut of forms of symbiosis and exploitation between human and other biological com-
munities' (1975:1). The 'more generalised modes' of 'symbiosis and exploitation' adopted by Australian Aboriginal people do not qualify under this narrow definition, because their use of fire 'to modify and exploit their terrain ... is not usually considered sufficiently deliberate, laborious, or drastic to be called farming' (Hallam 1975:12).

Hallam (1975) refers extensively to the work of Jones and Gould in her analysis of this question, but relies for evidence primarily on text produced by the first European settlers and explorers of the southwest of Western Australia. One of the more remarkable aspects of this 'rich 19th century record of Aboriginal landscape burning' (Bowman 1998:389) is that it demonstrates that the settlers recognised a relationship between Aboriginal people and the land that was based not only on their religious and cultural affiliation but, more significantly from the Lockean perspective, on their securing 'a provision from the ground by hard manual labour' (Grey 1841:11-12 cited in Hallam 1975:13). Even so, the settlers felt morally and legally justified in taking the land from them. Grey, one of the more ardent proponents of Aboriginal subsistence as farming, was not alone in believing that European colonisation was divinely preordained (1884:220-1):

But as they have been passing from creation they have performed their allotted task; and the fires of the dark child of the forest have cleared the soil, the hills and the valleys of the superabundant scrub and timber that covered the country and presented a bar to its occupation. Now, prepared by the hands of the lowest race in the scale of humanity ... the soil of these extensive regions is ready to receive the virgin impressions of civilised man .... (Byrne 1848:11,321 cited in Hallam 1975:76).

Although the 'confinement' of the settlers to particular tracts of land reflected a European notion of 'territoriality' incompatible with Aboriginal concepts (Hallam 1975:13), the settlers were nevertheless aware that the peripatetic burning 'was not
an accidental or incidental activity of the Aborigines, but was closely meshed into their pattern of life' (Hallam 1975:29). According to Hallam, the significance of fire in Aboriginal society is more than simply ecological in the Western biological sense of the term. It is a conceptual metaphor (Lakoff and Johnson 1980:4) that is central to the constitution of Aboriginal subjectivity:

Fire had both ecological and symbolic significance in the linking of Aboriginal life and land, in perception by human groups of themselves and their environment, and participation by each in the shaping of the other (Hallam 1975:31).

According to some Western authors, especially those writing from an ecological perspective (Lucas et al 1997:120; Bowman 1998:404), Aboriginal participation in Western discourse is an essential requirement if Aboriginal ecological knowledge is to make a meaningful contribution to Western land management. Aboriginal people, on the other hand, may be motivated to take part in the discourse by a desire to express their proprietary interest in country. Land ownership is no less associated with ecological praxis for Aboriginal people than it is for Europeans. Indeed, Hallam (1975) argues, in Aboriginal society relationships with land are not only juridical but social, existential, symbolic and ceremonial, as well as ecological in the Western sense of the word.

Hallam cites several texts to demonstrate that early settlers recognised that Aboriginal people 'owned' the land (1975:67-8). Their pattern of ownership was manifest in their travel through the landscape following rivers, soakages and waterholes. Their ownership of the country thus correlated the distributions of water and fire, a pattern upon which European colonisation was superimposed:
utilising the same tracts of country ... using the same network of nodes (at water sources) linked by tracks (Hallam 1975:67).

When Aboriginal people returned during their seasonal round to land now occupied by settlers, fires led inevitably to conflict, invoking diametrically opposed responses to fire in the landscape:

On 15 Dec. my home and all it contained was destroyed by fire ... a native set my run on fire which spread to my house while I was absent (Grahame 1862 cited in Hallam 1975:75).

Such accounts elide over the settlers' own role in erasing not only the infrastructure of Aboriginal society, but the ecological praxis of Aboriginal people upon which the colony depended:

the progress of exploration and settlement had depended and continued to depend on indigenous knowledge, use and development of the country and its resources (Hallam 1975:66).

The ongoing dependency of Western settlement on Aboriginal ecological knowledge is a prominent theme within the discourse on fire management in North Australia, a dependency of its own making. Colonisation consigned 'the skilled developers of the land' to the status of 'indolent ne'er-do-wells', reliant on the generosity of the settlers who had 'robbed' them of 'the land which had mapped out the patterns of their existence' (Hallam 1975:65). By displacing the land management which had created the landscape upon which their own occupation was grafted (Hallam 1975:67), the European colonists created the circumstances by which the ecological skills upon which they depended became increasingly both necessary and unavailable.
The limitations of the European approach to land management in Australia, and of Western Ecology on which it is based, were demonstrated during a pilot forestry project in north Central Arnhem Land. Forestry is an interesting context in which to consider Aboriginal ecological praxis, since it works through essentially the same ecological paradigm as agriculture while regarding fire as one of the primary factors in managing its resource. This encounter between Western and Aboriginal fire management marks the start of the stage in the discourse that is the focus of this essay. While there was already recognition that Aboriginal fire management was ecologically effective and conservative (Jones 1969), Haynes' (1974) reporting of events at Maningrida during the early 1970's entrenched in the discourse the notion that

an Aboriginal type of fire-management programme was in the long run the best policy for some of the tropical savanna woodlands of Australia (Jones 1980b:124-5).

Following Haynes, this notion developed into a concerted appropriation of Aboriginal ecological knowledge concerning fire for the purpose of improving the management of the North Australian savannah, particularly to conserve the biodiversity that Jones (1969) characterized as a legacy of Aboriginal fire-stick farming. The analysis below examines a set of texts in which this concept is developed and applied, as well as some others that contributed further significant elements. That it is appropriate for the analysis to approach these texts as discourse in the Foucaultian sense (Fairclough 1992:49) is demonstrated by Haynes' (1974) account of the social and ideological conflict that lay at the heart of the events he describes.
While the Aboriginal people of Maningrida appreciated the role of the forestry in exploiting the timber (since it offered employment and provided the materials for sought-after housing), it also evoked horror and fear, anger and resentment (Haynes 1974:103). The specific cause of the latter was violation of ritual places by forestry operations, but there was also strong resistance to the approach that forestry took toward fire management, and there was no appreciation of the role of forestry as a conservator of the resource. Fire exclusion was the backbone of the conservation program and, during the critical fire month of October, a series of fires were lit by Aboriginal people upwind, and these then ran together, feeding on fuel accumulated over several years of careful fire suppression, producing the first known crown fires in North Australia, and razing all regeneration and many mature stands of Cypress (Haynes 1974:102-3).

Haynes was subsequently hired as an advisor to the Aboriginal management that took over the forestry operations (1974:105), providing him with the opportunity to closely observe Aboriginal fire management. He notes that it has primarily 'totemic/religious and ritual purposes', a rationale captured in the sobriquet 'clean up the country' (Haynes 1985:211). Haynes uses this epithet to contrast Western and Aboriginal views of landscape:

It is possible to look at the part of fire in cultural life in a number of ways. Most white Australians view bushfire as a nuisance, or something to be feared, regardless of intensity. At even the most superficial level, my informants had a radically different view. In driving or walking through freshly burnt country, with some logs still smoking, my companions frequently commented on how good and again, 'clean', the country looked, whilst to me it appeared bad: black, dry and lifeless (1991:69).

Haynes also notes that, though spiritually motivated, Aboriginal burning not only has practical outcomes, but is carried out 'carefully, deliberately and pragmatically',

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and exhibits 'discernment, discrimination and order' (1991:62). Further, Aboriginal fire management constitutes a 'complex technology' (Haynes 1991:63). Haynes cites numerous alternative reasons that Aboriginal people offered in response to his asking why they lit fires, reasons that included promoting green pick to attract macropods, driving them toward waiting hunters, stunning smaller animals, and conserving plant food resources (1985:210).

Haynes, like his contemporaries Jones (1985a) and Russell-Smith (1997), considers Aboriginal fire management within the framework of the seasonal calendar. 'Fire season' (Haynes 1985:206; 1991:61) associates Aboriginal fire management with the 'seasonal cycle', 'sequential burning' (Haynes 1985:208) indicating that management is based not on an abstraction but on empirical observation of natural processes. Furthermore, the management is not ad hoc but is done according to 'old custom' (Haynes 1985:208) or established principles.

His references to 'control', 'timing and placement' and 'precise' (Haynes 1985:208, 209) draw attention to the strategic nature of the management, implying advance knowledge of the behaviour of fire in different environments in different seasons. The fire management varies in response to not only the ecological characteristics and flammability of the particular biome, but to the behaviour of food species.

Because the ceremonial aspects are those of primary significance to Aboriginal people, secular interpretations consider only part of their fire management. Haynes points out that obtaining and interpreting the greater part of the technology 'still to be discovered by Europeans' relies on informants being willing to pass on information. Indeed, Haynes is able to address the ceremonial significance only indirectly, his informants being 'reluctant to discuss the purpose of 'cleaning' in detail because they [were] unable to divulge some of the totemic/religious symbolism related to fire' (1985:211).
A clue to understanding the significance of cleanliness, in that sense, came from the ritual approach to a dangerous totemic site, djalag. The site had to be approached by particular individuals (and is forbidden to all others) who sing its totemic song, burning the grass as they continuously approach the site from the north-west. This can only be done while the south-east winds of the cold weather are blowing. Smoke blows back over them as they approach. 'The smoke keeps us clean, and our country too. If everything is clean, the dreaming will be quiet' (Haynes 1991:69).

The ritual approach to the totemic site – from a particular direction, at a particular time, by particular individuals performing specific actions – defines a space (physical, temporal, social and metaphysical) over which the ritual seeks to exercise control. This space is the conceptual foundation of Aboriginal Ecology, just as the biological ecosystem underpins Western Ecology. It is a space containing not just the natural world – the empirical world inhabited by human beings – but includes the domain ‘inhabited by gods, ghosts and demons’ which is accessible ‘spontaneously through the act of dreaming’ and which ‘the act of ritual’ contrives to introduce into ‘the domain of mortals’ (Jones 1991:22). The essential meanings of fire in Aboriginal Ecology necessarily elude Western signification, its symbolism as evanescent as the smoke blowing from burning grass.

Jones (1969) and Hallam (1975) concluded, as did the explorer Mitchell (1969), that the Australian landscape was the product of Aboriginal burning. Haynes (1985; 1991) takes this concept further, observing that Aboriginal fire management is better at producing the practical ecological outcomes desired by a Western system of land utilization than is that Western system. Following Haynes, an outstanding characteristic of the discourse is its documentation of both the content and praxis the knowledge underpinning this management. Although earlier texts had paid some attention to this knowledge (eg Leichhardt 1847), this more recent documentation is premised on the view that Aboriginal ecological knowledge contains elements that are essential for the fire management of North Australia, and is marked by a sense
of urgency motivated by a view that both the knowledge and the biodiversity that it sustains are disappearing (Russell-Smith et al. 1997). This more recent development in the discourse is the focus of the analysis that follows.

The analysis seeks to demonstrate that this development, while appearing to democratize the Western discourse on Aboriginal Ecology by opening its production to those represented within it, is instead a continuation of the colonial discourse. The analysis examines this approach to the management of fire in North Australia in terms of its role in securing the successful transposition of European ideologies onto the Australian continent, ideologies that include land ownership and conservation. An important aspect of the analysis is the role of the discourse in grafting Western subjectivity onto an Aboriginal landscape. This appropriation of subjectivity has implications not only for the relationship between humans and landscape as understood within Aboriginal discourse, a relationship that Western discourse interprets through the trope of ownership. By contributing to the erasure of Aboriginal subjectivity and its substitution by a proxy of Western construction, it is the process by which Western scientific discourse contributes to the appropriation of land.

The selection of texts for analysis has been made on the basis of significant contribution to the discourse on Aboriginal Fire Ecology, as well as their role in promoting its application in the fire management of North Australia. Foremost are texts by the two ecologists, Russell-Smith and Bowman, which focus on the role of Aboriginal burning in the production of North Australian ecosystems, and which advocate the incorporation of Aboriginal praxis in their current management.

Also included in the analysis are texts by Aboriginal authors, Langton (1998) and Yibarbuk (1998; Yibarbuk and Cooke 2001; Yibarbuk et al. 2001); the essay argues that their references to these representations of Aboriginal Ecology (in particular those in Bowman's text) promote favourable Aboriginal subject positions.
Another set of texts provides important context to the analysis: Rose (1988) addresses the paradigm of the Dreaming myth through which ecological knowledge is reproduced in Aboriginal discourse; Bradley (1997) describes the nature of an Aboriginal landscape and its inextricable subjective and spiritual dimensions. In addition, Andersen (1999) identifies what makes fire management contentious: the ideologies and subject positions through which control over the land is exercised. The analysis of Bowman et al (2001) critiques the translation of Aboriginal discourse into the Western scientific paradigm.

The analysis shows that the arcane spiritual and subjective metaphors through which Aboriginal discourse interprets ecological relationships – previously indicated by Spencer, Warner, Thomson and Haynes, but also evident in the texts analyzed – pose a problem for the accurate translation of this Ecology into Western scientific discourse, a discourse that relies on objective truths that can be empirically verified (Lakoff and Johnson 1980). There is a consistent representation within the Western discourse, in texts examined in the historical overview above (Spencer 1928; Warner 1969; Hallam 1975; Jones 1991; Brockwell et al 2001) as well as in texts by Aboriginal authors examined later (Yibarbuk 1998), of Aboriginal Ecology as comprising the relationship between humans and both the natural and supernatural domains, and of this in turn comprising the basis for the conceptualization in Aboriginal discourse of human subjectivity.

The essay seeks to demonstrate that the shift during translation into Western scientific discourse from a subjective to an objective paradigm supports the erasure of subjectivity. It argues that this erasure perpetrates the European colonial discourse, because the erasure of people from the landscape enables its characterization as empty and available for legitimate occupation. Moreover, it enables Western discourse to people the landscape with a construct based on Western ideology, such as the Noble, or in this case Knowledgeable, Savage. The
erasure also has semantic implications, in that it significantly alters the meaning attached to referents, again substituting something constructed within Western imagination.

The analysis construction of alternative Aboriginal subject positions was illustrated during the discussion of Schrire (1984b) above. The analysis focuses in particular on the nature of this proxy: a highly favourable representation of Aboriginal people as responsible, knowledgeable and skilled ecological agents who pro-actively deploy fire to reproduce ecosystems. This representation credits Aboriginal ecological praxis with the creation of Australia’s biodiversity, underpins the scientific quest for Aboriginal ecological knowledge about fire, and justifies the basing of fire management in North Australia on Aboriginal Ecology.

Another representation depicts Aboriginal burning contributing to the extinction of Australia’s megafauna (Jones 1975:29; Flannery 1994). The analysis examines Langton’s (1998) references to, and normalizing of, Bowman’s more favourable representation (1998) for the purpose of contesting this less favourable representation, and thus demonstrates how the discourse serves as an arena in which subject positions are contested. The analysis seeks to demonstrate that, because the discourse is engaged in determining control over land, this contestation is concerned not simply with determining whether a particular subject position is valid or not, but with aligning it with the power of the dominant discourse. It will become apparent during the analysis of Yibarbuk’s text that this contestation, although ostensibly about control over land, is ultimately about control over the production of the subjectivity which draws from the semiotic landscape.

Western colonial discourse has utilized Aboriginal Ecology in claiming and settling the Australian continent. It continues to utilize that knowledge and praxis to secure that occupation, by developing fire management based on the principles of Aboriginal burning. Agrarian settlement, with its defensive attitude to fire (Phillip
1788 cited in Williams and Frost 1988:187; Hallam 1975:75; Bowman and Vigilante 2001), radically altered the fire regime in Australia. Given the intrinsic propensity of the Australian bush to burn, however, fuel accumulated through fire exclusion inevitably leads to more severe fires. Wildfire is not only a threat to settlement itself (Pryor 2002) but to biodiversity, a characteristic of the Australian landscape that is viewed as a legacy of Aboriginal burning (Jones 1969; Bowman 1998). The continued application of an Aboriginal style of fire management to maintain this legacy is motivated not simply by the pragmatic requirement to maintain the qualities of the landscape which made settlement materially possible (Hallam 1975), but is influenced by the complex ideology of conservation, an ideology that among other things views landscape as the basis for human identity (Jeans 1983:171; Black and Rutledge 1995; Tacey 1995; Head 2000:214).

This utilization of Aboriginal Ecology to secure Western occupation clearly revises earlier discourse that represented Aboriginal ecological praxis as inferior to European ‘art and industry’ (Mitchell 1969:422; Grey 1984:217). If Aboriginal praxis was responsible for the production of, and is necessary for the continued maintenance of, the ecosystems upon which agrarian settlement depends – there is an evident need to revise the definition of cultivation (Hallam 1975:12) when representing pre-contact Australia as a land where ‘the Natives know nothing of Cultivation’ (Cook 1893:318). The appropriation of Aboriginal Ecology by Western discourse to advance European colonisation supports this revision and, if it is accurate to say that the land was cultivated not with a plough but with fire, undercuts the Lockean premise upon which the legitimacy of European claim was based (Mitchell 1965:333).

The analysis is not concerned with any significance this revision might have for land ownership under Western law – legal disputes over ownership are decided on other criteria, such as alienability and the existence of a system of laws (Butt and Eagleson 1993). Rather, it examines the striving within the Western discourse on Aboriginal
Ecology to arrive at a truth or authenticity of Aboriginal ecological knowledge, and the application of this knowledge to exercise control over natural processes. This control does not constitute proprietary interest in land in a Western legal sense, but it does determine which ideologies – or mythologies – are imposed. An illustration of this process, albeit an extreme expression of it, is Whitehead’s suggestion that the most effective way to achieve Western land management outcomes is to return land to Aboriginal hands (1999), a suggestion that echoes Haynes’ (1985) conclusion.

The discussion thus far has traced the history of the Western discourse on Aboriginal Ecology and its role in the European colonisation of Australia. The analysis of the discourse that follows examines its continuing role in this process, abetting not only settlement but also the transposition of European ideologies. The analysis considers the discourse as an arena in which a struggle is being enacted, between the ideologies – or mythologies – that underpin the competing Ecologies, and for control of the landscape itself and its derivative subjectivities.

In reproducing an Aboriginal Ecology, Western discourse constructs subject positions that refer to this landscape, and the analysis argues that the power contingent to the dominance of the discourse makes these subjectivities highly coercive. The authority that the discourse attaches to the Aboriginal subject positions, however, provides both Aboriginal producers with access to this power and Western authors with access to an authentic Aboriginal Ecology. The analysis leads toward an examination of this dynamic – an apparent democratization manifesting as a struggle for the control of the Western discourse on Aboriginal Ecology.
Section Two

The Analyses
Chapter Four

Preamble

The preceding historiography depicts Western discourse ascribing a range of characteristics to Aboriginal Ecology. The earliest texts represented Aboriginal people as being at one with nature, a nature that provided for their subsistence through ecological processes over which they exercised no control. Subsequent texts that recorded their use of fire in managing the landscape deemed this to be nevertheless an 'art and industry' that was inferior to that of Europeans (Mitchell 1969:422; Grey 1984:217), and to thereby earn no interest in the landscape that might inhibit European claim over their land. Aboriginality was seen as an immersion in the natural landscape of Australia, an autochthony that precluded its alienation as their property (Stokes 1969a:394-5; Butt and Eagleson 1993:45).

Anthropology turned attention toward the landscape of Aboriginal imagining, with the relationship with country described in the metaphor of myth (Spencer 1928; Warner 1969), and the myths themselves as texts of accumulated adaptive knowledge (Tindale 1959). Ecological discourse provided paradigms through which to interpret the distribution of Aboriginal populations, their cultural adaptation to particular environments, and their economic systems (Tindale 1959; Thomson 1949a). The discourse then came to regard Aboriginal mythology as the paradigm through which Aboriginal discourse reproduced ecological knowledge (Warner 1969; Jones 1990), and to regard the paradigm as valid because it has been effective in producing desirable ecological outcomes. Furthermore, Western discourse asserts that through this paradigm Aboriginal discourse expresses territorial rights (Peterson 1975).
As if to affirm Grey's earlier suggestion that Aboriginal people were better equipped than Europeans to survive in the Australian environment (1984:221), the discourse now considers Aboriginal ecological strategies to be the product of millennia of adaptation to the Australian environment and hence more successful than the agrarian strategies of Europeans (Jones 1980a:25). Jones interprets their working of the land by burning it as an equivalent of European agriculture (1969). Hallam considers Aboriginal ecological praxis to be responsible for producing the biological landscape that made European agrarian settlement possible (1975:9).

With exceptions, notably Grey and Eyre, earlier discourse interpreted Aboriginal Ecology in such a way as to legitimate European dispossession of the Aboriginal inhabitants. The development of the more favourable representation of Aboriginal Ecology found in Jones' and Hallam's texts lays the foundations for the application of Aboriginal ecological knowledge in the production of Western land management outcomes. This is a continuation of the appropriation Aboriginal Ecology that was instituted by the early explorers and settlers (Reynolds 1991; Hallam 1975). Thus, having enabled European occupation, Aboriginal Ecology is now required to facilitate the adaptation of Western Ecology to the Australian environment.

This essay is concerned with the social implications of this ongoing appropriation of Aboriginal Ecology, and specifically with the more recent attention to Aboriginal ecological knowledge about the role of fire in the landscape (Haynes 1985; Press 1987; Head 1994). The appropriation of this knowledge by European colonisers to achieve effective control of natural processes such as fire, and to thereby further the process of their own adaptation, would appear contrary to the notion of Aboriginal Ecology as inferior (Mitchell 1969), and to thereby undercut the presumed legitimacy of any European claim based on Lockean premises (Alvey 1987:3-10). While this shift in the representation of Aboriginal land use might not suffice to
challenge the status of Aboriginal tenure within Western legal discourse, it has led to the proposal that land be returned to the control of Aboriginal people (Whitehead 1999; Bowman et al 2001). This proposal, referring to land already under Aboriginal tenure in Arnhem Land, as well as the more general proposal that the principles of Aboriginal Ecology should inform Western fire management practices across the breadth of North Australia (Russell-Smith 2001), raises questions that extend beyond the relationship between land and its inhabitants as conceived in either Western legal or ecological discourse.

This appropriation of Aboriginal Ecology requires the translation of Aboriginal ecological knowledge into Western discourse. It will be shown by textual analysis that the translation into the reductive and objective metaphors of Western Science strips a subjectivity from the knowledge that is its significant element. While this clearly impacts on the accuracy of the translation, the principal concern of this essay is its social implication. The erasure of subjectivity textually erases from the landscape the subject positions through which the knowledge is constituted and represents the land as empty and available, not so much for occupancy since European colonisation has already displaced Aboriginal habitation and ritual management, but for the application of Western ideologies.

In its empirical quest for a true and accurate representation of Aboriginal Ecology, Western discourse turns to the source of that knowledge, Aboriginal discourse itself. There are various representations of this discourse: by Western authors – retrieving observations of Aboriginal praxis from the journals of explorers (Braithwaite 1991; Fensham 1997; Hill et al 2001; Vigilante 2001), recording ecological knowledge from contemporary Aboriginal individuals (Russell-Smith et al 1997; Bowman et al 2001), and describing Aboriginal ecological paradigms (Rose 1988; Bradley 1997); and by Aboriginal authors inscribing directly into Western discourse (Yibarbuk et al 2001).
This emphasis on how Aboriginal Ecology is expressed within Aboriginal discourse reflects a shift in focus from people in the landscape to the interaction of people with the landscape. However, this is still a representation 'of', rather than 'from', the 'native's point of view' (Marcus and Fischer 1986:25; Geertz 1976). It is constructed through the Western paradigm which interprets 'the facts of the world' as though they exist 'independently of us as observers', a paradigm referred to as 'modernism' (Gergen 1991 in Schwandt 1994:125).

Modernism subscribes to the view that 'incomplete knowledge is an obstacle to be overcome' (Rose 1997b:73), and that this can be achieved through scientific method with its positivist emphasis on 'validity, reliability, generalisation, prediction, and control' (Manning and Cullum-Swan 1994:463), concepts that are characteristic of 'Western culture and institutions' (Rose 1997b:73). Postmodernism, by contrast, is an approach to knowledge that developed in the 1960's under the influence of semiotic theory (Rabinow 1986:248; Manning and Cullum-Swan 1994:467). It dismisses such notions as no more than a quest for a 'scientific utopia' (Tyler 1986:139). Postmodernism strives not to construct knowledge through yet another paradigm but to adopt an approach which is 'post-paradigm', and to remain incredulous towards the meta-narratives of Science (Marcus and Fischer 1986:8). Tarnas’s description captures something of the scope of postmodernism:

an antinomian movement that assumes a vast unmaking in the Western mind .... deconstruction, decentering, disappearance, dissemination, demystification, discontinuity, difference, dispersion ... an epistemological obsession with fragments or fractures, and a corresponding ideological commitment to minorities (1991:401).

Postmodernism does more than simply challenge the absolute certainty of the scientific paradigm: it undercuts the presumption of European culture as 'the unquestioned and dominant centre of the world' (Young 1990:19). Its concern with decentering democratises the Western discourse, providing opportunities for
Aboriginal producers to access 'prestigious discourse types ... and [the] powerful subject positions within them' (Fairclough 1992:202). It suspends 'grand theories' 'in favor of a close consideration of such issues as contextuality [and] the meaning of social life to those who enact it' (Marcus and Fischer 1986:8). In Malinowski's terms, to represent Aboriginal Ecology from the post-modern perspective is 'to grasp the native's point of view, his relation to life, to realize his vision of his world' (Malinowski 1922 cited in Marcus and Fischer 1986:25). In the sense that the texts below mark a democratic turn in the discourse, it is at this point that the discourse encounters postmodernism.

Although to suggest that Science could be postmodern may appear oxymoronic, its interest in the ecological role of Aboriginal subjects is at odds with its pursuit of objectivity. The analysis seeks to demonstrate that, although it foregrounds the role of Aboriginal subjectivity as a significant element, Western ecological discourse does not leave Aboriginal subject positions intact, but instead requires their erasure and subsequent substitution by those constructed within the Western discourse.

The analysis considers whether this proxy subjectivity is coercive, insofar as it may appeal to Aboriginal producers of the discourse to identify with, and thereby reinforce, this subjectivity. Its appeal as an alternative to an authentic subjectivity may derive not only from its providing an encomiastic characterisation of Aboriginal Ecology, but also from its being aligned with the dominant discourse. That discourse allocates control over the semiotic landscape through which subjectivity is produced in Aboriginal discourse (Williams 1986a). Participation in this Western discourse, and subscription to its proxy Aboriginal subjectivity, provides Aboriginal people with the means to not only regain control over their land, but also to reassert control over the production of their subjectivity.
The texts analyzed below participate in an intertextual network. They draw from and build upon fundamental concepts inscribed by their precursors that constitute the concept of Aboriginal Ecology as it is understood in Western discourse. During their analysis this essay continues the inscription of the narrative in which these concepts were formulated.

Rather than being simply descriptive, as in the historiography above, the essay now takes a critical approach (Fairclough 1989:5), paying attention to textual cues that foreground the social implications of the discourse. The particular features analyzed vary from text to text. The analysis seeks to rewrite the texts (Barthes 1974) rather than to reduce them, because the reductive paradigm characteristic of scientific analyses is identified here as one of the main limitations to the translation of knowledge from an Aboriginal to a Western episteme. It is also identified as a means through which Western colonial discourse erases former inhabitants and legitimates itself (Niranjana 1992:169).

The approach taken below is to critically examine the production of each text within its social context (Fairclough 1992:78; Poynton and Lee 2000:5) and, by drawing the threads of this intertextual network into a narrative, to foreground the social implications of this Western discourse on Aboriginal Ecology. The essay acknowledges its own role in this intertextual network and, rather than refer to some notional absolute meaning of Aboriginal Ecology, participates in the active reproduction of a meaning which eludes definitive conclusion. The analysis presumes that the dialogue between Western and Aboriginal Ecological discourses produces an enigmatic outcome, rather than the objective truth sought by Western Science. The conclusion which forms the final chapter of this essay does not, therefore, purport to achieve a closure that eluded the texts included in the analysis but simply brings to the surface the enigma which sustains the essay’s narrative.
The analysis draws its texts from the fields of Ecology and Anthropology, and from a more recent genre distinguished by its Aboriginal authorship. It is a characteristic of the Western discourse on Aboriginal Ecology that it serves as a point of intersection between these otherwise quite separate discourses. Although the primary focus of the analysis is Ecology, the contribution from these other perspectives has given the discourse a broader scope. The narrative traces the process whereby the narrower Western paradigm has tried to grasp the broader Aboriginal sense of Ecology.

The analysis resumes the narrative from the point where the previous section left it. This is the development of the concept introduced by Haynes (1985), that the principles – and indeed the praxis itself – of Aboriginal Ecology should be incorporated into Western land management in North Australia, a concept substantially developed by two ecologists, Russell-Smith and Bowman. It would be redundant for the analysis to take the ecological content of the texts, and it does not intend to take their arguments to task. Instead, the analysis pays attention to less explicit processes within the texts, processes that assume significance only within the intertextual network that comprises the cross-disciplinary discourse. A description of the relevant analytical approach precedes the analysis of the respective texts, but the brief outline that follows describes the overall structure.

The analysis begins with a comparison of two texts (Russell-Smith et al 1997; Russell-Smith 2001) to illustrate the role of translation as an agent in the process of colonisation. It examines how the scientific metaphor that marks these texts as Western contributes to the erasure of the subjectivity that is central to the knowledge.
The fundamental assumption prompting the translation of Aboriginal Ecology into Western discourse is that Aboriginal burning is responsible for the production and maintenance of the diverse ecosystems of North Australia, and that the application of a similar regime is therefore essential for their survival (Bowman 1998; Russell-Smith 2001). The analysis examines the subject position that is implicit in this representation of Aboriginal people as responsible managers of the Australian environment, and the selective citation of this favourable ecological representation to advance Aboriginal subjectivity in social discourse.

In the same way that the earlier representation of Aboriginal land use as non-agrarian legitimated European dispossession under Lockean tenets, its representation as ecologically irresponsible justifies the application of a Western management regime under a Western conservation ideology. Both representations serve to rationalize the occupation and control of land that constitutes European colonisation. The analysis examines the role of the Western discourse on Aboriginal Ecology in contesting this colonial subjugation.

A demonstration of contested subject positions can be found in the debate over the role of Aboriginal people in the extinction of Australia's megafauna, a debate in which Flannery (1994) and Bowman (1998; Choquenot and Bowman 1998) take opposing positions. Again, metaphor is the textual feature of interest in the analysis. Bowman’s metaphor reflects his striving for 'incontrovertible fact' (1998:390) and his texts clearly demonstrate the scientific canon of producing objective truths. In scientific discourse this approach substantiates authority, an authority which is then available to authors in other discourses to refute dis-empowering representations. The analysis examines the use of Bowman’s representations of Aboriginal Ecology by Langton, a prominent Aboriginal academic and advocate, to refute Flannery’s notion that Aboriginal people were responsible for the extinction of the megafauna. Through Langton, the ecological subjectivity constructed in Bowman’s texts contests the premises of European colonisation. It is this imbrication with social power that make these positions attractive to, and coercive of, Aboriginal authors.
Scientific metaphor, and in particular objectivity, has significance not only for the manipulation of subjectivity, but also for the translation of a system of knowledge that is subjective in composition. The effect on meaning of the translation from a subjective to an objective paradigm is demonstrated later during an examination of another of Bowman's texts (Bowman et al 2001). This latter text differs from the previous (Bowman 1998) in its direct reference to Aboriginal discourse, an element that not only shifts Bowman's Ecological discourse into the province of Ethnology, but also reflects an increasing Aboriginal participation in the production of the Western discourse. This participation, evident all along in the sense that Western authors employed Aboriginal informants, took a more active form when Haynes (1985) advocated changing land management to incorporate Aboriginal praxis.

The representation of Aboriginal Ecology became more an expression of Aboriginal discourse when anthropological texts sought to represent the relationship between humans and their natural environment through Aboriginal paradigms (Rose 1988; Bradley 1997). The direct production of Western discourse by Aboriginal authors is the ultimate step in the process of democratization of the discourse considered here, the most active representative being Yibarbuk whose texts are analyzed last. Bowman et al (2001) represents an intermediate step in this process in that it makes a point of including, and authorizing, an Aboriginal Ecological perspective.

To examine more closely this democratic shift in Ecological discourse, the analysis examines two anthropological texts (Rose 1988; Bradley 1997). Rose (1998) is not specifically concerned with fire in North Australia, and its role in the analysis is to draw attention to this step that Western discourse takes toward including Aboriginal discourse. In Rose (1988) can be seen the notion emerging that the aspect of Aboriginal Ecology that is of value to Western land management is not the knowledge per se, but the paradigm through which it is known as well as its inherent ethos. The contrast between the Aboriginal and Western paradigms drawn during the analysis of Rose (1998) also allows significant differences between the two Ecologies to be identified.
A key difference concerns the nature of ecological agency and the role of the supernatural, a question addressed by Bradley (1997). Differences between Western and Aboriginal notions of causality impinge not only on the capacity for Western land management to apply Aboriginal ecological knowledge, but also on the nature of the knowledge itself.

The analysis then turns to two texts that explicitly propound the merits of Western Science. By virtue of its emphasis on scientific over management culture, Andersen (1999) allows the analysis to clarify just what it is that is being contested, and that is, which set of ideologies is to prevail over the North Australian landscape. However, the dilemma arising from within these competing ideologies becomes apparent in the subsequent text.

Bowman et al (2001) is a complex text comprising three levels. The analysis traces the translation through these levels from the source text into the scientific text, and notes the changes in meaning attendant upon its reduction and objectification. Analysis of this text allows a contrast to be drawn between Aboriginal and Western Ecologies, enabling not so much a characterization of Aboriginal Ecology but the sketching of a counterpoint for its representation in the analysis of Yibarbuk's texts that follows. The analysis of Bowman et al (2001) demonstrates the problematic nature of the translation. Furthermore, in combination with the preceding analyses, it allows several aspects of the Western discourse on Aboriginal Ecology to be exposed, in particular, the implication of the discourse in the colonial processes, the motives underlying Western appropriation of the Aboriginal discourse, and the conundrum that is intrinsic in the application of Aboriginal ecological knowledge to Western land management.
With the aim of securing Western control of the North Australian landscape, the discourse appropriates not only Aboriginal knowledge, but also Aboriginal subjectivity. For both of these, Aboriginal discourse is the authentic source. The Aboriginal subject positions constructed within Western discourse are positions of power associated with the process in which control over the landscape is arbitrated.

The three texts analyzed last (Yibarbuk et al. 2001; Yibarbuk and Cooke 2001; Yibarbuk 1998) are by an Aboriginal author, working with co-authors of various affiliations and producing into different genres, and subscribing to these powerful subjectivities. In each of the three texts, Yibarbuk assumes a subjectivity which the analysis examines in the context of each, taking into consideration the interests of the co-authors and the language employed.

The analysis of Yibarbuk's text, in the context of the representation of Aboriginal Ecology by the Western discourse examined so far, asks whether this is an authentic expression of Aboriginal Ecology or an Aboriginal authorization of a Western construction. A definitive answer to this question is not available from this evidence, but it is clear from Yibarbuk's own statements, or those of his co-authors, that participation in the subject positions of Western construction provides Aboriginal people with access to the power of the dominant discourse, a power associated with control over land and with the production of Aboriginal subjectivity. The analysis concludes by raising the possibility that, while the Western discourse on Aboriginal Ecology is highly coercive of Aboriginal producers, its efforts to appropriate an authentic Aboriginal ecological knowledge has left it in turn open to appropriation by Aboriginal authors who use it to subvert European colonisation.
Chapter Five

Russell-Smith and Bowman

Texts Analysed


A brief account is required of the social context in which these texts were produced. Russell-Smith’s text, including those analysed here, Russell-Smith et al (1997) and Russell-Smith (2001), are part of an opus that follows themes set by Haynes (1985). Haynes, a forester, asserted that the pro-active application, rather than the suppression, of fire was more appropriate in the management of North Australian ecosystems (1985, 1991). Working within the NT Bushfires Council, Russell-Smith is now driving the development of strategies for the management of fire in the savannas of tropical Australia. As both an authority on fire management in North Australia, and a recorder of Aboriginal ecological knowledge (Lucas et al 1997; Russell-Smith 1985; 1995; 1997), Russell-Smith is active in propounding and constructing the discourse on Aboriginal ecological knowledge, especially about fire.

The analysis is less concerned with the texts themselves than with the discourse in which they participate, and thereby with the social context in which they are produced. The following analysis of Russell-Smith’s text thus critiques its role in the discourse rather than its ostensive ecological content. His text is included here because of his influence, as the first theorist to develop upon Haynes’ concepts (1985; Russell-Smith 1985), on the representation of Aboriginal Ecology in subsequent texts and, as a practical ecologist developing the region’s fire management strategy, on the reproduction of Aboriginal ecological knowledge in the management of the North Australian landscape.

The analysis of Bowman’s text (1998) that follows is similarly concerned with its role in the discourse. The analyses of both texts pay particular attention to their use of metaphor because this device indicates myths and assumptions that underpin their construction of knowledge. The analyses also focus on the texts’ representation of Aboriginal subjectivity. While the analysis of Russell-Smith’s text examines its erasure of subject positions, the analysis of Bowman’s examines its construction of subject positions and the subsequent deployment of these by Langton (1998) in social discourse.
Russell-Smith was the first to detail the ecological role of Aboriginal praxis in the maintenance of the North Australian landscape (Russell-Smith 1985). He is responsible for the early development of the fire management of Kakadu National Park, a management regime based on his observations of Aboriginal ecological praxis (Russell-Smith pers comm), and he advocates the wider application of these principles across North Australia (Russell-Smith 2001). Whereas, in Kakadu, at least partial knowledge of past fire management was directly available from Aboriginal informants (Lucas et al 1997), this source is becoming less available, and Russell-Smith identifies a pressing need to retrieve this knowledge from other sources (Russell-Smith 2001).

This retrieval entails a reconstruction not only of the knowledge but also of Aboriginal subjectivity, and it is the social implications of this process that are the concern of the analysis here. Russell-Smith’s text exhibits the tendency of more recent discourse to foreground the ecological role of Aboriginal people, and to represent it as having contributed in a constructive manner to Australia’s ecological heritage. This premise is common to the texts analyzed in this essay. The analysis of Bowman’s text that follows examines the appropriation of this constructed Aboriginal subjectivity and its deployment in a social contest. However, for a proxy to be substituted, the existing subjectivity has first to be erased.

Russell-Smith identifies three sets of text that contain ‘a considerable body of knowledge concerning the use of fire in traditional northern Australian cultures’: these are ethnographic texts, explorers’ journals and historical records, and
contemporary practice (2001:10). With few exceptions (eg Yibarbuk 1998), this ‘knowledge’ is a reconstruction by Western authors from a range of source material: ‘knowledge’ obtained directly from Aboriginal informants with its attendant problems of translation (Niranjana 1992); first hand observation by explorers and others which is strongly determined by the observers’ interpretive framework; and recent analyses of these historical texts which apply a further layer of interpretation.

Russell-Smith argues that changes in fire regimes accompanying European colonisation – specifically the ‘collapse of traditional burning practice’ (Russell-Smith et al 1997:180) – place North Australian ecosystems at risk (Russell-Smith et al 1997; Russell-Smith 2001), and that

by far the most important requirement for conservation of biodiversity is the imposition of patchy management regimes. No single fire regime, nor spatial scale, will suffice for all species; rather, imposition of a fine-grained mosaic will optimise habitat diversity (Russell-Smith 2001:23).

Central to Russell-Smith’s argument is the association of this ‘fine-grained mosaic’ with the pattern of burning produced by ‘traditional fire practices’ (Russell-Smith 2001:10). He advocates transplanting the principles of these practices into the management of that increasing proportion of northern Australian land where traditional systems have been displaced by ‘the pervasive culture and lure of pastoralism’ (Russell-Smith 2001:9; Head et al 1992).

This approach has been applied to fire management in Kakadu National Park. The fire regime in this Park, located on the western boundary of Arnhem Land, changed during the last century following a drastic reduction in the Aboriginal population and the development of a pastoral industry (Press 1987:244). Press points out that
fire is one of the few natural tools that ecosystem managers possess to manipulate habitats (1987:247). To ensure that the fire regime is not overwhelmed by late season wildfire and to provide conditions conducive to habitat diversity, Kakadu fire management 'aims ..... to re-establish as far as possible the presumed pattern of traditional Aboriginal burning, with input from the traditional owners' (Press 1987:245).

'Mosaic' is one of the more frequently used terms in the discourse on Aboriginal Ecology. It is used most often to refer to a variable rather than uniform pattern of burning, and is associated with the burning by Aboriginal people credited with producing ecological diversity (Bowman 2000:289; Hallam 1975:34; Haynes 1985:209; 1991:66; Jones 1969:226; 1980b:13; Jones and Bowler 1980:7; Russell-Smith et al 1997). Its association with biodiversity charges it with political significance (Langton 1999:3; Rose 1996:65; Yibarbuk 1998:6). Lewis (1982:51) applies the term in an international context, in connection with native North Americans. Gill (1997:89) points out that the term refers to a paradigm whose structural parameters include size, shape and arrangement not only in space but in time. Head (2000:127) also draws attention to its paradigmatic role, in particular how it enables the Australian landscape to be viewed not through a static framework of 'neat and tidy zonations' but through the interaction of 'spatially variable patterns of soil and fire ... with temporally variable climatic processes'. All the above refer to Western ecological parameters, but 'mosaic' is also used to represent the landscape constructed in Aboriginal discourse. Warner (1969:390) refers to Aboriginal myth as a mosaic, and Keen (1997:76) describes the 'mosaic of intersecting ancestral movements and traces' which connect people to country.
The point is that 'mosaic' is no casual term, but a conceptual metaphor whose popularity is due to its semantic versatility. As a visual metaphor – an image constructed from assorted fragments of coloured glass or stone (Concise Oxford) – it enables both the Aboriginal and Western conceptual landscapes to be projected onto the same physical landscape. 'Mosaic' provides a spatial and temporal matrix of correspondence between the two conceptual systems.

The word 'mosaic' derives from Greek mythology, the mousa being the nine daughters of Zeus who are the source of creative inspiration, and in particular the genius of poetry. Aboriginal epistemology assigns myth a prominent role, and the ethnographic literature provides abundant examples of the explicit role of myth in Aboriginal conceptualisation of the natural world. Hiatt and Jones (1988) describe the key role that myth plays in Aboriginal concepts of Ecology, and Haynes (1991:69) demonstrates that practice ('cleaning the country') is interpreted through and determined by the metaphor of myth (the 'dreaming'). Western Science, on the other hand, is concerned only with what can be empirically confirmed, and reduces the natural world to concepts constructed purely from objective fact, an approach which Christie terms 'atomism' (1994:19). Bowman, whose text is discussed shortly, prioritizes the positivist properties of scientific knowledge over knowledge constructed of 'poetic' metaphor (1998:404).

However, as Lakoff and Johnson (1980) point out, all language, and indeed all knowledge, is constituted by metaphor. Metaphor is not the exclusive province of poetry or myth. The difference between epistemologies comes down to not whether metaphor is used or not, but which metaphor is chosen. Lakoff and Johnson further
argue that all knowledge is based on myth, that myths 'provide ways of comprehending experience, [and] give order to our lives' (1980:185-6). 'Like metaphors', they add, 'myths are necessary for making sense of what goes on around us', and 'objectivism', or science, is as much a myth as any other (Lakoff and Johnson 1980:185-6). The property of science that sets it apart from other epistemological approaches, and in particular from those like Aboriginal epistemology which acknowledge their myth, is its insistence that it is not a myth but instead a quest for 'objective fact' or 'truth' (Christie 1991:27). Science 'makes both myths and metaphors objects of belittlement and scorn', dismissing them as 'fiction' (Lakoff and Johnson 1980:186).

As a metaphor in scientific text, 'mosaic' enables an explicitly mythical conceptualisation of the natural world to be inserted into one that is objective. It is a poetic metaphor masquerading as a scientific metaphor, translating mythical concepts into an acceptably scientific format. The mythical foundations of Aboriginal Ecology generate a dilemma for Western ecologists, because its ecological truths refer explicitly not to reality but to the Imaginary. The conceptual metaphor 'mosaic' represents one point at which the Western discourse on Aboriginal Ecology has successfully resolved this tension which it otherwise deals with by representing Aboriginal myth as incomprehensible or inaccessible (eg Haynes 1985:211). Russell-Smith et al (1997) is an interesting text in that it is a fusion of both conventions, the text itself being constructed as a mosaic as if to reflect an Aboriginal way of seeing the landscape. Moreover, it represents the landscape in close detail, and is 'fine-grained' in the sense that Russell-Smith (2001:23) considers Aboriginal fire management to be.
This attribute of 'fine-grained' is, like 'mosaic', the product of a visual perspective, and refers to a concept of spatial and temporal scale. The opposite scale, coarse-grained, would therefore be a view of landscape from a distance, and is precisely what results from satellite imagery. Remote sensing is an appropriate analogy for the distance from which Western discourse views and represents Aboriginal knowledge and subjectivity. Much of the discussion so far has considered the problematic nature of this representation as a result of cultural distance, but Western discourse also reconstructs Aboriginal knowledge and subjectivity from a spatial and temporal distance analogous to the assembly of a landscape image from satellite data.

Russell-Smith (2001) juxtaposes coarse-grained views of the Western and Aboriginal landscapes. In this text the Western scientific perspective of the landscape is, literally, that provided by satellite imagery. This perspective has contributed 'substantially' to the 'understanding of contemporary burning patterns across northern Australia', and in particular the 'spatial and seasonal patterning' and the proportions of various habitats burnt (Russell-Smith 2001:6, 14, 16). Just as satellite imagery is ground-truthed, that is, correlated with data obtained from surface-based observation to enable the remote-sensed data to be assembled into an image of the ground, so too is the remote-sensed historical data on Aboriginal burning (Braithwaite 1991; Fensham 1997; Vigilante 2001) truthed against both the ethnographic record and the traditional burning which continues to be practised on some indigenous land (Russell-Smith 2001:6, 10).

Russell-Smith et al (1997) reconstructs this fire regime and the seasonal round in which it was embedded. This text is notable for the human dimension it brings to
scientific discourse. Several terms insert people into this landscape, not simply 'men' and 'women' but people with motives ('functional purpose'), attitudes ('care', 'protect/conserve'), consciousness ('guidance', 'systematically', 'strategems', 'techniques') and with relationships to each other ('brother') and to the country ('senior custodians'). The reference to a brother being 'killed' imparts to fire a potency which, in contrast with the 'low creeping fires', represents the people as capable of controlling this dangerous force. The key to this capability is their knowledge of and ability to predict its behaviour.

A comparison of the two representations of the Aboriginal landscape in these texts (Russell-Smith et al 1997; Russell-Smith 2001) highlights the way in which scientific discourse filters Aboriginal knowledge in order to incorporate it. In contrast with the intimate detail of the earlier text, the latter is marked by its broad scale viewpoint. For example:

burning was undertaken across northern Australia throughout the dry season period

in many regions ... burning was concentrated in the early-mid dry season, commencing in upland, run-off areas and situations, and extending generally to lower lying, run-on, moister areas as country progressively dried and fuels cured

burning was concentrated in higher rainfall, typically coastal and subcoastal regions,

in some situations, however, burning was evidently directed at maintaining certain habitat conditions;

an essential characteristic of Aboriginal burning was/is that it tended to be highly patchy, and thus provided for the development of relatively fine-grained habitat (Russell-Smith 2001:13-14).
To refer to the generality of this text is not to imply superficiality or to otherwise disparage it; indeed it is explicitly 'general' and aims to compare traditional Aboriginal burning with the present-day fire regime, and to thereby promote an understanding of the change in fire patterns at a continental scale that occurred during colonisation. However, just as the resolution of the satellite data is too coarse to detect people on the ground, this remote view erases people from the pre-contact Aboriginal landscape, an erasure marked in the text by the passive tense of verbs ('was undertaken', 'was concentrated', 'was evidently directed'), a passivity which contrasts with the active tense employed for landscape entities ('country progressively dried', 'fuels cured'). This erasure of people as sentient individuals is in distinct contrast with the earlier text (Russell-Smith et al. 1997), and has the effect of blending the diverse groups of Aboriginal people in the region into a common entity. As Said argues (1978:92-110 cited in Hill et al. 2000:154), colonising powers have typically represented indigenous peoples as culturally homogeneous and as having rapidly disappeared from the land. Such a representation conveniently depopulates entire regions in the interests of the colonial power.

This erasure and blending of Aboriginal identity has implications for rights over land. Rights over and proprietary interest in land are closely aligned in both Western and Aboriginal law, the use of land being an assertion of proprietary interest. Aboriginal law takes this a step further. Not only is the subjectivity of an individual person – their identity – defined in terms of specific land or place, but proprietary interest – the individual’s relationship with and responsibility to land – arises from that subjectivity. That is to say, kinship, ceremonial affiliations, stories, songs, designs and so on are associated with totemic beings located at specific sites in the landscape. To erase individuals from a representation of the landscape is to erase their relationship with that landscape.
Fire management is the primary expression of this relationship for Aboriginal
people, but it is also represented as one of the most urgent responsibilities – or
expressions of ownership – for Western land managers. The irony is that the
knowledge that underpins Aboriginal ownership of the land is being appropriated
to support the Western management regime that displaces it. To fulfill this role, the
knowledge has firstly to be stripped of the myth which is its essential property, and
a Western myth substituted. The analyses that follow attend to the nature of the
myths, both Western and Aboriginal, that underpin the systems of knowledge and,
as in the analysis above, therefore pay close attention to metaphor.

The persuasive power of scientific metaphor stems from its claim to signify objective
fact. Subject positions defined within arguments that cite scientifically deduced fact
are incontestable, and when they are developed within the context of the
relationship of people to land they confer social power. The analysis of Bowman’s
text that follows concerns the use of the factual metaphor in the construction of
Aboriginal subjectivity, and its application by an Aboriginal author, Langton, in a
social context. A subsequent analysis of another of Bowman’s texts (Bowman et al
2001) will examine more closely the way in which scientific metaphor erases
subjectivity, and the significance this carries for the validity of the knowledge it
purports to represent. The argument being developed here is that the Aboriginal
subjectivity represented in Western ecological discourse is imaginary, grounded in
Western ideologies, and constructed for the purpose not of reinstating Aboriginal
control of the land but of securing the transplantation of those Western ideologies
that arrived during the European colonisation of Australia.
David Bowman

The context for Bowman’s texts is similar to that of Russell-Smith’s, although Bowman, working within academia, has a greater theoretical emphasis. Seeking to explain the distribution of rainforest in Australia (Bowman 2000), Bowman has identified the role of fire (eg Bowman et al 1990) and in particular its application in Aboriginal management of country (eg Bowman 1998; Bowman et al 2001). Bowman’s text adheres rigorously to the tenets of scientific discourse with its pursuit of empirically derived absolute truths, and his constructions of Aboriginality are presented as factual and authoritative by other texts that seek to promote political Aboriginal interests (eg Langton 1998; Yibarbuk and Cooke 2001). Bowman’s text is therefore significant in its determining subject positions for Aboriginal people within ecological discourse, and in their application within the broader social context.

The analysis thus far has been concerned with the erasure of Aboriginal subjectivity in Western Ecological discourse, an erasure resulting from the objective metaphor characteristic of scientific text. At the same time, the discourse also constructs Aboriginal subject positions in the process of representing the relationship between Aboriginal people and the landscape. The analysis of Russell-Smith’s text above examined that process of erasure. The analysis below examines the construction in Bowman’s text (1998) of an Aboriginal subjectivity and its recruitment by Langton (1998) to the advantage of Aboriginal subject positions more generally in Western social discourse.

The Aboriginal subjects in Bowman’s text (1998) play an active ecological role in producing outcomes favoured by Western Ecological discourse, in particular the promotion of biodiversity (Russell-Smith et al 1998). Langton (1998) relies on the scientific authority of Bowman’s text (1998) to assert this subjectivity as an objective
truth, and to align it with the power of Western ideologies, such as Conservation, that seek these outcomes. The analysis scrutinizes Bowman’s choice of metaphor to demonstrate that these subject positions are actually the product of a preferential representation. Early Western discourse (eg Cook 1893) idealized Aboriginal Ecology through the metaphor of the Noble Savage, and it is suggested here that the ecologically knowledgeable Aboriginal is similarly a projection of contemporary Western ideology.

In defining the ecological role of Aboriginal fire during Australian prehistory, Bowmans’s text is complementary to those produced by Jones and Schrire: peopling the prehistoric landscape but with an emphasis on the ecological rather than the ethnological aspects of the human-environment relationship. Just as anthropological representations have supported the establishment of Aboriginal proprietary interest juridically through Land Rights, ecological prehistory is the precursor to present day fire management. As Bowman puts it, ‘the environmental impact of Aboriginal landscape burning ... is central to the formulation of appropriate strategies for the conservation of the nation’s biodiversity’ (1998:385).

Bowman concludes that Aboriginal people colonised a continent ‘ablaze’ since the Tertiary (2000:285). Far from initiating that conflagration as some have suggested (for a summary see Horton 1982), Aboriginal people mitigated the impact of these fires on the biota by replacing an ecologically homogenising natural regime of late season wildfires with a regime of pre-emptive early season burning which promoted biodiversity (Bowman 1998; 2000). Bowman (1998) refutes the hypothesis that Aboriginal burning contributed to the extinction of Australia’s megafauna. This megafaunal extinction notion is not new (Owen 1877 cited in Jones 1975:29), but was popularised by Flannery (1994) who used it as part of a broader thesis alleging that humanity literally consumes its future resources.
Bowman rejects arguments for an Aboriginal role in the extinction of the megafauna on the bases of inconsistencies in their chronological and paleoecological evidence, their conflation of unrelated evidence, the uncertainty of ecological equivalence between fire and megaherbivory, the lack of correlation between changes in fire regimes and small mammal extinction (Bowman 1998: 401-2), and the improbability of Aboriginal hunters exterminating entire animal populations (Choquenot and Bowman 1998). The vigour of this rebuttal may reflect Bowman’s rigorous contestation of ‘excessively speculative arguments’ (Bowman 1998:386), but a further significance is apparent in Langton’s polemic against the misrepresentation of Aboriginality (Langton 1998).

Bowman refers to Flannery’s key metaphor as ‘a so-called blitzgrieg’ (1998:401). His qualification ‘so-called’ serves three purposes: it imputes the notion ‘blitzkrieg’ to Flannery, it designates the metaphor as semantically super-charged and, more importantly, it implies that the concept it signifies – that Aboriginal people effected a concerted campaign of extermination – is incorrect. The assertion that concepts fall neatly into two categories – those that are correct and those that are not – is a fundamental premise of scientific thinking: that it is possible, with sufficient empirical observation, robust analysis and critical debate, to arrive at an absolute representation of objective reality. It is into these two categories that Langton divides the ‘historical assumptions which shape arguments about the role of Aboriginal people and their traditional environmental knowledge in the management of their cultural and physical landscapes’ (1998:7).

Langton seeks to counter representations of Aboriginal people such as ‘irresponsible with fire’ (1998:43), ‘frozen in time’ (1998:38) and dependent ‘on natural bounty’ (1998:39). To support her case, she presents the arguments of Flannery and Bowman in ways that prioritize the latter over the former:
Flannery's *The Future Eaters*, which has been widely accepted by its lay readership as an account of settled scientific opinion ...

Note also Flannery's extraordinary assumption ...

Flannery makes the extraordinary assumption ...

Lamenting the alleged ancient extinctions of megafauna ...

He goes on to argue ... (Langton 1998:45);

Flannery has failed to understand ... (Langton 1998:46)

The word 'lay' consigns 'The Future Eaters' to a class of texts that appeals to an undiscriminating readership, which are produced by non-professional authors, and whose arguments are therefore not based on logical or evidential rigour. 'As an account' implies as if or supposition rather than fact. 'Settled' refers to opinion which is arrived at through proper reasoning, a process from which Flannery's argument is precluded by its attachment to 'extraordinary assumption'. 'Lamenting' implies that Flannery is emotional and therefore irrational, but it also imputes premeditation to his reasoning. 'Goes on' suggests that Flannery's presentation of evidence is non sequitur, impelled by discursive momentum rather than logic. 'Failed to understand' designates Flannery as unable to draw obvious conclusions and his argument as therefore 'failing'. These also, however, expose the presumptions which Langton herself brings to the debate.

Her portrait of Flannery undermines his authority and thereby the credibility of his argument. By contrast, Bowman is valorised through his association with several authoritative institutions:
Bowman, of the Parks and Wildlife Commission of the Northern Territory, who contributes to the Cooperative Research Centre for the Sustainable Development of Tropical Savannas, in his forthcoming Tansley Review in New Phytologist, summarises the range of views among scholars ... (Langton 1998:44);

One of Bowman's conclusions, in response to the views of Flannery and others, is that there is insufficient evidence to support the speculative hypotheses ... (Langton 1998:46).

Langton sanctions Bowman's evidence by citing his association with reputable institutions and, moreover, his ability to 'summarise' the views of 'scholars' 'among' whom he is therefore included. 'Conclusions' carries the implication that his views are not mere opinions but derive from his weighing the 'evidence'. In response implies that these views are motivated by a scholarly desire to correct 'views' which are no more than 'speculative hypotheses' based on 'insufficient evidence'.

Flannery's hypothesis portrays Aboriginal people as agents of environmental destruction, exterminating the megafauna and initiating a conflagration which radically altered the floristic landscape, and whose fire management was a rearguard action to counter the consequences of their own ignorance and irresponsibility. Such representation is the target of Langton's 'quest for justice for Australian indigenous people in the environmental field' (Langton 1998:7), a quest supported by Bowman's representation of Aboriginal fire management as a 'triumph ... in harnessing landscape fire to their own ends' (Bowman 2000:285-6).

Langton and Bowman single out Flannery (1994) to represent the Aboriginal megafaunal extinction theory. However, it was not Flannery who first proposed this theory but, according to Jones (1975:29), Richard Owens who, a century before, speculated upon 'the possible relation of the first introduction of the Human kind into Australia ... to the final extinction ... of all the characteristic Mammals which happen to surpass in bulk the still existing, swift retreating saltatorial and nocturnal
Kangaroos' (Owens 1877 cited in Jones 1975:29). Neither Langton nor Bowman mention Jones' early support of this theory (Jones 1975:29-30), though both cite those of his texts which extol the merits of Aboriginal use of fire (eg Jones 1969). Langton describes Jones as 'the first to alert the academy to the existence and antiquity of fire as a land management tool' (1998:40).

Jones reserved his final opinion on both questions: on whether 'through firing, man may have increased his food supply and thus probably his population', and whether this was deliberate ecological manipulation (1969:227); and on whether 'the arrival of the first large placental predator, with his spear and fire-stick onto the continent of marsupials [was] only coincidental with the disappearance of so many of the latter, or [whether] the two events [were] causally linked' (1975:39). Jones considers it 'inconceivable' that the arrival of humans 'did not have a profound effect on the biology of the whole continent' (1975:39). However, Langton and Bowman select from his texts those of his views which support their representation of Aboriginal people as astute and responsible ecological agents, and attribute to a straw man – Flannery – those views which oppose their preferred representation.

It is worth attending more closely to Bowman's use of metaphor because of its role in his rhetorical strategy. 'Triumph' (Bowman 2000:285) is a manifest reference to Blainey's (1975) characterisation of Aboriginal colonisation as a 'great achievement' or 'victory' (Concise Oxford), manifest (Fairclough 1992:10) because, in the earlier text, Bowman cites Blainey's text as one of 'numerous books about Aboriginal burning [which] underline the profound importance of this debate to Australians' (Bowman 1998:386). It is also a pointed reference to Jones' contestation of Aboriginal people as 'passive slaves of the environment' (1969:224). This rather hyperbolic metaphor ('triumph') may appear to be an anomaly in text marked by otherwise measured language, but Bowman's representation of Aboriginal people is delivered in strong and certain terms even while conforming to the scientific convention of sampling a range of opinion (1998). For instance, it would be hard to find a more
self-assured term than 'incontrovertible fact' (Bowman 1998:390), which is how Bowman characterises Russell-Smith's description of Aboriginal use of fire as 'systematic and purposeful' (Russell-Smith et al 1997:159). Also, Bowman describes fire as a 'powerful' (1998:390) and 'indispensable' (1998:385) tool which Aboriginal people used to create 'favourable habitats for herbivores' and to increase 'the local abundance of food plants' (1998:385).

While acknowledging the 'aptness' of Jones' term 'fire-stick farming' (Bowman 1998:385; Jones 1969), Bowman contrasts this 'poetic concept' with 'coherent scientific analysis', the latter constituting an 'advance' on the former (1998:404). 'Poetic' derives from the Greek poieo, 'to make' (Concise Oxford), referring to such text's self-conscious structuration and deployment of metaphor. As Lakoff and Johnson (1980) have shown, metaphor comprises the conceptual bricks of which all knowledge is constructed. Scientific analysis does not somehow break apart this structure to reveal an essential truth, but instead constructs the edifice of knowledge from a blueprint which specifies use of a particular class of metaphor.

Self-conscious metaphor may appear incongruous in scientific text but it can be an effective way of communicating a complex idea. A metaphor is, in effect, an intertextual device, a lexical synapse which brings together otherwise unrelated concepts. The more incongruous the concepts, the more powerful the metaphor. This is why 'fire-stick farming' has become a popular catchphrase. It fuses a number of apparently incompatible conceptual elements: fire as a creative rather than a destructive force, hunting/gathering as a form of agriculture, and Aboriginal people actively shaping their environment. These elements continue to be contentious (eg Andersen 1999), and it is indeed the contested nature of the metaphor which promotes the debate which in turn, by helping to propagate the metaphor, naturalises it.
The resistance that writers of scientific text feel toward metaphor may be that it overtly stands for something which does not actually exist. For instance, the highly effective metaphor, 'biological furniture' (Bowman 1998:386), refers to a conceptualisation of biological components and systems as tables and chairs, a notion which is absurd yet, at a more profound level, is an insightful representation of ecosystems 'furnishing' the Aboriginal home.

As obsessed as Western Ecology is with the discovery and representation of objective fact, it is also involved in the construction of truth. Scientific text is peppered with metaphor, most of it unremarkable, whose function is not to spice up the readability of the text but to produce its meaning. Those occasional metaphors whose very incongruity draws attention to themselves mark points in the text where this construction is contested. It is science's caution towards contested concepts that confines its text to conventional metaphor, a caution evident in Bowman’s drawing attention to his deployment of this unconventional metaphor by referring to it as a 'caricature' (1998:386).

Overwording is another feature of text which may indicate an 'intense preoccupation pointing to peculiarities in the ideology' (Fairclough 1992:193). The overwording which marks Bowman’s text, although infrequent, refers consistently to, and buttresses the authority of, a handful of texts which he cites to support one of his primary themes. It includes Bowman’s description of Jones’ text as ‘eloquent’ (2000:224), ‘beguilingly simple’ (2001:61), ‘extremely provocative’ (2001:75) and ‘profound’ (1998:404; 2001:76); of Hallam’s as ‘magnificent’ (1998:388); of Thomson’s as ‘truly extraordinary’ (1998:390) and ‘insightful’ (2001:74); of Yibarbuk’s as ‘important’ (2001:74); and of Russell-Smith’s as ‘ingenious’ (2000:224). This is not intended to designate his text as hagiographic or to suggest that these approbations are other than fair assessments. They are, however, exceptions to the measured language of Bowman’s text, and it is interesting to note the characteristics that the texts have in common and to which the epithets specifically refer:
[Jones] has eloquently described systematic and skilful burning linked with the orderly seasonal exploitation of different environments (Bowman 2000:224);

The magnificent synthesis by Hallam (1975) of the ethnohistorical record for the southwest of Western Australia led her to conclude that 'the land the English settled was not as God made it' (Bowman 1988:388);

The truly extraordinary anthropological research of Thomson underlined complex and systematic temporal variation in the use of landscapes by Aborigines (Bowman 1998:390);

[Yibarbuk's] important account of traditional Aboriginal fire usage in Arnhem Land; it is also one of the few Aboriginal perspectives of landscape burning (Bowman 2001:74);

Russell-Smith ingeniously reconstructed seasonal patterns of landscape burning (Bowman 2000:224).

These quotes focus on Aboriginal activity rather than ecosystems, and in particular the role of Aboriginal burning in shaping the floristic landscape. Moreover, they characterise this burning as 'systematic', 'skilful', 'orderly' and 'complex', adjectives that firmly associate fire with ecological knowledge. This positive representation of Aboriginal burning is reinforced by Bowman's positioning of the Aboriginal author Yibarbuk's text (the fourth of the above quotes which represents an Aboriginal 'perspective' on 'fire usage') among those produced by Western scientists, and therefore of at least equal status in the production of Western ecological knowledge.

Overwording is confined in Bowman's texts to references to contemporary Aboriginal burning, and especially to fire as a tool for the purposeful manipulation of ecosystems. Overwording does not occur when he refers to either inanimate environmental parameters or to the ecological behaviour of historical Aboriginal people. The overwording signals the contentious nature of the concepts which Bowman summons in support of his argument. These concepts are contentious not just because they are contested factually, but because they impinge on contemporary land management and ownership.
The argument here is not that Aboriginal burning is other than complex and systematic, nor that Aboriginal people do not manipulate ecosystems with advance knowledge of long-term outcomes. Rather, the discussion is aimed at drawing attention to these as representations, that they are not images of Aboriginal people viewed through a transparent window but are constructions which are not ideologically neutral. Through repetition these representations become normalised, especially when authoritative opinions coincide, and assume the status of 'incontrovertible fact' which is increasingly difficult, even for Aboriginal people, to contest. Furthermore, since these representations come primarily from the dominant society, they are imbricated with the power of that society, a power whose accessibility for Aboriginal people is contingent upon them subscribing to a representation of themselves from within that other (Western) symbolic order.

This essay views the Western discourse on Aboriginal Ecology as the product of ideologies contesting control of the Australian landscape. The ideologies associated with Western Ecology and its derivative, the regime of land management imposed during European settlement, have resulted in a substantial re-engineering of the Australian landscape. In order to conserve the biodiversity that remains, a biodiversity especially threatened in North Australia by an anarchic fire regime unleashed by the European displacement of pre-emptive Aboriginal burning, the discourse has sought to co-opt Aboriginal ecological knowledge.

The urgency to recover this knowledge is a direct product of the erasure of Aboriginal ecological praxis during settlement, not only the actual practice of burning, but of the ritual reproduction of the knowledge itself. Similarly, the textual erasure of Aboriginal subjectivity within the Western discourse during translation of this knowledge produces a loss of meaning because, as will be demonstrated during a later analysis (Bowman et al 2001), its meaning within Aboriginal discourse relies on subjective referents.
This raises the interesting question of whether this loss of original meaning is of any consequence to Western Ecology. In Western discourse, myth is considered tantamount to fiction (Lakoff and Johnson 1980:186), and an Ecology that is explicitly supernatural (Warner 1969) would seem to lack agency over events in the real world (Spencer 1928:835). It would be of no more than passing interest to Western Ecology were it not for the capacity of Aboriginal ecological discourse to produce effective material outcomes (Thomson 1949a; Bradley 1998:29; Bowman 1998; 2000; Russell-Smith 2001). It is on the basis of this capacity, rather than an interest in its intrinsic rationale, that Western discourse approaches Aboriginal Ecology as a valid paradigm (Jones 1991:28).

The scientific approach to knowledge adopted by Western Ecological discourse is based on an assumption that perfect knowledge exists in an objective reality (Bowen 1979:211; Tarnas 1991:278; Denzin and Lincoln 1994a:2; Denzin and Lincoln 1994b:103) and can be arrived at empirically. Its quest for a more accurate representation of Aboriginal ecological knowledge has led the discourse inexorably toward its source: Aboriginal discourse. This is apparent throughout the history of the discourse outlined above, and especially in more recent Ecological texts concerned with knowledge about fire. In this recent discourse, the trend manifests in two types of text: those produced by Western authors that seek to incorporate Aboriginal ecological paradigms (Russell-Smith et al 1997; Bowman et al 2001) and those by Aboriginal authors producing within Western discourse (Yibarbuk et al 2001).

As stated, the capacity of Western scientific texts to truly represent an Aboriginal Ecology is constrained by their objectivity (Lakoff and Johnson 1980:186), and analysis will examine later the extent to which even texts produced by an Aboriginal author express Aboriginal or Western ideologies. Firstly, however, the analysis turns to texts (Rose 1988; Bradley 1997) that ascribe validity to the mythological premises
of Aboriginal Ecology. The purpose of these texts in the analysis is to illustrate the adoption of Aboriginal ecological paradigms into Western discourse. Although, strictly speaking, these texts are anthropological, their valorization of Aboriginal Ecology as does Bowman (1998) and their foregrounding of Aboriginal ecological paradigms help trace the ascendance of Aboriginal discourse within Western Ecological discourse.

Earlier analyses examined the way that the discourse erases Aboriginal subjectivity and constructs a proxy subjectivity whose favourable representation and association with social power may coerce Aboriginal people into identifying with and reinforcing it. It was argued that this process implicates Western Ecology in colonial discourse. The erasure of the subjective fabric of Aboriginal discourse has implications also for the process of translation, an effect that will be examined during the analysis of Bowman et al (2001). The objectivity that underpins Western Ecology and that produces this erasure refers to the quantifiable material plane of existence; it specifically excludes the supernatural. The texts whose analysis now follows (Rose 1988; Bradley 1997) represent Aboriginal Ecologies that refer to humans inhabiting a cosmos where the supernatural and the natural coexist along a continuum.

In the Ngarinman cosmology described by Rose (1988), the supernatural is vital to the reproduction of the natural world. In Bradley’s Yanyuwa cosmology (1997), living humans share the natural world with the spirits of the recently deceased; the natural world is continuous with the mythical world created by the Ancestral Beings. Such conceptions of the cosmos clearly require a different notion of causality than that allowed within Western ontology, and yet Western Ecology seeks to retrieve the knowledge that enables these Aboriginal Ecologies to produce material outcomes in the natural world.
The analysis of Rose (1988) and Bradley (1997) will be followed by an analysis of the scientific approach to the translation of this knowledge as exemplified in Bowman et al. (2001), and then by an analysis of its translation into Western discourse by an Aboriginal author (Yibarbuk et al. 2001; Yibarbuk and Cooke 2001; Yibarbuk 1998). With the analysis of Bowman's and other Western texts providing the standard against which to gauge the contribution of the Western paradigm, this analysis of Rose and Bradley's texts provides a normative Western representation of the Aboriginal ecological paradigm.
Chapter Six

Rose and Bradley

Texts Analysed


In parallel with, and virtually contemporaneous with, Haynes (1985) and Russell-Smith (1985), Rose (1988) signals a significant shift in the Western representation of Aboriginal ecological knowledge. In contrast with Thomson (1939) and Jones (eg 1990) who use conventional ethnographic metaphor, Rose harnesses Aboriginal paradigms and voice in her efforts to present knowledge from an Aboriginal point of view. Rose (1988) thus marks a transition in the role that Aboriginal people play in their own representation, moving from object through participant to producer of, and thus in a position to appropriate, the Western discourse in which that representation is constructed.

Bradley (1997) similarly embraces Aboriginal paradigms to foreground the ontological and epistemological premises of Yanyuwa ecological knowledge and praxis. He focuses on the role that mythical and spiritual agents play in Aboriginal ecological knowledge, an agency that places the Yanyuwa episteme beyond the network of causality upon which Western knowledge is premised. Through a process that will be discussed later, Aboriginal subjectivities are constructed within Western ecological discourse to circumvent the consequential problems for its translation of Aboriginal ecological discourse. The analysis of Bradley (1997) allows the significant differences between the two epistemes to be isolated.
Deborah Rose

Through references to ‘Dreaming trees’ and the ‘Rainbow Snake’, Rose (1988) places spirituality at the centre of Ngarrinman cosmology. However, she avoids explicit mention of spirituality, emphasizing instead philosophical and moral concerns, echoing her informants’ own concerns with ecological ‘responsibility’ (Rose 1988:378). This responsibility equates to a ‘moral agency’ by which all animals, not just humans, take ‘responsibility for those portions of the system in which they operate’ (Rose 1988:383).

This is a departure from the notion of ecological agency, discussed above, that refers to the capacity of humans to influence their natural environment. In the Ngarrinman cosmology described by Rose (1988), the concept moral agency involves more than merely the right or wrong of human society, it signifies a responsibility to act according to supernaturally sanctioned mores to ensure the reproduction of the natural world. This draws a clear distinction between ecological and moral agency: the former requires a causal medium through which humans can intervene in ecological processes, which humans then have the choice whether or not to exercise; in the latter, the capacity of humans or any other animal species to influence the natural order is not at issue, rather, the supernatural ordering of the natural world requires that they act according to their designated roles.

It is not that Rose is averse to the notion of Aboriginal spirituality. In another text (Rose 1996) she makes 78 such references in 80 pages of text: 33 to ‘sacred’, 9 of which are direct quotes from Aboriginal speakers, and 45 to ‘spirit’ or ‘spirituality’, 14 of which quote Aboriginal speakers, an average of one per page. Elsewhere, in Rose’s text, spirituality travels under the guise of ‘aesthetics’:
feelingful dimensions of cultural and social life [which] inform, and are informed by, the ecosystems within which people make their lives and places meaningful (Rose 1997a:viii­ix).

The displacement of spirituality onto the alternative metaphors ethic and aesthetic (Rose 1988; 1997) renders her text more accessible to an agnostic Western reader. As Tacey (1995:4) observes, Australian society perceives itself as having outgrown religion, scientific rationalism dismisses 'the symbolic statements of the soul' as 'primitive science', and anthropologists regard spiritual beliefs as 'merely social or structural functions' typical of 'archaic peoples'. Too explicit an association with spirituality may therefore engender resistance to her ideas among the rationalist minds Rose seeks most to sway, those who express 'the relationships between cosmos, society and self' through 'mechanical cultural constructs' rather than 'organic metaphors' (Rose 1988:378).

However, neither aesthetic nor ethic are neutral terms. Aesthetics was the theme of a substantial discourse in 18th century Europe which sought to enquire into 'the origin and causes of Sublime experience' (de Bolla 1989:12). Burke's systematisation of these ideas in his treatise on the Sublime (Clute 1984:1) enabled writers, painters and musicians to express Divinity through representations of the natural world (Cosgrove 1984:230), and modern ecologists producing into a postmodern discourse are legatees of this intellectual tradition. Aesthetics is, literally, the perception of the Sublime in the landscape. Rose advocates a radical shift in the paradigm through which Western society positions itself in the natural world. This shift is not, as Tacey (1995) advocates, from secular to spiritual, but toward an epistemology that is 'non-human-centred such as 'found ... among Aboriginal Australians' (Rose 1988:378).
This ‘acentric’ *Ngarinman* Ecology reflects an ecological egalitarianism, whereby all animals (including humans) comprise a ‘sentient cosmos’ (Rose 1988:383), and where each member shares responsibility for the maintenance of the cosmos. This acentricity is the precise opposite of the Humanism that is one of the fundamental principles of not only Western Science but of the ‘Land Ethic’ first expounded by Aldo Leopold (Rose 1988; Nash 1989:32). According to Leopold, the evolutionary development of sentience (conscious choice in ecological behaviour) encumbers humans with a moral responsibility toward the rest of the ecological community (Oelschlaeger 1991:206). *Ngarinman* Ecology, by contrast, identifies all animals including humans, as well as some non-animal species, as sentient beings who share this responsibility and are impelled to act as ‘moral agents’ (Rose 1988:383). These respective positions afforded to humans in Western and Aboriginal Ecologies would appear to constitute a further ideological divide between the two epistemes (Foucault’s term *episteme* signals that knowledge is embedded in its social context; Danaher et al, 2000:16-21).

Humanism is a philosophical perspective prominent in classical Greek thought, revived by medieval scholasticism, and central to Western traditions of thinking and doing for the last four hundred years (Artz 1980:432; Relph 1981:16; Cosgrove 1984:83; Tarnas 1991:69). Humanism maintains that ‘human beings are alone responsible for their circumstances and their destiny’, ‘that only by using our capacity for reason can we understand and control the conditions of our lives’, and that humans can appeal to no higher power, whether God, fate or some invisible hand (Relph 1981:16). It is closely aligned with science, firstly because ‘scientific knowledge has been accepted as the highest human achievement’ (Relph 1981:16) and, secondly, because it is in keeping with the scientific ‘passion to understand, to penetrate the uncertain flux of phenomena and grasp a deeper truth’ (Tarnas 1991:69). Humanism regards the ‘scientific method [as] the only truly effective means of explaining and resolving problems of nature, society and even psyche’ (Relph 1981:16).
Humanism does not deny a spiritual dimension, but it separates Creation into hierarchically ordered spiritual and temporal planes. According to the medieval scholastic philosophy from which scientific thinking emerged, it is the capacity for reason that enables humans to comprehend the spiritual (Cosgrove 1984:83). The Humanistic tradition at the heart of Western epistemology presents three incongruities which resist its merging with Ngarinman Ecology through Leopold's land ethic: Humanism separates humans from nature, it differentiates the temporal from the sacred, and it positions humans at the ethical centre. In consequence, as Stanner puts it, the 'vast intuitions .... at the heart of Aboriginal ontology' are beyond the grasp of 'humanism, rationalism and science' (1979a:27).

*The Ngarinman Ecological Paradigm*

The foremost paradigm in Rose's (1988) account of Ngarinman Ecology is the *Ngarinman* conceptualisation of seasonality. The seasonal calendar is a normalised conceptual metaphor, and marks any text which refers to the seasonal calendar as making a claim to represent the natural world from an Aboriginal point of view (eg Alderson et al 1980:41; Baker 1999; Chaloupka 1981:162; Jones 1985a; Morris 1996). The metaphor is problematic since the concept 'calendar' is a Western paradigm and thus constrains this representation of Aboriginal seasonality. Rose, however, makes no reference to 'calendar' (except when referring to the time-frame in which Western people operate), and her seasons comprise a structure which scarcely refers to time at all. Instead the seasons articulate a semantic network (Jones 1991:34), a concatenation of linked symbols spilling rhythm.
In her application of *Ngarinman* paradigm Rose not only employs Aboriginal metaphor, but also engages the pattern of Aboriginal speech. This narrative structure is the textual feature upon which the analysis of her text is based.

I found that Yarralin people recognise and have a term for the cold time of year ... They also have a term for the hot time of year ... In addition there is a term for the time of big rains ... / Beyond this, I was taught a generic term for rain, and a set of terms to refer to all the different types of rains: the cold-weather rain, the hot-weather rain, the first rain after the really hot time of year, and the smell of the first rain. / There are also different coloured rains, which relate to matrilineally defined categories of people. / Rain is conceptually related to all water, and different coloured rains are conceptually linked to different coloured river water / Again, different coloured river water relates to the action of the rainbow snake, as does the rain itself. / So there is a complex and interconnected set of ideas about water that relate to the rainbow snake /

(Rose 1988:381).

The original text is in the form of continuous prose, the format is altered here to foreground the metre, the metonymic repetition and the thematic progression which together mimic Aboriginal recitation of knowledge. A comparison of this versified text with two others illustrates this mimicry. Firstly, an Aranda 'Bandicoot Song' recorded by TGH Strehlow, and cited by Hiatt and Jones in their discussion of incantatory magic:
The bandicoots are rushing through the grass.,
In and out of their nests they are rushing through the grass. /

On the cracked swamp flat they are brushing their fur;
The bandicoots are brushing their fur. /

Crooking their little claws they are raking grass together;
With balled paws they are raking grass together. /

They are snoring now
Half-asleep they are snoring now /

(Hiatt and Jones 1988:12).

Admittedly, the metric rhythm is partially an artefact in both cases – doubtless enhanced by Strehlow during his translation from Aranda, and certainly exaggerated in the reformatting of the above extract from Rose’s text. It is unnecessary to belabour the technicalities of poetic metre to establish the mimicry in Rose’s text; it is readily apparent. That the metre is an inherent quality in Rose’s text, rather than entirely an artefact of this analysis, can be seen when, for comparison, similar formatting is applied to a passage from Russell-Smith *et al* (1997) which similarly describes an Aboriginal concept of seasonality. Reformatted into verse, the rhythm (which sustains the latter as prose) vanishes:

By yegge,
at the beginning of the 7-month long dry season,
dry southeasterly winds begin to blow consistently across the country. /
Woodland yams are still conspicuously abundant at this time,
and large fish are readily caught (trapped or speared) in receding riverine and floodplain channels. /
From this time,
and through wurrgeng,
both men and women,
typically under the guidance of senior
custodians,
set about arri wurlhge, 'cleaning the
country,'
moving through their clan estates
systematically setting fire to the curing
grasses
with their smouldering anyakngarra (Pandanus
spiralis) or guibuk (Banksia dentata)
firesticks. /

(Russell-Smith et al 1997:174)

It is, of course, possible to establish any number of different rhythms by breaking
the text at different points. Here, the breaks have been selected so that each line
expresses a single theme. The themes link adjacent lines into units, which are
distinct couplets in Strehlow's example. In the other two texts, these are also called
couplets for simplicity. The end of each thematic unit is marked with a 'slash' (/).

Russell-Smith's text breaks both rhythmically and semantically at the end of each
couplet, which is no more than sound sentence construction in prose. In the other
texts, the couplets are connected by cohesive textual devices. In Rose's text, these
devices are logical connectors, respectively, 'beyond this', 'also', 'related', 'again'
and 'so'. In Strehlow's verse, the devices are inferential, the rhyme between
'rushing' and 'brushing', the imagery of their fur brushed by grass and by their
paws, their claws used to brush their fur then being used to rake grass, and then, in
the last couplet, simply 'they' to refer obliquely to the subject of the previous three
couplets.

In addition, the concepts expressed in each line of Rose's text undergo a metonymic
progression, the 'time of the year' becomes 'big rains', 'rain' implies sensory
perception (cold, hot, smell) or aesthesia, and thus can be linked to 'colour' and
incidentally to ‘people’, and then to ‘water’, to ‘river’ and finally to the ‘rainbow snake’. Thus, conceptual metaphors which have no causal relationship to one another – at least as causality is understood in Western cosmology – are linked to form a syntagmatic chain (Silverman 1983:80). Rose makes explicit reference to this chain at the end of the passage quoted above (‘a complex and interconnected set of ideas’). The paragraph which then follows picks up this theme – the cluster of metaphors circulating around the rainbow snake, metaphors about seasons, rain, water, colours and people – and establishes metonymic associations between the rainbow snake, the various species of animals and the classes of human identity:

But the rainbow snake is not alone; it has its allies in the turtles, fish, frogs, tadpoles and flying foxes. In a normal course of events, rain comes because the flying foxes have told the rainbow snake that the earth is getting very hot, the trees are all getting dry, the flowers that are food for the flying fox are gone. They ‘say’ this by going to roost along the river. So one portion of the seasonal cycle is conceptually linked to a range of faunal species. Many of these species are associated with human beings through matrilineally derived categories of identity. In this way, humans, animals and seasons are brought together as part of a system. I know far less about the other portions of this cycle, but they incorporate a similar range of associations (Rose 1988:382).

Hiatt and Jones (1988) debate whether such versification of Aboriginal knowledge is ‘evocatory’ or ‘invocatory’, that is, whether it is intended to epitomise and celebrate the subject of the song or to be efficacious toward some outcome. They conclude that any ‘magical purpose’ is dependent on context (eg ceremony) rather than content, and that such songs commemorate their subject for its own sake much in the way that totems ‘figure in the Aboriginal mind more as objects of contemplation than sources of sustenance’ (Hiatt and Jones 1988:17). The metonymy in Rose’s text is similarly indicative, stating merely what is.
Rose’s evocative narrative represents *Ngarinman* Ecology (or rather cosmology) as an expression of knowledge of the natural (and supernatural) world. The verse is a syntagmatic chain whose linking devices are metric rhythm, metonymy and thematic progression. The elements are also metaphorically related, for example, the serpentine river stands for the rainbow snake, and the rainbow refers to the different coloured rains which may stand for the rains of different times of the year, but the colours may also stand for other forms of diversity such as social groupings based on totemic affiliation. The verse reproduces knowledge not as a list of facts (Povinelli 1993:695), but as meaning connoted through the interplay of metonym and metaphor (Cohan and Shires 1988:54; Ingold 1993a:451; Silverman 1983:80).

The symbol that draws the various elements into a conceptual whole is the Rainbow Snake, a conceptual metaphor which enjoys widespread appeal among diverse Aboriginal societies as a symbol of unity (Taylor 1990:329). The first of the two verses quoted establishes the semantic relationship between the elements, linking them to the paradigm symbolised by the Rainbow Snake. The second verse (quoted above in its original format) introduces the concepts that make this semantic network cohere as a working reality: the ‘communication’ between the elements (the flying foxes telling the rainbow snake that it is time to bring the rain), and the ‘moral agency’ (Rose 1988:379, 383, 385) that impels each species to carry out its allotted task.

It was noted earlier that ecological agency is a key concept in the Western discourse on Aboriginal Ecology, a concept that refers to the capacity of Aboriginal people to manipulate environmental variables and in particular to mitigate variability in their food supply (Jones 1969; 1985a; 1990:41; Jones and Bowler 1980:16; Meehan 1982:160). Ecological agency is a basic premise upon which the discourse constructs.
Aboriginal people as playing an active rather than a passive role in ecosystems, and in turn underpins the representation of their ecological behaviour as intentional and knowledgeable.

The alternative concept proposed by Rose, 'moral agency', refers to 'the conscious and responsible actions of different life forms' that maintain the whole cosmos (1988:379). Whereas ecological agency implies intervention in ecological processes and manipulation of ecosystems with a human-oriented outcome in mind, 'moral agency' constitutes responsible action resulting from the correct interpretation of and response to messages sent out by other agents in the system. This ethos prescribes how ecological agency may be exercised:

Yarralin people are reluctant to intervene in ecological processes except in limited and localised ways, or in ways that are authorised by accumulated experience, expressed as Dreaming or Law (Rose 1988:384).

This glossing of Dreaming as a repository of 'accumulated experience', encountered earlier in Thomson (1949a) and Tindale (1959), points to Western efforts to reduce to comprehensible simplicity what Stanner calls 'a kind of narrative of things that once happened; a kind of charter of things that still happen; and a kind of logos or principle of order transcending everything significant for Aboriginal man' (1979a:24). According to Rose, the Dreaming provides the 'moral and ontological systems [through which] Aboriginal people have achieved and sustained their skilled ecological management strategies' (1988:385). As the logos of Aboriginal Ecology, the Dreaming presents an epistemological impasse for Western scientists seeking to draw upon that knowledge. The problem is twofold.
Firstly, Western Science excludes mythological or supernatural explanations of natural phenomena, insisting that truth can only be arrived at 'through the rigorous employment of human reason and empirical observation' (Tarnas 1991:70). Scientific empiricism locates truth 'in the present world of human experience', and denies the validity of any 'undemonstrable other-worldly reality'. This view is not universal, but a specific legacy of the Hellenic philosophy which underlies Western thinking (Tarnas 1991:70).

The second problem concerns causality, one of the principal conceptual metaphors of Western Science (Christie 1997:9). Causality is an even more fundamental tenet of science than the notion of objective truth, because the assumption that it is possible to arrive at 'a correct, definitive, and general account' of an objective reality (Lakoff and Johnston 1980:187) is based upon the premise that there is a causal relationship between an object in reality and the sensory data in the mind of an observer.

The process through which reality becomes known in language entails both causality and a system of signification. The model developed by the linguist Saussure (Silverman 1983) is useful in discussing this process. Saussure characterises the perceptual process in terms of the referent (the object in reality), the signified (the concept in the mind of the observer) and the signifier (the spoken or written word) (Cohan and Shires 1988:9-16). Together, the signifier and signified constitute the 'sign', and Saussure insists that the relationship between the signifier and signified is an arbitrary one (Cohan and Shires 1988). It is only through language, or signification, that objects which exist in reality (the referents) become known. As Eagleton puts it:

The Savvy Savage
It is not as though we have meanings, or experiences, which we then proceed to cloak with words; we can only have the meanings and experiences in the first place because we have a language to have them in (1983:60).

The significance of causality to Western scientific knowledge is more than simply the principle of 'cause and effect', of one object being causally related to another, which underpins the 'experimental method' of producing a cause to observe an effect. Causality is fundamental to the way Western knowledge is constructed. Western Ecology is a system of signification which constructs its knowledge with the assumption that there is a causal relationship between the referent and the signified. To appreciate just how this assumption bears on Western efforts to recruit Aboriginal ecological knowledge, it is necessary to take a brief discursion into the theoretical nature of phenomena, and its role in the construction of truth (Danaher et al 2000:5-7).

In the 18th century, the Scottish philosopher, David Hume, argued that causality may not be a property of the world at all but a 'need of the human mind' (Riedl 1984:72), a conclusion based on his analysis of the way the mind organises its perception of objects in reality. Causality is usually thought of in terms of an association between objects or events:

the mind may perceive that one event, A, is repeatedly followed by another event, B, and on that basis the mind may project that A causes B. But in fact all that is known is that A and B have been regularly perceived in close association (Tarnas 1991:337).

According to Hume, all 'supposed knowledge is based on a continuous chaotic volley of discrete sensations' which the mind assumes are causally associated with an objective reality (Tarnas 1991:337). In fact, the mind 'never experiences cause as a
sensation', 'only simple impressions, atomised phenomena', and causality per se is not one of them (Tarnas 1991:337). The presumed causal relationship between referent and signified, or for that matter between objects perceived in sequence or conjunction, is only due to the 'habit of the human imagination' of creating associations between ideas (Tarnas 1991:337). As Hume phrased it, one cannot say 'the stone gets warm because the sun shines,' but merely 'whenever the sun shines, the stone gets warm' (Hume cited in Riedl 1984:72).

There is no evidence to support an assumption that Aboriginal knowledge is similarly based on a presumption of causality. To the contrary, the oft cited crucial role that myth plays in Aboriginal epistemology would suggest an alternative interpretation of the nexus between concepts and their referents in the natural world (Christie 1997:10). Rose suggests one such alternative:

Specifics emerge from a background of broader categories; simultaneous emergence indicates a shared ontological status (1988:383).

This terse observation may, as Rowse puts it, 'summarise a wealth of exposition' (1992:7). 'Simultaneous emergence' is an alternative to causality as an interpretation of the conjunction between phenomena. The concept 'shared ontological basis' allows for the relationship between phenomena to be causal (because on the other hand there is nothing to suggest that causality is an exclusively Western myth), but all that can be known here is that it refers to the Ngarinman myth Rose calls the 'Dreaming' which is remarkable for the lack of causality expressed between the actors:
Sally Bijibiji, a most knowledgeable woman, told me: 'March flies are telling you the [crocodile] eggs are ready. When the brolga sings out, the Jarlalka (dark catfish, associated with flood waters) starts to move. When the little bird nini starts crying, it's hot weather time and a good time to kill emu. When the flowers of the Jangarla tree fall into the water, the barramundi are biting' (Rose 1988:382).

Western reasoning resists a literal interpretation of this dialogue: the notion of march flies, birds and flowers talking to people is patent nonsense in that context. Western Science might instead interpret this exchange with reference to the seasonal calendar, for instance, the Jangarla flowering at a particular time of the year when barramundi are voraciously feeding means that both of these events coincide with specific seasonal conditions relating to temperature, daylight, rainfall, river flows, and nutrients. Thus, while there would be no direct causal relationship established between the flowers and the fish, each would be related in a wider ecological network of causality. This wider network is, of course, a construct of Western ecological modeling or, as Lakoff and Johnston put it, a Western myth (Lakoff and Johnston 1980:186). It is against this ‘background of broader categories’ that meaning adheres to the ‘specifics’.

Similarly, specific Ngarinman ecological knowledge has meaning only with reference to the broader categories of Ngarinman myth. While the information transmitted through the network may constitute ecological knowledge, Aboriginal people may be unwilling or unable to communicate the metaphors which unlock the profound meaning within the prosaic messages (Haynes 1985:211). Isolating the information content and trying to interpret it through Western metaphor will produce at best partial, or more probably distorted or superficial, knowledge.
Western anthropological discourse, and in particular the discourse on Aboriginal Ecology, has cast the Dreaming in an increasingly critical role in everyday decisions (Thomson 1949a; Stanner 1979a; Myers 1986; Haynes 1991; Russell-Smith et al 1997). Povinelli (1993), referring to food gathering rather than ecosystem management, states that events assume mythical rather than secular significance, and that socio-cultural meaning takes precedence over economic materiality (1993:687).

Stanner calls this a 'magnification of life', and remarks upon Aboriginal people's 'obsessive preoccupation' with the 'signs, symbols, means, portents, tokens, and evidences of vitality' (1979d:119). While Povinelli generally agrees with Stanner's characterisation (Povinelli 1993:687), she places less emphasis on spirituality, pointing out that not 'every overturned stone' is seen 'as manifesting Dreaming intentionality' (Povinelli 1993:687; Stanner 1979d:179).

It is a commonplace that Aboriginal people manage ecosystems sustainably (Christie 1991; Toyne and Johnston 1991:8; Ross et al 1994:29; Bomford and Caughley 1996; Dodson 1996a:26; Bradley 1998:29; Bowman et al 2001:76), yet Bradley observes these pragmatic ecological outcomes may be no more than the serendipitous by-product of social and spiritual priorities:

What at first may look like wise management of sea turtle eggs, for example, may have more to do with the good fortune of the nesting area being within the confines of a restricted area due to the presence of sacred objects (1998:29).

While a dialogue is possible between Science and the Dreaming at the mundane level of 'folk taxonomics' (Povinelli 1993:694; Bradley 1997:76), Bradley argues that
the compilation of such lists does not 'help explain the complexity of indigenous environmental perspectives' (1998:26). However much scientific discourse may strive to plumb the true values of Aboriginal Ecology, the characteristic indeterminacy of Aboriginal language that enables people to negotiate the ambiguities introduced by myth, ecological probability and social conflict (Povinelli 1993:679) runs counter to its need for certainty.

For Bradley, spirituality is more than simply a rhetorical device that enables scientific discourse to explain away that which it cannot comprehend about Aboriginal ecological behaviour. The ecological knowledge that Western discourse seeks to recruit to its own purposes is instead 'encoded' within an Aboriginal discourse that interprets the natural world through a mythical symbolic order (Bradley 1998:27). Science tries to interpret Aboriginal ecological knowledge as if it were static — unchanging and ahistorical — rather than what Christie calls 'performative' (Christie 1994). During translation, significant properties of Aboriginal ecological knowledge are lost, elided over or suppressed, such that it is represented in Western discourse as seeking closure on an absolute reality rather than exploring the possibilities of a relative reality, determinacy rather than negotiation in relationships, and meaning through denotation rather than connotation.

Translation impinges on not just the knowledge but on the social order from which it is taken. Foucault describes the nexus between knowledge and society as 'a circular relation' between 'truth' and the 'systems of power which produce and sustain it'. By 'truth' Foucault means not the representation of an absolute reality toward which scientific knowledge advances (cf Bowman 1998:404), but 'a system of
ordered procedures for the production, regulation, distribution, circulation and operation of statements' (Fairclough 1992:49). The epistemological hegemony of Western Science not only corrupts Aboriginal knowledge but erodes the social structures through which it is authorized (Bradley 1998:25-28).

Western Ecological Science is implicated in social discourse (Fairclough 1989) through this imbrication of knowledge with power (Crick 1982). The appropriation of Aboriginal knowledge, its translation into Western metaphor and its reproduction in Western discourse are a process by which European society displaces and transforms Aboriginal society. That the knowledge is ecological makes this process especially germane to the process of colonisation, because it speaks to the human-land relationship that is the quiddity of what Europeans settlers took from Aboriginal people. The appropriation of ecological knowledge is, in effect, the quintessence of colonisation.

The analysis of Rose (1988) above addresses one aspect of an Aboriginal ecological paradigm, and that is its explicit reference to the Dreaming myth. The analysis shows that the nature of the paradigm makes the translation of Aboriginal Ecology into Western scientific discourse problematic. The analysis of Bradley (1997) that follows addresses a further aspect of the paradigm that poses a difficulty for translation. This aspect is deployed tactically in Aboriginal text (Yibarbuk 1998), examined later, and was first noted by Haynes (1985) as providing Aboriginal informants with a pretext to withhold knowledge from Western discourse, or at least to render it into a code to which only they hold the metaphoric keys.
The following analysis of Bradley's text (1997) borrows its methodology from Barthes (1974). Barthes identifies five codes that 'weave' the narrative as if they were 'mirages' dissolving into one another, resulting in a text without an obvious and definitive structure (Barthes 1974; Silverman 1983:247; Cohan and Shires 1988:25). The analysis below focuses on just one of these codes, the hermeneutic, the code that formulates the enigma of a narrative. The choice of Barthes' narrative methodology is prompted by Bradley's presentation of his text as a 'story', and the focus on the hermeneutic code is determined by his use of this device to describe an enigmatic aspect of Aboriginal Ecology.

Bradley's enigma concerns the Yanyuwa perception of landscape, its inhabitants and the relationships between them. Its enigmatic quality stems from the fact that this ecological cosmos transcends the boundaries of the natural world that forms the basis of Western Ecology. Barthes' narrative methodology requires that no more be said about the enigma at this juncture, but rather that it be allowed to emerge during the progress of the analysis.

A story: In 1989 I travelled into the Limmen Bight with a number of senior Mara men, as we travelled towards the coast, through open forest and then savannah grassland the men were busy burning the country. By the end of the day extensive areas of burnt land lay behind and around us. The sun sank as a bright red disc into the smoke and haze-filled sky. That night as we lay in our swags a bush turkey came close by our camp, making quite a lot of noise as it did so. The men accompanying me saw this turkey as a manifestation of the spirit of their deceased kin who had belonged to the country we were travelling through. He was calling out, they said, to his living kin telling them that he was annoyed at what he considered to be the abnormal amount of burning they had done during the course of the day (Bradley 1997:75).
The above quote is the introductory paragraph to a text describing the attitude of Yanyuwa people to landscape fires. The text anchors their motives in their relationship with country, motives that are spiritual rather than secular, reflecting the essential difference between Aboriginal and Western Ecologies. Bradley uses the term 'spiritual' with 'trepidation', noting that its use presumes a 'split between the secular material world and the realm of the spirit' (1997:75). This split is a fundamental tenet of Western Ecology and is a distinction that the Yanyuwa do not make, who instead recognise 'only one world, one environment, which is simultaneously material and spiritual' (Bradley 1997:75; cf Jones 1991:22).

The title, 'Burning for the Ancestors', contains the text's central enigma, as did Rose's 'Land Ethic' (1988). It combines two signifiers ('Burning for' and 'the Ancestors') which stand opposed to each other in a way which is at first reading plausible but which closer examination reveals to be highly improbable. This is the 'thematization' of the enigma, this being one of ten 'morphemes' which constitute the hermeneutic code, and whose task is to 'effect the definition of character, object or place in ways which signify mystery' (Silverman 1983:258). Thematization also involves other codes, notably the 'semic' and the 'symbolic', and it typically occurs not once but repeatedly throughout the text on its path to exposition and disclosure. The hermeneutic code is responsible not only for first suggesting and later resolving the enigma, but also for delaying its unfolding (Silverman 1983:257). For example, it is not until more than two-thirds of the way through Bradley's text that the enigma contained in the title is expanded thus:

It is upon the living that the obligations fall of burning country, nurturing the family and maintaining the sanctity of the sacred places, just as the deceased did when they were living (1997:76).
'Burning for the Ancestors' implies 'obligation', but an obligation to burn by and for whom? It is clear from the introductory paragraph, quoted earlier, who is obliged. It is the 'senior Mara men', or at least the Yanyuwa people, and more generally the Aboriginal people that they symbolise. In Western discourse on Aboriginality, 'Ancestors' conventionally refers to the Creation Beings of the Dreaming (eg Spencer 1912:460; Warner 1969:18; Thomson 1949a:18; Jones 1988:90), although in archaeological discourse it also refers to the genealogical ancestors of present-day Aboriginal people (Hiatt and Jones 1988:2) and of humans generally (Jones 1980a:5). The text thus draws a distinction between the historical ancestors once living but now 'deceased' and whose memory has passed into myth, and the imaginary ancestors who have only ever existed in myth. Bradley refers to those of more recent memory:

The knowledge, for example, that deceased kin are always present on the country provides for people an avenue for remembrance and celebration of their lives, and also enables an acknowledgment of the care they provided while living and the potentiality to care now that they have become a part of the environment (1997:76).

This passage refers to continuity between the recently dead and the imaginary Ancestors or Creation Beings, a continuity which has an equivalent in Western theology but which Western Science excludes from its purview. The enigmatic title, along with the introductory 'story', extends this continuity between remembered and imagined ancestors to include those people still living. In other words, the living, the recently deceased and the Creation Beings share an existential continuum. Western Science finds this continuum highly problematic, but this 'story' implies that the Yanyuwa conceive of it as quite natural. The continuity between the living and the ancestral spirits is also established in this passage by the exercise of 'care' on both sides of the existential divide. This care manifests as a 'potential' in the spirit realm, a multivalent signifier which refers to a reciprocity...
between the living (who have the obligation) and the deceased (who potentially may care), and to the propitiation of the ancestors (by burning) which converts this potential caring into ecological reality. It also refers intertextually to the potency of spirit beings, manifest for example in Spencer’s increase ceremonies (Spencer 1928:835) and Thomson’s Marr (Thomson 1975).

While the title refers to this act of propitiation, it is only later on that the text refers to the power that spirit beings can exert over the natural world:

These spirits are said to be jealous of their living kin, and can if they choose cause their living kin harm and hardship. Conversely they can assist the living, appearing in dreams and assisting their living relatives with the retention of information such as place names or the location of bush foods (Bradley 1997:77).

The spirits of the deceased are considered “cheeky”: they are cantankerous, they can respond to the living in ways which are not always benign (Bradley 1997:78).

The text suggests one further continuity. ‘Part of the environment’ echoes ‘part of nature’ (Dodson 1996a:26; Silas Roberts cited in Rose 1996:26), possibly an intentional resonance by the author, but one which nevertheless again taps the incongruity between Western and Aboriginal ecological knowledges. In ecological discourse, ‘environment’ presumes the natural or physical environment to be the limits of causality. In Yanyuwa discourse, it refers to both the ecological and the cultural environment, and indeed the social environment insofar as spirits are kin.

The ‘bush turkey’ referred to in the introductory ‘story’ is a spirit manifesting as part of the natural environment, and serves as a metaphor through which Bradley represents the existential continuity between the mythical domain and the physical reality in which living people experience ecological causality. The dialogue between
the spirits and the living men – the turkey expressing annoyance and the men burning the country – indicates that ancestors also constitute a social environment.

The enigma is readily resolved since, as Barthes points out, 'the sentences ... cannot help but move the story along' (1974:75), and it would be redundant to explore any further the devices that Bradley employs to delay the disclosure were it not for one which 'jams' the passage of this Yanyuwa metaphor into Western discourse.

In contemporary times tourists, pastoralists and other non-indigenous people who own occupy-country, are also described as "shutting up country", not just because the Yanyuwa cannot fulfil their obligations towards their country, but the country is described as getting poor because the old people have "shut it up". Thus, new land uses are seen to be altering the landscape in radical ways, and the burning of country by people who are not Yanyuwa is seen to be wrong. The country may be burnt, but the people who are burning it are seen to lack the sensibilities required to do it in a manner which will not offend the spirits which inhabit the landscape and the living people responsible for the country (Bradley 1997:78).

'Jamming' is another of the ten morphemes which comprise the hermeneutic code, and whose role in narrative Silverman describes as one 'intended to induce in the reader a frenzy of epistemophilia' (1983:261), or in other words, to provoke an intense desire for knowledge. In classic narrative, jamming usually results from 'an exhaustion of all available resources' and the consequent 'failure of the hermeneutic activity' (Silverman 1983:261). The picturesque reconciliation anticipated in the introductory story – Mara elders and the neophyte anthropologist bedding down as the 'bright red disc' sinks 'into the smoke and haze-filled sky' – is interrupted by the arrival of 'tourists, pastoralists and other non-indigenous people' who 'shut up' the country (Bradley 1997:78; Crick 1995).
Bradley is told by his companions that the turkey is expressing annoyance at the 'abnormal amount of burning', but this activity may be no more than 'corrective burning' (Head 1994:177; Hill et al 2000:153; Lewis 1989: 950; Russell-Smith et al 1997:130), that is, the 'cleaning of country' unburnt for many years because 'traditional fire management has broken down and [whereby] Aboriginal people are attempting to regain control' (Bowman 2001:73; Haynes 1985:205). Bradley describes 'negotiation in relationship to country' as 'an important ecological tool' (1997:76), and reports that Yanyuwa perceive fire as a way of 'speaking to country, holding or embracing the land, following the Law, listening to country, making the country safe and making the country good' (1997:77).

One might imagine that the turkey would approve of such a return of the Law, might rejoice at the return of the hunters or indeed welcome the opening of the country so that it too might hunt (Bradley 1997:76). The turkey would thus regard such 'abnormal' burning as a reconciliation with 'people who have been remiss in their responsibility towards the burning of the country' (Bradley 1997:78). Although the Mara men may be too courteous to say so, the bush turkey may be braying instead at their knowledge-hungry Western guest, the anthropologist.

Bradley's contribution to the Western reconstruction of Aboriginal Ecology reinforces several key concepts already active in the discourse: that Aboriginal Ecology is concerned with caring for, or curating, the natural environment; that this natural environment is perceived as being continuous with a non-temporal realm, or at least with that inhabited by spirits of the deceased; that ecological causality is available from the mythical power that created both the natural and supernatural worlds, and that is accessible through propitiation of spirits that inhabit the landscape; and that the relationship between Aboriginal society and the landscape is one of affiliation (in the anthropological sense of kinship), an ancestral lineage that in fact constitutes the natural world.
The above analysis of Rose (1988) and Bradley (1997) identifies characteristics of Aboriginal Ecology, at least as it is represented in Western discourse, that pose significant obstacles to its translation into that discourse. Similarly, the analyses of Russell-Smith's (Russell-Smith et al 1997; Russell-Smith 2001) and Bowman's (1998) texts examined the role of the discourse in erasing Aboriginal subjectivity in the process of this translation, and showed this erasure to have implications not only for the meaning attached to the knowledge, but also the role of the discourse in European colonisation. This colonial role stems from the contribution by Western Ecological discourse to the stabilization of that colonisation, one aspect of which is the appropriation of Aboriginal ecological knowledge for the purpose of exercising control over natural processes like fire.

Thus far, the analysis has also considered the production of imagined subjectivities, and the appropriation of those subject positions to align Aboriginal discourse with the power of the dominant discourse. This alignment serves not only to valorise the role of Aboriginal Ecology against the norms of a conservation ideology, nor merely to validate it against those of Science, but, as the analysis of Yibarbuk's texts will demonstrate later, to enhance its role in the production of the Western discourse. According to this analysis, the discourse is undergoing changes that reflect competition between ideologies for control over its production and resultant shifts in authority and power.

These changes also reflect a prevalent notion that the discourse needs to incorporate Aboriginal ecological knowledge. This incorporation entails a shift from an objective representation of the knowledge, to an attempt to represent the knowledge through Aboriginal paradigms (even if these are in turn artefacts of Western discourse), and ultimately the production of the discourse by Aboriginal authors. Whether the latter is an authentic expression of Aboriginal discourse or yet another form of Western discourse is a question raised during the analysis of Yibarbuk's texts below.
Beforehand, however, the analysis returns to the dominant discourse, and to Science as one of the ideologies competing in its production with the increasing influence of Aboriginal ideology.

The dominant role that scientific ideology plays in the discourse derives not just from its association with the dominant society, but also because it provides a set of semantic and rhetorical tools that producers can use to advance its position. The analysis of the two scientific texts that follows (Andersen 1999; Bowman et al 2001) employs a methodology that attends to certain textual features, with the aim of exposing the activities of underlying ideologies. The basis for the choice of these two texts for analysis is that they propound quite different ideologies, at least insofar as to which should prevail in its control over the landscape. However, in both, a rigorously scientific Ecology prevails in the production of text, as does an underlying ethos of conservation. Their comparison thus provides a further basis, along with the analysis of Rose (1988) and Bradley (1997), for the analysis of Yibarbuk’s texts that then follows.
Chapter Seven
Andersen and Bowman

Texts Analysed

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As an ecologist and leader of the CSIRO's Tropical Ecosystems Research Centre, Andersen's text (1999) reflects CSIRO's strong orientation toward scientific paradigms. CSIRO has a long association with the cattle industry in North Australia and Andersen's (1999) concern with pastoral management strategies reflects the organization's ongoing role in developing sustainable and productive land utilization systems. The text addresses ongoing conflict between the management priorities and approaches on neighbouring land under respectively pastoral and Aboriginal control (Head et al 1992). Andersen's (1999) assertion of the preeminence of a scientific over a management ethos may be couched in terms that seem politically neutral, but it provoked a critical reaction from parties seeking federal funding to promote Aboriginal fire management (P Cooke pers comm). The stance Andersen takes in this text counterpoints the valorization of Aboriginal discourse by scientific texts such as Bowman's analysed below.

As a text published in a volume celebrating the work of Rhys Jones (Allen et al 2001), Bowman et al (2001) explicitly aligns itself with the representation of Aboriginal people as knowledgeable and active land managers, especially through their mastery of fire. Like Jones' texts (eg Jones and Bowler 1980), Bowman et al (2001) blurs the boundary between ethnography and ecology, and demonstrates the influence of ethnographic precedents on ecological discourse that underpins the inclusion of Rose 1988 and Bradley 1997 in these analyses. Just as those texts incorporated Aboriginal paradigms, Bowman et al (2001) incorporates Aboriginal text to facilitate his translation of Aboriginal Ecology into Western scientific discourse. Bowman acknowledges as coauthors not his informants but two translators whose interpretative contribution is, for simplicity sake, not considered in this analysis; nor, for the same reason, is the complex question of attribution. Because the role of Bowman's informants is highly significant to the resultant
subject positions and social constructions, as are Bowman's efforts to write his informants' own subjectivities out of the final text. Andersen (1999) and Bowman et al (2001) both address social issues that arise as a consequence of the Western appropriation of Aboriginal ecological knowledge. Concerned with the development of fire management strategies for North Australia, they present from different perspectives the dialogue between the two systems of knowledge, Western and Aboriginal.

While firm proponents of the scientific method, they diverge on the question of which system provides the best basis for management; Andersen arguing for scientific Ecology, Bowman for Aboriginal knowledge. Together they are specimens of a discourse that is distinctly Western, and which contrasts with the texts of Ybarbuk whose analysis follows. The two sets of texts – Andersen and Bowman, and Ybarbuk – demonstrate not only differences in language and priorities between the two ecologies, but also the association of those discourses with their respective ideologies, ideologies which refer ultimately to control over the land.

Andersen (1999) argues that land management based on scientific knowledge is in a better position than intuitive management to promote core management values. The text draws a distinction not between Aboriginal and scientific knowledge systems, but between scientific and intuitive management. Andersen (1999) thus appears to build a bridge between Aboriginal and Western discourses about land, and to represent Science as a discourse within which the two discourses find common ground. However, the analysis of Andersen (1999) shows that the text instead works to increase the hold of Western ideology over the North Australian landscape, advancing the position of both scientific and conservation ideologies in the discourse within which control of the landscape is contested.
In the context of the present essay, the analysis of Andersen (1999) demonstrates a principle that is both central to the argument here and is an important ideological theme within the discourse, and that is the alignment of knowledge with control over the landscape. It is apparent, from the analysis of Andersen (1999) below, that it is not so much a question of who owns the land but which ideology prevails in the exercise of its control. This, in turn, provides the system of rules that determines ownership of the landscape.

The remainder of the analyses in this essay explore differences in the coding of the two systems of knowledge, scientific represented by Andersen (1999) and Bowman et al (2001), and Aboriginal represented by Yibarbuk (1998; Yibarbuk et al 2001; Yibarbuk and Cooke 2001). The analysis of the scientific texts is building toward the analysis of Yibarbuk's text, the latter presumed to be a composite of Western and Aboriginal discourse. The analysis of Yibarbuk's text will thus draw upon insights obtained during the analysis of the anthropological representation of Aboriginal discourse (Rose 1988; Bradley 1997) and the scientific representation of Aboriginal ecological knowledge (Andersen 1999; Bowman et al 2001). The analyses pay attention to the particular textual features of the texts that are linked to, and expose the workings of, the ideologies associated with the respective discourses. The aim, in the analysis of Yibarbuk's text, will be to ascertain the workings of the two discourses in the text, and to thereby examine the social implications of their joint production of the Western discourse on Aboriginal Ecology.
Alan Andersen

Nominalisation, the conversion of processes and activities into nouns or nominals, is a characteristic of scientific text. While it achieves brevity and enables the nominalisations themselves to take on the role of agents in other processes, it is of considerable cultural and ideological importance because it has the effect of pushing into the background the process itself, leaving out who is doing what to whom as well as the motivations involved (Fairclough 1992:179-183).

Andersen’s text identifies its scope as:

cross-cultural issues relating to the acquisition and use of knowledge relating to fire management in northern Australia (1999:2).

The nominalisation of most interest here is the ‘acquisition and use of knowledge’, which is comprised of two separate nominalisations each of which elides over intensely contested processes. Another nominalisation, ‘cross-cultural’, implies that the knowledge is acquired by one ‘culture’ from another, and it is apparent from the text (Andersen 1999:1) that European and Aboriginal comprise the respective sides of this transaction. It is not evident from this sentence, however, whose knowledge is being acquired and who uses it, although the text argues primarily that land managers – which includes Aboriginal people – should heed scientific knowledge, or more specifically, Western epistemological conventions. This would make the text an exception to the more recent trend wherein the discourse champions Aboriginal knowledge. However, in hedging this proposition by acknowledging ‘the rich cultural heritage of Aboriginal Australians, who..... possess an enormous, but largely untapped, knowledge of the Australian biota’ (Andersen 1999:7), the text
does adhere to the consensus view that Western Ecology would benefit from Aboriginal ecological knowledge.

'Acquisition' is an ideologically more neutral term than 'appropriation', which it approximates in meaning, but which is often used to refer to taking possession of property (Alvey 1987:10). This could be the appropriation of land, either through recourse to Crown Law (Butt and Eagleson 1993:89; Ryan 1996:3), force (Williams 1986 cited in Head 2000:66) or discourse (Ryan 1996:60; Head 2000:142), or it could be the appropriation of cultural identity (Nicholls 2000). 'Acquisition', derived from the same etymon as 'inquire', avoids any implication that the knowledge is obtained without authority as it would be if it were 'appropriated' (Russell 2001:19), and elides over the question of what intellectual property rights Aboriginal people might hold over their ecological knowledge (Allen 1997:146; Smyth 1995:58).

The ambiguity about agency assists this submersion of process. If it is Western knowledge being acquired, as the text proposes, then this process is only part of the 'creation and sharing of information [which] is a global activity' (Andersen 1999:3) and there is no conflict over intellectual property. However, if it is the intention to expose all knowledge to this ethos, then the text itself (as does Bradley 1997) identifies the problem:

Aboriginal people place great emphasis on protecting their knowledge, which is a major source of status for tribal elders, and there is considerable resistance to the acceptance of new knowledge from outside sources (Andersen 1999:3).

'Fire management', the third of the nominalisations, is frequently encountered in the discourse on Aboriginal Ecology, and it is worth drawing attention to its elisions, even though they are fairly straightforward. Andersen refers to these:
Fire is a dominant land management issue in the tropical savanna environment of northern Australia, with up to half or more of regional landscapes being burned during the dry season (1999:1).

‘Dominant’ here explicitly refers to the extent of land burnt, although its being an ‘issue’ clearly refers also to the social tensions surrounding fire management. Later in the text, Andersen indicates the source of these tensions:

Most of the fires are lit by people: by people of (colonial) European origin who wish to protect life, property, pastoral resources, and their concept of a “natural” environment, and by (indigenous) Aboriginal people wishing to maintain traditional practices (1999:2).

‘Colonial’ and ‘indigenous’ are intended not to qualify ‘European’ and ‘Aboriginal’ but to indicate polemic extremities. ‘Life’ and ‘property’ signify the essentiality of the role that fire plays in the political and social context of North Australia. ‘Pastoral resources’ is associated with the economy and buttresses ‘property’ in associating Europeans with the land as owners, an ownership which is asserted through land management. ‘Natural environment’ refers to the complex of concepts clustering around conservation, and appears here (in shock quotes) to evoke the debate over whether the Australian landscape is ‘wilderness’ (Langton 1996) or the product of Aboriginal intervention (Jones 1969). The text associates European fires with concepts that refer to control of land but, by characterising Aboriginal fires as ‘traditional’, renders Aboriginal people ‘ahistorical’ (Stacey 2001) and thereby detaches them from political reality.

Andersen draws a cultural dichotomy not between ‘black and white’ (1999:3) but between ecologists and land managers, the former subscribing to a ‘scientific culture’, the latter – which includes European as well as Aboriginal – to an experiential culture (1999:3). Andersen differentiates between the two cultures thus:
European fire management is viewed as a task-oriented activity, usually driven by a particular "problem" that needs to be "solved," with management goals relating directly to specific outcomes such as protection of life and property, or biodiversity conservation (1999:3).

By contrast, ... the desired ecological outcomes of traditional burning are often difficult to define, at least for Europeans (1999:3).

In European management, the knowledge base is continually developed through the scientific method, which aims to create new knowledge, often by challenging old knowledge, through the paradigm of hypothesis testing (1999:3).

Traditional explanations of major biophysical phenomena are based on "dreamtime" mythology (comparable to the Genesis mythology of Christianity), rather than on natural biophysical processes (1999:3).

The contrasts here are self-evident and refer to distinctions already drawn. However, several points in the final quote are worth noting. 'Biophysical processes' implies an interpretation of natural systems based on Western paradigms, as opposed to the mythology of 'dreamtime' conceptualisations. In scientific metaphor, 'mythology' equates to fiction (Lakoff and Johnson 1980:186); in a discourse which privileges fact, it is a term which dismisses concepts labelled thus. Andersen's attempt to mitigate this disparagement by referring to Western mythology (as did Warner 1969:398) fails on two accounts.

Firstly, there are no shock quotes around Genesis to correspond with those around "dreamtime"; moreover, Genesis and Christianity are capitalised whereas dreamtime is not. Secondly, although Wolfe (1991) makes no distinction between 'dreamtime' and 'dreaming', it has been suggested that while 'dreaming' is a valid Western translation of the original Aboriginal concept, 'dreamtime' is associated with an ahistorical representation and the commodification of Aboriginality (Darrel Lewis pers comm). This is not overzealous criticism; it indicates the opposition which
the text constructs between scientific rationality and Aboriginal thought. Such
textual nuances are exposures of the author's ideology.

Andersen expands on 'traditional', but in terms that lack the certainty and
specificity of those associated with European fires, and which are encapsulated
within the notion 'diffuse':

landscape burning by Aboriginal people is
more of an emergent property, diffusely
arising from many uses of fire that serve
social, cultural, and spiritual, as well as
ecological, needs (1999:1).

'Emergent' is curiously ambiguous, it could mean 'becoming apparent', 'coming into
existence', or 'changing' (Concise Oxford), but it associates Aboriginal burning with
imprecision. Andersen's description of the role of fire in Aboriginal society as
'diffuse' might indicate no more than an intention to be vague about its significance,
extcept that he explicitly refers it to the question of land ownership:

This distinction between European and
Aboriginal land management has been summed-up
by Tilmouth (1994), who describes the
European philosophy as one of land belonging
to people (and therefore people having
command of it), contrasting with the
Aboriginal perspective of people belonging to
the land and being part of it (1999:2).

The distinction cited here was, in point of fact, first drawn by Justice Blackburn in
the Gove Land Rights case. The metaphor of 'people belonging to the land', while
evoking a Rousseausque affinity with Nature which predates property law (Hall
1973; Alvey 1987), asserts the absence of alienability of land which led Justice
Blackburn to dismiss the plaintiff's claim to land ownership in that case (Williams
1986a; Butt and Eagleson 1993).
Andersen advocates a ‘science of ecological land management’ called ‘adaptive management’, ‘a highly structured, strategic approach to minimising the risks associated with ecosystem management due to the inevitable lack of complete ecological understanding’ (1999:3). In contrast with conventional scientific paradigms, this approach is concerned not with ‘absolute truths’ but with ‘learning experiments’ (Andersen 1999:3). This requires ‘clear and unambiguous management objectives, and the formulation of performance indicators’ (Andersen 1999:4). The chief indicator for Western ecologists is biodiversity. Andersen insists on this as an indicator even though

the western concept of biodiversity conservation is not understood or accepted by Aboriginal people (1999:4).

As an unfamiliar abstraction, the term “biodiversity” is not only meaningless, but also many of the contemporary concerns relating to it, such as much of invertebrate ecology and the whole field of genetics, lie outside traditional Aboriginal experience (1999:4).

As a general statement, this agrees with observations by Russell-Smith et al (1997) and Haynes (1985; 1991) that when Aboriginal people burn country it is not with the aim of preserving biodiversity. Andersen here takes that principle further, associating biodiversity with fields of Science that, at least technically, lie outside the experience of anyone but specialist scientists. The intended corollary of this is that only Western Science holds the knowledge on which to base contemporary land management, and the perhaps unintended corollary is that only those who ascribe to this episteme can legitimately assert their proprietary interest in the land by burning it.

There are too many references throughout the discourse to detailed Aboriginal ecological knowledge, the ability of intelligent Aboriginal people to comprehend

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complex Western ideas, and the negotiated and evolving nature of the Aboriginal episteme, to conclude that Andersen rejects the notion that Aboriginal Ecology comprises acute ecological knowledge and praxis. Rather than being taken at face value, then, his argument should be considered in terms of its positioning of Aboriginal ecological knowledge relative to Western Ecology. He provides the key in the context of ‘the setting of strategic objectives’, and especially where they are ill-defined or ambiguous:

Most land management agencies in northern Australia are guilty of at least sometimes setting unprioritized, competing objectives (Andersen 1999:5).

Kakadu National Park has the “twin” objectives of promoting traditional burning practices and conserving biodiversity (Andersen 1999:5).

The extent of harmony between these objectives depends on exactly what is meant by “conserving biodiversity” (Andersen 1999:5).

The ‘competing’ objectives identified in the second quote, ‘traditional burning’ and ‘biodiversity conservation’, have been elsewhere in the discourse (eg Bowman 1998) shown to be compatible, in particular in the context of traditional burning to promote biodiversity specifically in Kakadu (Press 1987). It is reasonable to assume that Andersen is thoroughly conversant with the discourse, and thus refers not to the ecological effect of traditional burning but to the management cultures – or discourses – associated with each. In other words, while the text is ostensibly an exposition of an approach to fire management of the landscape of North Australia, it actually refers to the competing discourses which it signifies by ‘traditional burning’ and ‘biodiversity’.
Two discourses, Aboriginal and Western, have been engaged in what might be termed a dialectic whose narrative trace is the Western discourse on Aboriginal Ecology. Andersen's text depends on the polarity between Aboriginal and Western Ecological discourse and, despite the argument being superficially structured around the opposition between Ecological Science and intuitive land management, the dialectic repeatedly erupts onto the surface of the text in the form of ambivalent metaphors, ambivalent because they signify at two different levels. 'Harmony' is one such textual clue.

What is meant by 'harmony' in the last of the above three quotes is, on the surface, a reconciliation between competing land management objectives. Andersen reduces this to the prioritising of objectives, and suggests that three alternative regimes of biodiversity are candidates for conservation. That which prevailed

[1] immediately prior to European settlement [or]

[2] prior to any human occupation, [or]

[3] perhaps it is more appropriate to maximize biodiversity in the national park system through management intervention, or to engineer landscapes especially suitable for rare and endangered species (Andersen 1999:5) (emphasis in original).

The first two refer to the debate over the impact of Aboriginal burning (Jones 1969; Bowman 1998). According to the discourse on Aboriginal Ecology, extant biodiversity is the result of Aboriginal custodianship of the Australian landscape, a legacy now threatened by an ecologically anarchic regime of wildfire. The third proposes biodiversity reserves, either excised from the general pattern of exploitative use which supplanted the Aboriginal landscape or, in cases where islands of this landscape have not survived, 'engineered'.
'Engineer' speaks to the 'mechanical cultural constructs' which have replaced 'organic metaphors' (Rose 1988:379), and the Baconian notion of controlling nature through perfect knowledge (Oelschlaeger 1991:105). The machine metaphor is a symbolic node (Silverman 1983:22) at which several potent discourses intersect: the pre-Copernican clockwork models of the cosmos which spoke of a Divine mechanic; Descartes' Humanism which, he wrote, would make men 'masters and possessors of nature' (Relph 1981:32); Newtonian physics which promised discovery of the laws of the universe; and landscape gardening, the 18th century precursor to the creation of National Parks (Tuan 1974:128, 137; Nash 1989; Oelschlaeger 1991; Stankey 1978), whose significance refers to the discourse on the Sublime (Cosgrove 1984:17-18) and thereby to the quest for individual meaning (Jeans 1983:171).

'Harmony' also refers beyond its immediate context (the competing management objectives in Kakadu) to the social context in which the two metaphors, 'engineer' and 'traditional', signify competition for control over the North Australian landscape:

Reconciliation between European Australians and Australia's original inhabitants has an enormously high national profile, particularly in relation to land access and ownership (Andersen 1999:8).

For the effective management of such land, another difficult but rewarding challenge lies in reconciling tensions between the cultures of science and management, black and white (Andersen 1999:1).

In this context, the conventional European vs. Aboriginal contrast might be more accurately described as a conflict between scientists on one hand and land managers in general, both black and white, on the other (Andersen 1999:1).
'Reconciliation' is more than 'a vague motherhood statement' (Andersen 1999:5) with which Andersen rounds off his text. It is semantically related to, and thus refers to, the 'harmony' between competing management objectives, and therefore to the competing epistemologies symbolised by 'traditional burning' and 'biodiversity'. As Andersen indicates in the second of the quotes here, the tensions to be reconciled exist between two competing cultures, which he identifies as Science on the one hand and management on the other.

To head off any racial interpretation of this polarity, that is, as a 'conventional European vs Aboriginal contrast', Andersen conflates black with white management. Irrespective of whether white managers share the culture of black managers, Andersen is articulating a 'conflict' between two epistemologies: Western Science – which is implicated in the process of colonialism, whether directly as an agency or as a Western ideology; and tradition – which colonialism assaults on two fronts: physically by displacing Aboriginal land management (Russell-Smith et al 1997:165), and epistemologically through the hegemony of Western Science.

In form, Andersen's 'adaptive management' resonates with Rose's 'Aboriginal land ethic' (1988), although it derives its data from scientific method rather than from non-human members of the biotic community. The validity of the latter derives from its sanctioning in Ancestral Law; the validity of scientific data relies on its confirmation through an empirical process of trial and error. Andersen (1999) is not postmodern in the conventional sense but the text does approach the production of knowledge as a negotiation. The key paradigm is not the Aboriginal myth of Creation but the Western myth of nature as machine which, if it can be said to have
any religious aspect at all, stems from a Hebraic-Christian view of nature as existing for the purposes of man (Passmore 1974:17). In the discourse inhabited by Andersen's text, Western ideology has replaced the textually rich Aboriginal landscape with a precise and scientifically engineered environment.

Andersen (1999) manoeuvres Science into a position of power as the source of the knowledge that underpins decisions about land management. Bowman (Bowman et al 2001:76) criticises Andersen's argument for privileging Western over Aboriginal ecological knowledge, for being 'dogmatic', 'wrongheaded' and 'stubborn', and for 'ignoring the evidence'. This criticism itself suggests strongly-held opinion, and overlooks the insight that Andersen's text provides into the social nexus between Ecological Science and power.

The above analysis aims to demonstrate that, from the powerful position of scientific authority, Andersen (1999) neatly aligns land access and ownership – and in particular the control of land through the management of fire – with the epistemological alternatives represented respectively by Western and Aboriginal Ecologies. The contribution of this analysis to the broader argument presented in this essay is that it clearly identifies the hegemony of Western Science in the production of the Western discourse on Aboriginal Ecology, a hegemony manifest in Andersen's (1999) advocating Western Science as the paradigm through which Aboriginal people should exercise their managerial control over land. The exercising of this power during the translation of Aboriginal into scientific discourse, the changes it produces in meaning, and its social implications are the focus of the analysis of Bowman et al (2001) that follows.
David Bowman

The analysis now turns once again to Bowman's text (Bowman et al. 2001). The return would be warranted alone on the basis of Bowman's substantial influence over the discourse. This influence is exercised not only through Bowman's construction of Aboriginal subject positions which are then adopted by other authors (eg Langton 1998) for political purposes, a process examined earlier in the analysis of Bowman (1998). It is also exercised through his interpretation of ecological and social processes and the naturalization of these as fact. This occurs not only by virtue of their association with the authority of scientific discourse but simply by virtue of their being repeated. A demonstration of Bowman's influence, and how balanda science steers Aboriginal discourse, is given in the analysis of Yibarbuk and Cooke (2001) later, where Bowman's account of how science identified Cypress Pine as an indicator of fire history is accepted in preference to a plausible alternative that credits Aboriginal knowledge.

Bowman et al. (2001) marks a significant step in the development in the discourse in that it seeks Aboriginal ecological knowledge directly from its source. It is thus an application of the scientific principle of objectivity, that is, a working toward a knowledge of the object as it exists in the real world. The object of the scientific quest is here, somewhat confusingly, a body of knowledge and, just as a scientific study of atoms or ecosystems considers them as objects in the real world and develops knowledge about them, the representation of Aboriginal Ecology in Western scientific discourse approaches that body of knowledge objectively. The evolution of the representation of Aboriginal Ecology, moving from the distance of a reconstruction of explorers' accounts of Aboriginal praxis (Fensham 1997) to the proximity of interviews with Aboriginal informants (Bowman et al 2001), can thus be seen to be merely the normal progression of scientific scrutiny toward its object. A subsequent analysis considers the production of the Western discourse on
Aboriginal Ecology by an Aboriginal author (Yibarbuk) as a further logical step in this process, and one that reveals much about underlying motives.

The earlier analysis (Bowman 1998) examined the production of Aboriginal subjectivity within scientific discourse, and its application in social discourse to advance the position of Aboriginal Ecology with respect to Western ideological values. The analysis below (Bowman et al. 2001) examines the significance of this objectification of Aboriginal Ecology and consequent erasure of Aboriginal subjectivity. The analysis of Russell-Smith's text earlier considered the implications of erasure for the process of European colonisation. The analysis of Bowman's text below examines the way in which this erasure produces a change in meaning.

Bowman et al (2001) asserts the preeminence of scientific discourse, referring to Aboriginal discourse in order to validate perceptions of Aboriginal Ecology that have already been established through the scientific method. At the same time, the text valorises Aboriginal discourse both explicitly and implicitly by virtue of its seeking out and privileging the views of informants. While seemingly contradictory, specific motives underlie this approach toward the objective source of the knowledge, and an examination of these reveals important aspects of the social and epistemological dynamic.

As will become evident during the analysis below, Aboriginal ecological knowledge is far from being the object that scientific discourse imagines, and is instead highly subjective in nature. The analysis seeks to demonstrate how the erasure of this subjectivity during translation produces a change in meaning, a conundrum that scientific discourse endeavours to resolve by interpolating scientific values and meanings to the translated knowledge.
Another problematic aspect of Aboriginal ecological knowledge is its reference to the supernatural, whereas Western Ecology limits its interest to the natural world. Moreover, as the analysis will show, in Aboriginal discourse this supernatural dimension is continuous with the subjectivity. Since the purpose of the translation of Aboriginal ecological knowledge is its application to real material outcomes, its supernatural referents introduce problems of causality, at least as that is understood in Western discourse. The problems are resolved not only by shifting to a myth of objective causality (Lakoff and Johnson 1980:186; Riedl 1984:72) with the consequent change in meaning indicated above, but by advocating that the responsibility for managing land be given back to Aboriginal people (Whitehead 1999; Bowman et al 2001:76), a solution that would seem to reduce European control rather than enhance it.

Bowman attempts to find points of equivalence between Aboriginal and Western ecological knowledges, using Western criteria to validate Aboriginal knowledge, and Aboriginal text (oral testimony) to validate his own scientific hypotheses. Whereas Bowman’s text (1998) analyzed earlier focused on the paleoecological impact of Aboriginal burning, the text analyzed below (Bowman 2001) focuses on contemporary Aboriginal burning. He assumes a position opposite to that of Andersen (1999), arguing that the extant biodiversity is living proof of the potential benefit that Aboriginal ecological knowledge offers to Western land management.

The earlier text (Bowman 1998) constructed subject positions for Aboriginal people as responsible ecological agents, positions seized upon in Langton’s (1998) polemic. Bowman et al (2001) similarly constructs Aboriginal subjectivity in terms of Western ideologies, notably with reference to Western ecological and conservation outcomes. The capacity of these powerful positions (eg Langton 1998) to coerce Aboriginal people to conform is the focus of the analysis of Yibarbuk’s texts below. In the analysis of Bowman et al (2001), the text is segmented (Barthes 1974), and where the
analysis refers to specific elements of the text, these are underlined, and numbers after the quotes indicate pages.

Bowman’s text presents its data in three steps: a transcription of the interviews with informants, summaries of the information thus obtained, and key points which collate and précis these summaries. These steps involve translation, initially from Bininj Gun-wok and Rembarrnga into English, but also from Aboriginal into Western scientific paradigms. They also entail sorting, filtering and interpreting information, as well as assumptions on Bowman’s part about his informants’ subjectivity. The analysis below begins with the last of the three steps and works back toward the original source material. This approach reverses the order in which Bowman presents them, in order to foreground the workings of scientific objectivity, to then highlight the subjectivity that is an essential element of the source text, and to allow the implications of the removal of this subjectivity during translation to be considered.

One point worth noting is that Bowman positions Aboriginal ecological knowledge relative to a Western ecological data set comprising:

1. analysis of fire scar patterns registered on satellite imagery over a 10-year period;

2. comparing vegetation at sites surrounding Aboriginal outstations with ecologically similar but unoccupied areas and;

3. changes in the extent of fire sensitive rainforest pockets determined from sequences of aerial photographs. 61-2

Bowman recruits Aboriginal ecological knowledge to enhance his scientific data:

In addition, Bowman’s landscape ecology studies are bolstered by some traditional Aboriginal owners’ oral testimonies about Aboriginal fire management. 62
'Bolstered' means 'propped up' or 'supported' (Concise Oxford) which, in combination with 'in addition', implies that he uses the 'oral testimonies' of Aboriginal people to corroborate notions already developed from Western data, rather than using the testimonies as a primary source to develop concepts of Aboriginal fire management.

The relationship between the scientific and anecdotal data is of interest because of what it may reveal about the social context of the research. Evaluative clauses attached to the anecdotal but not the scientific data suggest ideology at work (Fairclough 1989:119):

The documented voice of Aboriginal people is extremely valuable.

Hopefully, the majority of Australians will eventually come to appreciate and respect the great importance of traditional Aboriginal use of fire in managing their landscapes.

The different treatment afforded the two data sets arises from scientific notions of how truth is derived, that it can come only from 'purely empirical data' detached from the 'vagaries of the human experience' (Bradley 1998:31). The values expressed in the above suggest that Bowman esteems Aboriginal experiential knowledge, and it is apparent from this and other of his texts discussed earlier that he considers this knowledge important because of its role in the creation and maintenance of the modern landscape. Another attribute of Aboriginal knowledge is 'scarcity', which from an economic standpoint further enhances its value:

The continuing unravelling of hunter-gatherer economies following European colonisation stymies the complete comprehension of 'traditional' subsistence and the role of landscape burning.

There remains a great deal of information about the traditional use of fire in the minds of Aboriginal people. Priority should be given to support interpreters to help anthropologists and ecologists record knowledge of Aboriginal people.
These statements strongly impute value to Aboriginal knowledge, but they also refer to the social processes which make it a scarce commodity. It is by examining the text in its social context that its underlying ideologies are exposed, ideologies which its scientific language works hard to conceal. One way to break into this ideological (or cultural) code is to examine the text as a narrative (Silverman 1983:36).

'Unravelling' and 'stymies' are terms which signify a narrative process, respectively the 'unfolding' or disclosing of an enigma (hermeneutic code), and the 'jamming' or delaying of this disclosure to create dramatic tension (Barthes 1974). Bowman formulates the enigma as: 'the process of Rhys Jones' now well-known phrase 'fire-stick farming' ' (Bowman et al 2001:62). He signals that this is an enigma by stating that 'the documented voice ... provides us with clues' (Bowman et al 2001:62) (the etymology of 'clues' refers to the ball of thread which Theseus followed out of the labyrinth – Concise Oxford). Bowman's central enigma concerns the longstanding debate among scientists about the ecological role of Aboriginal burning, and it is around this ecological hermeneutic that Bowman weaves his tale.

The dialogue between Western scientific and Aboriginal anecdotal data that progresses Bowman's narrative toward the disclosure of this ecological enigma takes place within the context of a more profound social narrative, a context he characterises as the 'stymiing' by colonisation of a 'complete comprehension' of the knowledge it is erasing. It is within this social narrative that the subject positions are constructed, and it is from this subjectivity that Aboriginal people speak into the Western discourse. The subjectivity created within this social narrative, and specifically within the narrative tracing the Western appropriation of Aboriginal ecological knowledge, not only determines the degree to which the Western discourse on Aboriginal Ecology is a true representation of the Aboriginal episteme, but this subjectivity is implicated in determining whose proprietary interest is ultimately expressed by the ensuing fire management of the North Australia landscape.
The analysis, tracing Bowman's reductive translation in reverse for the reasons outlined above, begins with the last of the three steps and works back toward Aboriginal discourse, following in a sense the objective progression traced in this essay, whereby the Western representation of Aboriginal Ecology has trended toward its production by Aboriginal authors.

Key Findings

Traditional burning reduced the occurrence of damaging fires, particularly those that occurred in the late dry season.

Fires...lit later in the dry season could destroy flowers on fruit trees and hence inhibit the production of fruit and bush honey.

Yam beds could...be...burnt after the yams had been harvested in the early dry season.

Landscape burning was...undertaken to achieve a variety of immediate goals including clearing areas for access, locating small game like goannas and turtles on floodplains and felling trees for bush honey.

The most important use of landscape burning concerned the management and harvesting of kangaroos.

Burning was...known to produce nutritious feed for kangaroos.

Fire was...used as a hunting tool, with use varying according to local geographic situations.

Areas were intentionally kept...unburned until they could be used for fire drives.

Anybody who burnt a fire drive area without permission would be punished under strict traditional laws.

Large scale fire drives enabled Aboriginal hunters to harvest quantities of meat sufficient to provide for ceremonial gatherings involving many people. 72

The consistent use of past tense has four effects. Taken literally, tense situates activities in time, here intimating that they occurred in the past and no longer occur.
Secondly, the past tense is also partly a result of the stylistic convention of scientific writing aimed at conferring a sense of objectivity, that is, the detachment of the writer (writing in the present) from the observed (occurring in the past). The past into which this style projects Aboriginal people is ahistoric, in that it lacks specific dates and lies outside the trajectory from the historical past to the present in which Western producers of the discourse situate themselves. The representation of Aboriginal people as ahistoric, which Head traces to the quest of early 20th century anthropology for ‘the essential Aborigine’ (2000:61,77), constructs them as separate from contemporary civilised Australian culture, yet symbolizing ancient Australia (Waitt 1997:51) to which Australians turn for a sense of national identity (Black and Rutledge 1995).

Thirdly, associated with this grammatical rendering of Aboriginal burning as ‘timeless’ (Head 2000:5) is the role of the verbs in erasing agency. The passivity of ‘fires lit’ or ‘kept unburned’ extinguishes the Aboriginal actors, as does the nominalisation of ‘traditional burning’, ‘landscape burning’ and ‘fire drive’. Even ‘Aboriginal hunters’ is not (in a grammatical sense) the agent in the ‘large scale fire drives’ because no reference is made to the senior men who organise the drives and in this sense are the true agents. The effect of erasing agency is to remove Aboriginal people from a position of power or control over landscape processes like fire and, instead given no more grammatical status than goannas, turtles, kangaroos or yams, they become part of the landscape represented within the compass of Western Ecology.

The fourth effect concerns modality, a textual feature which has to do with the authority of the speaker or writer. Fairclough identifies two types of modality: relational modality, which concerns the authority of one participant relative to others; and expressive modality, which concerns ‘the speaker or writer’s authority with respect to the truth or probability of a representation of reality’ (1989:126). One device for expressing modality is tense, and the past tense of the verbs – ‘reduced’,
‘was undertaken’, ‘produce’, ‘concerned’ - expresses categorical modality, supporting ‘a view of the world as transparent, as if it signal[s] its own meaning to any observer, without the need for interpretation and representation’ (Fairclough 1989:129). The presence of this modality in the text signals the producer’s ideological commitment to Science’s pre-eminence in the representation of reality, and the translation of Aboriginal discourse into scientific language asserts the latter’s authority over experiential epistemologies.

The net result of these four effects is to consign Aboriginal Ecology to a temporal and social context to which Bowman can refer. It is excluded from direct participation in the discourse and is instead given authority by virtue of its translation into scientific discourse.

In addition to these grammatical features, it is worth noting some semantic features. The lexias primarily focus on pragmatic ecological effects: the damage caused by late season fires, and the effect of fires on fruit trees and yams. The specific focus on the food components – yams, fruit trees, and especially kangaroos – implies that this is the extent of Aboriginal interest, in contrast to the broader scope of Western Ecology which is concerned not just with utilitarian values but also, and especially in the case of Bowman’s text, conservation values.

This representation of Aboriginal ecological knowledge, as being concerned exclusively with the pragmatic use of fire and with the ‘immediate goals’ of food, comes at the expense of social and ceremonial values. This omission – or distortion – becomes evident when these key points are compared with the source from which they were compiled and, especially, with the ‘unsolicited narrative’ about hunting kangaroos which is the third sample of text examined below. Continuing to work back toward this source text, the analysis now turns to the second step in Bowman’s translation.
The Key Findings create the impression that Aboriginal use of fire is short-term, pragmatic, self-serving and rule-bound. Furthermore, the absence of Aboriginal people as actors in the processes denies them a role as ecological agents. However, an examination of the summaries from which these Key Findings were drawn shows that these are largely artefacts of the reductive focus on scientific values. (The summaries below have been collated to facilitate discussion – they were juxtaposed with the source dialogue in the original text.)

The oral record recounted here is largely consistent with previous accounts of Aboriginal fire management in Arnhem Land. 73

It is recognised by all men that the absence of Aboriginal people in the landscape, and hence the cessation of traditional burning, results in degradation of the bush because now intense fires periodically burn such unoccupied country. The men recognising that fires lit late in the dry season are also difficult to control because they are intense and can burn through the night. Such intense fires are considered dangerous and uncontrollable. 62

In areas where Aboriginal people were still burning their country the men expressed a relaxed attitude about the effect of fire on vegetable resources. 63

Under traditional fire management practices, yam beds that had been dug up in the early dry season were usually burnt after the harvest. Aborigines planted the top of each yam they harvested and these were known to resprout following the onset of the wet season. 63

There was consensus among the men that early dry season fires have no effect on fruit trees. However, fires lit later in the dry season would destroy flowers and hence inhibit the production of fruit. 65

During the dry season it was recognised that in order to maintain supplies of bush-honey it was important to leave areas where flowering plants were unburnt. 65
Various motives for burning were reported. These included clearing areas for access, such as fishing spots, locating small game like goannas and turtles on floodplains, felling trees with 'bush-honey' and clearing areas beneath fruit trees to provide bare ground upon which the fruit could subsequently fall, making it easy to collect. However, the primary motive concerned game.

Most notable are the emergence of an Aboriginal voice producing the discourse ('the men recognise'), Aboriginal agency effecting ecological outcomes, and knowledge about the effects of fire ('Aboriginal people were still burning'). The above quotes make explicit reference to Aboriginal people, but the text activates Aboriginal subjectivity also through indirect means. It does this in three ways.

Firstly, it refers to subjective experiences: 'recognise', 'considered', 'expressed a relaxed attitude', 'were known', as well as motives for actions: 'in order to'. Subjective experiences require people to experience them. Secondly, it refers to knowledge, and implies a social dynamic in the reproduction of this knowledge: 'recognised by all men', 'there was consensus'. Knowledge is not merely a static quantity that exists independently in an objective reality, but exists only because it is reproduced through social discourse. Thirdly, many verbs are active and driven by Aboriginal subjects, although the higher proportion (two-thirds) of the verbs are passive, many processes are nominalised, and there are some infinitives ('to control', 'to collect'), all of which elide over agency.

As in the Key Findings, there is a predominance of past tense verbs in the Summaries. This takes two forms. One relates to reported activities and attitudes: 'Aborigines planted', 'were usually reported'. The other relates to the reporting itself: 'the men expressed', 'there was consensus'. Curiously, the present tense is also used to refer
to this reporting: ‘it is recognised’, ‘the men recognise’, ‘are considered’. The present tense is also used when comparing the ‘oral record’ with ‘previous accounts’, and signals that the comparison is made simultaneously with the text’s production.

The variation in the use of present and past tense in relation to the reportage (the opinions that the informants expressed about the information) follows a pattern associated with the prioritising of context. The past tense is used when referring to the effects of fire on fruit trees and bush honey, and to the motives for burning. The present tense is used in the context of the depopulation of country, the removal of the Aboriginal fire regime, and the damage caused by subsequent wildfires, which together constitute a pressing concern for ecologists in North Australia (Bowman and Vigilante 2001; Russell-Smith 2001). The text projects this opinion onto Aboriginal people (implies that they share the concern) by applying the present tense to their expression of opinion about this ecological process.

The ecological process is the result of a social process – the depopulation of country initiated by the arrival of Europeans. The remedy to this situation – the return of an Aboriginal fire regime and therefore of Aboriginal people to country (Cooke 1999; Whitehead 1999 cited in Bowman 2001:76) – is negotiated within a broader political and social matrix which includes economics (Altman 1987) and land rights (Meehan and Jones 1980). The present tense foregrounds the knowledge of the Aboriginal informants which relates to this process, and the past tense relegates the other knowledge, concerning fruit trees, bush honey and such, to the status of ahistorical tradition. This begs the question as to whether this prioritising by Western discourse, along with a perceived imminent ecological crisis, influences the priorities of Aboriginal people, at least so far as they express these as producers of the Western discourse. This question is addressed in the analysis of Yibarbuk’s text.

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below. The text’s alignment of its informants’ ‘oral record’ with ‘previous accounts’ (in the first lexia above) may reflect this coercive tendency in Western ecological discourse.

The text (Bowman et al 2001) takes its title from the prominence given to game management by the informants. Bowman identifies ‘two aspects of the use of fire for game management: to attract kangaroos to areas of grass regrowth and as a hunting tool’ (Bowman et al 2001:65). The former has persisted as a prominent theme in the discourse since Mitchell first made his observation concerning the co dependence of ‘fire, grass, kangaroos and human inhabitants’ (1969:412) from which Jones constructed his concept of Aboriginal people ‘farming’ the landscape with ‘firesticks’ (1969:225).

Despite this prominence (Hallam 1975; Lourandos and Ross 1997:97; Bowman 2000:222), Bowman et al (2001) is concerned less with fire as a tool for increasing productivity than with fire as a tool for hunting. The dangerous and socially complex fire drives for hunting kangaroo are a distinctive feature of Western authors’ accounts of fire in Arnhem Land. The appeal of fire drives to Western writers (eg Haynes 1985; Russell-Smith 2001) may be that they are dangerous (Russell-Smith et al 1997:74), socially complex (Altman (1987:119) or simply spectacular, although few if any Europeans have apparently witnessed them.

Alternatively, it may be due to the fact that they are highly significant to Aboriginal people. Bowman’s informants drew particular attention to this use of fire, and it is at this point that his representation of Aboriginal use of fire moves away from its strictly ecological focus.
Large fire drives allowed groups of people to come together from surrounding clans and estates and formed a large part of ritual life. Smoke signals and the delivery of message sticks and small torches made from the bark of stringbark (Eucalyptus tereticornis) would be used to invite people to particular places. The timing of the drives would be determined by the drying out of the fuels during the course of the dry season. It was critical that the areas remained unburned until the hunt was organized. Disputes could arise should somebody burn a hunting ground without appropriate customary law rights.

Bowman here notes the social (‘people come together’, ‘invite people’, ‘clan-estates’), ceremonial (‘ritual life’, ‘ceremonies and associated songs and dances’, ‘customary law rights’) and pragmatic (the ‘timing’ of a social event determined by the ‘drying out of the fuels’) aspects of the fire drives. Bowman also refers to ‘the great cultural significance’ attributed to these fires by Yibarbuk, acknowledging the status of these fires as ‘sacred and very serious ... often first enacted by the major creative beings for that area’ (Yibarbuk 1998 cited in Bowman 2001:74).

Nevertheless, he seeks their significance in Western ecological terms:

We have demonstrated that traditional Aboriginal landscape burning had the specific objective of managing game that was situated within a complex cultural milieu. This style of management had well understood ecological spin-offs such as controlling the intensity and spatial scale and location of landscape fires and the conservation of vegetable resources.

Before finally turning to the source text which focuses particularly on the use of fire for hunting, it is worth noting the modality which marks his summary of the interviews:

Special ceremonies and associated dances and songs would be performed during the fire drives to ensure the success of the hunt.
The modality expressed here by ‘would’ qualifies the ‘probability of a representation of reality’ (Fairclough 1989:126), and establishes a conceptual distance between Bowman’s scientific notions of causality and causality as it is understood by his informants according to Aboriginal cosmology, the latter encountered in Spencer (1928) and Thomson (1949a). The infinitive ‘to ensure’ also serves to elide over the precise nature of this causality. Bowman acknowledges that ritual plays a role in Aboriginal Ecology, producing ‘ecological spin-offs’ not directly but through regulating the ‘complex cultural milieu’, a view that essentially corresponds with Thomson who characterised the ontological basis for this notion of causality as ‘belief’ (1949a:34).

**Aboriginal Text as Source**

Text by Aboriginal producers is more specifically the subject of the following chapter. However, Bowman includes source material from his informants in his own text and some of this is examined below. The text in question is the ‘unsolicited narrative’ from one of his informants. (The numbers before the text identify each line to facilitate analysis; they do not occur in the original text.)

1. I’m going to speak in Rembarrnga [language].
2. Long ago, he used to light hunting fires.
3. He used to light hunting fires.
4. He used to light hunting fires to get kangaroo.
5. Grass and wood, one man used to light for hunting.
6. He used to make it go into (the hunting area).
7. He would be lighting fires.
8. That one man.
9. The “mantis” man is lighting fire.
10. They were getting the animals for themselves.

11. Lots of people went.

12. There was one Man in the middle.

13. One man to the west, one to the north

14. One man to the south, they would be looking for kangaroo.

15. They saw many kangaroo there.

16. They go for all (the kangaroo) under the cover of smoke.

17. They (the kangaroo) don’t see those men for the smoke

18. Then the men would be hunting and spearing them with a spear.

19. They speared and speared them, the kangaroos bodies would be dropping and dropping.

20. They took a stick from the river.

21. They hit them on the neck.

22. They picked up the carcasses.

23. They carried the carcasses and put them here.

24. They returned to camp with the carcasses.

25. They returned with the animals to all the women.

26. Then they would sit and relax.

27. They speared the kangaroo for us.

28. This is how they carried them, Long ago.

29. This man was me.

30. I knew it

(Bowman et al 2001 68-70).
It is important to note firstly that this is a translation from Rembarrnga into English, and that the grammatical structures of the two languages differ substantially (McKay 1975). The analysis here assumes that the translation is a fair representation of the sense intended by the speaker, an assumption which may be generally valid in relation to tense and transivity (the relationship of the action words to the subject and object of the clause) but it is probably not reasonable to extend this assumption to interpretations which rely on culturally specific metaphors.

The outstanding feature of this text is the foregrounding of the speaker and the actors, and especially the melding of the speaker with all actors in the final two lines. This subjectivity and agency is progressively removed during Bowman’s translation and interpretation, partially in the summary, completely in the Key Findings. All of the verbs here are active: each process is driven by an actor who is identified. The identity of these actors varies through the text, from the speaker (‘I’) (line 1), to an unspecified male (‘he’) (line 3) who is then particularised as ‘one man’, the ‘mantis man’ (lines 8 & 9). In the next line (10), the actor becomes plural (‘they’), particularised as ‘lots of people’ (11) then as several individuals (‘one man to the west’ etc) (lines 13 & 14) who are again generalised as the group pronoun ‘they’ (15). It is clear who the pronoun (‘they’) refers to when they ‘saw’ the kangaroo, since ‘kangaroo’ is specified (line 15). Even in the next line (16) when ‘they go for all’, the context defines the subject and object, since ‘go for’ is something only humans do. However, both humans and kangaroos ‘see’, so it is necessary to specify who ‘don’t see’ whom, although it is in fact sufficient to specify only one of these (‘the men’) since the other is therefore understood. Because only humans and not kangaroos hunt and spear, ‘the men’ in the next line (18) is redundant but it serves to draw attention to the actors, in the same way that ‘the kangaroos’ bodies’ foregrounds these as objects in the next line (19). The ‘men’ (18) also serves to draw attention to the fact that this is a male activity, a point that is reinforced later by ‘all the women’ (25).
In the fourth last line (27), the speaker differentiates himself ('us') from the actors ('they'), but then equates himself with the actors by stating that 'this man was me' (29). This statement also reduces the plural to the singular, and refers back to where 'that one man', the 'mantis man', is expanded to the plural 'they' (9 & 10). In the final line (of this extract, not of the speaker's original narrative) the speaker ('I') moves from identifying with the actors to identifying ('knew') with the action ('it'), as if knowing is being.

If the analysis here appears to pay attention to the social rather than the ecological aspects of this narrative, it is because that is the focus of the narrative itself. The only references to the environment are to 'fire', to which there are 9 references (including 'it' 'light' and 'smoke'), to 'grass and wood', to 'river', and to 'kangaroos' (13 references including 'the animals', 'them' and 'carcasses'). This compares with 36 references to humans. Of the 60 references in this narrative that specify actor or context, 60% are to humans, 22% to kangaroos, 15% to fire and 3% to the environment. There is no mention at all of the effect of fire on the environment.

It is reasonable to conclude that the unsolicited narrative focuses on the social role of fire, and especially hunting fires as part of a ritual process allowing the individual (the speaker) to identify through knowledge with the broader social group, and through the social role of a male hunter to identify with what may be glossed (Morton 1991) as a totemic figure. The ritual dimension is signaled by the reference to the 'mantis man', whether this is intended to mean a spirit being ('getting the animals for themselves' – line 10 – in the same way that Bradley's 'spirits of the deceased' hunt, burn, sing and dance; 1997:76), or whether it indicates the living hunters performing in a ritual manner such as to invoke a mythical identity (Hiatt and Jones 1988:17). Christie provides an alternative view on the role of deceased spirits as names in a 'web of meaning' (1994:16, 20), and nodes in a network of people (1994:21), which suggests that both interpretations may be pertinent.
The unsolicited narrative itself has an element of the ritual to it. It possesses the same metonymic and metric rhythm discussed earlier in relation to Rose's text. Insofar as ritual denotes structure (refers to a prescribed order – Concise Oxford), the narrative structure is ritualistic. As well as the temporal sequence, there is a ritualistic spatial structure in the narrative which is most visible in its positioning of 'one man to the west, one to the north, one man to the south'. Bowman presents this unsolicited narrative as an account of Aboriginal Ecology direct from its source, Aboriginal discourse. In this narrative, the relationship between humans, fire and landscape is not ecological; it is social and ritual. Another way of stating this would be that, in Aboriginal cosmology, ecological behaviour is not an expression of biological existence alone. Rather, Aboriginal Ecology represents natural processes as a ritual expression of a supernatural order.

The Western discourse on Aboriginal Ecology acknowledges the significance of ritual for Aboriginal people, but distills from an episteme concerned primarily with a social order (which gives pre-eminence to spirit beings) only those data which can be verified empirically as being causally associated with natural processes. This process of reductive translation can be seen in a comparison of the 'unsolicited narrative' (the 'source material' above) with Bowman's derived reproduction of Aboriginal ecological knowledge. Being unsolicited, the narrative is an Aboriginal perception of fire expressed without the prompting of questions, questions which in the interviews from which Bowman draws his data may be leading. The unsolicited narrative is notable for its lack of the sort of ecological detail that Bowman elicits from his informants in those interviews, and this raises the question of why Bowman gives the narrative so much weight – he positions it at the conclusion of the transcripts, and cites as 'an unanticipated finding ... the great emphasis placed upon fire for kangaroo management, and particularly the cultural importance of large scale fire drives' (Bowman et al 2001:73).
In discussing his data, Bowman attends mainly to the use of fire by Aboriginal people in managing their physical environment and in particular their food resources. Bowman’s text sets out to test the concept of ‘fire-stick farming’ against the Aboriginal people’s own concepts about their use of fire (Bowman et al 2001:62). Bowman argues that his data supports the notion of fire as a tool for ‘game management’ (Bowman et al 2001:65, 76), there being ‘a highly significant statistical relationship between macropod density and burnt areas’ on ‘a traditionally managed Aboriginal estate on the Cadell River’ (Bowman et al 2001:73-4). Bowman points out that the term ‘farming’ is problematic in the context of a system of land use which is not ‘equivalent to conventional forms of agriculture’ (Bowman et al 2001:75), fire instead playing a complex ecological role: having ‘important effects for other components of the subsistence economy including yams and fruit trees’, but being used ‘primarily for hunting and managing game’ (Bowman et al 2001:75). Bowman notes that fire, and in particular ‘large scale fire drives’, has ‘great cultural significance’ for Aboriginal people (Bowman et al 2001:75), and points out that the Aboriginal perspective on landscape burning (Yibarbuk 1998) emphasises the ritual role that fire plays in Aboriginal society (Bowman et al 2001:74).

This may go some way to explaining why Bowman pays such attention to the kangaroo hunting drives when, as an infrequent occurrence, they play a relatively minor role in shaping ecosystems. In addition, his informants stress the significance of these hunting fires when reporting their own perceptions of fire to Bowman, an emphasis he can hardly afford to overlook. Bowman justifies his interest in ecological terms, partly by pointing to the ‘valuable insights into the spatial scale of fire management, and thus the intensity of land use’ that maps of these fires could provide (Bowman et al 2001:75), and partly by referring to their ecological role in generating ‘massive meat surpluses’ (Bowman et al 2001:74). More importantly, at the conclusion of his text, Bowman cites them as a demonstration that Aboriginal knowledge of fire existed ‘within a complex cultural milieu’, that ‘ecological
spin-offs' such as 'a high degree of ecological sustainability' were due to the close coupling of these ecological impacts 'with a hunter-gatherer economy' (Bowman et al 2001:76).

Bowman acknowledges the significance of fire for Aboriginal people and the role of ritual in producing the pragmatic ecological outcomes in which he is specifically interested. In this sense, as a dramatic fire event considered highly significant by Aboriginal people, the fire drive is a powerful symbol of ritual fire that carries an ecological rationale. However, this still does not fully account for the importance that Western ecologists generally place on Aboriginal ecological knowledge about fire. The significance of Aboriginal Fire Ecology for Western ecologists may instead be appreciated from the dilemma that its appropriation by Western discourse poses, a dilemma that the discourse itself spells out as follows.

Aboriginal burning has been an important factor in producing the biological landscape. The maintenance of its floristic and faunal structure - and in particular its biodiversity - requires mimicking the fire regime which immediately preceded European colonisation, or at least reproducing the effects of that regime. Aboriginal people possess ecological knowledge concerning (not only) fire which is considered essential to the effective fire management of this ecological legacy, but this knowledge is rapidly being lost. The collapse of Aboriginal society under the colonial onslaught is causing not only the loss of this ecological knowledge, but the collapse of the system of fire management and the consequent emergence of a 'natural' regime which exposes the landscape to destructive wildfire. According to Western ecological discourse (eg Bowman et al 2001), the suddenness of, and delay in recognising, the unraveling of the fabric of Aboriginal knowledge and management, along with the threatened rapid extinction of the ecological legacy by consequent wildfire, make the retrieval of Aboriginal ecological knowledge a matter of urgency.
However, this knowledge exists within a symbolic order which is radically incongruous with the scientific paradigm. Moreover, it is knowledge which is acted or performed rather than contained, and meaning adheres to this knowledge only insofar as it is expressed within the social order in which it is reproduced by Aboriginal people. Attempts to translate this knowledge, to excise or distill it from this Aboriginal social context, entail reference to a Western metaphor which effectively changes its meaning. Western ecological meaning is not inherent in Aboriginal knowledge in a form that can be reliably translated, that is, it is not possible to be certain whether the Western ecological significance of a given element of Aboriginal ecological knowledge exists already within the Aboriginal episteme or is imposed during translation.

Successful management of fire in North Australian ecosystems, a factor in the success of European colonisation, is seen to depend on the translation of Aboriginal ecological knowledge into the Western episteme, a translation which first requires the validation of this knowledge according to Western scientific norms. In doing so, Western Ecology – and European colonisation – encounter paradigms which undermine the pillars of their own certainty. Each system of knowledge serves to legitimise rights over natural resources and, by deferring to an Aboriginal ecological metaphor, Western ecologists implicitly acknowledge the preeminence of Aboriginal control over and proprietary interest in the North Australian landscape.

Recognition of the problems of translating Aboriginal ecological knowledge and applying it through Western systems of land management is implicit in Whitehead’s (1999) proposal to return land to Aboriginal control. This is, in effect, a proposal to draw upon Aboriginal Ecology to secure the European colonisation in parts of Australia that have proven to be beyond the capacity of Western Ecology to do so. Given the role of Western ecological discourse in legitimating the dispossession of Aboriginal people, it appears paradoxical for the discourse to propose their repossession in order to stabilise Western occupation.
The process beneath this apparent paradox can be seen to be quite rational if control over the landscape is understood not in terms of proprietary interest but instead in terms of ideology. European colonisation was legitimated and proprietary interest assigned on a Lockean premise that privileged agrarian ideology. Just as early colonial momentum was achieved through the appropriation of Aboriginal Ecology to assist explorers and settlers, its momentum is being maintained in North Australia by an equivalent appropriation to achieve control over natural processes like fire. Just as the former referred to an agrarian ideology, the latter refers to a conservation ideology. Both ideologies share common European intellectual heritage, and it is the imposition of this set of Western ideologies that is the essence of the European colonisation of Australia, and to which end Western discourse is appropriating Aboriginal Ecology.

Control over land may seem to be the ultimate manifestation of power within colonial discourse, but the implications of the Western discourse on Aboriginal Ecology go beyond that to the question of the individual's identity. The relationship between identity and landscape is well established in Western discourse (Tuan 1974; Relph 1981; Ingold 1993b). For non-Aboriginal Australians, it may be as straightforward as identifying with a market image of Australia (Waitt 1997; Palmer 1999), or as complex as aspiring to an Aboriginal spiritual affinity with the landscape (Tacey 1995; Head 2000).

Western anthropological discourse represents the relationship between Aboriginal identity and the landscape through kinship overlain on Dreaming tracks and geographical features (Williams 1986a; Keen 1995). The analysis of Yibarbuk's text below examines the hypothesis that Aboriginal authors seeking to participate in the production of the Western discourse on Aboriginal Ecology and to thereby wrest control over its production of Aboriginal subjectivity are coerced into the subject positions the discourse has already constructed for them. This requires firstly an overview of the way that discourse generally is engaged in the construction of subjectivity.
Chapter Eight

Subjectivity and the Western Discourse on Aboriginal Ecology

During the discussion of Schrire's text earlier, mention was made of the way the discourse fleshes out its narrative by constructing subjectivity for the Aboriginal people who inhabit its landscape. In Schrire's narrative, there is a clear distinction between Schrire as 'speaking subject' (producer of the discourse) and Aboriginal people as 'spoken subjects' (constructed within that discourse), since she is reconstructing a way of life that existed in the near to distant past. However, the distinction need not always be so clear. In the text examined below for example, Yibarbuk acts as 'speaking subject' producing a 'spoken subject' which includes himself.

The two subjects are nevertheless separate entities even though they may seem equivalent, and this raises the important question of the nature of the 'speaking subject', that is, the role that Yibarbuk occupies when reproducing himself (and Aboriginal people more generally) as 'spoken subject'. Before turning to Yibarbuk's participation in Western discourse as a producer, and the implications this has for the way the discourse constructs positions for Aboriginal people both as speaking and spoken subjects, it may be useful to review some of the theory concerning the construction of subjectivity in discourse.

The interdependence between discourse, or indeed language, and subjectivity can be seen in Benveniste's analysis of that special class of signifiers, the pronouns 'I' and 'you':

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There is no concept 'I' that incorporates all the I's that are uttered at every moment in the mouths of all speakers, in the sense that there is a concept "tree" to which all the individual uses of tree refer. The 'I', then, does not denominate any lexical entity.

... I refers to the act of individual discourse in which it is pronounced, and by this it designates the speaker. It is a term that cannot be identified except in an instance of discourse and that has only a momentary reference. The reality to which it refers is the reality of the discourse. ... And so it is literally true that the basis of subjectivity is in the exercise of language (1971 cited in Silverman 1983:43-44).

Benveniste distinguishes two sorts of subjects, the 'speaking subject' or 'referent', which is the speaker or writer who produces the discourse, and the 'subject of speech' or 'referee' which is 'the discursive element with which that discoursing individual identifies [the pronoun 'I'], and in so doing finds his or her subjectivity' (Silverman 1983:45-6). The ‘speaking subject’ and ‘subject of speech’ cannot be ‘collapsed into one unit’, but remain ‘separated by the barrier between reality and signification’ or, in Lacanian terms, between ‘being’ and ‘meaning’ (Silverman 1983:46). In addition, 'I' is defined in opposition to 'you', a signifier which implies a listener to whom the speaker is talking (Silverman 1983:44-5).

Benveniste developed this model for conversation, but when it was applied to the analysis of cinematic narrative it became apparent that there is a third category of subject: the ‘spoken subject’, ‘the subject who is constituted through identification with the subject of the speech, novel, or film’ (Silverman 1983:47). This category is obscured in conversation because the protagonist functions 'simultaneously as speaking and spoken subjects' (Silverman 1983:47). In cinematic narrative, however, the two are differentiated by being located 'on opposite sides of the screen', the 'speaking subject' being the 'complex of apparatuses responsible for that text's enunciation', while the 'spoken subject' is the viewer (Silverman 1983:47).
The cinematic model is relevant not only to narrative fiction but to the production of subject positions within discourse generally. Foucault (1991b:112) identifies equivalent roles in the production of text: respectively, the real writer, the fictitious speaker or narrator, and the author. Foucault pays particular attention to the author function not because it is a general function in both art and science, but because it offers a way to examine the 'circulation, valorization, attribution and appropriation of discourses' (1984b:117). Foucault considers the subject, as both the product and producer of discourse, as central to an understanding of the power/knowledge nexus (Rabinow 1984:12).

The subject positions constructed within discourse are representations with which it is possible to identify in the same way that a viewer or reader identifies with a character in a film or novel. In conversation, the speaker provides the conceptual signified for the signifier 'I', whereas in narrative fiction, the representations within which we recognize ourselves are clearly manufactured elsewhere, at the point of the discourse's origin. In the case of cinema, that point of origin must be understood as both broadly cultural (i.e., as the symbolic field) and as specifically technological (i.e., as encompassing the camera, the tape-recorder, the lighting equipment, the editing room, the script, etc) (Silverman 1983:197).

In the discourse on Aboriginal Ecology, the three subject positions are clearly discernible: the speaking subject being the writer, the subject of speech being the
representation of Aboriginal people as ecological actors who serve as characters to animate this narrative, and the spoken subject being the subject constituted through identification with this representation. Although an oversimplification, such a model reveals the dual role played by an Aboriginal producer of this discourse, constituted as subject by the discourse on the one hand and, on the other, contributing to the construction of Aboriginal subjectivity.

The reality is rendered even more complex than the model would suggest by the different perceptions of subjectivity contained within Aboriginal and Western discourse. Christie maintains that the notion of subjectivity is itself an artefact of a Western ontology which perceives reality in terms of polarised subject and object whereas, in Yolngu thinking at least, the two are collapsed to produce objective meaning through 'subject-hood' (1994:22). According to this view, Western ontology hypothesises an objective world in order to pose questions which serve its subjective position, and the phenomenal material success of this hypothesis (eg Western technology and political domination) ratifies its claim on absolute reality (Christie 1994:26). By contrast, Yolngu make 'no ontological split between what is real and what we say about what is real' (Christie 1994:22):

The subject only has meaning insofar as she/he is constructed in terms of links between all other people and Yolngu realities. The objective world attains reality only through the received meanings which, through negotiation, we choose to foreground the pattern of our relatedness (Christie 1994:25).

Christie attributes the crisis in Western Ecology – evidenced by the ecological impact of Europeans on Australian ecosystems – to the carving up of the world into 'objective segments, which we, posing as subjects, took it upon ourselves to act upon and utilise to our heart’s content' (1994:26). Like Rose (1988), he traces the crisis to...
the placing of humans at the ontological centre, and argues instead for an 'acentric' Ecology which is inclusive of 'all human dimensions, the social, economic, religious and political' (Christie 1991:26). Like many other Western authors, Christie suggests that the 'Aboriginal perception of the world' poses an alternative ontology which offers a more ecologically sustainable future (1994:26). To characterise this alternative, Christie compares the metaphors which underpin the respective systems of knowledge, and argues that the 'atomistic' Western metaphor on the one hand, and the 'holistic' Yolngu metaphor of on the other, lead to different kinds of ecological outcomes. The contrast between Western and Aboriginal metaphors is apparent in Yibarbuk's text analyzed below.
Chapter Nine

Aboriginal Authorship

Texts Analysed


Dean Yibarbuk

If the metaphors upon which Aboriginal and Western ontologies are based are so radically different, some of these differences may be evident on the surface of a text produced by an Aboriginal author. Yibarbuk’s text is useful in this respect, since he assumes varying degrees of author participation: in Yibarbuk (1998), a preface to a book by Marcia Langton on landscape fires, he is cited as sole author; in Yibarbuk and Cooke (2001), he is the senior of two authors; and in Yibarbuk et al (2001), he is one of several authors whose respective roles are ambiguous from the citation, which raises an important point.

The citation for the latter text places Yibarbuk (a senior Aboriginal man) in the position conventionally reserved in Western scientific text for the senior author. The draft version of this text contains a note to the effect that, in a departure from this convention, the authors’ names are arranged in alphabetical order, a note omitted from the published version. Now, alphabetical order is usually from A to Z, but this convention has been reversed here such that Yibarbuk’s name appears before the others, all but one (another senior Aboriginal man) of whom are Western scientists. It is possible only to speculate on the motives for this anomalous positioning of Yibarbuk’s name first, but the alternatives are worth listing since they indicate the social matrix in which Western and Aboriginal ecological knowledge are contested: to defer to the people to whose country the text refers; to foreground the inclusion of an Aboriginal ecological perspective in the text; to recognise Yibarbuk as the senior contributor. This does not exhaust the alternatives, but they raise some points worthy of further comment.
One of the significant differences between Western and Aboriginal ecological knowledge is that the former is general in scope and common in ownership, while the latter is specific to country and the property of individuals who are responsible for its reproduction. Western Science in its quest for truth supercedes previous knowledge that it holds to be less than absolute, and in this tendency is analogous to the colonial quest for land in that it displaces systems of knowledge which its conventions of legitimacy deem invalid. Bradley (1998) describes how this 'presumptuous' attitude of science is destructive of not only Aboriginal knowledge but the social fabric. Rather than contesting Aboriginal ecological knowledge, the text in question (Yibarbuk et al 2001) aims to substantiate the validity of this knowledge. In other words, it deploys scientific tools to demonstrate that the Aboriginal ecological praxis, and ergo the Aboriginal ecological knowledge which continues to be applied on this traditionally managed tract of land, maintains the ecological health of the land to a degree to which Western management can no more than aspire.

The second point concerns the institutional context in which the text is produced and indicates the political implications of authorship. The authors are involved to varying degrees with a research centre which has a proclaimed interest in supporting research on and management of Aboriginal land. Aboriginal land in North Australia is seen as a key resource for sustaining wildlife populations, not just because of the large areas of land involved, but because Aboriginal management of this land, unlike that held under Western ownership, is perceived as having maintained its wildlife habitat. Aboriginal ecological knowledge is consequently a key focus for research. Wildlife on Aboriginal land is also potentially a resource for generating income for remote Aboriginal communities where there is little alternative opportunity and, in the current funding climate, is an important financial resource for research centres who need to demonstrate that their work has substantial practical and economic application.
In addition to the above, there is the question of Yibarbuk's actual role as author, that is, the extent to which he is responsible for the production of the text and/or for the ecological knowledge it contains. The notion that one author is more responsible for a text than another raises the intriguing question of how this might be determined, whether it be on the basis of who does the actual writing, or who contributes most knowledge. The latter is of greater interest here because it conceptualises knowledge as 'content' and text as a vessel in which a certain volume of knowledge is held, and proposes that this content can be partitioned as the property of various people. Christie (1994; 1997) points out that Aboriginal people do not think of knowledge in this way but rather as something which is enacted and performed. This Aboriginal concept of knowledge approximates more closely the concept of 'reproduction' which Fairclough defines as the mechanism 'through which societies sustain their social structures and social relations over time' (1992:5). Discourse analysis is a practice which critiques the hegemony whereby Western Science presumes to hold a mortgage over knowledge. The ranking of the authors in this text's citation (Yibarbuk et al 2001) suggests that it may be sensitive to the implications of knowledge for power.

Yibarbuk could be expected to bring to text production a different perspective on knowledge, and this should manifest to a greater extent in those texts in which he plays a greater authorial role. The above discussion demonstrates that the citation of any text cannot be taken as a reliable indicator of what role any author plays in its production. However, the projection by a text of Yibarbuk as its author proclaims it as an expression of an Aboriginal perspective and, as a contributor to the Western discourse, such a text claims to represent Aboriginal Ecology from an Aboriginal perspective, in much the same way as did Bowman's presentation of the unsolicited narrative (Bowman et al 2001).
The three texts considered in this chapter differ substantially, despite Yibarbuk being cited as the senior or sole author, and this begs the question as to just how representative they are of an Aboriginal perspective and how much this difference reflects the varying influence of Western co-authors, whether the latter are acknowledged in the citation or not (anonymity would ensure that the nature and extent of this influence cannot be known). A brief comparison of the texts may therefore indicate something of the difference between the Western and Aboriginal perspectives, a difference which has been obscured in the texts examined so far.

The order in which Yibarbuk’s texts are analysed reflects a trend that this essay has identified within the discourse, tracing the representation of Aboriginal Ecology from a scientific viewpoint toward its production from an Aboriginal perspective. Accordingly, the first text (Yibarbuk et al 2001) is one co-produced with Western ecologists and thus more expressive of a scientific paradigm. The last (Yibarbuk 1998) is explicitly an expression of an Aboriginal ecological paradigm. The second (Yibarbuk and Cooke 2001) lies between the two, explicitly embracing both. For convenience, the texts are arbitrarily referred to as respectively belonging to scientific, popular and authentic genres. Again, the text pertinent to the analysis is underlined.

**Scientific Genre**

The first of Yibarbuk’s texts analysed here (Yibarbuk et al 2001) is manifestly scientific. Because the analysis of Yibarbuk’s text relies on a contrast between the discourses to which they contribute, it is important to establish what it is that locates this text in a scientific genre. These characteristics will be utilized in its analysis. Not only is it published in a scientific journal, but six of his co-authors are Western scientists. In addition, the structure and language of the text clearly belong to scientific convention. Its scientific approach to knowledge is also evident in its stated aim:
To COMPARE fire behaviour and fire management practice at a site managed continuously by traditional...Aboriginal...owners with other sites in tropical northern Australia, including the nearby Kakadu National Park, and relate those observations to indicators of landscape condition (Yibarbuk et al 2001:325).

'Compare' signals an empiricism which presumes that knowledge is a reflection of an objective reality, rather than a 'socially negotiated picture of the universe' (Christie 1991:26). 'Traditional Aboriginal owners' invokes a relationship between people and the land which relies on a European trope concerning proprietary interest discussed earlier in this essay. 'Traditional' also invokes the notion of Aboriginal people as 'timeless' and their praxis as being in a condition of stasis (Stacey 2001). In association with 'managed continuously', 'traditional' further implies a set of management practices which are not only unresponsive to stimuli for change but are somehow incorporate, that is, exist as a discrete body of knowledge and praxis.

The first sentence therefore reifies the Aboriginal people in question, rendering them as much objects of scientific purview as are 'fire', the 'site', 'tropical northern Australia', 'nearby Kakadu', and the 'landscape'. This reification is largely a product of the nominalisations which reduce processes to things and, as discussed earlier, elide over agency. 'Owners' thus suppresses the high degree of contestation within the people-land relationship: contestation between colonists and Aboriginal people, between Aboriginal people and scientists (which articulates the authorship of this text and the social matrix of the study), and between different Aboriginal people with interests in this land (glossed as 'traditional'), all of which are expressed in the nominal 'fire management practice'.

A further sign of the text's scientific orientation are the 'indicators of landscape condition' to which it relates these 'observations':

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1. mapping of the resource base of the estate from both traditional and ecological perspectives;

2. aerial survey of the extent of burning, distribution of the fire-sensitive native pine *Callitris intratropica*, rock habitats, and a range of macropod and other fauna resources;

3. fauna inventory;

4. detailed ecological assessment of the status of fire-sensitive vegetation;

5. and empirical assessment of the intensities of experimental fires.

Ethnographic information concerning traditional fire management practice was documented in interviews with senior custodians (Yibarbuk et al 2001:325).

The 'mapping' of the physical landscape uses parameters encountered in earlier texts (Jones and Bowler 1980; Schrire 1982; Russell-Smith et al 1997), notably geological explanations of formations (as opposed to the explanatory paradigms of Aboriginal myth) and associated vegetation communities, including those referred to in Western texts on fire ecology (Haynes 1985; Bowman et al 1990; Russell-Smith 1995; Bowman 1998), notably *Callitris* and rainforest. The climate is primarily described in conventional Western terms, with Aboriginal seasonal names appended to those sets of conditions which affect fuel and fire behaviour and are thus relevant to fire management. In this respect, Western criteria dominate the representation of the landscape.

The Aboriginal perspective on the landscape is subsumed under the heading 'cultural landscape', with the densities and distribution of the human population referred to the structures of Aboriginal society. These structures are represented through anthropological paradigms, and are thus affiliated with land and the associated responsibilities to country, and in particular with the management of fire.
The text makes mention of the relationship between fire management and cultural priorities ‘eg spiritual sites, yam beds, preparations for macropod fire drives’ (Yibarbuk et al 2001:328), but places greater emphasis on pragmatic than social or spiritual concerns, a discrepancy between Western and Aboriginal priorities noted in the previous chapter.

‘Inventory’ implies quantification, a preoccupation of science which ‘Aboriginal knowledge makers discount ... as unproductive because it necessitates examining things out of context’ (Christie 1991:27). Christie credits the practice of quantification for the exponential expansion of abstract scientific knowledge, the placing of ‘humanity apart from and above’ and therefore in (apparent) control of the natural world at the expense of environmental, historical, sociological and religious context (1991:28). Paradoxically, this ‘decathexis’ (Christie 1994) de-sensitises Western Science to the ‘extremely varied and constantly fluctuating stimuli’, rendering it ill-adaptive (Christie 1991:28), and forcing it to turn to an episteme which it disparages as ‘traditional’.

The predominance of Western metaphor and tropes in this text suggests a strong bias toward Western Science in its authorship. This may reflect that seven of its nine authors are Western scientists, yet it may also indicate the inclinations of the two Aboriginal authors. In other words, their endorsement of the Western scientific paradigm implied by their participation in its production may signal their recognition of the power associated with this paradigm, although it could not be inferred from this text whether this power derives from the epistemological prowess of science or its hegemony. Yibarbuk makes his appreciation of Western Science explicit in the text below (Yibarbuk and Cooke 2001) but, before discussing that text, it is worth noting the reciprocal appraisal of Aboriginal Ecology expressed here.
We attribute the ecological integrity of the site to continued human occupation and maintenance of traditional fire management practice, which suppresses otherwise abundant annual grasses (*Sorghum* spp.) and limits accumulation of fuels in perennial grasses (*Triodia* spp.) or other litter. Suppression of fuels and coordination of fire use combine to greatly reduce wildfire risk and to produce and maintain diverse habitats (Yibarbuk et al 2001:325-6).

The benefit that Aboriginal knowledge affords the management of the Australian landscape has been a prominent theme of the discourse ever since Stokes and Mitchell wrote about it more than 150 years ago. Even the Dutch were interested in Aboriginal knowledge of the country only insofar as it might yield tradable goods. It is fair to say that Aboriginal knowledge about and management of the landscape has been valued by Europeans only where it serves European interests (Smith 1960; Sharp 1963; Wood 1969). When such knowledge has been viewed as constituting a challenge to the legitimacy of European ownership of Australian soil, eg in land rights disputes, its validity has been contested.

It is also a not unreasonable observation to make that, while the colonial endeavour has succeeded to the extent of securing ownership of the Australian landscape, it has yet to establish a relationship with the landscape which is ecologically stable (Davidson 1972; Kirkpatrick 1994). Indeed, it is a fundamental premise of the discourse on Aboriginal Ecology that the European colonial push caused ecological instability by displacing a well-adapted Aboriginal regime of fire management. The adoption by Western Ecology of Aboriginal ecological knowledge assists European control of the natural processes unleashed during the transition from Aboriginal to European occupation. Ironically, European tenure is thereby secured with the assistance of the same ecological knowledge and praxis which precluded European recognition of Aboriginal tenure.
Bowman points out that it is difficult for Western technology to mimic the fine-grained management effected by Aboriginal people (Bowman et al 2001:77), quoting Whitehead (one of the coauthors of the text analyzed here) asserting that 'a return by Aboriginal people to their tribal lands' is 'an important strategy in the ecologically sustainable management of north Australia' (Bowman et al 2001:76). Thus, three separate texts with overlapping authorship - Whitehead (1999), Bowman et al (2001) and Yibarbuk et al (2001) - work in concert to perpetrate this argument within the discourse:

The implication of this study is that the maintenance of the biodiversity of the Arnhem Land plateau requires intensive, skilled management that can be best achieved by developing co-operative programmes with local indigenous communities (Yibarbuk et al 2001:326).

Aboriginal people stand to gain from the privileging (Danaher et al 2000:151) of their ecological knowledge by Western Ecology, since it validates their tenure of land in Western terms and, moreover, does so for reasons which serve the interests of the colonial power. In this way, the epistemological dominance of Western Science is reinforced, because there is inducement for Aboriginal people to subscribe to Western ontology in preference to their own ‘traditional’ ontology. One expression of this epistemological hegemony is the transcription of Aboriginal values into Western metaphor.

Aboriginal people derive clear economic benefits from this style of management, as evidenced by abundant and diverse animal and plant foods.

However, the motives for the Aboriginal management system are complex and include the fulfillment of social and religious needs, a factor that remains important to Aboriginal people despite the rapid and ongoing transformation of their traditional lifestyles. (Yibarbuk et al 2001:326)
The pragmatic focus of Western Ecology validates Aboriginal Ecology in terms of its utilitarian outcomes. Other texts contributing to the Western discourse which do not pursue the conventions of Western Ecology (e.g., Warner 1969; Rose 1988; Christie 1997) stress that Aboriginal discourse prioritises other values, especially social and spiritual values, and that it does not make the same distinction as Western discourse between the secular, social and sacred.

In this analysis, Yibarbuk et al. (2001) appears as a text that mirrors Bowman et al. (2001). Whereas the latter sought to present Aboriginal ecological discourse within a Western text using Aboriginal metaphor, the former seeks to present a Western representation of Aboriginal Ecology using scientific metaphor. In contradistinction to the latter produced by a Western author, the former is, according to the convention of scientific citation, primarily the work of an Aboriginal author. Its language, however, clearly identifies it as the product of Western authors, and thus the ecological paradigm contained within it to be that of Western science. Yibarbuk et al. (2001) is, according to this analysis, a Western representation of Aboriginal Ecology, albeit attributed to an Aboriginal author.

Its Western authors benefit from its branding of Yibarbuk as its principal author. This allows the Western representation within it to claim to depict an Aboriginal Ecology that originates from, and is authorized by, Aboriginal discourse. It is therefore relevant to the analysis to establish the relationship between the two discourses.

Yibarbuk, the nominally principal author, assumes the authority (Foucault 1991b) of Aboriginal discourse. He also derives the authority associated with being a producer of Western scientific discourse. Scientific representations purport to be fact (Lakoff and Johnson 1980), a status that is to some degree accepted, even within an Aboriginal episteme (Bradley 1998). Yibarbuk's identification with scientific
discourse extends this factual status to his representations of Ecology from within Aboriginal discourse. In other words, Yibarbuk's representations of Aboriginal Ecology through metaphors that refer to Aboriginal, as opposed to scientific, myth still carry the authority of his association with Science. These representations are examined in the two analyses that follow.

**Popular Genre**

The language of this text (Yibarbuk and Cooke 2001) is less formal than the previous, even colloquial. This may be partly a result of the stylistic guidelines of the journal in which it is published, although another text (Russell-Smith 2001) published in the same journal uses formal scientific language which more closely approximates the style in the previous text (Yibarbuk et al 2001). This suggests that the stylistic shift reflects authorship, and that the role of the journal in this shift is to permit a less formal style. Like the 'unsolicited narrative' in Bowman et al (2001), this text foregrounds people as actors and speakers. Thus the structure and metaphor of this text may be attributable to Yibarbuk, whereas the scientific formality of the previous text may be attributable to the authors who draw from that language convention. The influence of Yibarbuk's co-author (Cooke) here is no more overt here than it was in Yibarbuk et al (2001), but any indication of authorship is a useful lever in prising apart the Western and Aboriginal discourses from which these texts draw.

Depending on the text in question, Western discourse tends to focus on either utilitarian or spiritual aspects of Aboriginal burning. Yibarbuk (Yibarbuk and Cooke 2001) attaches both values to fire:

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People at Bulman ... noticed that the fires had driven away many of the animals they depend on for food: Emus, kangaroos and even buffalo (Yibarbuk and Cooke 2001:35).

people on the plateau ... talked of the bad effect the hot fires had on bush tucker for animals especially the fruit that Emu need to make themselves fat. ... one landowner was particularly concerned about fire getting into a rainforest gorge and burning out a big area that used to be a regular place for hunting flying fox. People expressed their concern about fire in terms of its effect on animals and plants they depend on for food (Yibarbuk and Cooke 2001:35).

our people also try to burn off around the remnant patches of Allosyncarpia trees which are called anbinnik or manbinnik in Bininj Kunwok. It’s important as a food source for native bees, flying foxes use it but most of all we protect it because in its deep shade we remember our ancestors who also appreciated that deep shade. It is also important to burn off around some important sacred sites that we have been told to keep fire away from (Yibarbuk and Cooke 2001:34).

The emphasis on food species here goes beyond the direct effects of fire, although the narrative repeatedly returns to food species as a focal metaphor around which other concepts cluster. There is an implicit concern with what in Western discourse would be called ‘nature conservation’, though the authors express this concern in terms of the effect of fire on food species. These species serve therefore as a symbol through which people relate to and understand the wider environment, suggesting that Aboriginal ecological knowledge is relative to humans in a way that the ‘acentricity’ described by Rose (1988) and Christie (1994) suggests it is not. This is not at all to infer a contradiction, rather, that a dimension of personal connectedness accompanies that acentric perception of the environment, in contrast to the separateness which accompanies the anthropocentric Western view.

In the last of the three quotes above, there is close alignment between the mythical and temporal domains (Bradley 1998; Hiatt and Jones 1988:10), a connection
maintained through the ritual application of fire management and memory.

Yibarbuk deploys ecological metaphor to bridge the social and the sacred:

People used to walk long distances to join other groups in these fire drives and on those walks they used to burn as they went, again reducing fuels and creating burned breaks (Yibarbuk and Cooke 2001:34).

After a death, fire is used to cleanse the country of spiritual pollution. In our way, the spirits of dead people return to their clan's sacred places to be born again some time later. So, burning the bush after a human death is bringing back new life after another kind of death. It is an important symbol and ritual action (Yibarbuk and Cooke 2001:34).

In Yibarbuk's text, fire is a key metaphor linking concepts that in Western discourse are discrete: food ('fire drives'), fire management ('reducing fuels'), the dynamic structure of society ('join other groups'), the relationship of people to country ('walk long distances'), the interrelationship of time and space ('burn as they went'), and the implied trade between the groups. The network of meaning is as much a product of the reading of this text as of the writing, that is, the meanings depend not only on the metaphors through which the author constructs the text but on the resources that the reader brings to the interpretation (Fairclough 1992:72). Thus, in the second quote above, the authors' reference to fire as 'an important symbol and ritual action' invokes meaning which is available to Aboriginal readers (in the sense that firing the landscape is a reproduction of text) but which remains invisible to Western readers who, possessing a different set of symbolic and ritualistic resources, impose different meanings. Yibarbuk's meanings are examined more thoroughly and systematically in the last of the three texts discussed below.

Fire is the foundation upon which Yibarbuk builds a narrative about the struggle of Aboriginal people to retain control of land and knowledge. In this respect, the perspective of this text is quite different from the first in which Aboriginal ecological
knowledge and praxis augments Western land management. Here, fire symbolises an ecological lineage disrupted by the arrival of Europeans:

Fire is a tool for caring for country and that is how it has been used for tens of thousands of years by Indigenous people. But now we are seeing bad effects of changes that have happened over the past 100 years or so, since the European colonisation of Australia reached the north and changed the traditional way of managing the land (Yibarbuk and Cooke 2001:34).

After reviewing fire ecology and the social and spiritual role of fire, the text describes a project aimed at getting Aboriginal people involved again in fire management of the Arnhem Land Plateau. In recent years the Plateau has been swept by extensive late-season wildfires which threaten fire-sensitive vegetation, an anarchic fire regime following the exodus of the Aboriginal population and the consequent cessation of prophylactic burning (Press 1987; Russell-Smith et al 1998; Cooke 1999). There are two politically contentious aspects to this project: nature conservation on the Plateau and its reoccupation by traditional owners. While these two related goals may be shared by both Aboriginal and Western producers of the discourse, their respective interests in furthering these outcomes are likely to flow from different ideologies.

Many other people, however, have never been able to go home. This is especially true for people on and around the west Arnhem plateau. Much of it is inaccessible by road. In other areas people couldn't find support to build roads, make airstrips and get back into country. When we look at these empty areas we realise how much the country needs its people (Yibarbuk and Cooke 2001:35).

The perception by Aboriginal people of the Arnhem Land Plateau as ‘home’ is at odds with the Western concept of ‘wilderness’ which presumes the absence of people (Rose 1988:384; Langton 1996). Western ecologists support the control of land
by Aboriginal people (Whitehead 1999 cited Bowman et al 2001) but with the ultimate motive of conserving nature. Both Ecology and nature conservation emerge from a Western humanistic tradition which constructs a separation between humans and nature, and valorises landscape as the locus for spiritual fulfillment (Jeans 1983; Nash 1989; Tarnas 1991).

'Wilderness' is a complex metaphor. It refers historically to an ideological struggle between 'an ancient semi-nomadic people, at home and practicing religion in the wilderness, and a later agrarian people, who abhorred the wilderness' (Oelschlaeger 1991:48). From this arose the 'dichotomy between people and nature', where people are 'masters not members of the natural world' (Nash 1989:88), and 'wild nature is ... an implacable foe to be conquered' (Oelschaleger 1991:49). Abraham's symbolic journey into the wilderness to found a nation at the behest of God is both the precursor of the Romantic Sublime (Oelschaleger 1991:50; Ride 1978; Hawes 1981) and the legitimating rationale of agrarian settlement (Ramson 1990).

There is also the etymological resonance between 'wilderness' and 'savage'. 'Wilderness' derives from 'wild-deor-ness', 'the place of the wild beasts' (Nash 1973 cited in Stankey 1978:5), but it also refers to unsown, uncultivated or deserted land (Short 1991:5; Hall and Page 1999:215). 'Savage' derives from the Old French, 'sauvage' (wild) deriving from Middle English via the Latin 'silvaticus', and this from 'silva' (a wood) (Concise Oxford). Medieval Christian monasteries were typically located in remote wild places surrounded by thick forest (Oelschlaeger 1991:72). Edmund Spenser's 'vile caitiff wretches, ragged, rude, deformed' may well have been the wild tribes of Ireland (Stanner 1979c:147), but the etymology suggests that the original referents were more likely to have been Huns or Goths. The

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association between the ‘wilderness’ and the ‘savage’ is thus one of metonymy, and together they signify both the locales and hordes whose conquering marks the westward progress of European civilisation, and against which Western society defines itself (cf Lattas 1992:46).

Reoccupation of land by Aboriginal people is more than a reestablishment of cultural, social and spiritual connections, it is an expression of ownership. Those who have been able to ‘go home’ have done so since the 1970’s by setting up outstations on ‘homelands’. When ‘dissatisfied with the life at missions and settlements, and fearful that Government would give their country to mining companies or other developers, many aboriginal people ... [moved] back to traditional estates to establish small communities’ (Cooke 1999:103). Those who have not been able to return or remain on their homeland because of the inaccessibility of much of the Plateau are supported by the project described here (Yibarbuk and Cooke 2001). The project might thus be seen as an extension of the homelands movement. Where it is not practicable for reoccupation to occur on a permanent basis, the project involves such activities as

making walks of more than 100km into inaccessible country to get early burning happening and check out what’s really happening in these areas where there are no people (Yibarbuk and Cooke 2001:36).

The project is based on the premise that ‘for solutions to be sustainable there must be a sense of ownership and commitment to them by aboriginal landowners’ (Cooke 1999:105) and, to this end

we now have people from the plateau and all around talking, planning and working together on better fire management (Yibarbuk and Cooke 2001:37).
The text makes the distinction between Western and Aboriginal Ecology, glossing them as 'two toolboxes':

With Balanda scientists amongst our partners in this project we started looking at fire issues in two ways - using traditional knowledge and understanding as one set of tools and balanda science tools, like remote sensing and so on, as another set of tools (Yibarbuk and Cooke 2001:36).

This is a perspective on Western Ecology which complements the recruitment of Aboriginal ecological knowledge by Western Ecology. It implies a utilisation by Aboriginal people of Western ecological knowledge – metaphors and technology – to achieve outcomes specific to the Aboriginal cultural order. It implies an adaptability, already noted by Leichhardt (1847:494, 523) and Thomson (1949a:19), that contrasts with the cultural stasis implicit in the epithet 'traditional'. The text thus represents Aboriginal people subverting the Western ideologies which disrupted their society and turning them to their own advantage: supporting a return of people to country and the return of that country to a sustainable regime of management. This amounts to the return of effective ownership of country to people.

The text projects an Aboriginal perspective on fire as if by an Aboriginal speaker, although only one of the two authors is Aboriginal:

At first binini didn't see manlarr as an important indicator. But then as we went around the country and looked to see how much manlarr was dead or dying and how few young trees were coming through people could see that this did tell us a lot about the kind of fires that have been happening (Yibarbuk and Cooke 2001:36)

'We' could refer to the two authors together observing manlarr, but 'people could see' clearly indicates that 'we' and 'us' refers to the 'binini' who didn't at first see it
as an important indicator. In an adoptive sense, Cooke may be bininj, but in this context bininj refers to the people of Western Arnhem Land and Cooke is a balanda. This may appear to be hair-splitting, but it is pertinent because the analysis here seeks to establish what this text reveals about authentic (MacCannell 1973) Aboriginal Ecology, and the ambiguity over the respective authorial roles leaves unclear which concepts are attributable to which author. This uncertainty continues to hover over the text analyzed next, since it is again not clear as to what extent the views expressed there are due to the cited author alone and to what degree they reflect Western ideology. Again, this is relevant because the present chapter is concerned with the appropriation of the Western discourse on Aboriginal Ecology by Aboriginal people. This assertion of Aboriginal control over ‘the native’s point of view’ (Malinowski 1922 cited in Marcus and Fischer 1986:25) has substantial social and political implications, notably the control over and ownership of land. Thus the authorship of text is imbricated with the exercise of power.

A further anomaly concerns the origin of this recognition of manlarr as an indicator of fire history. This text asserts that balanda scientists discovered its potential:

While both Balanda and Bininj recognised that we had problems with fire, each group expressed their concern using different indicators. Bininj, as we noted, most noticed the effect on fire on animals or on plants that people depend on for food or making tools or so on. But for balanda scientists the effect of fire on the tree we call manlarr (or anlarr) and Balanda call Callitris intratropica, or cypress pine, was a useful indicator of how fire was affecting country. At first bininj didn't see manlarr as an important indicator (Yibarbuk and Cooke 2001:36).

However, Haynes clearly indicates that Aboriginal people around Maningrida with whom he was working in the 1970’s perceived dead Cypress Pine (manlarr) as an indicator of an undesirable fire regime:
Cypress pine ... also provided a unique marker in response to changes in fire regimes. The advantage of cypress pine as an indicator is that when it dies, it stands as a dead tree for many years, often decades. Healthy stands of cypress pine are unmarked by fire scars and are surrounded by regeneration of different ages. Fires lit under the described regime, i.e., during the wurrgeng season, approach the cypress stands and go out or are reduced to very low intensity. By contrast stands which are subjected to more intense fires of the walirr season are surrounded by no regeneration, and some or all adult trees are dead. In some cases only charred boles or even stumps remain. The significance of these situations is not lost to the Aborigines who frequently remark 'These people (the traditional owners) didn't look after their country properly' (1985:212).

The fact that Aboriginal people themselves recognised Cypress Pine as an indicator of fire history so impressed itself on Haynes that he considered the point important enough to restate it some years later:

The species which had prompted my original question, cypress pine, attracted considerable voluntary comment. When a patch of cypress, killed by some late season hot fire of several years earlier, was encountered, many informants expressed their disapproval of the owners of that country who were accused of 'walking out' and not burning at the 'right' time (1991:68-9).

The recognition that cypress pine was being killed by late season fires created a problem for some informants. What else could they have done as a result of returning late in the dry season? They still had to 'look after' their country, and by 'look after' they meant burning it (1991:68-9).

Haynes (pers comm) states that his Aboriginal informants were clearly aware that the damage to stands of Cypress indicated poor fire management. His informants placed greater emphasis on shrub species such as Buckinghamia and Terminalia which bear fruit, and on the Gronophyllum palm, which yields cabbage. The shrubs therefore have significant economic value to Aboriginal people which Cypress does not, and the palm is spiritually significant which Cypress also is not, at least not...
overtly. On the other hand, Cypress does have a name, *Manlarr*, which indicates that it is recognised and therefore has a significance (Jones 1991:22 cf Hiatt and Jones 1988:5), albeit one whose nature may have prevented his informants from referring to it (Haynes 1985:211), and its behaviour during fire was in all probability noted by Aboriginal people. In any case, because Haynes’ informants knew that as a forester his primary interest was in Cypress, they chose to describe the effects of fire with reference to this indicator (Chris Haynes pers comm).

Haynes is generally regarded as the first Western ecologist to propound the merits of Aboriginal fire management (Jones 1980a:125; Cooke 1993:103), and it is evident from the above quotes that, at that time, he identified Cypress Pine as an indicator while acknowledging that Aboriginal people already appreciated its significance. Since the authors of the text analyzed here are familiar with the country around Maningrida, it leaves open the question as to where the notion arose that *balanda* scientists made the discovery. The answer may lie in an account by Bowman of an ‘experience’ that changed his life:

In the early ’90’s, I took a helicopter up to look at some die-back we’d spotted from the air on the Arnhem Land plateau. I recall getting out of the helicopter and being faced with this dead cluster of cypress pines. Suddenly I realized that was one of the most significant observations I’d ever made. ... I ended up doing a major survey across northern Australia and realised there had been a major decline in this cypress pine tree. This was a bio-indicator, a miner’s canary, of a major landscape change that related to the cessation of Aboriginal burning. ... The inference was that this was the hand of human beings. I’d never really spoken to Aboriginal people about burning country. I was just reading the landscape. So we made a model about the cypress pine and we were able to show very clearly that to get healthy populations of cypress pine, you need a very specific sort of fire; not too much, not too little, not too intense. The implication is that that was the effect of how Aboriginal people managed the country (1995:16).
Bowman’s description here of his epiphany is not thereby a denial that anyone else had made this observation before. However, in none of Bowman’s text is there any mention of Haynes’ reference to Aboriginal prior awareness of Cypress as a bioindicator, and his influential status as one of the more outspoken proponents for Aboriginal Fire Ecology may have led to a misconception that Aboriginal people were not previously aware of this.

Again, this may appear hypercritical, but this is one of the few elements in Yibarbuk’s text that can be identified, with certainty or otherwise, as having its origin in Western discourse. This is intended not to suggest that there are inaccuracies in the text but to demonstrate the coercive influence that Western discourse can exert on its Aboriginal contributors, and that the act of translation even by Aboriginal producers introduces elements of Western discourse into their text.

Cypress had little economic value to Aboriginal people and was not a prominent topic of Aboriginal ecological discourse when Haynes worked as a forester at Maningrida, although Aboriginal people did recognise its role as an indicator of the prevailing fire regime (Haynes pers comm). However, Cypress has now acquired profound economic significance to Aboriginal society because of it plays a key role in the Western ecological discourse that is advocating support for the return of Aboriginal people to their country.

The prominence given to this advocacy in Yibarbuk and Cooke (2001) distinguishes this text from Yibarbuk et al (2001), as does its vernacular style. Because this analysis is concerned with the articulation between Western and Aboriginal ecological discourses, it is important to identify aspects of the texts that reflect an increasing influence of the latter over the former, and vice versa.
Western discourse links Cypress to the return of Aboriginal people to country, not only as the linchpin in ecological argument, but as a highly visible indicator of the fire regime prevailing on a particular landscape and, *ergo*, whether the land is managed under a Western or an Aboriginal Ecology. This text's emphasis on Cypress suggests, therefore, that the advocacy may be an artefact of Western discourse, especially given its uncritical acceptance of Bowman's role in its discovery. In other words, Aboriginal discourse may have been coerced by the allure of the more powerful discourse to not only defer to scientific knowledge, but also to align itself with an ideology emerging in that discourse that seeks to return land to Aboriginal people. There is, however, another possibility, and that is, that Western discourse is itself being appropriated by Aboriginal authors.

The vernacular that differentiates this text (Yibarbuk and Cooke 2001) from Yibarbuk *et al* (2001) signals its practical rather than theoretical bent. Even though Yibarbuk carries into the production of this text a scientific authority derived from his prominent role in the production of the latter, the language here signals that it is an expression of Aboriginal discourse, despite its being co-authored by a *balanda*. Cooke's role in its production adds yet a further layer of complexity to this process of appropriation and re-appropriation.

The interpretative model developed by MacCannell (1973) for Western tourism is useful in appreciating this complex interplay between discourses. Interpreting tourism as a search for an authenticity absent from modern civilisation but believed to still exist in the sacralisation to be found within primitive societies, MacCannell devised a concept of 'stages', graduating from the 'front region' where authenticity is simulated for tourist consumption, to the 'back region' which tourists strive to enter but necessarily never can (1973:591).
MacCannell's concept of authenticity is analogous to the objectivity that is the goal of Western science. In the context of the Western discourse on Aboriginal Ecology, Western science is seeking Aboriginal ecological knowledge as if it were an object in reality about which it is possible to represent an absolute truth. This knowledge is, of course, not a material or static object but an abstraction reproduced within Aboriginal discourse. Western ecologists recognise this, and therefore seek to retrieve the knowledge from that source. The translation from Aboriginal into Western discourse is problematic in several ways discussed earlier, and thus Aboriginal producers who are fluent in the metaphor of Aboriginal discourse can occupy the uniquely authoritative position of authenticity.

Yibarbuk appropriates Western discourse, symbolised by the 'toolbox' of 'balanda science' (Yibarbuk and Cooke 2001:36), establishing a space wherein Aboriginal discourse may resist the dominant colonial discourse (Danaher et al 2000:104). This space exists not merely because Western discourse accepts as valid that other toolbox, the traditional ecological knowledge in which he is also competent (Yibarbuk and Cooke 2001:36). Rather, it is an insularity achieved through the esotericism of Aboriginal metaphor, and thus a space in which Aboriginal identity can be free from Western colonial influence analogous to MacCannell's 'back region' (1973:591). According to MacCannell's model, the existence of a back region is also made possible by the creation of a corresponding 'front region' (1973:591), occupied by tourists. By occupying the front region, Western authors (Cooke in the present instance) derive an authority by identifying with the production of this authenticity, an authority they can carry into their production of Western ecological discourse. The role of traditional ecological metaphor in delineating an exclusively Aboriginal ecological space within Western discourse is the subject of the analysis that follows.
Authentic Genre

It is interesting that the word 'ecology' does not appear at all in this text (Yibarbuk 1998), although the etymologically-related term 'economic' does once, whereas 'spirit' (or its derivatives) does 3 times, 'sacred' 5 times, 'ceremony(ies)' 7 times, and 'ritual' 4 times. A further sense of the author's perspective on the role of fire is that the are 17 instances of the word 'people' (including 'person'), 16 of 'child' (or 'children', 'kid/s, 'boy' or 'girl'), 15 of 'man' ('men') 7 of 'women', 4 of 'parent(s)', 4 of 'father' ('grandfather'), 2 of 'mother', 3 of 'wife', one of 'husband', 7 of 'family' ('in-laws', 'kin/ship'), and one each of 'sister', 'uncle' and 'nephew'. There are 32 references to food species and 28 to the land (including 'landscape', 'land-owning', 'estate', 'country', 'floodplain', 'forest' etc). Thus, there are 75 references to people, 60 references to conventional ecological criteria (land and fauna/flora), 19 to spirituality or associated words, one to economics and none to ecology (as actual words or derivatives). This compares with 75 references to words related to 'fire', comprised of 54 to 'fire' itself (including 'fire-stick', 'firewood', and 'fire-drive'), 3 to 'flame' and 18 to 'burn(ed/ing)'. In short, there is a pronounced emphasis on people in defining the role of fire, and a lesser emphasis on conventional ecology, and significant reference to spiritual aspects.

An alternative approach to quantifying the relative emphasis in this complex text is to note the references by sentence. Only sentences which directly refer to fire are counted, a single sentence may refer to more than one aspect of fire, and consecutive sentences which refer to the same aspect (reinforcing or summarising the point) are counted as separate instances. A few examples illustrate the way these statistics are derived.
children learn about fire from their parents and being told stories about who can make fires, different types of burning and the responsibilities of djungkay, the people who help the landowners look after the country and our law (Yibarbuk 1998:1).

This sentence contains references to learning about law and culture, to properties of fire ('types of burning' could refer to ceremonial aspects but this is not explicit), relationships of people to country ('djungkay') and relationships between people. Thus, the sentence registers in each of these four categories.

fire that is the centre of each family living area (kunrak) (Yibarbuk 1998:1),

This clearly refers to hearth and counts as one statistical entry. Note that this is not a complete sentence, indicating that lexias are counted rather than sentences per se.

they learn by observation how different kinds of wood burn different ways and how stacking wood in a fire affects the way it will burn and the kind of ashes or coals that come from that. They learn to gauge the heat in a fire so that it cooks and does not burn food (Yibarbuk 1998:1).

There are three references to knowledge and learning about the properties of fire in the first sentence, and one in the second. However, only one reference is counted for each sentence, a total of two.

In the upper Cadell River area there is a tradition of young men's initiation involving circumcision at about the time of puberty (Yibarbuk 1998:2).

This makes no reference to fire either direct or indirect, so none is counted.

The burning is not just of economic significance. It also has a spiritual meaning in making the country clear of spiritual pollution which follows a death amongst the landowners (Yibarbuk 1998:2).
The first sentence has no countable reference. The second refers to ceremony and to the relationship of people to country.

Yibarbuk makes most frequent reference to fire in relation to people, that is, its role in mediating (as a metaphor) relationships between people (social), and between people and country; this grouping includes fire as hearth. If references to fire in law and culture are included, this accounts for over half the references; if they are excluded, just under half.

The next most frequent reference is to knowledge itself, and especially learning about fire and its roles. The pragmatic aspects of fire, which include not only those which are the primary concern of Western Ecology but its use in hunting and cooking, account for only a third of all references. If references to hunting and cooking are removed from this group, conventional ecological aspects of fire rate the same mention as the spiritual aspects of fire.

Three passages warrant specific attention. The first is the introduction to the text, which contrasts Western and Aboriginal attitudes to fire.

Most people know fire as something very dangerous that can destroy the environment or habitats or buildings or people. The secret of fire in our traditional knowledge is that it is a thing that brings the land alive again. When we do burning the whole land comes alive again - it is reborn. So we don't necessarily see fire as bad and destructive - it can be good and bring the country back to life. But it is not a thing for people to play with unless they understand the nature of fire (Yibarbuk 1998:1).

This draws an explicit contrast between the Western perception of fire as destructive, and the Aboriginal perception of fire as an agent of rejuvenation, the latter stated three times. The paragraph which follows this in the text refers to children, knowledge passed on from parents, responsibilities to fire and country,
properties of fire, relationships of people to country, and the law, in fact, most of the significant themes. The only aspect of fire missing from the second paragraph is spirituality, and this may be implicit in the opening sentence of the first, that fire is 'very dangerous'. Yibarbuk refers explicitly to the Western view that fire is dangerous because it destroys buildings, but counters this with a reference to the 'secret of fire' and 'traditional knowledge'. He thus refers to an aspect of fire which cannot be spoken of directly but which manifests in rebirth, not only of the country, but of the affiliation between people and country, and of the law.

Another passage of particular interest occurs well into the text, following a description of the fire-drive:

For a young man the spearing of his first kangaroo at an event like this is very important. That kangaroo can be eaten only by the senior men and their sons and grandsons. Women and their female children cannot eat this food, which is classed as nadjamun, a word for sacred meat food. The young man is now in an age-grading phase called kalngbuyh which may last for several years during which time the bones from his game are cleaned and red-ochred and stored in dillybags looked after by his father or his paternal grandfather. When the time is judged right these bones are disposed of. Depending on the country and circumstances, they may be placed in a cave or they may be crushed and scattered by men as they go about a fire drive, or used in ritual. In each case senior people call out to the spirits, asking them to ensure that more kangaroos will be produced and that new grass will come to bring the earth back to life (Yibarbuk 1998:5).

This paragraph comprises a substantial proportion (8%) of the text but the only explicit reference it makes to fire is the scattering of the crushed bones during a fire-drive. The significance of this passage, and its relevance to a text about fire, can only be imagined or, one assumes, known by someone to whom its metaphor is transparent. Two details of the passage can, however, be remarked upon. The first is
the reference to 'age-grading’, a term first encountered in Warner (1969), who placed strong emphasis on this aspect of Murngin (Yolngu) social structure. It is curious that Warner’s term is used here and it would be interesting to know, although difficult to ascertain, how closely the Western anthropological metaphor approximates the Kunwinkku concept.

The second point of interest is that this paragraph describes a process which Spencer glossed as an ‘increase ceremony’ (Spencer 1928:834) and which refers back to the text’s introductory paragraph associating fire with renewal. This oblique reference may be to a use of fire which cannot be directly referred to at all. It hints at the complexity of Yibarbuk’s text, highly transparent at one level yet alluding to more profound meaning not available to a reader who lacks the metaphoric keys. As he points out,

as they grow, young people learn that fire is more than just something for cooking or hunting - that it has a deeper meaning in our culture (Yibarbuk 1998:2).

Irrespective of any Western editorial intervention which may have sculpted the surface of the text, it is possible that any such meaning lies beyond the reach of Western discourse and instead expresses an authentic Aboriginal Ecology.

The third passage of interest, and with which this analysis concludes, may or may not betray editorial smoothing since it echoes the conclusion of the second of Yibarbuk’s texts discussed above. Its significance rests in the probability of its expressing what Yibarbuk, a person well-versed in Aboriginal Ecology, perceives as the core principles which need to be passed into Western Ecology:

To go forward we need to encourage our children in the ways of the past. Fire must be managed and people must be on their country to manage that fire (Yibarbuk 1998:6).
These two deceptively simple and apparently innocuous sentences are richly intertextual, invoking several powerful discourses. Firstly, Yibarbuk refers to the handing on of knowledge from elders to children. This accentuates the nexus between a vital Aboriginal society and the maintenance of knowledge, reinforcing the notion that, unlike Western knowledge, Aboriginal knowledge is not something to be contained in written text but continually reproduced through performance.

Secondly, the bald statement 'fire must be managed' refers, without making the connection explicit, to the ecological consequences of not managing fire. In addition, it represents fire as a natural element rather than the result of 'peripatetic pyromania' (Hallam 1975:8), contesting the notions of Aboriginal use of fire as destructive and Aboriginal society as primitive. Moreover, 'must' refers to not only this ecological imperative but, as the earlier context makes apparent, also to the spiritual imperative.

Finally, 'people must be on their country' is a clear political assertion which refers to the impact on Aboriginal society – and consequently on their country – of the arrival of Europeans in Australia. Yibarbuk astutely ties this not to social justice but to the self-serving ecological interests of the colonising power.

In this text, Yibarbuk asserts the authority of an Aboriginal ecologist who is initiated into the more arcane meanings of Aboriginal ecological knowledge. The text demonstrates semiotic conventions in the production of Aboriginal ecological discourse, just as Yibarbuk et al (2001) does for Western ecological discourse. Through his participation in the production of Yibarbuk (1998) and Yibarbuk et al (2001), Yibarbuk associates with the authority of both discourses. This dual authority enables him to participate freely in either, and to carry the authority from one into his production of the other.
Although this text is specifically concerned with the social and ecological significance of fire for Aboriginal people, it serves as the foreword to the text by Langton (1998) referred to in the analysis of Bowman (1998), a text which seeks to redress the subjugation of Aboriginal people in Western discourse (Langton 1998:7). Although ostensibly ecological in scope, Yibarbuk's (1998) position relative to Langton (1998) ensures that it is political in effect.

The ecological paradigm depicted in Yibarbuk (1998), of an interrelationship between the reproduction of human subjectivity and the natural world, is similar to that described by Rose (1988) and Bradley (1997). Indeed, such a representation of Aboriginal Ecology is well established in Western discourse (eg Thomson 1939; Warner 1969; Hiatt and Jones 1988).

It may be that this discursive history facilitates Yibarbuk's presentation of this paradigm, a paradigm that is peculiarly Aboriginal and which Western readers may otherwise resist or fail to comprehend. Alternatively, Yibarbuk may be borrowing a representation of Aboriginal Ecology constructed within Western discourse. The propensity of Aboriginal texts to reproduce Western constructions as fact was evident in Yibarbuk and Cooke (2001). Its crediting of Science with revealing to Aboriginal people the ecological significance of Cypress demonstrates the coercive power of a Western discourse that makes a claim to absolute truth. Yibarbuk's participation in the production of scientific discourse would suggest that his representations of Aboriginal Ecology may be influenced by Western as much as by Aboriginal constructs.

Whichever is the case, it is clear that Yibarbuk draws upon Western discourse, and establishes a distinctively Aboriginal space within it. For this space to be Aboriginal, it requires demarcation from Western discourse and the exclusion of Western producers. The barriers it raises to maintain separation are both linguistic and ontological, and include the metaphors and mythical paradigms through which
Aboriginal Ecology is represented, as well as the causal relationship between living humans and their ancestral kin—a relationship that breaches the existential divide between the natural and supernatural. This kinship requirement further ensures that the subjectivity produced within Aboriginal ecological discourse is available only to Aboriginal people.

The essay thus far has examined the appropriation by Western discourse of Aboriginal Ecology to abet the European colonisation of Australia. It has shown that the Aboriginal Ecology upon which that discourse is based is at least partly a construction that refers to Western ideologies. The essay has traced the increasing participation in Western discourse by Aboriginal authors, and the increasing influence that Aboriginal discourse has had on how Aboriginal Ecology is represented. The tendency of Western discourse to seek objective truth has led naturally to its production by an Aboriginal author, and the essay has shadowed this trend by concluding with an analysis of texts by Yibarbuk.

The analysis has shown that democratization has opened Western discourse to re-appropriation by Aboriginal authors. Although the democratization has been in part motivated by the Western quest for an objective truth of Aboriginal Ecology, the analysis has demonstrated that Aboriginal authors subscribe to Western constructs, and that the product of Aboriginal discourse—at least as it is inscribed into Western discourse—may refer to Western, as much as to Aboriginal, concepts.

In other words, while Western discourse seeks an authentic Aboriginal Ecology that exists in a back region, Aboriginal authors have constructed a front region where an Aboriginal Ecology may be staged to meet the ideological expectations of Western ecologists. Formerly, an agrarian ideology prevailed in the relationship between Western and Aboriginal ecological discourses, an ideology that enabled the dispossession of Aboriginal society, and the colonisation of their habitat by Europeans. More recently, a new Western ideology has constructed Aboriginal
Ecology as a superior adaptation to the Australian environment. In particular, an Aboriginal style of fire management is seen as more likely to produce the outcomes desired under the emerging conservation ideology.

Although there may be a consequent imperative to return land to Aboriginal control, or at least to re-impose an Aboriginal ideology on the landscape, the ideology imposed is also necessarily Western since the aim is partly to produce conservation outcomes, and conservation shares with agrarian ideology a European intellectual heritage.

The re-occupation and re-appropriation of landscape create a semiotic and discursive space in which Aboriginal subjectivity may be reproduced free from Western intrusion. However, it is evident that Western discourse facilitates this process for its own purposes, and that producers of Western discourse (eg Bowman et al 2001; Yarbuk et al 2001; Yarbuk and Cooke 2001) enjoy a derivative authority from their association with what is seen as an authentic Aboriginal ecological discourse. Aboriginal authors are, in turn, empowered by associating with the dominant Western discourse (eg Yarbuk et al 2001), by subscribing to subject positions constructed within that discourse (Yarbuk and Cooke 2001), or by deploying those constructs strategically in order to subvert Western discourse (Langton 1998).

In its examination of the social context in which the Western discourse on Aboriginal Ecology is produced, this essay began with an historiographic review of the emergence of the discourse. The essay then analysed a series of more recent texts through which Aboriginal discourse came to play an increasing role in the production of the Western discourse. The essay is principally concerned with the construction of Aboriginal Ecology in Western discourse, and its implications for power relationships in the ongoing process of European colonisation of Australia. The essay concludes with a review of the ground covered, and a synopsis of the relationship between the two discourses.
Conclusion
Chapter Ten

Conclusion

It is the intention of this essay to draw no conclusion, since a key premise is that, despite the scientific quest for one, there is no definitive or objective Aboriginal Ecology. The essay acknowledges its own participation in and contribution to the discourse and production of meaning, and, because this process is necessarily ongoing, its narrative remains open and eludes conclusion.

The approach it takes instead is to produce a reading of the history of the Western discourse on Aboriginal Ecology and, on the basis of an analysis of a more recent part of the discourse, to rewrite that narrative to expose its underlying social and ideological dynamic. This rewritten narrative is what passes here for a conclusion, and it is preceded by a summary of the points raised during the analysis.

Summary

Western ecological discourse, by displacing pre-emptive Aboriginal burning and re-engineering the Australian landscape, has unleashed an anarchic fire regime that threatens the biodiversity of North Australia. The discourse has long credited Aboriginal fire management with the creation of Australia’s ecological heritage but, following a confrontation between Western and Aboriginal fire management of Cypress forests in north central Arnhem Land during the 1970’s, recognized that Aboriginal Ecology might benefit Western systems of land management in their adaptation to the North Australian environment. Thus began a concerted effort to incorporate Aboriginal ecological knowledge into Western ecological discourse.
The above analysis of texts engaged in this effort demonstrates that, in attempting to translate this knowledge, Western discourse alters its essential meaning. Although acknowledging the primacy of the Aboriginal relationship with the landscape, the translation furthers the European colonial process by contributing to the erasure of that relationship. This occurs because the retrieval of Aboriginal Ecology entails a reconstruction not only of the knowledge but also of Aboriginal subjectivity. Also, its objectification in scientific discourse represents Aboriginal peoples as culturally homogeneous and entire regions as uninhabited.

It was apparent, from the brief overview of its history, that the discourse recognizes fire as a primary metaphor through which Aboriginal people identify with land, yet it appropriates the knowledge that underpins this relationship to support the Western management regime that displaces it. To incorporate the knowledge into Western discourse, it has firstly to be stripped of the ideologies, or myth, that are its essential property, and a Western myth substituted, the myth of scientific objectivity.

The social power of scientific metaphor stems from its claim to signify objective fact. Subject positions defined within arguments that cite scientifically deduced fact are incontestible, and when they are developed within the context of the relationship of people to land they confer social power. Having firstly stripped Aboriginal ecological knowledge of its intrinsic subjectivity, Western ecological discourse interposes one that is imaginary, grounded in Western ideologies, and constructed for the purpose of securing the transposition of Western ideologies.

The construction of Aboriginal ecological subjects by Western discourse impinges upon the capacity of Aboriginal discourse to exercise control over the reproduction of the landscape and its derivative subjectivities. The analysis of Bowman’s text (1998), and of Langton’s citation of it (1998), demonstrates that representations of
Aboriginal subjectivity in Western Ecological discourse are available for appropriation by Aboriginal discourse for the purpose of advancing its position in Western discourse. However, this merely serves to naturalise it to the point where it becomes increasingly difficult, even for Aboriginal people, to contest those imaginary subjectivities. The accessibility of the power of the dominant discourse is contingent upon Aboriginal people subscribing to a representation of themselves constructed from within the Western symbolic order.

One characteristic of Aboriginal Ecology that is consistently highlighted throughout the history of its representation in Western discourse is its overriding reference to Creation mythology. In Western discourse, myth is considered tantamount to fiction, but it is on the basis of its capacity to produce effective material outcomes, rather than any interest in its intrinsic rationale, that Western discourse represents Aboriginal Ecology as valid. In order to render it applicable in Western management, the translation of Aboriginal ecological knowledge into scientific discourse reduces it to a Western paradigm. However, Rose (1988) and Bradley (1997), affording greater credence to the mythological premises of Aboriginal Ecology, contend that the paradigms through which it is constituted in Aboriginal discourse are of perhaps greater value to Western discourse than the knowledge itself.

This principle of incorporating Aboriginal paradigms (Russell-Smith et al 1997; Bowman et al 2001) is merely a further application of scientific objectivity, of progressing knowledge toward a truth that emanates directly from its objective reality. This methodology is based on the same phenomenological interpretation of the natural world as is the Western notion of causality: the same chain of cause and effect that enables perception and knowledge of reality enables humans to act upon the natural world. In the Ngarinman cosmology described by Rose (1988), however, ecological agency derives not from human intervention in the natural world but
from their participation in a supernaturally sanctioned order. Similarly, in Bradley's *Yanyuwa* cosmology (1997), living humans share the natural world with spirits of both the recently deceased and the mythical Ancestors, investing landscape with that spiritual power. Such conceptions of the cosmos are clearly based on a different notion of causality than that of Western Science, yet Western Ecology seeks the knowledge that Aboriginal Ecologies contain to produce material outcomes. While a dialogue is possible between scientific and Aboriginal Ecologies at the mundane level of 'folk taxonomies' (cf Povinelli 1993), a more meaningful engagement would appear to be problematic.

The analysis considered the social implications of Aboriginal participation in the production of the Western discourse, whether as informants to Western authors (Bowman *et al* 2001) or directly as authors (Yibarbuk 1998). As Aboriginal discourse exercises increasing influence over the production of the Western discourse, the activities of the competing ideologies become more evident and the discourse becomes more visibly an arena for contesting social positions. Scientific discourse benefits not just from its association with the dominant ideologies that advance its position, but also from a set of semantic and rhetorical tools devised specifically for that purpose. Aboriginal discourse, on the other hand, is in the strong position of holding the knowledge that the other seeks.

Ultimately, as the analysis of Andersen (1999) shows, it is a question not so much of who owns the land but of which ideology prevails. The scientific attitude espoused by Andersen (1999) is that knowledge is a global commodity to be shared, but this egalitarianism does not extend to land, the control of whose natural processes and resources is the aim of its appropriation. The rendering of Aboriginal Ecology in an ahistorical frame, as the backdrop to European colonisation as it were, detaches Aboriginal people from the political reality in which such questions are determined. The analysis of Andersen (1999) demonstrates the nexus between Ecological Science.
and power, and exposes the hegemony of Western Science manifest in its putting itself forward as the paradigm through which Aboriginal people should exercise their managerial control over land.

The analysis of Bowman’s text (1998) firstly examined the construction of Aboriginal subjectivity and its subsequent appropriation in social contestation. A later analysis then examined, in relation to a different text (Bowman et al 2001), the erasure of subjectivity resulting from translation, and its effect on the meaning attached to the translated knowledge. This showed that, far from being the object that scientific discourse imagines, Aboriginal ecological knowledge is instead highly subjective in nature. The problems of causality introduced by the supernatural referents of Aboriginal discourse are resolved not only by shifting to an objective paradigm, but by advocating that land be returned to Aboriginal control. Such a resolution is not at odds with the Western appropriation of Aboriginal ecological knowledge in order to secure the ecological stability of European colonisation.

The analysis of Yibarbuk’s texts shows that the discourse is comprised by two ideologies competing for its production and for the control over the landscape determined therein. Yibarbuk’s texts are the product of a mixture of both Western and Aboriginal discourse, and provide a window into the dialogue between the two, their authorship serving as a guide as to which of the discourses the respective texts are indebted. Having initially legitimatized European claim to Australia, Aboriginal Ecology is now regarded as the key to a sustainable colony. Aboriginal discourse stands to gain from this privileging, since it not only supports occupation of land by Aboriginal owners but does so for reasons which are in the interests of the colonial power. The discourse thereby reinforces the epistemological dominance of Western Science while promoting the values of Aboriginal Ecology.
Yibarbuk's text conveys as a consistent theme the struggle of Aboriginal people to retain control of land and knowledge, and refers to fire as its central metaphor. In addition, he represents this metaphor and its attendant knowledge as available to Aboriginal readers but invisible to Western readers who lack the symbolic and ritualistic resources. Through the Western discourse on Aboriginal Ecology, Yibarbuk gains access to the metaphors and technologies of Western discourse to achieve outcomes specific to the Aboriginal cultural order. Although Western ideologies disrupted Aboriginal society and its relationship with the landscape, Yibarbuk subverts the European colonial discourse to his own ends, supporting the return of people to their country, and of that country to the regime of management which constitutes ownership in Aboriginal discourse. Yibarbuk appropriates the power of Western discourse for the purpose of asserting Aboriginal rights over land.

The Narrative Rewritten

The ecology of Australia's Aboriginal people has been emerging as a theme in Western discourse since the continent was first imagined. The shift in representation from basic determinism to complex mastery - of Aboriginal people occupying and responding to ecological possibilities, shaping and curating the biological landscape, developing systems for sustainable exploitation, and constructing a mythical landscape in which individuals and society discover meaning - echoes the Western quest for a substantive occupation of Australia.

Underlying this shift is a changing perception about the degree to which Aboriginal people exercise ecological agency, and there are several aspects to this principle: what role did Aboriginal people play in shaping the Australian landscape; did they influence natural processes to increase the yield of food and other species; was the means through which they exercised agency real (operating in the world of cause and effect) or was it imagined; were the ecological changes they produced incidental to activities such as hunting or were they known in advance and achieved through purposeful action?
Western discourse has increasingly portrayed Aboriginal people not only exercising ecological agency, but also doing so from a position of profound ecological knowledge. Even early explorers and settlers recognised the Australian landscape as the product of Aboriginal burning (Mitchell 1969:412; Grey 1841 cited in Hallam 1975:12; Hammond 1933 cited in Hallam 1975:67) although, with a vested interest in laying claim to the land and burdened with 19th century ideas about savages and civilisation (Schrire 1984a), they saw hunting and gathering as a lesser form of agency than agriculture. As a consequence of this rationale, not only was European occupation seen to be more ecologically substantial but, according to Locke’s theory of property, legitimate (Alvey 1987; Reynolds 1987).

Western discourse thus constructed an Aboriginal Ecology that served colonisation, not only providing the moral rationale, but enabling the actual process of dispossession. Aboriginal ecological knowledge was pressed into the service of European colonisation by explorers, who employed Aboriginal guides (Leichhardt 1847:503; Reynolds 1990:128; Stokes 1969a:400), and by settlers, whose agriculture was transplanted directly onto an ecological template created through the prior performance of Aboriginal Ecology (Hallam 1975:67). Colonisation of that landscape erased the very knowledge and ecological praxis necessary for its reproduction, requiring the colonising discourse to reconstruct the adaptations that had underpinned the success of those it displaced. The principal adaptations relate to fire.

In the Western discourse on Aboriginal Ecology, fire signals an Aboriginal relationship with the Australian landscape that is both material and spiritual. Aboriginal colonisers successfully developed an adaptative form of land management wherein fire is used proactively, to manage the inherent flammability of the Australian flora, to shape the landscape, and to produce the essentials of subsistence. The term ‘firestick farming’ (Jones 1969) signifies the recent shift in the

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representation of Aboriginal land management that refutes one of the key premises that Western discourse deploys to legitimate European dispossession. The emergence of this discourse on Aboriginal Fire Ecology does not, however, mean that European colonisation is undergoing a reversal. To the contrary, the discourse merely serves to further the interests of that colonisation by appropriating not just the knowledge and praxis contained in Aboriginal ecological discourse, but also the paradigms through which Aboriginal people find meaning in the landscape and reproduce their subjectivity.

Western scientific discourse regards Aboriginal Ecology objectively, as if it were an object in reality about which it were possible to represent an absolute truth. The authentic Aboriginal Ecology, which is the object of the scientific quest, is located by Western discourse exclusively within Aboriginal discourse. The subjectivity that is an essential quality of Aboriginal ecological discourse, however, stymies its translation into Western text. In order to incorporate an authentic Aboriginal Ecology, Western discourse has increasingly opened its own production to Aboriginal authors. Initially, the influence of Aboriginal discourse on the production of the Western discourse was limited to objective representations of Aboriginal ecological knowledge and praxis by Western observers who were more or less guided by Aboriginal informants. More recently, Aboriginal informants have been recruited to lend authority to the production of Western text, such that the text may represent itself as an expression of authentic Aboriginal ecological discourse.

The Aboriginal subject positions available within such text reflect, at least partially, Western ideologies. They are projections of the subjectivities that circulated within Western ecological discourse during its earlier stages, not the least of which is the Noble Savage. These constructed subjectivities may carry greater authority than the actual (Said 1978 cited in Stoddard 2001:232). They valorize Aboriginal Ecology and offer to those who would subscribe to them a position of privilege within the
dominant discourse. While identification with such favourable images might itself coerce Aboriginal participation in the colonising discourse in which they are constructed, perhaps more alluring is the power of the dominant society to return land to Aboriginal people (Cooke 1999; Whitehead 1999).

As Foucault has noted, coercive discourses necessarily create their own opposition (Danaher et al 2000:95). The incorporation of Aboriginal Ecology has opened Western discourse to its re-appropriation by Aboriginal discourse. While the Western representation of Aboriginal Ecology progressively encroaches upon Aboriginal discursive space, thereby furthering European colonisation of the Aboriginal landscape, Aboriginal authors occupying the subjectivities made available within the Western discourse are in a position to resist it.

An authentic Aboriginal Ecology that will facilitate the adaptation of Western ecological ideologies to the South Land (Smith 1960) may well exist, but it is accessible only to the initiated (Yibarbuk 1998:2) who possess the metaphoric keys. Aboriginal ecological paradigms that jam the resolution of Aboriginal Ecology enable Aboriginal authors working within Western discourse to create a space quarantined from Western ideology. In MacCannell’s (1976) terms, Western observers are presented with a staged Aboriginal Ecology in a front region, and an authentic Aboriginal ecological discourse reproduced in a back region. Even though this takes place under the arch of Western ideology, access to the back region is only through the mediation of someone fluent in Aboriginal discourse, a role which in itself confers authority.

Aboriginal participation subverts Western colonial discourse by reasserting control over land and the associated reproduction of Aboriginal subjectivity. Aboriginal discourse derives power from its association with Western discourse yet, by subscribing to imaginary subject positions, Aboriginal producers reinforce them. Western discourse, in seeking to penetrate to the back region (MacCannell 1976), confers authenticity on the imaginary.
Western colonial discourse has been engaged in the systematic erasure of Aboriginal authenticity, through genocide, expropriation and representation. Western scientific texts contribute through their reductive reconstruction of Aboriginal ecological knowledge. The imaginary – source of the earliest images of *Terra Australis* – still inspires Western representation of Aboriginal Ecology (Hamilton 1986:1; Silverman 1983:157), confounding the vigilance of the empiricists. European colonisation unfolds on a stage whose backdrop is the antiquity of an Aboriginal Australia and, as the earlier colonists dissolve at their appearance, the settlers anchor themselves to the names left vacant in the semiotic matrix that is the landscape. Western myth still figures in the imaginary Aboriginal Ecology constructed in Western discourse, but now the Noble Savage has become knowledgeable.

Yibarbuk (1998) finally reveals the enigma to which the Western hermeneutic aspires: the secrets of Aboriginal Ecology available only to those initiates who hold the metaphoric keys. But by refusing to then resolve this enigma and instead formulating it in terms of an esoteric Kunwinkku paradigm based on fire, like Haynes’ informants defining a space by approaching the totemic site with the smoke blowing back over them (Haynes 1991:69), Yibarbuk delineates the boundaries of the back region, a landscape of Aboriginal imagining where an authentic Aboriginal Ecology survives, exclusive and increasingly the object of Western desire.
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