An Investigation into Spring Water

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Abstract

This exegesis explores the sacred, holy and commercial aspects of spring water as revealed by an exploration of the relationships of Indigenous Australians and non–Indigenous European Australians to spring water.

As a non–Indigenous Australian migrant, my knowledge of Indigenous Australian spiritual and cultural matters was limited, as was knowledge of Indigenous Australian history, both pre- and post-European settlement. As a migrant, I have many memories and experiences of spring water at European wells, springs and places of pilgrimage where healing, both physical and spiritual was sought. In childhood, I enjoyed reading the many myths and legends that surround the magical, mysterious and often invisible resource of spring water. Realising that my current knowledge of spring water relied more on folklore and anecdotal information than on fact, I decided that the topic of spring water offered worthwhile opportunities for research.

I live twenty kilometres north of the Central Victorian spa town of Hepburn Springs, and I became aware of local understanding that many underground streams run below the surrounding countryside. Consequently I have located two springs in the Jim Crowe creek which runs adjacent to our boundary. With the bleak future offered by climate change, I feel that it is important, as a rural resident, to find out as much as possible about the essential and diminishing resource of spring water. As an artist, I am inspired and challenged by the mystery of a water resource flowing unseen below our land. As a researcher I am challenged to explore the threats to the integrity and viability of spring water from events above ground. These threats to spring water are equally threatening to the environment so I see spring water as a metaphor for the environment.

While commercial industrial expansion and exploration traditionally challenge the viability and integrity of spring water, occasionally there can be surprisingly positive outcomes for some Indigenous Australian artists. There is an additional challenge offered to an exploration of the commercial aspects of spring water. Climate change is affecting the recharge capabilities of spring water and its availability to existing and potential consumers. At the same time, increasing demand for water, caused by diminishing rainfall is offering an extra revenue
source to commercial miners of spring water. The availability of spring water is
being challenged on more than one front.

This research explores and investigates the abundance of (particularly) art
references to spring water in Indigenous Australian culture and traditions, while
noting the dearth of art references relating specifically to spring water in non-
Indigenous Australian culture; although an abundance of art references to water in
general is revealed. In the latter context, references to art depicting aspects of the
hydrologic cycle have been substituted and explored.
Statement of Authorship

Except where explicit reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma. No other person’s work has been relied upon or used without due acknowledgement in the main text and the bibliography of the thesis.

Signed

Marie Purtill  Date

Principal Supervisor Anne Saunders  Date
Acknowledgements

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Preface

In my childhood, I enjoyed reading the many myths and legends that surround the magical, mysterious and often invisible resource of spring water. As a migrant, I have many memories and experiences of spring water at European wells, springs and places of pilgrimage where healing, both physical and spiritual was sought by people from all walks of life.

I was appalled to see the first spring water for sale in plastic bottles in Australia, thinking that it would never be commercially successful. Unfortunately, I was wrong. It is now marketed everywhere.¹ It has become a virtual fashion accessory. As drought tightens its grip on many parts of Australia, the desperate nation seeks solutions to increasing water shortages, and often sees ground water as the panacea of all drought-imposed ills, as letters to newspapers attest. This despite frightening information revealed recently regarding the contaminated and polluted state of aquifers below major cities in both the British Isles and Australia. There are examples of the devastating effects of commercial enterprises such as mining and tourism on supplies of spring water in remote areas of Australia such as Uluru, the Pilbara and on supplies of spring water to Saint Winifred's Well in North Wales, United Kingdom.

In February 2007, after reading that the British must use less water or face water rationing by April, and considering the possible reaction of Geoffrey Chaucer² to the news that his "shoures soote" were possibly an endangered species, I realised that without significant rainfall between February and April, supplies of spring water in that country would therefore also be at risk.

It is the contrast between the historical, mystical and mythical aspects of spring water as revealed by the spirituality, culture, traditions and art of both Indigenous and non-Indigenous Australians, plus the ancestry of traditions and beliefs that surround spring water and the contemporary commercial aspects of this invaluable

¹ In Australia, the availability of spring water in plastic bottles is a fairly recent phenomenon compared to that in glass bottles. References to ‘bottled water’ in this exegesis apply to spring water in plastic bottles unless stated otherwise.
² (Chaucer, 1387) line 1.
resource, that are now combining with unpredictable natural forces, possibly set in
train by human activities, that I intend exploring as both an artist and as a
researcher.

**Rationale for use of Term ‘Spring Water’**.

In exploring the phenomenon of subterranean water, I am aware that there are
different names to describe it. It can be called ground water, spring water or
mineral water. It can be described as the water of a seepage, rock hole,
waterhole, spring, well or bore. Water that has few minerals in it and is very
potable can be called still water or spring water. I have elected to follow the
lead of the advertising industry and use the most attractive label of spring
water, which carries with it connotations of mystery and purity.
Chapter 1

Introduction

Spring Water and Indigenous Australia.

European Settlement had a disastrous effect on the Djadja Wurrung, the Indigenous Australian nation of Central Victoria, which was similar to the effects of the Reformation of Henry VIII and the subsequent iconoclasms of his son Edward, on Catholic culture and life in the British Isles. Europeans were successful in suppressing and eliminating virtually all evidence of Djadja Wurrung culture so that little remains to tell their descendants and others of their way of life and beliefs. Proximity to alien colonists, disease and alcohol left few surviving Indigenous people. Some older survivors elected to stay in their country, the remaining few moving to Corranderk Reserve (Healesville). The stories of the Djadja Wurrung now blend with those of the stations where they resettled, however there is now visible evidence that the Djadja Wurrung people are returning to their ‘country’. On the gate of a small property near Mount Franklin and on urban fences in Campbell’s Creek, black, gold and red emblems make a statement of pride.

In more remote parts of Australia, e.g. Arnhem Land, the Western and Central Deserts, the Kimberley, North Queensland and the Torres Strait Islands, the effect of European settlement, was also harsh, unforgiving, uncompromising and unbelievably traumatic. However, relationships between Indigenous Australians and non-Indigenous Australian artists especially, have, over time, ameliorated into one of interest and support. The mutually advantageous partnership which subsequently developed between Indigenous Australians and non-indigenous people, has promoted the acknowledgement and recognition of Indigenous Art to

3 (Attwood, 1999) p. 1
5 Mount Franklin, the site of an ancient volcano, is located just outside Daylesford. From 1841, it became part of the Mount Franklin Reserve which was reputed to cover one hundred square miles. (Clark, I. D., & Cahor, D. A. (2004). Tanderrum, P.10). To my knowledge there is no spring water bottling plant at that location!
6 Campbell’s Creek is now a ‘suburb’ of Castlemaine.
7 (Caruana, 1993) Contents page.
the greater Australian public. This relationship was due to various factors. The most pivotal inspiration of all, I believe, was that of Geoffrey Bardon, the teacher at Papunya school. Papunya was a classic example of the failures and tragedies associated with European settlement and assimilation policies. After a number of forced migrations across Australia into the Government settlement of Papunya, 250 kilometres west of Alice Springs, Indigenous people lived in abject intellectual, spiritual, material and emotional poverty. The removal of their children created unbelievably long lasting grief and trauma for parents and children, and resulted in generations of Indigenous Australian people forcibly separated from their families, inheritance and traditional heritage. Under the assimilation policies of the time, speaking Indigenous Australian languages, performing Indigenous Australian ceremonies, and conducting traditional activities were all prohibited. Bardon introduced art to relieve the grieving, harshness and boredom of personal and cultural deprivation imposed by conditions at Papunya. The art movement spread to other communities and received financial government funding. When people were allowed to return to their traditional country in the late 1970s and early 1980s, various interstate travelling exhibitions put the final seal of approval on Indigenous Australian art as notable, acceptable and collectable fine art. The subsequent sales of their artwork has helped alleviate some of their miserable living conditions and has helped create a rebirth of interest in cultural and spiritual life.

It is from Indigenous artists speaking through their art, that outsiders have come to understand something of their spirituality, culture, traditions and art. In the culture of Indigenous Australians, everything is inter-connected and inter-linked to the land and natural environment. In order to learn about one aspect, for example connections between Indigenous people and spring water, it is necessary to know something of the whole. This will always be to a limited extent for the

8 (Morphy, 1998) p.25
9 (Perkins, July - September 2000) p. 61
11 (McLean, 2006)
12 Without author – interpreters (both Indigenous and non Indigenous Australians) such as Hetti Perkins, Wally Caruana, Jennifer Isaacs, Ann Marie Brody and Christine Nicholls, this would be so much more difficult.
13 (Isaacs, 1999) p. 6
Indigenous Australian art relates, and has always related, to what outsiders call ‘the Dreamings’, which is a network of law, beliefs, traditions and cultural practices. ‘The Dreamings’ describe the journeys and activities of the Ancestor Creator Spirits as they travel the earth creating or destroying life, landscapes and landmarks. The land is described as a sacred, living thing, which is continuously changing and interacting with people and nature. The Ancestors (traditionally to this time and into the future) give Indigenous elders/artists ceremonial objects, symbols, designs and powers, which enable them to invoke Ancestral power through ceremony and art and give meaning to life and existence. Custodianship of power and authority is conferred to the elders/artists through initiation and ceremony. Physical contact with the artwork puts the artist into direct physical contact with the power of the Ancestors. The artist’s singing and 'awareness' while painting can induce a trancelike state invoking more ancestral power. To Indigenous people living in remote desert areas of Australia, knowledge of the locations of water is of paramount importance. According to Indigenous Australian beliefs, the Ancestors confer knowledge of water locations to them. Although English is rarely their first language, Indigenous Australian artists, through their artworks are willing to communicate this knowledge using the language of art. For example the Rainbow Serpent, other serpents, witchetty grubs and objects like digging sticks are considered by Indigenous people to be Ancestral creators involved in the creation of soakages, waterholes, rock pools and other manifestations of water. Their appearance in art works indicates reference to water. Water is of such importance to Indigenous Australians that it is not surprising that so many Indigenous Australian artists allude to water and its creation in their art works.

14 (Nicholls, 2000) p. 106 and (Isaacs, 1999) p. 8
15 (Isaacs, 1999) p. 4
16 (Isaacs, 1999) p.6
17 (David, 2002)
18 (Isaacs, 1989) p.9
19 (Isaacs, 1999) p. 1
21 (Isaacs, 1989) p.10
22 (Brody, 1997) p.11
23 (Caruana, 1987) p.45.
24 (Isaacs, 1989) pps.9 - 131
25 (Isaacs, 1989) p. 10
Spring Water and the Outside World

Early settlers to Central Victoria brought rich cultural traditions of beliefs, religion and spirituality with them. Most of them came from Europe and their official religion was Christianity. The countries of their origin were palimpsests of various civilisations that had existed since pre-literate times. Our understanding and knowledge of pre-literate civilisations depends on archaeologists for interpretations.

Pagan beliefs were never totally suppressed by Christianity and again form palimpsests. These compacted and partially erased layers of belief still live very comfortably together especially in Wales, Ireland and the Isle of Man. From pre-Christian times, water was seen as the boundary between the underworld and the natural world. This was extrapolated to between heaven and earth, and the boundaries between daylight and dark, dusk and twilight. These boundaries were of great importance spiritually and psychically so subterranean elements such as water, evoked feelings of awe and mystery. The Celts believed water to be the giver and taker of life and therefore a force worthy of reverence especially when the water originated underground, as in springs and wells. Offerings, sometimes of great value and rarity, sometimes the personal and mundane, were thrown into the water to propitiate the spirits of the waters of lakes, bogs, streams and wells. In gratitude for cures or as petition for healing, offerings of parts of clothing that referred to the physical affliction, were sometimes pinned to trees close to wells. The wells are known as ‘clootie wells’ and this practice, which continues to the present day, is not confined to the British Isles. The artist Arshile Gorky, for example, refers to similar practices in his native Armenia.

Many places with springs or holy wells where healing took place as a result of drinking or bathing in the water, became destinations of pilgrimage. One of the oldest European pilgrimage destinations is St. Winifred’s Well in North Wales.

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26 (Pennick, 1996) and (Bord & Bord, 1972) p.153
27 These boundaries relate directly to my studio practice and especially to my drawings in which I explore the intervals between boundaries in the works, as well as tonalities.
28 (Mckillop, 2005 ) p.34
29 (Bord & Bord, 1972) p. 153
30 (Fineberg, 1995) p.64
This is still a place of very active pilgrimage despite the fact that in 1917 a local mine dewatered the well and it is now fed by the local municipal water supply instead of by the spring. Another European centre of pilgrimage is San Pellegrino, visited by Leonardo da Vinci in 1509. Many people believe that water is a holy creation of God, without which life could not exist. There are many biblical references to water. For example, there is the separation of the waters in the Book of Genesis, and Moses striking the rock to produce water in the Book of Numbers, each from the Old Testament of the Christian Bible. The New Testament of the same Christian Bible describes how Christ was baptised in the water of the river Jordan.

Christians believe that the cleansing and purifying properties of water used in Baptism, symbolise the washing away of sin from the soul. Water is used as a symbol of cleansing with the washing of the feet of the faithful on Maundy Thursday, commemorating Christ's washing of the feet of the disciples as a sign of His humility and service to His people. Christ's first miracle took place at the marriage feast of Cana in Galilee, when He changed water into wine at His mother's request in order to save the wedding party from embarrassment. Often in the Bible, springs and wells are described as locations for physical healing, spiritual renewal and forgiveness such as the pool of Bethesda in Jerusalem.

Individual beliefs and traditions, culture, spirituality, religion, knowledge and first hand experience of some of the manifestations, rituals and properties of spring water, were all brought to Australia by European settlers. Two adjoining areas where they settled are Daylesford and Hepburn Springs, in Victoria.

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31 ‘Holy Pilgrim’.
32 (Santi, 1984) p.75
Perhaps the magnificent scenery and turbulent weather inspired his Drawing of a Catacism (sic)
33 Matthew, 3, 13-17.
34 According to Wikipedia, it is believed that Cana was a small village in Galilee, probably close to Nazareth. It should not be confused with the ancient region of Canaan which in modern times would have covered Israel, the West Bank, the Gaza Strip plus coastlands and parts of Lebanon and Syria.
35 John, 2, 1-11.
**Spring Water and the World of Commerce**

Daylesford and Hepburn Springs have been Meccas for tourists since the 1860s, thanks to the mineral water springs and the natural beauty of the area. The discovery of mineral springs at Hepburn Springs (1836) predated the discovery of gold (1851). The gold rush overshadowed mineral spring interest until the late 1880s. Many local residents included migrants who had experienced first hand the economic and therapeutic benefits of the European spa towns of their birth. The importance of the mineral water assets was recognised by formal legal protection in 1865.

In 1980, various enquiries and reports resulted in the Crown Land (Mineral Springs) Act, and commercial activities were boosted, infrastructure was improved and various commercial enterprises were developed. In 1996, the Victorian Mineral Water Committee was appointed the key advisory body to the Victorian Government. Very substantial financial resources were invested from both public and private sectors. This area is now one of the fastest growing tourist venues of Australia with an emphasis on spring water and balneology. Recently the Victorian State Government announced funding of another $3million to enable the redevelopment of the Hepburn Spa Bathhouse, bringing the total State Government investment so far to $7.5 million dollars. In order to preserve the integrity of the Mineral Springs as a valuable commercial and therapeutic asset, Andrew Shugg, a hydrologist, of the Department of Natural Resources and Environment, Catchment Planning and Water Resources Management Unit, prepared a discussion paper entitled ‘Mineral and Spring Water. Resource Protection.’ In this paper he lists what he considers to be the main threats to the integrity and viability of spring water.

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36 Gervasoni, 2005. P63
40 2006 The Advocate. (Daylesford) 19.4.
41 This Report provides background information on mineral water management, education regarding hydro - geological matters pertaining to mineral water, identification of deficiencies and future needs and trends. I have found it to be a very useful resource. Research engendered by this report has helped me appreciate such miraculous processes as the hydrologic cycle and its vital role in our very existence, as well as understand how water becomes mineralised and have explored water's ability to go through as well as around rocks / obstacles. I have used this research in the studio to investigate the effects of forces that can be exerted on paint e.g. gravity and pressure. The lateral, horizontal, vertical and diagonal gravitational flows produced by the hydrologic cycle have inspired my mesh and
Mineral Water means groundwater, which in its natural state contains carbon dioxide and other soluble matter in sufficient concentration to cause effervescence or impart a distinctive taste.

This is the definition of mineral water according to the Victorian Water Act (1989). The definition can differ elsewhere in the world. Fresh quality groundwater does not have mineral water characteristics. It has low salinity, (less than 350 mg/l total dissolved salts and less than 50mg/l Sodium) is of potable quality and is a desirable bottled water. Consumers are now more conscious of the hazards associated with salt intake so suppliers seek a low sodium / chlorine still water. Commercial mineral water levies are often avoided by bottling water from several different sources, under the same label and name without accurately defining its source or composition. Bottled still waters have an important and lucrative market, but leave heavy carbon footprints.

Disturbing aspects of bottled water raised in The Age newspaper describe the environmental cost of the plastic bottles that hold purchased water. Why buy bottled water? Most tap water in Australia is of as high, (if not higher quality) as bottled water, and is distributed through a more efficient infrastructure. Production and transport of plastic bottles containing water, consume enormous amounts of fossil fuel. Discarded plastic bottles present retrieval and disposal problems. Much of the ancient spring water of Europe is now ‘mined’ by American companies and in 2002, the bottled water market was estimated to be worth more than $US20 billion per year.

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graph images. My computer enhanced drawings are inspired by the images conjured by the capillary action of some waterflow encountered in the hydrologic cycle.

42 These include goldmining, alluvial mining, eductor dredging, deep lead mining, reef or underground mining, quarrying and extractive industries, urban development, agricultural chemicals, forestry, land subdivision, and dryland salinity. To this list I would add drought and climate change. In my opinion, these are threats not only to the integrity of spring water, but also to the environment in general and therefore affect us all. Based on this opinion, I decided to use graphs as metaphors for both spring water and the environment.

43 (Shugg, 1996).
44 Ibid p.20
45 see chapter 3.
47 See footnote 37 above.
48 In a recent taste test on television, only 7 out of 20 people were able to correctly distinguish bottled water from tap water. Prime Television, This Day Tonight, 26.4.'06
49 Because so much bottled water is consumed away from home and there is no recycling system of ‘away from home’ waste in Australia, these discarded containers finish up in parks and on waterfronts where thirsty wildlife become trapped. The presence of recycling bins in public places would alleviate this problem. 2006. The Age, 25.2.
50 (Clarke, 2004) p.85.
In the following chapter I will discuss art works and artists who have had an influence on my studio practice, and other artists who have used water as a source of inspiration for their artistic endeavours. I will also refer to those authors and other sources that have provided me with the inspiration to direct my focus towards the topic of spring water. A major aspect of the next chapter will also be the link that I see between Indigenous and non-Indigenous artworks as they pertain to spring water in historic and contemporary contexts.
Chapter 2
Literature Review and Influences

There is a common thread running through history from the beginning of time that links pre-Settlement Indigenous people to pre-Settlement non-Indigenous people, post Settlement Indigenous Australian people to post-Settlement non-Indigenous Australian people and contemporary Indigenous Australian people to contemporary non-Indigenous Australian people. This common thread is spring water.

The Australian Crucible of Creativity.
Australia has been described as ‘a crucible of creativity’. In the context of visual art, Australia is home to Indigenous Australians and non-Indigenous Australians of different cultural backgrounds whose discrete attitudes to spring water are revealed through their artistic representations of spring water (..or lack of them.) While Indigenous Australians speak many languages, English is not always one of them. Indigenous Australian art can be an intermediary, a communicating vehicle and an interpreter. It is a valuable teaching tool not only to succeeding generations of Indigenous Australians but also to non- Indigenous people. From Indigenous Australian art, we can learn much about Indigenous Australian culture and aspirations and most importantly in this context, their understanding of and attitudes to spring water. This knowledge is unique and unsurpassed.

Indigenous Australian Cultural Background and Connections to Spring Water. Wandjina, Rainbow Serpent, Shimmer, Radiance and Rarrk.
Some of the earliest Indigenous Australian rock art depicts what are called Wandjina figures that are found in the Kimberley region of north west Australia. After leaving the sea and sky, the Wandjina were said to have created various land

51 In a recently televised National Press Club Address, abc t.v. American biologist and bio-mimicry advocate Janine Berryns, described Australia as a crucible of creativity, though not necessarily solely in relation to spring water.
52 (Stanton, 2006) p.416. Indigenous Australian art has always been and continues to be, mnemonic
53 Especially because of climate change we need to understand more about spring water so should consult Indigenous Australians more widely as soon as possible.
54 See footnote 62
features and then to have been integrated into the walls of caves. Initially documented by Sir George Grey in 1837, the Wandjina tradition dates from c. 1500 B.P. and continues through the present.

The Wandjina are human in form, approximately twenty three feet in height with haloes surrounding their heads. They are powerful representations of the Creator Ancestors associated with rainfall, thunderstorms, the wet season and the fertility of all living things. It is said that if the Wandjina were given mouths, it would never stop raining. The Wandjina’s power is associated with the shimmer or radiance of pearl shells which are worn in the Kimberleys and can be used as rain making artefacts. The concept of radiance or shimmer is an interesting aspect of the Creators’ authority and power, and is an aspect to which artists, especially of Arnhem Land and the Desert, aspire when enhancing images with rarrk and the specific use of white paint. Ancient Wandjina figures on rock sites have their paint regularly freshened by the people of the Kimberley region. Consequently, the images can appear to shine, resonate and vibrate.

Indigenous Australians believe that natural shimmer and reflection as seen in rainbows, water, sunrise and sunset can be signs of Ancestral power. Tangible forms of this belief are pearl shells, which share the association of Wandjina with water, rain, the flashing of lightning and consequently with the Rainbow Serpent. Their lustrous nature evokes supernatural powers and wellbeing. In the Kimberley, designs on shells are either figurative or geometric. The latter includes parallel zigzags, meanders and interlocking key designs, all of which are acknowledged internationally as symbols of manifestations of water.

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55. Grey could not reconcile the beauty of these works as attributable to such primitives (in his opinion) as Indigenous Australians. These assumptions were made at the time of assimilation. (Morphy, 1998)
56. ‘Before the Present’ i.e.1950. Term used by some archaeologists eg. Bruno David (David, 2002) p.xii preface.
57. (Isaacs, 1999)
58. Maughan, Janet. Book Review: Keeping the Wandjinas (sic) fresh.”Valda Blundell and Danny Woolagoodja. (Maughan, 2005) p.15 By renewing the ochres and chalk, the descendants of the Wandjina feel that they are ensuring the continuation of fertility, rainfall and culture continuation. They are fulfilling their part of the bargain and they trust that the Wandjina will reciprocate.
59. This ‘vibrancy’ is also a feature of the work of Bridget Riley. Some people call it ‘op art.’ I employ it in some drawings e.g The Capillarity of Water 1.
60. (Caruana, 2003)
61. I have explored these symbols of water in the work Meander.
62. (Gimbutas, 1991) Gimbutas references similar symbols found on ancient water containers. Is this an example of collective unconsciousness?
engraved lines can be filled with fat and red ochre or powdered charcoal thus enhancing and highlighting the design.

Artists who portray Wandjina figures include Jarinyanu David Downs, Charlie Alangowa and Lily Karedada. David Downs’ Wandjina ancestor is called Kurtal. As well as portraying this figure on canvas, he also uses it on carved wooden shields.

Wandjina figure images have been found on anonymous art works, some of great antiquity. There are many versions of the Wandjina. A favourite is one painted by Lily Karedada. Lily was born around 1937 and was a bark painter. Her Wandjina, 1985, incorporates a range of techniques ranging from painting with a frayed bark brush, to engraving through the ochre to make inscribed patterns. As an Elder and Custodian, she has produced many images of Wandjina figures with her husband Jack Karedada.

**Transfer of Sacred Knowledge, Sacred Water Sites, Creator Ancestors, Custodians, Elders, Guardians and Indigenous Australian Artworks.**

Sadly, European settlement not only destroyed many sacred water sites, it seriously disrupted the transfer of sacred knowledge to successive generations of Indigenous Australian because British assimilation policies prohibited cultural and linguistic practices among Indigenous people. However, the vastness of the Australian country and the harshness of its climate and environment ensured that the disruptive effects of assimilation did not seep through to all areas of the continent to the same extent, nor on the same scale.

Gimbutas references similar symbols found on ancient water containers. Is this an example of collective unconsciousness?

63 During World War 2, the mission station where she lived was extensively bombed by the Japanese. Her traditional name is Mindildil which means 'bubbles' because before she was born, her father saw her spirit coming out of spring water as bubbles. (Isaacs, 1999) p. 119

64 The mining and grazing industries and the construction and maintenance of railways consumed enormous amounts of water and destroyed the natural environment of the water sites in the processes of extraction and continuous access by humans and stock.

65 The mining and grazing industries and the construction and maintenance of railways consumed enormous amounts of water and destroyed the natural environment of the water sites in the processes of extraction and continuous access by humans and stock. Because of these policies, many contemporary Indigenous Australians have little or no knowledge of either their familial nor cultural inheritance. This sad fact was well illustrated in a recent television programme about the making of the film *The Ten Canoes*, when local Indigenous Australian performers were unable to make the canoes without the assistance of the Director (a non-Indigenous Australian) and needed to refer to photographs taken by the anthropologist, Donald Thompson in the early 1900s.

66 (Stanton, 2006) This explains how some Indigenous Australian groups in some remote pockets of the country managed to retain languages and cultural and traditional beliefs. Greater priority should be given to Indigenous Australians to learn and understand their own Indigenous languages and cultural traditions before learning and understanding English.
Indigenous Australians have been able to survive in the remote arid areas where many of them live, because of the knowledge of flora, fauna and water locations which is being passed down through their families over thousands of years, from their Creator Ancestors.\textsuperscript{68} (Information concerning the locations of water, communicated via Indigenous Australian art, has been corroborated by both Indigenous Australian and non-Indigenous Australian dowsers.\textsuperscript{69}) Thanks to the wealth of documentation of spring water in modern Indigenous Australian art works, I have had access to a great deal of material for this research project.\textsuperscript{70}

Traditionally, it is the responsibility of Custodians or Elders or Guardians to visit and maintain sacred water sites\textsuperscript{71} such as waterholes, in order to ensure that fresh water remains unpolluted and accessible.\textsuperscript{72} Custodians, Elders and Guardians alone have the right\textsuperscript{73} to document information in art works concerning traditional beliefs and locations concerning these sites. Information about the Ancestors and their journeys is also documented in the art works, providing outsiders with privileged but not secret knowledge of Indigenous Australian culture.

John Mawurndjul, an Arnhem Land artist, is a Custodian, Elder and Guardian who combines a traditional way of life with international travel to prestigious art centres to exhibit his work which is concerned mostly with information regarding spring water and its creation. He lives traditionally, close to a sacred billabong where Ngalyod (the Rainbow Serpent) lives. Many of his bark paintings have the title \textit{Mardayin} (Sacred). His earlier works had similarities to body and rock painting because of the thick white paint which marked heads and faces. A shimmer was achieved which denoted and conveyed Ancestral power and

\begin{itemize}
  \item Knowledge of the work of the Creation Ancestors continues to be passed on through the teachings of songs and song cycles at ritual ceremonies. From childhood, the song cycles help people memorise locations and information.
  \item Custodians, Elders and Guardians alone have the right to document information in art works concerning traditional beliefs and locations concerning these sites.
  \item \textit{Mardayin} (Sacred).
\end{itemize}

\textsuperscript{68} Again, the continuous present tense is used to denote the ongoing nature of the work of the Creation Ancestors.\textsuperscript{(David, 2002) p. 25.}

\textsuperscript{69} This is not the case with examples of non-Indigenous Australian art, of which there seems to be a dearth of material concerning spring water specifically, although there is plenty on the subject of water in general. Imants Tiller is one of the few non-Indigenous Australian artists to refer nominally to the subject with his work, \textit{Aquifer}. David Hockney uses images of bottled water in some of his works (see preface).

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authority. Over the past twenty years he has refined and simplified his work into the essence of abstraction. His rarrk techniques shimmer and resonate as they did in his older works. In this way, Mawurndjul has removed his work from the traditional into the contemporary arena whilst still using both traditional techniques and the very traditional materials of bark and ochres. His work is now eagerly sought by national and international galleries and collectors and is no longer labelled ‘folk-loric’ as it was a few years ago. He has created a completely new style which is instantly recognisable and has proved that Indigenous art is not static but vibrantly alive in the 20th century. Mawurndjul has proved that art can strengthen and empower spiritually, socially and culturally. As a Custodian, Elder, Guardian, teacher and leader of his community, he is a very impressive role model to his people.

Another artist whose work is inspiring because of its stark simplicity and shimmering, vibrating resonance is Pinta Pinta Tjapangka. I have chosen his work Ralyalnga because of its austere simplicity and beauty. Its traditional message may not be accessible to the viewer because it concerns secret men’s business but its contemporary elegance resonates with me. Depicting a group of soakages in Western Australia, it represents images very relevant to the research project. It is said that Tingari men and women made the soakages in Creation times on one of their journeys. The work shows a continuation of traditional beliefs expressed in contemporary form. Like John Mawurndjul, Tjapanangka has simplified his style without sacrificing either traditional content or intent. The artist is one of the oldest Pintupi men living at Kintore. His work reflects his pleasure and delight in refining his symbolic range to classic Pintupi Tingari symbols i.e. concentric circles and tracks using thickly textured paint which enhances the starkness of white on black.

Jack Wunuwun believed passionately in traditional beliefs and practices. He was a meticulous painter and innovator and hoped that the use of his traditional art would stave off encroaching, unwelcome outside influences. Jack’s magnificent work Barnumbirr Manikay (Morning Star) which hangs in the National Gallery,

75 (Hinkson, 2005) pp. 14 - 19
76 (Isaacs, 1999)
Canberra, includes prophetic reference to his own funeral ceremony. Water plays a significant part in funeral ceremonies, for example, during the ceremony, ritual washing of attendants, helps the dead person’s spirit find its own way back to the clan waterhole. The washing signifies the removal of sweat and blood which are tangible symbols of the spirit. The first rains are said to wash the dead person’s spirit back through the ground to the clan waterhole and hence to the ‘right’ country, where it waits with unborn souls to be born again. In the painting, Jack foretold the occasion of his own funeral ceremony including the monsoonal rain, which washed away the ceremonial earth sculpture. There is a large butterfly in his painting. At his funeral there was also a large butterfly hovering above the mourners after the ceremony.

A work of Arnhem Land artist Jimmy Wululu tells the story of a spirit man who was also three people, who made hollow log sculptures which he threw into the deepest part of the sacred water hole. Baby catfish are thought to be the souls of the deceased and unborn souls. It is believed that just as catfish are carried away by birds, so death carries away the souls of the dying.

In a painting by nine Kintore women, rockhole and soakage sites are the locations for a depicted journey undertaken by a large group of women who participated in ceremonies and collected edible berries. The painting also depicts the story of an old woman’s journey to a soakage water site. In another gigantic work, nine Kiwirrkura men created a work depicting the travels of the Tingari, Creator spirits, who passed through one soakage water site on their way to another soakage water site and rockhole.

The story of Rover Thomas encapsulates the history of many Indigenous Australians. His story is one of displacement and unpaid station employment until expelled from the station. He witnessed many atrocities including massacres. In

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77 In Renaissance art symbolism, the butterfly is a symbol of resurrection.
78 (Brody, 1997).p.137
79 (Mundine, 2006) p. 29.
80 Ibid. p.145
81 (Perkins, 2000) P.80
82 (Caruana, 2001) After Cyclone Tracey, Thomas had a dream involving a recently deceased female relative. Her spirit invested him with power and knowledge regarding a new public ceremony to be called the Krill Krill which was also to become a series of paintings for him.
spite of these dreadful life experiences, he always hoped for reconciliation between Indigenous and non-Indigenous Australians. This hope he revealed in his work, Roads Meeting. Two of his works inspired by water were All that big rain coming from top side and Night Sky which depicts a full moon and the stars of the Southern Cross reflected in the fresh water of a rock pool.

The contemporary relationship of Indigenous Australian people with spring water was illustrated in a recent newspaper article with an account of reverse Indigenous Australian migration. Forced to leave their country because their waterholes had been dewatered by mining operations, a community of eight hundred people came out of the desert. They sought and found help from a local art dealer in setting up painting classes. Subsequently, some of them have become successful artists. Many of their works depict Winpa, their abiding ancestor, who created waterholes

**The Cultural Background of the Ancestors of Many Non-Indigenous Australians and their Connections to Spring Water.**

The Celts, ancestors of many non-Indigenous Australians, also lived in a crucible of creativity. They had strong cultural and spiritual links with all manifestations of water especially spring and well water, believing it to form the boundary between this temporal world and the next more permanent one. In ancient mythology the rivers Styx and Cocytus were the spring fed rivers of the underworld, giving water, especially spring water, numinous associations. Springs also had uroboric associations of life, death and regeneration, which bear interesting links to the hydrologic cycle. There are also links to Indigenous Australian spiritual beliefs, for example as portrayed in the works of Jack Wunuwun e.g. Barnumbirr Manikay, and Jimmy Wuluulu. e.g. Hollow Log Poles.

Because of their strong beliefs in the spiritual and curative powers of water, it is not surprising that many of the Celts' deities were connected to water, such as

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83 (Hutchins, 2006)
84 Celtic territories stretched from the British Isles, across Europe, north of the Mediterranean to Turkey.
85 (Stevens, 1998) p. 232
Danu/Ana/Anu. (Danube) Some of the deities and spirits of springs, wells, bogs and waterways were also considered ‘guardians’ of the water, providing another interesting link to Indigenous Australian Guardians and Custodians. In the British Isles, there were also hereditary or traditional guardians, the coarbs and dewars.

The Celts were complex and sophisticated people, somewhat volatile though extremely creative. As stated earlier, valuable objects, such as metal weapons, pottery, jewellery, etc. were thrown into springs, bogs, wells, lakes and rivers perhaps to elicit favours such as healing, from the water deities, perhaps in propitiation, perhaps in gratitude.

Recovered artefacts reveal a belligerent, complex, sophisticated and moral society for example, the many images that decorate the celebrated silver-gilt Gundestrup Cauldron, tell us much about the cultural practices and possible literary aspirations of an extraordinarily gifted people.

We learn about European culture from European art, both ancient and modern, without either speaking European languages or travelling back in time from scholarly interpretations of the ‘physical evidence’. The physical evidence being archaeological artefacts and manuscripts, such as the Book of Kells and the Gundestrup Cauldron.

As already mentioned, many British and European water sites gradually became destinations for pilgrims in search of both spiritual as well as physical healing, over the centuries. Leonardo da Vinci visited San Pellegrino in 1509 to try this

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86 (Wood, 1998) p.34.
87 (Wood, 1998) P. 34
88 (Perkins, 2000)
89 (Pennick, 1996) p. 10
90 (Wood, 1998) While classical sources claim there was no written Celtic language, this was possibly because Celtic manuscripts were too difficult to decipher.
91 These objects were sometimes deliberately damaged perhaps to show their human use in this world was finished, perhaps to prove a belief in the water’s power to achieve favourable outcomes, perhaps as self mortification, perhaps as atonement.
92 (Wood, 1998) This practice continues into the 21st century. P. 108
93 (Jones, 2003) p. xiii
94 So called by the name of the Danish bog where it was found in 1880. There are many such sites across Europe.
95 (Mckillop, 2005 ) p. xvii. The beauty of the craftsmanship on the cauldron reveals sophisticated creativitiy.
96 (Jones, 2003) p.xvi.
97 (Bord, 1982) p. 93
'miraculous' water. During his life, Leonardo made many observations concerning the natural world both in drawings and in words. His drawings of the motion of the surface of water, comparing water to hair, is interesting because it is through capillarity that water infiltrates soil after runoff.\(^98\) Leonardo’s understanding of the hydrologic cycle is remarkable in that without access to sophisticated, modern technology upon which modern day scientists rely, such as satellite imagery etc., he reached similar conclusions.\(^99\) Robert Wallace comments on da Vinci's obsession with the movement of water and describes his fearsome and almost abstract drawings of the deluge that would sweep away the world.\(^100\) His commentary on them might be a final warning to humankind, "Ah me, how many lamentations!"

**Post - Settlement Artists and Spring Water In Australia.**

Eugen von Guerard,\(^101\) a European artist familiar with Italy, Austria and Germany, arrived in Geelong, Victoria in December 1852 and headed for the Ballarat goldfields where he worked as a miner for sixteen months. In 1857, his painting *Ferntree Gully in the Dandenongs*, made his reputation when exhibited in Melbourne. After reading an article by Tim Bonyhady\(^102\) concerning artists with axes in colonial Australia, I realised that the drawing, *Dobson’s Gully* by von Guerard, which illustrated the article, was similar to his oil painting of *Ferntree Gully*.\(^103\) Examining the drawing closely, there appears to be water rising from the earth in the foreground which could be a spring. It is less easy to identify any water in the oil painted version although there would appear to be fewer trees in the older oil version so Tim Bonyhady may be right about the axes.

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98 (Suh, 2005) There is a resemblance between his Surface Motion drawing and my ink drawing, The Capillarity of Water 1.
99 Ibid p.172
100 (Wallace, 1973) pps.180 - 182
101 With his father, also an artist, he travelled around Europe until 1836 when his father died of cholera in Naples It is highly likely that as a landscape painter, von Guerard would have visited areas of natural beauty in Italy, Austria and Germany where spring water occurred.
102 (Bonyhady, 1995). The article described the priorities of artists of the time being more concerned with attaining a view rather than being concerned about the environment and implied that von Guerard had a symbiotic relationship with a woodcutter called Thomas Dobson who cleared trees in order to facilitate access to the view for the artist.
103 http://www.artistsfootsteps.com/images/vonGuerard_FerntreeGully
It was inevitable that Fred Williams would investigate the subject of water in his work. In 1968 he said, “I have become very interested in the actual look of water – I guess this should have interested me long ago, but it never did.”

Because of a deep attachment to his work, I visited an exhibition of Fred Williams’ Coastal Strip at the Castlemaine Art Gallery to admire his innovative strip forms and abstract aerial views, especially the Marked Grave, Erith Island series. The strip paintings include the phenomenal works Lightning Storm, Waratah Bay.

Fred Williams was inspired by the power of water as it scoured out the land to form gorges or canyons and painted Werribee Gorge and Plenty Gorge many times. In 1975, he completed three paintings based on Kew Billabong that he visited frequently because of its proximity to his home. You Yangs Pond is another example of Williams’ interest in water and his mark-making expertise.

Unlike the quintessential Australian, Fred Williams, Rosalie Gascoigne was born in New Zealand, becoming an Australian resident on marriage to astronomer Ben Gascoigne. She was always keenly aware of her environment and had the gift of verbal image making, “… and the air hung down to the ground, empty, …” she said of her isolated environment.

Clouds can be harbingers of some form of precipitation and play an intrinsic part in the hydrologic cycle. Gascoigne’s work Clouds, is composed of weathered...

104 (James, 2002).
105 These are also examples of multiples.
106 They are reminiscent of the multi-perspective Polaroid views of David Hockney.
107 Their spare linear elegance is reminiscent of Richard Diebenkorn’s Ocean Park series (1990). There is also more than a hint of Colin McCahon’s coastal work, Necessary Protection in the minimalist statements and formal simplicity of Williams’ Cliff Top 1971.
108 Like William Robinson and David Hockney who painted similar subjects.
109 (Zdanowicz, 2003) p. 35.
110 Williams was bewitched by its shape, the dappled light and its fascinating texture He did not ignore its debris strewn surface, taking pains to include in all versions, the discarded tyre in the foreground.
111 Ibid p. 83. Of all his works, I love the abstract beauty of his etchings, which seem the perfect vehicles for his mark making.
112 There are many similarities between her life and mine, not least of which is the fact that we were both migrants, bringing up our families far from the lands of our birth. We were both emerging artists in our later years, both interested in landscape and recycling.
113 As a lonely, isolated young mother, she would express a philosophy common to many in the same position, “You have to tell yourself, ‘Nothing’s going to happen, so you might as well get used to it,’ and it’s very true, nothing did happen,” verbalising the two concepts of futility and philosophical acceptance in one sentence. (Fenely, 1997)
composition board pieces distributed across a narrow rectangular space. Rosalie Gascoigne had a keen sense of the ridiculous, and blended it with the serious business of weather, stock survival and the banality of old linoleum in her description of her work, Sheep Weather Alert 5, which I consider worth quoting.115

Somebody gave me a lot of that lino. I couldn’t stand the inferior red and green on it, which in theory were the colours, but the black and grey were good so I tore it by hand. It turned out in a way like sheep shapes, if you saw a mass of them. “Sheep weather alert” is what they say on the weather report. It's a good name. It means you jolly well get your sheep or you're going to lose a lot to the cold. It's a bitter winter climate here. This is a misted over (sic) one. They’re washed over and it reads like shapes looming in the mist…sheep, sheep, sheep.. That was what I was after.116

Looking at this work, I saw a resemblance to the work that I had just finished, Frost Catchers. Both the ephemeral nature of the colours and the subject matter are almost identical.117

In her obituary tribute to Gascoigne, Deborah Clarke said

"There is so much air in Rosalie’s work that to stand in a gallery space surrounded by it, is literally breathtaking, like standing on a breezy hilltop with your face turned towards the sun."118

Artists who use multiple panels and graphs.

Because I use multiple panels and employ graphs to explore spring water in my paintings, I am inspired by and interested in the work of other artists who also use multiple panels and employ ‘graphs.’ It was the work of Torie Begg that first inspired me to use graph-like iconography in my work. Although we both use graphs, there are similarities and differences in our work.119 She often incorporates hers into assemblages whereas I do not. Begg has strict rules
concerning colour sequences and behaviours and I do not. We both incorporate side paint drips into our work. She by re-stretching the canvas while I sometimes incorporate the paint drips into the front picture plane, sometimes rejecting the third dimension. Both our graphs appear unstructured.

Sean Scully initially painted graphs or ‘plaids’, which were very structured and formal because he used tape to achieve perfect precision. These early works contradict his later rough and primitive blocks of colour, from within which, light emanates (this also harks to Indigenous Australian art, the shimmer effect and my own work). Like the work of Imants Tiller and that of David Hockney, ad hoc graphs form of their own volition to give three dimensional aspects to his works for example White Robe. 120

The square, three-dimensional grid and graph-like works of the sculptor Hilarie Mais, refer to chance, mystery and allusion which I consider to be enticing and inviting, while her multiples, often hung in sequence, invite investigation. Shadow plays an integral part in her work so that optical information depends on the position of the viewer who therefore has an important role to play. 121

When one looks at the austere, serene graph and line works of Agnes Martin, one starts to understand what she meant when she said:

The goal of life is happiness and to respond to life as though it were perfect is the way to happiness. It is also the way to positive art work.

Her thoughts on beauty 122 and humility 123 are worth celebrating. Martin’s visual vocabulary is restricted, disciplined and modest. It could be the product of a medieval nun. I would like my works to be aids to meditation, as hers are, perhaps to convey how I feel about how important and precious the resource of pure and abundant spring water is to our lives. 124

120 (Carrier, 2004) p190
121 (Waterlow, 2003)
122 (Haskell, 1993) p. 10
123 (Haskell, 1993) p. 22
124 (Haskell, 1993) p.93.
Artists Who Use Multiple Panels.

The use of multiple panels is part of a long artistic tradition that includes altarpieces and oriental screens. Contemporary artists using multiple canvasses or panels include Sean Scully, Imants Tiller, and David Hockney.

Sean Scully often uses several canvasses (multiple panels) to create one work in order to convey the appearance of a single, simple object. By using a number of canvasses together, he slows down the viewer’s eye movement, enabling a considered response. Scully uses the painted stripes on his panels to create relationships between the panels, and in some instances smaller panels can be inserted into larger ones.

Initially, Imants Tiller’s use of small canvas boards was purely practical because he worked in a tiny room that he accessed from the street by climbing up several flights of stone steps. The problems of portability and storage were solved by this use of small boards (as in my situation). As composite paintings, Tiller’s small boards form dimensions of the graph or grid, which he exploits by widening or narrowing gaps.

David Hockney’s photo-collages gave birth to the massive composite paintings, the Grand Canyon series which, by retaining many focal points, encourages the viewer's eyes to move around vast space, thus inviting longer viewer participation. Like those of Imants Tiller, the edges of each individual image/panel form involuntary graphs and intersecting lines.

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125 They can be diptychs, triptychs or polyptychs. The famous Ghent altarpiece, Lamb of God by Jan van Eyck was a complex polyptych of twelve panels. Oriental panels are usually composed of two or three panels.
126 (Desmond) p.384.
129 (Curnow, 1998) p.47. Storing stacks of boards inspired Tiller to display them as sculptures, both before and after exhibiting them on walls. Although each work can contain hundreds of boards, they can be ‘dematerialised’ into smaller works or ‘exploded’ into the original large composite, to accommodate available exhibition space. Tiller’s use of composites proves their versatility.
130 He had used diptychs and triptychs for many years before venturing into photo collages. His photo collages had their genesis in ‘Polaroid joiners’ and ‘grid collages’
131 Hockney’s A Bigger Grand Canyon was composed of 60 small canvas panels. I visited its exhibition in Ballarat some years ago and was impressed by the massive undertaking. My eyes were certainly forced to move around the work. I am planning to use this important aspect of multiples in a planned work using nine panels exploring spring water reflections.
The simplicity of Sol Le Witt’s small graph drawings and etchings impressed me and resonated with me. They were the starting points for my ink drawings and later my combination works. Through them I explore the force, fluidity and movement of spring water as visible and invisible natural manifestations that reflect or absorb light. These drawings bear striking allusions to the movement of water, for example Undertow, without deliberate intention from me. This experience is possibly a manifestation of automatism, of which Jackson Pollock said, “When you are painting out of your unconscious, figures are bound to emerge.” Sean Scully also admits to a nostalgia for allusion to the representational when he said:

I think my paintings are abstracts with a very powerful memory of figurative painting. …I didn't start from abstraction as so many abstract painters do now. And when I make abstract work, I always want some kind of connection with the world of reality. My painting might be described as abstraction that has a longing to be figurative.

Through the ink drawings, I explore the force, fluidity and movement of spring water as both a visible and invisible natural manifestation that reflects or absorbs light. In the following chapter I will explain the methods I used during this research investigation and describe how experiments using some of these drawings, computer software and the printer, resulted in investigative works such as Anatomy of a Drawing.

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132 The edges of some of my work, such as Drop by Drop, also form involuntary intersecting lines.
133 I love these drawings and small etchings which are elegant, logical, unassuming, and deceptively simple. However, LeWitt’s conceptual work does not appeal to me.
135 The term ‘automatism’ was first described by the Surrealists in the artistic context. It is also a term used in psychiatry to describe ‘dissociative’ states.
136 (Siegel, 1999) P. 24.
138 (Scully, 2004) p. 197
139 I experimented with various sized pens ranging from .5 to .1. These very small, detailed drawings impose great demands on the eyesight so I ration their production.
Chapter 3
Methodology

Inspirations, influences, philosophies, techniques and innovations,

I have only seen spring water in its natural state after it has emerged from the ground, at the eyes of springs. Spring water and surface fresh water share common properties, appearance and behaviour, so in my opinion, information regarding spring water can be extrapolated from observations of the appearance and behaviours of surface waters. In this way, the studio exploration of spring water is informed by research, observations and personal experiences of fresh surface waters, in and close to, our home property.

The presence, and sometimes absence, of water in and around our property, provide more than the means of physical survival. Observations of fresh surface water, or the lack of it, nurture creativity, by offering many images, sometimes of surplus, as in flood, sometimes of insufficiency, as in drought. First hand experiences of reflection, refraction, absorption of light, variations of light and darkness as at sunrise, twilight and night, are enabled. These observations also enable experiences of unique, ephemeral images involving patterns, colour and movement that may form in, on and above water. Opportunities present to observe and experience various manifestations of water such as ice, mist, and condensation.

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141 Although I have heard its magical sound emitted through rocks adjacent to the creek, I have never ‘seen’ spring water in the dark depths below ground.
When attempting to photograph the creek one night, I experienced almost total darkness/blindness and simultaneously the sound of water. The experience helped me relate to Jacques Derrida’s ‘belief and seeing.’ (Derrida, 1993)

142 Potholers are among the few to see and experience subterranean spring water. I am not a potholer.

143 These properties include responses to gravity, having no tangible shape of its own, accumulating and carrying debris, shape changing, avoiding obstacles, lacking purity, possessing powers of dilution, responses to heat and to intense cold etc.

144 The waters include our boundary, the Jim Crowe Creek, its two fords, our two dams, incidental water such as puddles, collections of water in rock holes and any fresh water that we may be fortunate enough to accumulate on the property. Other water such as the springs at Hepburn Springs will be identified by name.

145 At times there seems to be a total absence of light. At other times, there is an amazing range of degrees of ‘darkness’ with a surprising amount of reflection of sky, stars and cloud in nearby water.
As water is the focus of the research investigations, I decided to connect it to aspects of the studio work by developing painting techniques to imitate its flow, versatility and fluidity. I particularly incorporated the effect of gravity because of its relevance to spring water and the hydrologic cycle. During the hydrologic cycle, after precipitation, water can seep into the ground through capillarity, eventually reaching either shallow or deep water systems or aquifers, where it is contained temporarily, maybe for months, maybe for centuries.

Precipitation, in its many manifestations, can form lines, some continuous, others intermittent, some may also intersect. Manifestations of the hydrologic cycle including fog, evaporation and mist can also produce lines, which do not necessarily fall vertically or horizontally and may even ascend in different directions from the ground, as for example when water evaporates from a road. This provides both verticality and horizontality of direction as do other visual aspects of intersecting lines such as the infrastructure of plumbing involved in the transportation and operation of mineral spring water, for example in the mineral spring water and therapeutic spa industries. I interpret all these referential intersecting lines as graphs in my work.

Living in rural Victoria, I can view the landscape and the environment through the intersecting lines of fly screens, blinds, shade cloth, sheep wire, chicken wire, gates, etc. as well as the natural meshes of reeds, grasses and branches. River and spring waters swirl, fall and move in various formations, forming graphs or meshes. Again, these intersecting lines and patterns, both natural and human made, I imitate and incorporate into the work as graphs.

The use of graphs and intersecting lines is a deliberate and essential aspect of the work. It is possible to relate intersecting lines and graph-like mark-making to various associative concepts and images that have developed over a lifetime, for example, an interest in weaving.

146 (Smith, 2006) When water was discovered accidentally by mine drilling, three kilometres down a South African mine shaft, it was estimated that the water has been sealed off for at least three thousand years and possibly for as long as twenty five million years.

147 Intersecting lines may also symbolise the convergences of the various cultures and peoples in Australia, representing their interactions with each other and with spring water.

148 See Appendix 1

149 See Appendix 1.
The combination of all these factors, as well as exposure to the inspiring, impressive work of artists who use ‘graphs’ or intersecting lines, such as Jackson Pollock, Torie Begg, Agnes Martin, Sol Le Witt, Hilaire Mais and Sean Scully, convinced me that the use of graphs in the work was relevant and worth pursuing. However, the most impressive and inspiring works employing graphs which also relate to the research project are those of Indigenous Australian artists such as John Mawurndjul, Elizabeth Nakamara, Dorothy Napangardi, Regina Wilson and Abie Loy Kemarre.  

The Importance of Indigenous Australian Culture and Artistic Techniques as Essential Resources to the Research Project

The cultural and artistic work and artistic techniques of Indigenous Australian artists have been constant and important resources on the research journey. Not only are most Indigenous Australian artists strongly connected to their land and country, with an unmatched culture based knowledge of sacred spring water sites that is documented in their artworks, but many Indigenous Australian artists are superb abstract artists.  

From Indigenous Australian artists, I have adopted and adapted the artistic concepts and techniques of shimmer, radiance/luminescence and rarrk, 

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150 Australian Art Collector. Issue 13, July-September 2000 The surface effect of shimmer/rarrk/graphs is associated with Indigenous Australian art of all regions. 


152 While some writers, curators and scholars appear reluctant to describe some modern and contemporary Indigenous Australian art as ‘abstract art,’ there are nevertheless, in my opinion, sufficient references from both Indigenous Australian and non-Indigenous Australian writers and curators, to describe certain Indigenous Australian art works as ‘abstract art.’ Some references to Indigenous Australian art as abstract art include: 


2002 Magiciens de la Terre. art and australia (sic) vol. 39 no. 4 


Ryan, Judith. 1997. Abstraction, meaning and essence in Aboriginal art. art and australia (sic) vol 35 no 1 pp. 77 - 81 

153 As stated in chapter 2, these artistic and sacred cultural techniques imbue works with the supernatural power and authority of what is culturally of great significance to Indigenous Australians. Icons of great cultural significance to Indigenous Australians, include the Rainbow Serpent, the Wandjina, and the highly prized pearl shells which have important sacred associations with fertility and water. Sparkling white paint is used to maintain the ancient cultural figures of the Wandjina to enhance their spiritual authority. The reflective luminescent effects visible in the rainbow and pearl shells are used by some Indigenous Australian artists to depict the Rainbow Serpent, can be obtained from the use of shimmering metallic oxides. 

Cross hatching, or ‘rarrk,’ using white paint is also used to imbue work with shimmer for the same purpose. Icons of cultural significance can be of a malevolent or benevolent nature, but demand respect
(crosshatching) a form of shimmer. As stated earlier, my graphs are a form of rarrk. To achieve a simulation of radiance or shimmer or luminescence, I use brilliant white paint in combination with (or individually) metallic paints, as in, for example, The Frost Catchers, Liquid Gold, Manifestations and the series, Guardians/Custodians. Indigenous Australian artists use the technique of rarrk or crosshatching in conjunction with sparkling white paint to invoke the traditional power of the Ancestors. It is used to transform the dull into the brilliant and has the same effect as optical shimmer. Referred to in Chapter 2, some of the shimmering, vibrating effects are reminiscent of the work of Bridget Riley and are similar to the optical effects I use in some of the initial exploratory drawings, as well as in many later drawings e.g. Anatomy of a Drawing and Braided Water.

The work, Aqua Sancta et Profonda, (Holy and Deep Water) uses ‘shimmer’ to explore aspects of the intense cold of deep spring water and the numinous aspect of a holy place of healing and pilgrimage. (Saint Winifred’s Well) There is also allusion to the greater likelihood of the purity of water at depths below intrusive polluted surface waters. However, this assurance is belied by the hidden allusion to ‘being in deep water’, or ‘out of one’s depth’, a reference to the parlous state of the environment and hence spring water.

The use of luminescence enables an extra dimension to the works. When the reflective qualities of the paint used in these works combine with line, different visual or ocular phenomena occur. Kasha Linville, describing Agnes Martin’s work, calls these phenomena “the three readings” and describes them as "...sequences of illusions of textures that change as viewing distance changes." First comes the reading at close proximity, when one scrutinises the actual textures of both support and paint or drawing mark; secondly, the ‘standing back

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154 Gabriel Maralngurra refers to his crosshatching as representing his family, his country and his art ‘...the whole lot!’ Painting Australia A.B.C. t.v. 24.4.2007.
155 See earlier reference, this chapter.
156 (Shugg, 1996)
157 Like Indigenous Australian artists, the intention is to draw attention to things of significance in my physical, emotional and spiritual life such as the environment, e.g. the pollution of river water or the chemical spraying of unwanted living things, as well as those things of significant aesthetic beauty such as frost or the sound of pure spring water. These are not necessarily of cultural significance, but do have great aesthetic significance for many people and are appropriate for investigation using abstraction.
158 (Haskell, 1993)
from the work’ reading, when one absorbs the ambience or general impression of
the work; finally one stands at a distance from the work and the essence of the
work is available to be read. These readings also apply to my works, especially
the combination works.

Following my decision to use graphs or intersecting lines to imitate the various
water flows, I needed to devise a way to dispense the paint. Various artists
including Jackson Pollock, Bryce Marden, Morris Louis, Helen Frankenthaler and
Indigenous artists such as Elizabeth Nyumi, have used sticks rather than
brushes, to make marks and dispense paint. Many Western Arnhem Land painters
use brushes, twigs or strips of stringy bark, which have their ends frayed by
cheying for this purpose. After experimentation with other types of mark makers
and paint dispersers, such as bamboo canes, brushes and droppers, the use of satay
sticks proved the most suitable for my purposes. With use, they quickly assume
frayed ends probably similar to those of the West Arnhem Land painters, but
without chewing them. The sticks swell and split slightly as they absorb moisture
from the paint. This ability to hold paint and release it when required is essential
in the formation of running paint lines.

The experiments with hypodermic syringes proved satisfactory in the formation of
extremely long paint lines, and imitated the hydrodynamic force that expels
mineral spring water under pressure from below ground which ensures the
integrity of spring water and protects it from pollution. Syringes can also be
used to disperse paint across multiple canvasses to form continuous paint lines
when necessary. By turning the canvas during the painting process, intersecting
lines or graphs are formed.

Air currents can be two edged swords. While removing possibly harmful paint
fumes and proving useful when rapid paint drying is required, they sometimes
enable the introduction of uninvited and involuntary ‘participation’ in the work.

159 (Williamson, 2004) pp 575-579  
160 (Slugg, 1996) p.9  
161 There are various names given to the ‘device’ of intersecting lines, see Appendix 1.  
162 Moving air is essential because of my sensitivities to paint fumes etc.
My work contains donated, improvised and recycled natural materials because flies and ants seeking moisture, dust, pollen and plant debris blown by the wind and air currents land on the wet paint, are unable to separate from it and enhance it involuntarily, while transitory birds and small nocturnal animals frequently leave hair, feathers and other detritus. Many artists such as Jackson Pollock, deliberately change the composition and texture of their paint by adding dust, thickeners and other forms of debris.\textsuperscript{163} I am assisted in this regard by nature.

Improvisation and recycling were behavioural patterns learned in childhood\textsuperscript{164} that decided the initial choice of recycled linen glued to board as support. While this provided a most satisfactory painting surface, carrying a number of boards at one time proved too physically demanding. The next choice of support was stretched canvas, which is easier to manoeuvre and light to carry. Satisfied with the outcomes of these investigations, I decided to use stretched canvasses.

In order to achieve scale, multiple panels provided the solution without resorting to canvasses too large to carry and transport easily. Not only can multiples achieve an impression of scale, their use offers many other advantages, including a flexible range of display opportunities and an ability to form intersecting lines or graphs themselves. Single panels of multiples can stand alone as individual works. The readings of multiples can differ according to the number of contributing panels for example, three panels interact with each other while nine panels or more, force the eyes to move around more slowly, seeking connections and relationships. (as in the works of both Imants Tiller and David Hockney). I have completed several triptychs, for example Water Chevron, based on a common symbol for water and some multiple panelled works such as Liquid Gold, Miasmata 1, and Miasmata 2. Multiples can give a sense of continuity and fluidity, invoking the passage of time. In the exploration of the topic of spring water, cycles of continuity, fluidity and the passage of time, enhance the sense of communion with nature, which is itself composed of cyclic changes.

\textsuperscript{163} (Siegel, 1999) p.144 and p.187.

\textsuperscript{164} Perhaps this is why the work and philosophies of Rosalie Gascoigne resonate so strongly with me.
The Drawings

In my opinion, Sol Le Witt's small drawings and etchings are elegant, logical, unassuming, and deceptively simple. He employs simple lines and graphs. As stated earlier, the simplicity of his small graph drawings and etchings resonated with me, and impressed me and they became starting points for my ink drawings such as the series, Materia Organica and later, the combination works such as the series, Guardians/Custodians. The ink drawings, enabled by my observations of water, explore the force, fluidity and movement of spring water as visible and invisible natural manifestations that reflect or absorb light. They investigate the sacred and holy aspects of spring water by engaging with traditional spiritual questions such as light and darkness, grace and sin, heaven and hell, turbulence and tranquillity, dependence and independence, acceptance and rejection, inspiration and ignorance, purity and contamination, black and white, life and death. They examine those possible palimpsests formed between pagan and Christian beliefs and practices. The varying degrees, or intervals of light between the lines of the drawings, can indicate shallowness or depth, the hidden or the revealed, the seeing or the unseeing, vision or blindness, mystery or revelation. In them boundaries are explored and tonalities and dualities investigated. They continue the investigation of certain aspects of the hydrologic cycle such as capillarity, condensation and transpiration. As stated earlier, I experimented with some of these drawings, using computer software and a printer and produced works such as Undertow.

The Artist, Abstraction and Spring Water.

As an abstract artist, I believe implicitly in the partnership between myself, the studio work and the media. I believe that this is a privileged and equal partnership where neither one is the dictator and I welcome and have trust in outcomes that are at times unpredictable, often surprising and usually eminently satisfying.

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165 (Bord, 1982) and (Wood, 1998)
166 Because of the closeness of some of the intervals between lines, some drawings are too dark to be accurately reproduced.
167 (Perkins, 2000) p 82. and (Isaacs, 1999) p.14 In common with both Indigenous Australian artists and many other artists, my rhythmic repetitive drawing movements can induce a trance-like state
168 Andre Breton in his 1924 Manifesto, recommended the exploration of the subconscious mind for stimuli rather than attempting to duplicate the natural world. The Surrealist Manifesto of 1924, states the definition of Surrealism to be, "...pure psychic automatism by which it is intended to express ...the true function of thought...dictated in the absence of all control exerted by reason and outside all aesthetic or moral preoccupations."
Being alert to the possibility of unpredictable and unexpected events occurring in one’s work is essential, as is being prepared for decision making regarding the incorporation or rejection of such events should they occur. Examples of this awareness took place while working on the combination drawings which are works such as the series, Guardians/Custodians and combine both painting and drawing, ink and paint. The series explores the contributions made by those who take care of spring water and the environment, while lamenting neglect and exploitation.169 There is a sharp contrast between the original natural state and the deteriorated contemporary state of spring water.

I believe that the abstract artist needs to engage the viewer immediately in ‘a conversation’, in which the viewer would be a responsive observer with an important role to play in my work and therefore agree with Sean Scully, when he said, “I try not to present something that is conclusive. I try to present something that can be interpreted.” 170 Scully also said, “I’m not going to say, ‘OK, my paintings are to be read, and here’s the map!’ They are much more subtle, supple and complex than that” 171

Spring water, the subject of the research project, is also subtle, supple and complex so I consider abstract art to be a very appropriate art form with which to describe and explore the topic of water considering that spring water, while tangible, has no shape of its own. It is chameleon-like, taking on the colour of its surroundings and is also invisible for much of its existence, dependent on light to give clues regarding colour, movement and appearance, demanding non-figurative

Dada empowered the Surrealists (and subsequent artists). Surrealism evolved from the preceding Dada movement, which ferociously, albeit haphazardly, repudiated the Establishment’s concepts of what art should and should not be. This led to the Surrealist disputing of the external world as the only source of inspiration.

Serendipity, chance and the valuing of the unpredictability of outcome were all hallmarks of the philosophy of the Surrealist movement, which contributed to subsequent art movements, such as Abstract Expression, and empowered subsequent artists.

169 Becoming aware of new tensions arising from the work, it was realised that unintended straight lines were appearing through the work. Originally I had planned to buy and use craftwood as temporary backing for the works, but was too impatient to start and used what was available, namely cardboard which was not plain cardboard, as previously thought, but corrugated board. Although these lines were unintended, I decided that the tensions they created, while contrapuntal, were desirable, so they were incorporated into the works.

170 (Siegel, 1999) p. 175
171 (Carrier, 2004) p. 102
studio investigation, which, as already described, can result in the allusional overtones of works such as the ink drawings and Guardians/Custodians. 172

To be an abstract artist does not mean that everyday observations and experiences do not contribute to one's work. 173 Sean Scully feels strongly that, “Abstraction becomes esoteric when it is isolated from experience. 174 Both one’s own experiences, such as my observations of waters close to home, and the experiences of others can be sources of inspiration. For example the works Miasmata 1 and Miasmata 2 were inspired by emotions aroused in me by the consequences of Hurricane Katrina, the Boxing Day Tsunami and other recent catastrophes, on people, the environment and by extrapolation, spring water.

The Role of the Viewer

Where both abstract and figurative art is concerned, artists may need to develop a relationship with the viewer that invites almost instant participation and involvement because, according to Robert Motherwell, art has to make its initial impact quickly and succinctly because the average viewer looks at a picture for an average of only twenty seconds. 175 This is where the use of multiple panels to slow down the viewer’s eye and encourage a slower appraisal, can be of benefit. Works composed of multiple panels include Miasmata 1 and Miasmata 2 Manifestations, Liquid Gold, Frost Catchers and Aqua Sancta et Profonda.

However, where viewer acceptance of abstract art 176 is concerned, the playing field is not yet level, compared with that of figurative or representative art and viewer acceptance. 177 While all art is abstract to some degree, 178 some of the viewing public resist any interaction with abstract art as if it denies the existence

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172 (Siegel, 1999) p. 175
173 See paragraph 1,chapter 3 ( this chapter) p.24.
174 (Carrier, 2004 )
175 (Terenzio, 1981)
177 One only needs to attend an exhibition of abstract art and listen to comments from members of the viewing public, some of whom perhaps feel they are failing in a perceived obligation to understand the works rather than relate to them by simply looking at them. Mention the name “Jackson Pollock” in the presence of otherwise intelligent people and hear what his name elicits. I think that unflattering comments, that are perhaps value judgements, can be the result of insecurity, revealing a need for certainty and information rather than being a sign of arrogance, as I once thought.
178 The portrait painter does not paint every perceived pore of a subject’s skin, nor the landscape painter every blade of grass, so some abstraction of the essence of the subject takes place to some degree.
of reality itself. There may be valid reasons for this. The hapless modern viewer may already be bombarded by too many distractions, both artistic and technological, so again, Agnes Martin’s observation that, “It (the work) is enjoyed (or otherwise) according to the condition of the viewer,” is a valid one, in my opinion.

I feel that the abstract artist needs to engage the viewer in a non-verbal conversation and agree with Marcel Duchamps who believes that a painting (work of art) depends on the viewer as much as on the artist. The viewer’s important role would then be that of a responsive observer and therefore a participant in the work.

**Spring Water as Metaphor for the Environment.**

In order to help people understand the consequences of ignoring environmental hazards to spring water caused by their actions and activities, Andrew Shugg was employed to write his discussion paper in order to provide advice to the State Government of Victoria and the community, on matters concerning groundwater. From the information contained in this comprehensive, informative and useful document, it can be extrapolated that every activity that happens above ground can have subsequent effects below ground, with horrendous implications for spring water. The causes of depletion and degradation of spring water apply just as appropriately to depletion and

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179 Abstract art has not been in existence as long as figurative art. Perhaps some people feel threatened by the unfamiliar, are therefore suspicious of abstraction or be victims of subliminal cultural conditioning or peer pressure.


181 (Haskell, 1993)


183 While the response does not necessarily need to be positive, ideally neither would it be instantly dismissive. It is hoped that the viewer would consider the work worthy of exploration and consideration. Perhaps exposure to work over time may enhance an affinity with it.

184 (Shugg, 1996)

185 Ibid Pp.20 – 35. As stated earlier, in his document, Shugg identifies and lists causes of depletion and degradation of mineral and spring water. He cites such things as mining, dredging, quarrying, agriculture, forestry, land subdivision, housing, dryland salinity, leech waters from old mine dumps and mullock heaps as hazardous to the integrity of spring water. To this list, I would add drought and climate change. These activities and their consequences produce contaminants such as acidic runoff, sewerage seepage, fuel, pesticides, fertilisers, agricultural chemicals and biocides. All these pollutants and contaminants can be released through the soil to underlying strata and into groundwater.
degradation of the natural environment. In my opinion, as stated earlier, spring water is a therefore a metaphor for the environment. 186

Works that were inspired by research into the hydrologic cycle and both subterranean and surface waters, prompted by Shugg, include The Frost Catchers, Aqua Sancta et Profonda, Bloom, Manifestations, Permeability and drawings including Aquifer, Capillarity 1 and Capillarity 2. These works, with their rich layering of crosshatchings or graphs sometimes partially obscured, explore aspects of the hydrologic cycle as well as exploring other aspects of the research such as the sacred and holy aspects. The work Liquid Gold explores the reversals of fortune experienced when water mining overtook gold mining as the more successful commercial enterprise. This success continues today with the phenomenal commercial success of the contemporary commercial spa water and resort industries both overseas and in Australia, for example in Daylesford and Hepburn Springs.

**Colour, a Primary Conduit to the Works**

Colour is a primary conduit 187 to the purpose of my work. 188 In proposing that spring water is a metaphor for the environment I extrapolate from the work of Shugg, 189 that what happens above ground can have horrendous effects on subterranean water. Variations on the colours violet/purple 190 have been used in Miasmata 1 to signify both grief and mourning 191 for the disempowered and disadvantaged people of New Orleans who still suffer from the neglect, rejection and abandonment they suffered at the hands of indifferent government authorities 192 both State and Federal before, during and after Hurricane Katrina. The colours also signify great eco-grief at the ongoing and devastating effects of

186 The micro reflecting the macro.
187 Other important conduits are shimmer, luminescence, texture and line.
188 There are many cultural, traditional, generational, personal, ecclesiastic and gender based interpretations of colour. My colour symbolism is a personal mixture of these categories See Appendix 2 ‘A Personal Rationale for Colour Use’.
189 (Shugg, 1996)
190 See Appendix 1 for commentary on graphs. See also (Siegel, 1999) p.172.
191 The Catholic and Anglican Church use the colour violet/purple at such times as Lent in mourning for the approaching death of Christ, and in Advent in homage to the approaching birth of Christ the King (Royalty). In classical Roman colour symbolism, it was the exclusive colour of royalty and became known as ‘imperial’ purple because only the wealthy could afford to purchase it from Phoenician traders. The purple dye was obtained from murex shells, which were difficult to access, procure and process.
192 An added justification for the use of ‘imperial’ purple would be the element of exclusivity from accountability assumed by the authorities (ruling class/royalty) who abandoned disadvantaged New Orleans residents to their fates before, during and after Hurricane Katrina.
this catastrophe on spring water\textsuperscript{193} The use of the colours purple and pink also refers to colours seen when petrol or petroleum products\textsuperscript{194} are spilt or sprayed on or in water.

In \textit{Miasmata 2}, the use of the colour brown\textsuperscript{195} refers to the deterioration of human waste into humus, a positive life force that is valued in unsophisticated (though maybe wiser) societies in normal times. In the event of natural calamity, such as a hurricane or tsunami, the colour refers to the humble status of humankind in our powerlessness to avert or control natural calamity and our vulnerability when human waste is mixed with spring water and other waters.\textsuperscript{196} There is an allusion to the inevitable humble destiny of all beings.

Paradoxically, humus, as soluble matter, along with carbon dioxide formed by rock water chemistry\textsuperscript{197} and minerals from the rocks that spring water passes through,\textsuperscript{198} contributes to the mineralisation of some spring water. Mineralised water is believed to possess therapeutic, healing powers perhaps attributable to the contribution of humus.

In this chapter I have dealt with the methodological aspects of my investigation and commented upon particular events to which some of my works pertain or from which they gained inspiration. In the final chapter I will respond to the questions:

- What has been learned from the research?
- What lessons can be learned for the future?

\textsuperscript{193} In reports on the Asian Boxing Day Tsunami, there is direct reference to the severe damage inflicted on groundwater, and the poisoning of fresh spring water supplies. Undoubtedly, the spring water of the Mississippi Basin would have suffered similar contamination after Hurricane Katrina.

\textsuperscript{194} These include pesticides, herbicides and other lethal petrol derivatives.

\textsuperscript{195} Traditionally, medieval European pilgrims wore simple brown home-spun clothing.

\textsuperscript{196} In the case of the Asian/Boxing Day Tsunami, in places, the clearing of the coral reefs to make larger commercial fishing grounds certainly made the impact of the tidal wave more severe. The effects of the spread of liquid and solid waste, industrial chemicals and the destruction of treatment plants etc. threaten the environment and spring water further into the future in unpredictable ways.


\textsuperscript{197} (Slugg, 1996) pp. 5 - 6

\textsuperscript{198} Water has the amazing ability not only to move around rocks but also to pass through some rocks. I have explored this phenomena in the work, \textit{Permeability}. 

36
Chapter 4  
Conclusion

'Walkabout' is not a negative thing ... it may be a non-exploitative, environmentally responsible way of leaving light footprints on the country .. unlike those left by some non-Indigenous Australians.

Spring water has been investigated in the last three chapters by exploring the interactions of Indigenous Australians and also non–Indigenous Australians with this precious and unique resource. These interactions have been examined through an exploration of various sacred, holy and commercial aspects of Spring water. Within the framework of the research, there is a documentation of the development of the studio practice and those artists who have inspired and motivated the work.

There are three significant facts that I have learned from investigating the research topic. It is hoped that scientists, artists and lay people can learn important lessons for the future from all three.

The first significant fact has ramifications for the current situation of prolonged drought in Australia¹⁹⁹ and that is that most hazards to spring water and to spring water supplies are caused by events that originate (such as toxic spillages) or fail to originate (such as drought) above ground.

Before I started this research project, I assumed that aquifers were vast reservoirs of pristine, pure, subterranean water, unaffected by events above ground. While research showed that such sealed-off aquifers do exist,²⁰⁰ many aquifers, for example, shallow ground waters, are more vulnerable to hazards that originate above ground, from such human activities as urban development, mining, forestry,

¹⁹⁹ In spite of the flooding in the Hunter Valley and subsequent evacuation (including our grandchild with her young family) of hundreds of residents (9.6.2007) and good rains experienced in Central Victoria, much more rain is needed before it can be said that the drought is over.
²⁰⁰ As for instance, an ancient aquifer discovered by miners in an African mine as described in an earlier chapter.
land clearing and agriculture\textsuperscript{201} and from such natural events as floods, tsunamis, hurricanes, droughts and climate change.

Because spring or ground water is subterranean and therefore invisible for most of its existence, its quantity and quality is difficult to gauge. It is also difficult to assess how quickly recharge will occur after drought conditions such as have been experienced in Victoria during the last decade.

On 24\textsuperscript{th} August, 2006, the Australian Broadcasting Corporation (ABC Television) ‘7.30 Report’ ran a story concerning pollution caused by decades of industrial contamination in the Botany Bay area. In fourteen suburbs of Sydney, approximately two thousand groundwater users\textsuperscript{202} had been using groundwater as drinking water and for watering vegetable patches and lawns, unaware that it was polluted by toxic chemicals such as arsenic, vinyl chloride and hydrocarbons. Sixteen thousand households have been told not to use groundwater for any reason whatsoever. The use of ground water in these areas is now banned. Some of the bores are unlicensed and illegal.

As stated earlier, to Shugg’s list of hazards to the viability and integrity of spring water, I have added drought and climate change. Aquifers are dependent on adequate precipitation for recharge. Recharging of an aquifer can be a lengthy process whereas depletion/discharge of an aquifer may not take as long. The social dimension to the drought can affect both the quantity and quality of spring water. In 2004, during the time of my Honours degree course, I had experience of community disharmony triggered by ground water sharing. Workshops were held by staff from R.M.I.T. and Goulburn Murray Water to help the community of the small town of Glenlyon, near Daylesford, which is almost totally reliant on bore water, raise the level of awareness of the groundwater systems and its limitations\textsuperscript{1}. In my opinion, the most amazing aspect of the whole situation was that few houses had water tanks, and there was no building requirement for them! As well, because of increased tourism and residential demands being placed on the faltering municipal infrastructure of Daylesford and Hepburn Springs,

\textsuperscript{201} (Shugg, 1996)

\textsuperscript{202} As many of these bores were illegal, this number is approximate.
investigatory drilling for a bore at neighbouring Coomoora was to take place to provide an improved water supply to Daylesford. Domestic residents of Glenlyon felt threatened when they saw the need to share a dwindling resource with a larger, expanding tourist driven population. In spite of these semi-official attempts to mediate and inform, the worst case scenario of a stressed community, already divided into two camps of domestic and irrigation users, with little chance of an improved water supply, and the added burden of being expected to share an already dwindling water supply with the burgeoning tourist district of Daylesford was already being enacted. A desperate situation had been allowed to go too far and this minimal remediation process, in the opinion of many people, was too little and too late. When water rationing became severe, both rural and urban residents rushed to invest in bores. Because of the lowering of water tables and reduced availability of accessible ground water, neighbours blamed each other's overuse for the decline in supplies. With better ongoing community education about ground water, consumers could be helped understand that the problem may be connected with demand outstripping the ability of the aquifer to recharge under drought conditions. References to the consequences of overuse such as that which is occurring in Mexico City where significant subsidence has occurred as a direct result of complete aquifer depletion, would emphasise the need for caution.

Before property owners invest in a bore, there should be printed information available to them that would include worst-case scenarios concerning the responsibilities of owning a bore and sharing a water supply. Application to create investment in a bore should prompt local authorities to provide low cost information courses and handbooks about the responsibilities and consequences of tapping into this community resource. In my opinion, water and wise water use should be part of every Kindergarten program and every primary and secondary school curriculum.

203 As a result, more water was extracted, causing greater likelihood of the water table dropping and contamination of water occurring. Interactions and connections between aquifers, surface water, soil conditions and rainfall that decide the recharge ability and speed, are delicately balanced.
204 Local newspapers document many instances of antagonism between neighbours because bore water supplies are less reliable.
205 Consumers could be informed of the need for groundwater to be recharged by rainfall which is possibly a slow process. Further information could indicate the possibility of fluctuating levels of both quality and quantity.
206 (Clarke, 2004) p. 64.
Information regarding the need for regular ground water testing and monitoring could be readily available on a regular basis perhaps through the media, to consumers and the general public who, like I did, fondly think of aquifers as sealed off reservoirs unaffected by activities above ground.\textsuperscript{207} Although the Glenlyon workshops\textsuperscript{208} were held three years ago, little seems to have changed regarding water quality and quantity monitoring. It would appear that financial restraints hamper effective monitoring inspections, with one inspector to monitor 20\% of the state in Victoria. This situation needs immediate remediation in my opinion, with additional budget directed towards this critical resource urgently required.

Memories of the devastating flooding of New Orleans came to mind during the recent flooding in N.S.W. of June, 2007. Flooding, combined with power outages that prevented fifty sewerage treatment works from operating provided a recipe for disaster to spring water supplies. This would have been a golden opportunity to remind the public, via the media, of the toxic nature of common household chemicals such as chlorine bleach, caustic drain cleaner, fly and pest sprays, battery acids, petroleum products and garden chemicals. It is often the combining of such chemicals, plus untreated sewage and animal carcases that could cause the most harm to humans and animals during and in the aftermath of flooding. While watching television footage of the floods in N.S.W., I imagined exactly what toxins\textsuperscript{209} were being encountered in those rising waters, and what the subsequent

\textsuperscript{207} Many letters and articles in local newspapers indicate ignorance of the hydrologic cycle and the resource of ground water. The exception is a regular four page lift-out supplement in the Bendigo Weekly, compiled and authorised by a Federal Member of Parliament, Steve Gibbons, who accesses Government departments such as the Department of Sustainability and Environment, and Hansard to keep the people of Bendigo informed by directly quoting from these sources about such things as drought, groundwater, aquifers, the Kyoto Protocol, renewable energy, climate change and what it means to individuals etc. In my opinion, this information is apolitical, informative, easy to understand and is true community education. Its accuracy can be verified by accessing the indicated web-sites and conducting private research.

\textsuperscript{208} Report 1 and 2 on Glenlyon Groundwater Workshop 2 and 3.

\textsuperscript{209} I recently accessed test results taken in New Orleans between September 10 and 19, 2005 (between Hurricanes Katrina and Rita.) http://www.epa.gov/katrina/testresults/water/index.html. Toxic chemicals found to exceed the EPA drinking water action levels included lead, arsenic, barium, thallium, chromium, benzene, selenium, and cadmium. Others such as 2,4-D, hexavalent chromium and toluene were determined as not immediately hazardous to health as long as proper protective equipment is worn, because they were found in flood waters. This seems a little gratuitous as I saw no advice to residents to wear protective gear each time they intended falling into flood waters! (Clarke & King, 2004). There is no reason to doubt that exactly the same chemicals could be found in the aftermath of the N.S.W. flooding.
effects would be on groundwater after this toxic cocktail seeps down into the aquifers.210

Now (because of the effects of climate change), faced with almost inevitable climatic disasters of biblical proportions, some politicians clutch at straws in attempts to find solutions to problems caused by the drought, and the finite supplies of spring water. Their reluctant and tardy acknowledgement of the risks to fresh water supplies caused by climate change and global warming has been at odds with scientific opinions from a wide spectrum of political affiliations.211

Acknowledgement of global warming and the subsequent likelihood of human activities being major causal factors ten years ago with subsequent research and planned action could have eased today’s water problems. Unfortunately, such a concession, to the political minds of the time, would have been seen to cause possible economic and political repercussions. Australian business leaders, with hindsight, have decided that by not addressing the implications of climate change years ago by reducing greenhouse gases, the interests of both the economy and the environment have been seriously jeopardised.212

Belatedly, in my opinion, consideration is now being given to solutions ranging from desalination plants to carbon sequestration, using saline aquifers. A proposal has been outlined in Federal Parliament to access spring water for large cities during drought, subsequently using depleted aquifers to store surplus surface water when catchments' levels are near normal, thus establishing a water bank.213

Tim Flannery, while acknowledging the existence of some governmental commissioning of research into weather forecasting, identified horrific gaps in the nation’s knowledge of fairly basic rainfall patterns, and raised the issue of adequate funding into specific weather research. He is disappointed that rather than being directed towards such research as aerosol cooling caused by forest

210 Up to now I have not seen or read any advisory cautions apart from a warning concerning animal carcasses.
213 Water banking - an option to secure our future. 2007 Bendigo Weekly, January.
clearing haze and industrialisation in Asia and the subsequent effect on Australian weather, scientists have been ordered to become more relevant to industry.\textsuperscript{214} I therefore suggest that there is a need for more funding into relevant research and a need for good science to address the problems the country faces relative to spring in particular and water supply in general. We need frequent reminders of the need for urgent action because the planet is running out of time and we need to avoid serious repercussions for our tardiness in acknowledging the seriousness of climate change years ago.

We are dependent on clean potable water for the survival of our species. This survival should take priority. We need to reconnect with nature and the environment and a good first step would be to make a heavy financial investment into researching spring water and the hydrologic cycle because the same hazards that threaten spring water are also threats to the environment and therefore to human survival. This could link with new patterns of water saving behaviour being established in urban areas.\textsuperscript{215} Some scientists predict that a result of global warming will be melting of the Arctic icecaps and the subsequent dilution of salinity in the oceans which could result in the breakdown of the Gulf Stream and Conveyors.\textsuperscript{216} This in turn could herald a European Ice Age and subsequently affect the whole Earth. I believe that it would be in our interests to research such important weather aspects to determine future needs and address them proactively not reactively.

The second important fact concerns the unmatched, unique, cultural knowledge and understanding of the Australian environment and connectivity to the land possessed by some of the traditional Indigenous Australian Owners, Guardians and Custodians who understand the interconnectedness of nature, the environment and life and recognise the vital importance of maintaining and caring for the land and its resources (such as spring water) as they have done for thousands of years.

\begin{itemize}
\item \textsuperscript{214} Flannery, Tim. 2007. “If scientist’s hands are tied, we fly partly blind into the future”. \textit{The Age}. 29 January. p. 13
\item \textsuperscript{215} Rural residents have practised water saving for decades. The current slogan, “If its’ yellow ...” was coined in the bush decades ago. !!!!
\end{itemize}
It would make good sense and benefit us all, Indigenous and non Indigenous Australians alike as well as the environment, to invite the traditional owners of Australia to become involved in all aspects of environmental science research and educational programs relating to the land and to the environment, not only in weather forecasting, as reported recently on SBS television news.\(^\text{217}\)

At the time of European Settlement and on many occasions since, Indigenous Australian culture has been dismissed as worthless. Hetty Perkins\(^\text{218}\) tells us that under the Governmental policies of those times, Indigenous Australian culture was ascribed "no value," and every cultural activity from speaking Indigenous languages to hunting prohibited in order that Indigenous culture be abandoned and an inactive, sedentary European-type lifestyle be adopted. Recently, in the face of indisputable evidence of climate change, it is gratifying to note that an environmental report published by the Australian National University\(^\text{219}\) confirms that the current pristine nature of some northern areas has been preserved largely because in such areas as the Arnhem Land's Plateau to the east of Kakadu National Park, Indigenous Australian traditional practices of land management still obtain. As a result of these environmentally sympathetic practices,\(^\text{220}\) the study is reported as saying that Aboriginal customary practices should continue as they could be a key to continuing biodiversity and environmental health in the north. Professor Brendan Mackey, Environmental Science, Australian National University admits that scientists are only now beginning to realise that "traditional ecological knowledge and traditional land management has a lot to offer." Dick Williams, CSIRO Sustainable Ecosystems, describes their achievements as ".. an example of better fire management bringing a greenhouse gas abatement

\(^{217}\) Employment of Indigenous Australians at the Weather Bureau to take advantage of Indigenous traditional environmental knowledge and observational skills, was reported recently. While acknowledging that this is a step in the right direction, I cannot help feeling that it trivialises the immense scope of Indigenous Australian environmental knowledge that has unfortunately received little acknowledgement by Government or the media.

\(^{218}\) (Perkins, July - September 2000) p. 60.

\(^{219}\) Combating NT climate change threat. 2007 The 7.30 Report, 22 August, viewed 22.8.2007 http://www.abc.net.au/7.30/content/2007/s2012157.htm

\(^{220}\) For example, Indigenous Australian landowners' fire abatement program which won the prize for innovative solutions to climate change at this year's Eureka Science Awards. This program has already won them an income of $1 million per year for 17 years for the first major carbon offset program in Australia.
beneficial, a potential carbon sequestration benefit, biodiversity benefits and social benefits for the people of northern Australia.\(^{221}\)

The third important fact to be learned from the research concerns the enormous amount of information about the environment communicated so generously to outsiders by Indigenous Australian artists through their art work.\(^{222}\) The interconnectedness of Indigenous Australians' traditional relationship with the land and their spiritual beliefs and traditions, are all revealed. It is hoped that we avail ourselves of the many lessons to be learned. The research project would have been the poorer without access and reference to this vital knowledge. I am indeed indebted to the enormous contribution Indigenous Australian artists have made to the project. European artists both here and in Europe, made a far inferior contribution to the knowledge of spring water.

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*I am not painting just for my pleasure: there is the meaning, knowledge and power. This is the earthly painting for the creation and for the land story. The land is not empty, the land is full of knowledge, full of story, full of goodness, full of energy, full of power. Earth is our mother, the land is not empty. There is the story I am telling you - special, sacred, important.*

Wandjuk Marika Senior Yolngu artist.\(^{223}\)

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\(^{221}\) I find it regrettable that these achievements have not so far been accorded the same amount of publicity as the child abuse allegations in remote Indigenous Australian communities.

\(^{222}\) (Wolseley) pp. 377 -378

\(^{223}\) (Isaacs, 1999) p.228.
Appendix 1
Memories, intersecting lines, associations and World War 2

The Role of Memory to the Older Artist
Unlike many students who attend University in their youth then go out into the world to experience life and practise their art, I reversed the process, experiencing life before attending University. Whilst life experiences and memories are continuous connections with the past, artistic preferences, practices, artistic inspirations and philosophies are contemporary developments. Nevertheless, memories, experiences and associations of a long life-time have all contributed to the style, content and development of current studio techniques. They are vital contributing factors that are inseparable parts of the persona of the artist.

Mark Roskill describes the important role of memory to the older artist in his article on Louise Bourgeois thus

“For a work of art to be taken as such, seems to entail...an incorporation of the ongoing fabric of imagination and memory,...especially in later years, an artist has to gather up the threads of experiences and let them distil themselves.”

Childhood
Childhood experiences can have profound effects on later life, as the classic television programme Seven Up attests. I agree with the Jesuits when they said, “Give me the child until he (she) is seven and I will give you the man (woman).”

When I came to revisit aspects of the origins of my associations, attitudes and responses that inform and situate my studio work, I was surprised to find how many links to my childhood I found and feel that the use of intersecting lines and

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224 The role of past associations, memories and experiences in relation to the employment of graphs and intersecting lines in the works should not be dismissed lightly. They may not always have direct association with the topic but as part of the artist’s persona are therefore always part of the work.
225 (Roskill, 1992) p.25.
226 This statement is widely attributed (but no definitive provenance can be found) to Saint Ignatius of Loyola, founder of the Catholic order of the Society of Jesus known as the Jesuits. The quotation receives contemporary popular recognition thanks to the television series by Michael Apted describing a sociological experiment. Entitled Seven Up, the series investigates the veracity of the quotation as the lives of a number of people are examined from the age of seven. The project was established approximately forty years ago, is updated every seven years and aired by various television stations, such as SBS.
‘graphs’ in my studio work is in part, a result of past associations, attitudes and responses. It is now an intrinsic part of my current painting style and came about while developing techniques involving gravity and paint.

Artists and reviewers describe intersecting lines in art as grilles, graphs, lattices, meshes, grids or webs. All these words have a similar meaning, but each holds personal significance for me so the subtle differentiations are worth exploring, and could help document the origins of my image making.

One of my sisters is a Carmelite nun who has devoted her life to God. One of the many sacrifices she has made is the denial of close physical contact with her birth family. The huge, heavy metal grille separating the Enclosure of her monastery from the outside world embodies this deprivation for me. For me therefore, the word ‘grille’ has connotations of self-denial, deprivation and segregation. Together with the comforting, positive aspects of security, strength, protection and selflessness there are intriguing connotations of mystery, secrecy and a sense of the spiritual. A grille can provide a powerful barrier, screen and filter. It can reveal as much or as little as desired.

The portcullis, a larger version of the grille, I first read about in junior school history. My addiction to reading began in early childhood perhaps as a form of escapism from the realities and deprivations of World War 2. Favourite reading material involved tales of the inhabitants of castles, to which access was gained or denied by a portcullis. Images of portcullises as impermeable barriers to invaders provided an attractive feeling of security and a measure of control to a young child in wartime. The portcullis also gave access across a moat or stretch of water, often polluted by waste from the castle.

A more physical form of escape was available to me from time to time in the form of visits to my Grandmother’s home in North Wales. As described earlier, here I

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227 I have not found a word that adequately defines all the necessary nuances of meaning so from time to time I resort to using different words from the list according to the situation.

228 I emphasise that these associations and differentiations are personal, linked to my life experiences and incorporated into my studio work. They are part of my persona.

229 I suppose that the contemporary version would be the roller door!
found proof of the existence of miracles and transformations through visits to the holy well and listening to my Grandmother’s stories of the healing powers of the miraculous holy spring water of Saint Winifred’s Well. In North Wales also, fortified castles, such as Caernarvon Castle, contained reminders of the importance, longevity and power of the portcullis.

Unlike the word ‘portcullis’, with its associations of historical power, the word ‘graph’ has modern connotations of calculation, premeditation and objectivity. The graph is composed of intersecting lines drawn on a surface and is two-dimensional. It is used to produce outcomes such as statistics and can provide information such as timetables. A graph may evaluate, compare or appraise situations. Some people use graphs to prove or disprove facts and their reliability can be questionable.

Grids are similar to graphs but contain less numerical information. They are very useful when printed on maps to give map references. Some grids disperse energy such as electricity, and can cover vast distances.230 Whilst they are detectable, they are not always visible.

Trellises are more tangible than grids and were familiar things to me in my childhood because my Grandfather grew roses on trellises. They were made from wood and sometimes left splinters in fingers. In spite of this, they have connotations of unobtrusive strength, reliability and love because of the association with my Grandfather. Modern trellises can be made of materials other than wood.

Like the trellis, a mesh is three-dimensional. The word mesh has connotations of suppleness, strength yet surprising softness. It conjures up images of the silhouettes of bare branches against the sky, and the interlocking nature of a bird’s nest. A feeling of security is engendered. I like the images of natural and organic things that the word brings to mind. A mesh can also have connotations of

230 Childhood associations do not help because a grid to me then meant a covering for street drains into the sewer and were things to avoid.
catching, seeking, trawling and retaining. It reminds me of the processes of both research and ‘memory trawling’.

My use of intersecting lines frequently reminds me of weaving, painting and research, where sometimes there are gaps to be filled or threads that may need tightening.\(^\text{231}\) When painting, one selects the support, medium and format. When weaving, one decides on the thread, stitch and pattern. Gaps in designs and research can prove valuable.

‘Web’ is another word with similar connotations to ‘mesh’. There is no sense of rigidity in a web. All is flowing, soft and fluid...like water. The web is most natural and organic in origin. It has undertones of seduction, strength, premeditation and entrapment probably because of its original connection to spiders; helpful, industrious if predatory creatures. Personal childhood associations with the word ‘web’ are also connected to Tennyson’s poem, “The Lady of Shallott”.\(^\text{232}\) Again, weaving is involved, as well as supernatural enchantment. There are many references to ‘the web’ as the piece of weaving that the accursed Lady must continue to weave or risk death.\(^\text{233}\)

**World War 2**

As a child during World War 2, I remember the darkness especially. At night, no lights could show. Black curtains covered every window. The enforced darkness was anonymous, secretive and widespread across the British Isles. This was the ‘blackout’. There were elements of excitement such as searchlight beams across the night sky and the patterns of tracer bullets in the dark. Everyone owned a torch.

\(^{231}\) Some of the current studio works contain warps and wefts of paint ‘threads’ which fall over the edges of the works to create another dimension to the work.

\(^{232}\) (Tennyson, 1915)

\(^{233}\) (Tennyson, 1915) pp.64, 65, 66.
Images and concepts that were embedding themselves into my subconscious then, would emerge many years later in such works as my drawing series, *De Profundis (Out of the Depths)*. 234

During World War 1, not only were my developing senses of security and independence challenged, but also patterns of behaviour were being created, such as recycling, improvisation and the postponement of gratification, 235 which were to last a lifetime. The enjoyment of simple pleasures was the order of the day. Life was stark. The inside of communal bomb shelters did little to eradicate this impression. 236 Fortunately, our domestic bomb shelter in the back garden was different, a haven of cosy security. I have had a deep fondness for corrugated iron ever since.

In order to prevent injury from breaking glass in the event of bomb blast, we had to stick tape across all domestic windows. My Mother and Grandfather tore the brown, sticky tape into strips and stuck it across each pane of glass in a star shape. I use similarly shaped intersecting drip lines in studio work, referring to them as multi directional lines. The various manifestations of water in the hydrologic cycle also have this multi-directionality. Sometimes I use a contracted version using only horizontal and vertical lines.

Living in the great English port city of Liverpool in wartime, as a very young child, I grew accustomed to the sight of huge concrete cylinders linking barbed wire barricades across roads, preventing access. On our favourite beaches ‘over the water,’ (on the other side of the river Mersey) tank traps raised their jaws like gigantic scaffolding, while ubiquitous strands of wire again prevented our access. The registration of these images on my subconscious may be responsible for the restricted nature of visual access into some of my current works and the sometimes almost impenetrable nature of the intersecting lines.

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234 This is the title of a Catholic traditional prayer for the Dead.
235 This may account for the fact that I welcome surprises and unpredictability in my studio work!
236 Life in the shelters helped me recognise and appreciate the work of Henry Moore with affection in later years.
In wartime, bath water was rationed to a few inches, in order to ensure supplies for industry and fire fighting. A line on the bath told us where the water level should be. This was to prove good preparation for life in Australia.

**Note regarding The Canticle of the Sun.** (the portion relating to Sister Water is quoted in the frontispiece.)

Saint Francis composed this prayer/poem in the Umbrian dialect and it is thought to be the oldest extant poem in any modern language. The theme of *The Canticle* is that God, and God alone, deserves praise and deserves it from every source. Accordingly, Francis calls upon all creatures, the sun, the moon, the stars, the elements, even suffering and death itself, to pour forth their praise to God.

Francis commenced the poem in 1225, adding to it a short time later and concluding with the final verses to Sister Death just before his own death in 1226.  

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237 My husband remembers a wartime poster bearing an image of a disembodied leg from the knee down with a painted line around the ankle. A primitive, marked measure in inches ran down to the sole. He remembers another poster image of a tap with a drip of water escaping, bearing the words, “Stop that drip!”

238 (Habig, 1973)
Appendix 2

Personal Colour Symbolism

With cultural, generational, scientific, geological, traditional and ecclesiastical connotations, depending on the context.

Black
Darkness, invisibility, emphasis, compost, fertility, warmth, enticing, creativity, religious life, depth, clueless, misrepresented, unseen, mysterious, secretive, uniform, unseen, stain absorbing.

Blue
Marian, traditional, sky, water.

Brown
Humility, humus, pilgrim, excrement, compost, richness, unworldly, autumn, fertility, poverty, homespun, natural, dry, browned off, sunburnt, uniform.

Blue-Green
Toxic algal bloom, sea water (summer), swimming pools, water.

Emerald Green
Mouldy, luminous, harmful, unnatural, phosphorescent, beautiful, precious, Irish.

Verdigris.
Natural / unwanted, protective.

Gold
Wealth, gold, grandeur, exclusivity, other-worldliness, extravagance, greed, light reflecting and deflecting, indulgence, emphasis, hedonism.

Pink
Immaturity, feminine gender, poison, intense rain (see purple), healthy, (as in ‘in the pink’) intimate, spring blossom, fragrance, confectionary colour e.g. candy floss, 1950's fashion colours e.g. Schappiarelli's 'Shocking Pink'.

Red
Caution, importance, blatant, passion, heat, blood, martyrdom, emphasis, ripeness, perfumed, exotic, eye catching.

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239 Pink ribbons are tied to trees and shrubs destined for removal by poison or chain saw by council or forestry workers. Pink herbicidal spray is often used to kill unwanted trees and plants, leaving ambiguous pink stains on the surrounding area which could prove attractive but harmful to unintended recipients like children and animals.
Silver
Hidden beauty, inferior (to gold), coin of the realm, aged, valued, useful, shimmering, reflective, worthy of meditation, blinding, elegance, emphasis.

Violet & Purple
Healing, bruising, extreme cold,\(^{240}\) chilblains, poor circulation, splendour, (royal/imperial), grief/mourning, (ecclesiastical), petrol or oil in/on water, intense rainfall,\(^{241}\) dramatic.

White
Purity, virginity, colourlessness, pollution, death, mourning, bones, corpses, lifelessness, chemical toxicity, mould, fungi, illness, salt, sparkle, commerciality.

Yellow
Death or maiming,\(^{242}\) pestilence,\(^{243}\) infection, jaundice / prejudice, renewal, hope.

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\(^{240}\) (Fenely, 1997) Rosalie Gascoigne, referring to the intense cold of her first Canberra house, said, “…the air hung down purple in the passageways.”

\(^{241}\) The rainfall chart on the ABC program, Landline, uses purple and pink to denote the heaviest rainfall.

\(^{242}\) Forestry workers mark trees with a yellow ochre ‘x’ to denote the tree to be cut down or to be dismembered.

Local farmers paint recycled disintegrating structures close to the Creswick Newstead Highway, with ochre paint to denigrate and protest the introduction of wind farms locally, describing them as ‘blots on the landscape’, little realising that not only are these ochre structures a dangerous distraction to drivers on the highway but that they are far more hideous visually than the elegant wind farm turbines.

\(^{243}\) The yellow flag hoisted on ships indicated infectious disease aboard, such as typhoid.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td><strong>Mulju</strong></td>
<td>Water soakage.</td>
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<tr>
<td><strong>Billabong</strong></td>
<td>Freshwater lagoon, stillwater pool</td>
</tr>
<tr>
<td><strong>Bore</strong></td>
<td>Water pipe drilled and sunk to level of subterranean water table from which water can be pumped.</td>
</tr>
<tr>
<td><strong>Rockhole</strong></td>
<td>Water source contained by rocks, may be a sheltered pool or a subterranean soak.</td>
</tr>
<tr>
<td><strong>Soak</strong></td>
<td>Desert water source; usually applied to residual water along river beds or rocky pathways. The water may be visible or may appear as a damp patch which must be dug out and let settle. It may not be visible at all. Foreknowledge is required to locate hidden soaks and careful digging under apparently dry sand. Indigenous Australian people believe that they are given this knowledge by their Ancestors.</td>
</tr>
<tr>
<td><strong>Jila</strong></td>
<td>Living Water i.e. it never dries up.</td>
</tr>
<tr>
<td><strong>Jumu</strong></td>
<td>Surface water soaks which dry up in hot weather.</td>
</tr>
<tr>
<td><strong>Bongu</strong></td>
<td>Waterhole.</td>
</tr>
<tr>
<td><strong>Kurdungurlu</strong></td>
<td>Guardians / Custodians / Elders.</td>
</tr>
<tr>
<td><strong>Mardayin</strong></td>
<td>Sacred (used frequently by Elder and renowned Indigenous Australian artist John Mawurndjul as in the title of his work, <em>Mardayin Design 2006</em>). According to Jennifer Iaacs, Mardayin ceremonies are a major sequence of ceremonies practised in Arnhem Land. (Isaacs, 1999) p. 231.</td>
</tr>
<tr>
<td><strong>Balneology</strong></td>
<td>The practice of various therapies using spring water such as those used in the therapeutic spa industry.</td>
</tr>
<tr>
<td><strong>Rarrk</strong></td>
<td>a form of cross hatching used by Indigenous Australian artists such as John Mawurndjul to enhance important images with the power and authority of the Creation Ancestors by making them vibrate and shine.(^{244})</td>
</tr>
</tbody>
</table>

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\(^{244}\) (Mundine, 2006) p. 28
• Dowsing

This is sometimes called 'divining' which, while connected to educated guesswork may also be connected to the Divine. (This could bring it into the realm of Indigenous Australian Guardians and Custodians who, spiritually inspired by the Creation Ancestors, not only find subterranean water but also depict sacred water sites in their artwork. Jennifer Isaacs tells us that the locations of these sacred water sites have been endorsed by Indigenous and non Indigenous Australian dowsers alike.245) Traditionally, dowsers or diviners carried rods, often forked, which dipped downwards when a subterranean water source has been located. Dowsing / divining is not officially endorsed by scientists who nevertheless would hopefully acknowledge a successful location of water by this method.

• Radiance/

• Shimmer

Techniques used by Indigenous Australian artists to enhance images with the authority and power of the Creation Ancestors. The images appear to resonate, vibrate and shine. Op art appears to share many of these characteristics especially the art of British artist Bridget Riley.246

• Krill - Krill/

Kuril Kuril

A ritual ceremony performed by the people of the Kimberleys. It is mentioned in the dream of Rover Thomas by his relation Ancestor.247

• Dreaming

A most inadequate English term to describe the continuous Creation process being carried out by the Creation Ancestors as they journey around the country creating and destroying landmarks and the environment. This Creation process is internalised and celebrated in ceremonies and song ( known as song lines ) at sacred sites along the routes of their journeys. Depending on the language

245 (Isaacs, 1989) p. 10
246 (Hodges, 2005) pp. 64 - 66.
247 See chapter 2.
group of the people the Ancestral Creation era can be called
*Altyerre (Anmatyerre people), Tjukurrpa (Pitjantjara people),
Ngarrangkarni (Kimberley people), Tingari (people of the western
desert region)*

- Rainbow Serpent. One of the many manifestations as snakes of the Creation
  Ancestors.

- *Winpa* Spirit Ancestor who created waterholes. Western Desert
  painters forced to leave the desert because of mine dewatering
  and now living at Bidyadanga, Western Australia, such as
  David Walbidi, invoke his power in their image making.
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