



by Angus Leech

## Notes on Etching Heaven: A Fact and Fiction Expedition to the Cosmogony of the Map

*I believe, this is Heaven to no one else but me.*

- Sarah McLachlan

### Etching Heaven

The map systems of the Western world have their origins in geometric grids developed to chart the Heavens—the starry abode of divine rationality, and of perfect order. When celestial geometry began to be used for charting earth-bound geography, the consequence was transformation. Lines and rectangles of longitude and latitude became roads, property lines, neatly arranged buildings, entire cities planned on the grid. Endless modification of the planet carved the map into its surface, transcending the undulating grain of geology. Thus, it was no longer necessary to worry about building Towers of Babel. The cartographers had devised a way of bringing Heaven down to earth.

### The Cosmogony of Pherecydes

Of all that has come from Chaos who was first, these three things only are eternal: *Zeus*, Sky. *Chronos*, Time. *Chthon*, the Earth. When Zeus, whose eyes are lightning but whose spirit is the mind in reason, looked upon Chthon he was consumed. Thunder rove the Heavens and at last she was persuaded into matrimony, but in three days of love-making her face was changed. No longer did she look the virgin, with dark lips parted in fertile exhaustion. Her massive body trickled with awakened lust, and the Sky feared for the sanctity of his marriage.

So Zeus spread his arms to gather the white beams of the stars, then passed a needle through his palm and drew it out into threads of a new thing, which was colour. And with this thread the Sky wove a mantle of lightness and beauty with which to cover his mistress, in order that she would be known in intimacy only to him, whatever the trickeries of Time. And on that veil which billowed and shimmered and shifted were woven in all colours and

forms the lands and seas of the world. So it was that Zeus assured that the depths of Chthon would be ever and ever unknowable, and gave her the name of Gaia. So then was created a middle-place of change between the lightened sky and the dark mysteries. And so too was made the place where men would dwell and find the sustenance of life. Here, breathing the exhalations of enduring, hidden Chthon and never ceasing to raise our eyes to the perfect eternity of heaven that is always out of reach.

Thus it is that men's lives know only the seductions of Gaia's face, and must in all forms put up with change and then pass away. Thus the orator speaks his histories with whatever faith he has, that whatever small memory of this passing remains to us may be preserved for our betterment and aid. We speak these histories because we are not made for eternity, because we are powerless without remembrance. We repeat these histories over and over, because only Gods can afford to forget.

Try not to forget. The surface of these things is only a veil.

*(Pherecydes the sage philosopher, consumed as he is at his writing desk, does not know that most of those who come after him will read the poems of Hesiod instead.)*

### Scapulimancy

A woman with ochre skin is there by a fire with a kettle boiling, next to a small pile of clean, white bones, the femurs and ulna and clavicles of deer. Every few moments, she cracks one over her knee, pulling back on her stroke before it is broken in two. From the proliferating fractures she speculates the near future. Where lines intersect she infers decisions of importance. Green meetings, pin-points of caution. Each of her friends and acquaintances approaches, takes a bone, hands it to her, waits. One selects a large scapula which shatters dryly to slivers when the woman brings down a stone round and ridged like a fist.

"Too many pieces," she shrugs, and dusts herself off. *Too many pieces* stares at the stars, the stream of smoke and sparks rising like a translucent cumulus up from the fire.<sup>2</sup>

### Climbing the Ladder

"The Heavens never seem to change," said those Greeks. "They have always been good at just being there. And they're so neat and tidy. And as for the





Underworld, well, that's just permanent chaos. But we humans are stuck here on this middle surface, in a garden between perfect lasting order and eternal god-knows-what. The problem is we never know what will become of us. What with all these earthquakes, upheavals, insurrections, and deaths—even just the changing of the seasons—things are a bit unstable. What we wouldn't give for time to relax—it's hard enough just to stay in one place for very long. And the thing with a garden is, you have to take care of it. You either work to maintain order or it all goes to shit. One minute you're doing fine trimming the hedges and maybe building a little pagoda, and everything is looking *divine*. But turn your back for one minute and the Satyrs are jumping the fence and pissing all over your begonias.”

As far as most of the Greeks were concerned, change was going to happen whether you liked it or not—you had to live in the middle of the world. Existence on the surface of the Earth was ephemeral, but people did have a choice of which way they wanted to push things: you could work to move society toward the pleasant intellectual orderliness of planetary Heaven (and thus follow Apollo), or you could allow it to degenerate toward the wild unpredictability of the Chthonic realm (walking the path of Dionysus). As for popular opinion: a little ecstatic spontaneity was popular here and there with certain cults, but in general most people preferred the idea of climbing the ladder to that of falling down it.<sup>3</sup>

### Arachnae (The Weavers)

Oh, but those Greeks were good with geometry, though you really have to give the Egyptians credit for starting them off with straight lines and angles. The same people who built the Pyramids of Giza also invented a way to survey the land so they could more easily tax it. The Pythagoreans took these few simple mathematical laws and moved on to tackle circles and spheres. As always, their inspiration lay up there in the Heavens, and math and astronomy and philosophy were all the same thing.

The stars were known to be set rigidly in the Sky, which was a transparent sphere that turned from east to west once a day. Because the Sky symbolized perfect order, and it seemed to exist as a geometric sphere, geometry became a model for all intellectual achievement to imitate as the supreme exercise of reason. The Sun and the Moon traveled more slowly across the span of the Heavens, along separate spheres with different axes of motion. The plan-

ets traveled in odd elongated spirals which were perpetually hard to explain. (One Greek even suggested that the earth traveled on a sphere around the sun instead of the other way around, which would explain why the planets danced in loops. But he had to lay in a cold grave for seventeen centuries before anyone stopped believing he was crazy.)

With a working knowledge of angles and arcs, all of the different motions of these whirling bodies could be measured relative to one another. To keep track of it all those Ancient Greeks started drawing spider-webs on the Sky.<sup>4</sup>

### Erratics

Out on the bald-assed Alberta prairie, on the outskirts of a Provincial Park which shall remain nameless, sits a great pink boulder of granite from the Canadian Shield. This erratic, which has moved many times over the eons, once sat for untold centuries atop a high spot overlooking the plains. Until it was rolled from the path of some dirt-farmer's plough.

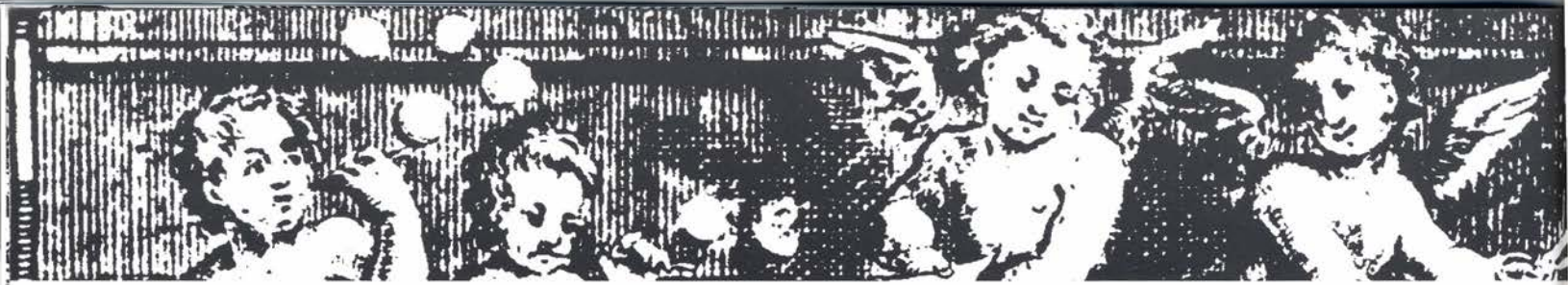
On the surface of this rectangular stone has been carved a glyph, as if drilled one pock-mark at a time. A field of shallow holes in the coarse stone; a long undulating line, which might be a river, or a snake because it ends in a circular head. Nobody, not even the Blackfoot Elders at nearby Glietzen, knows exactly what it is about. Yet, as any fool can see, it is almost certainly a map. A map of what, nobody can say, because they forgot to remember which hill it was on, which way it was pointing—details unimportant to the collector.

So now the glyph-stone just sits there, more erratic as ever, under an interpretive sign which seems to shrug its shoulders. Provoking mild interest from wandering tourists, and ever mis-informing ghosts who wander river valley slopes, making wrong turns at Deadlodge Canyon.

### Anaximander of Miletus

Anaximander is the first of the Spiders to spin a permanent thread; the first of the Greeks whose written work will survive in detail. He will invent the idea of the *apeiron*, the boundless, imperishable, eternal surrounding which is the fundamental source and substance of all things. Besides this metaphysical leap, his is the first known geometrical map of the universe. Anaximander looks up from his corner in the garden to cast silky filaments across





the Sky, and when he finishes, his labour has woven what we later will think of as the Celestial Grid.

Once someone had come up with the notion of dividing up the sky into equally-spaced equators and meridians—a grid of lines which, like Heaven itself, rotated but never ever changed in relation to one another—astronomers could start filling in the exact positions of the stars, which were permanently fixed, and trace the seasonal paths of the stuff that moved. The whole bewildering vastness could be drawn and captured on a blank page of thick vellum, rolled between the fingers, tacked upon the wall. It was as though you weren't even inside the cosmos anymore, but embracing it from a great distance or height.<sup>5</sup>

### Anaximander and the Gnomon

The Spider is in the temple garden again, but now he is thinking about time. The Heavens are an eternal clock, only there is no such word or machine. The rotations of stars measure the days, the sun counts out seasons and years. The moon brings tides, months and the considerations of women. At the temple of Delphos, among the crags and cliffs of Parnassus, is the *omphalos*, the cosmic egg of the world, where two eagles sent flying from opposite poles of the earth met and finally rested. It is here at the geometrical centre of the world, at this place where the vault of Heaven bows closest to Chthon's cool crevices, that the three parts of creation are impaled one upon another by the rotating vertical axis of Time. So it is here, in this garden terrace dedicated to Apollo, that Anaximander pounds his long pole into the dirt.

Sky, Underworld, and middle Earth, pierced and joined by the perpetual axle of Chronos. The Spider imagines himself twirling mid-air as he watches the shadow stretch across the garden's grounds. He has found with his sun-dial the means to measure the length and angle of Apollo's shadow. He has finally measured time, and soon he will use the light of the sun-clock to calculate exact positions and distances on the lands and the oceans. He will trace Gaia's erratic outline using perfect celestial reasoning; write his grid upon the Earth, catch her form upon his page. Each line of ink that he draws will measure an emptiness, bound a space waiting to be filled. A space in which Anaximander can plot whatever he sees or imagines might be there. The whole inhabited world, spread out on a wooden table; the lines at the margins of the page extended even beyond the known realms, into an empty yellow blanket filled with winds and abyss.

When the map is finally finished, Anaximander reaches into Heaven beaded with dew and plucks loose a single strand. The Spider lets his net drop, and wherever it comes

to stick it will seem as though the forgetfulness of Heaven has glimmered down and covered everything with a fresh layer of blank parchment.<sup>6</sup>

### Maps in Dreams

*Oh yes, Indians made maps. You would not take any notice of them. You might say such maps are crazy. But maybe the Indians would say that is what your maps are: the same thing. Different maps from different people—different ways. Old-timers made maps of trails, ornamented them with lots of fancy. The good people.*

*None of this is easy to understand. But good men, the really good men, could dream of more than animals. Sometimes they saw heaven and its trails. Those trails are hard to see, and few men have had such dreams. Even if they could see dream-trails to heaven, it is hard to explain them...You may laugh at these maps of the trails to heaven, but they were done by the good men who had the heaven dream, who wanted to tell the truth. They worked hard on their truth.*

- Jimmy Wolf, Dunne-za, Northeastern BC<sup>7</sup>

### We're All Trying to Get to Heaven

Those Greeks found a way to bring Heaven down to Earth: to plot the rational order and the eternal qualities of Heaven onto the ever-changing surface of their lives. By doing that, they laid the theological and mathematical foundation upon which the future of European cartographic science would rest: pure geometry. They created a kind of language which held itself apart from the world, like a person poring over a chart; no longer existing within the universe, this cartographic language became a tool to be applied from outside. Thus, there opened a rift between the map-maker (self) and geography (the material world), fostering the impression of manipulation, objectivity, domination, control.<sup>8</sup> In cartographic maps, the Earth was made to seem as though it were being viewed through a lens that filtered out everything irrational, irrelevant, imperfect. For only the singular, transcendent truths of celestially-sponsored reality could pass through the mathematical membrane of the grid and be represented upon the page.<sup>9</sup>

The preceding account is, of course, an overgeneralization: the process took many hundreds, even thousands of years. And cartographic science was far from the exclusive invention of the Greeks. In fact, the science of cartography as we know it didn't really come together until the Middle Ages, as a synthesis of technical developments from Christian, Arabic, Jewish, and Asian origins. It was actually Jewish and Saracen astronomers, working on contract for Pedro of Castile to more accurately chart the Mediterranean, who constructed the first modern carto-





graphic maps.<sup>10</sup>

Even though Europeans of the Middle Ages had for the most part changed religions since the advent of Greek astronomy, the celestial grid and Anaximander's first maps, many of the same cosmological elements remained in their thinking. Pico della Mirandola, Renaissance humanist and writer, expressed his thoughts on the choices made available by God for the human soul:

*He therefore took man as a creature of indeterminate nature and, assigning him a place in the middle of the world, addressed him thus: Neither a fixed abode nor a form that is thine alone nor any function peculiar to thyself have We given thee...thou mayest have and possess what abode, what form and what function thou thyself shall desire.<sup>11</sup>*

For Pico, a position in the middle of the world did not suit the destiny of God's best creation—again, there were two options: humankind could labour to rise heaven-ward through self-control and reason, or choose the unbridled bestial instinct of the terrestrial realms. Again, the choice lay between emulating Apollo or Dionysus, and Pico and most other intellectuals clearly preferred the former.<sup>12</sup> Thus, the association of celestial mathematics with divine truth remained strong, and the science of cartography was upheld as a fine example of these principles put into practice.<sup>13</sup>

The origins of Western cartographic science are as much rooted in the theological, cosmological, and spiritual aspects of human consciousness as anything else. Forced to occupy an uncomfortably ephemeral earth, people continued to wish to transcend it: the development of the geometric grid with which the heavens and then the earth could be plotted was tied to the ever-present urge to move toward the comforts and intellectual order of Heaven. As Geoff King suggests, by representing order, society might hope to more closely attain it, and in fact Western cartography became a tool for altering the landscape itself.<sup>14</sup> With the application of other technologies developed in the scientific and industrial revolutions, more and more the land was made to look like the idealized, neatly arranged, even gridded versions on maps. The cartographic science of the period just preceding New World contact was helping to create images of an orderly world, but it was also becoming a tool for controlling it. The map's incredible usefulness was regarded as proof that it presented a superior grasp of reality, and the more the world looked like the map (all rectangles and lines and blank spaces), the more it looked like a divine manifestation.

Throughout the Middle Ages, Europeans continued to openly mix pure geometry with theological and mythic elements. On the margins of every map would be drawn

beautiful cartouches of angels blowing trumpets (and sometimes bubbles), Caesars slaying monsters, bizarre sea creatures, and celestial maps. The angels were the most obvious—in addition to their trumpets they would also be depicted playing with compasses, sheafs of paper, theodolites, and cartographic tools of every description.

After a time (mostly following New World contact), these elements were gradually dropped from common usage; no longer did cartographers emphasize the spiritual origins of their art. This is generally ascribed to a dwindling in faith, a replacement of technical values over religious ones, and a general transformation toward atheism in science.<sup>15</sup> At the time of the first New World voyages, and for some time thereafter, maps are obviously steeped in values of religion.<sup>16</sup> Yet at the same time, European intellectual elites (of which most explorers and navigators—i.e. mapmakers—were not a part) were moving away from Christianity, and this trend eventually became manifest in cartographic charts. In short, map-makers stopped drawing so many pretty pictures of angels, and instead either left margins blank or filled them with illustrations of scientific instruments, landscape paintings, battles which their countrymen had won, impressive navies, depictions of savages, or lists of natural resources and tradeable goods or census figures. There was a shift toward secular realism, and yet the theological assumptions which had always favoured the rationality of the grid did not disappear: they were merely dressed anew in secular garments, hidden as invisibly mythic undertones beneath the grid itself. Mythic in a dual sense: because such assumptions had arisen in ancient mythic tales, but also because they had become so much part of Western culture that they existed as unchallenged archetypes, as the deepest of cultural values, taken for granted as part of the mental map by which European culture was operating.<sup>17</sup> No matter what the scientists said about it they were still trying to reach out to an idealized state of being in the world—a state of being once ascribed to Heaven.

## Thunder

*In olden times, of course, the Ojibwa did not know the real causes of thunder; nor could they conceive of the earth as a tiny satellite in a solar system, itself one of the least of many systems. The earth, insofar as they knew it, was flat and roofed with a flat layer of sky. Man can see only the undersurface of the sky; its upper surface is like this earth, abounding with woods and streams and game, but free from misery and unhappiness...*

*There are numerous myths... describing the origins of various stars, of sun and moon, of wind and snow, and other phenomena about which the Indians pondered. Many Ojibwa still believe in the historic truth of all these stories; others are frankly skeptical of them, regard-*





ing them as pleasant fairy tales. In earlier times sceptics were probably rare, because almost anything could seem possible to people who are ignorant of the physical laws that govern natural phenomena, and who interpret all things spiritually.

- Diamond Jenness, Anthropologist and noted Assimilationist, 1935 <sup>18</sup>

## 15th Century Contact: The Green Sea of Gloom

In the cabin of the small ship, the captain is reading a passage from Marco Polo's book—the one in which he tells of his second trip to the far Far East to meet with the Great Khan at Shandu. In the passage, Polo speaks of the Gobi Desert, edge of great emptiness, where only demons howl and beat drums. They call out to him, invite him to walk and become lost; to become sand, die of emptiness, die of loneliness in a land fit for Jinns.

Legend has it that when the Polos returned to Venice, they gathered their families and friends, threw open their cloaks, and a rain of silk lined with gold covered their boots. Ever since Polo, there have been Franciscan monks following the same tracks. They write accounts of the strangest of men: some drinking blood from their own mares, making war upon others with goat hooves like satyrs; or still others gigantic in stature, covered in hair, worshipers of grass.

The captain crosses himself, takes the hat from his little head, scratches his scalp, pinches a louse, wipes the pus upon his trousers. Black cloak, black trousers, black hat like a little bishop's, but much less erect. Every seven seconds he thinks of a woman's nipple, the nub of a pear, or a similar distraction, then crosses himself again. He stays in his cabin for sometimes days at a time, reluctant to walk upon the decks or to gaze out across the Green Sea of Gloom: the span of water upon which the Saracens say it is foolishness—nay, proof of absolute madness—to sail.

In his cabin, this man closes his eyes, imagines his little boat on the water, sees it bobbing on a net of sticky threads that holds it firm on the surface waves. If not for the mesh, the ship would certainly be sucked down into the foamy green ether, or would rise up into the sky, fall off of the world. What a comfort to see those strands spreading outward, billowing forward from the prow of this ship, becoming solid like a crystal of blue sulphate in an alchemist's vial. A net to trap satyrs and giants, aquatic monsters and daemons, Jinns and whatever men with tails

are about. A net to keep the ship on top and they on the bottom, suffocating beneath the waters. Good riddance, a happy death for the drowned offspring of Pan, thinks the captain. Then he thinks again of a woman's nipple.

An hour later, the ship's boy will arrive, will have to shout twice at the captain's door about supper and a little reef of islands. But, in his dream, the man is listening intently. What was that he heard knocking about over the creaking of the bilge, as if something soft had bumped against the hull?<sup>19</sup>

## Waterdrinker

A Waterdrinker, priest of the Sioux, dreamed that outlandish creatures were weaving a huge spiderweb around his people. He awoke knowing that was how it was going to be and said to his people, "When this happens, you shall live in square grey houses, in a barren land, and beside those square grey houses you shall starve."

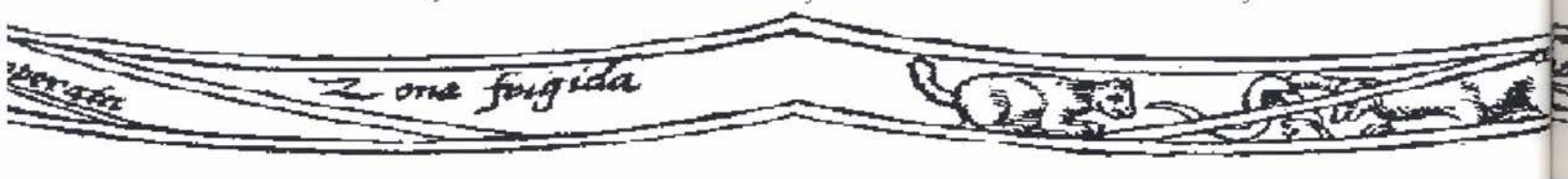
- Eduardo Galeano, *Memory of Fire: Genesis*<sup>20</sup>

## The Petals of Myth

Sailing for Oriental civilizations and unconscious of their true destinations or the motives that drove the sails, Columbus and his successors broke in upon mythic zones wholly unsuspected. It is impossible to overemphasize their error. What soon became known as the "New World" was in fact the old world, the oldest world we know, the world the West had once been. Now the onward press of Christian history brought a civilization into contact with its psychic and spiritual past, and this was a contact for which it was utterly unprepared. The ensuing conflict was so deep that it has yet to be resolved or even understood.<sup>21</sup>

When Europeans first began arriving in the New World as explorers and colonists, they found a landscape that was already full of history. For the most part that history was oral in the Northern latitudes (though even there the indigenous nations had come up with various ways of recording things physically) and the ground literally teemed with the living voices of memory.

*No, this New World was not empty. It was off our charts but it was surely there, lying not in darkness, nor in the white color of terror it would assume as the lines of the charts reached out to account for it. It existed in its own light and colors, its own tides, seasons, flocks and flowers...the New World teemed with its native life. It teemed also*





with the nature-inspired speculations of its humankind, the spectacular petals of myth.<sup>22</sup>

Within this memory lay distinct understandings of space, time, and cosmology which had grown up like vines around a trunk of local experience. The societies of this New World had as primary technologies, both practical and spiritual, their myths, stories, and also the technology of dreaming.<sup>23</sup> As it happens, they also had maps, very different from the Western versions. But these were technologies which most of the new arrivals chose neither to privilege nor to understand. Instead, these Europeans began immediately to catalogue and map everything according to their own cosmology of geometric grids, saying "History begins here and now, and this is the way it will be recorded, in lines and rectangles and writing." Inky blots. The white colour of terror.

Frederick Turner has suggested that the gridded emptinesses inherent in Western cartography functioned to remove a sense of life from the landscape and overwrite it with the residue of western myths, including, we might suppose, those mythic remnants contained within the methodology of cartography itself. As Geoff King has written, "The Western colonial map is an abstraction that tends to extinguish other dimensions of reality in an act of violent appropriation."<sup>24</sup> This estrangement from 'other' realities included a philosophical negation of any other human perspectives which may have preceded European arrival—especially if they did not mesh with the principal colonial project: ferreting metals, furs, and every other commodity by any means necessary. They laid these grids, blank as bleached wool, across a fresh landscape, and in a wink a million voices became silent to Western consciousness. It was as if they had stuffed the pages of their maps and journals like cotton into their ears.

### Epilogue (a choice)

**D**ecension: *A name on the map is often the only tombstone of a murdered people.*<sup>25</sup>

**O**ptimism: *The best way to argue against the world view expressed on one map is to offer a rival projection.*<sup>26</sup>

(But alas, that is a whole other story altogether.)

### Notes

- 1 Thematic material for this essay inspired by: Denis Cosgrove, "Landscape and Myths, Gods and Humans," *Landscape: Politics and Perspectives*, ed. Barbara Bender. (Providence: Berg, 1993).
- 2 Peter Nabokov, "Orientations from Their Side: Dimensions of Native American Cartographic Discourse," *Cartographic Encounters*, ed. Malcolm Lewis. (Chicago, Ill.: The University of Chicago Press, 1998).
- 3 See Cosgrove.
- 4 Simon Blackburn, *The Oxford Dictionary of Philosophy*, (New York: Oxford University Press, 1994).
- 5 Geoff King, *Mapping Reality: An Exploration of Cultural Cartographies*, (New York: St. Martin's Press, 1996) 140.
- 6 See Cosgrove; also Blackburn.
- 7 Hugh Brody, *Maps and Dreams*, (1981; Toronto: Douglas and McIntyre, 1989) 45-6.
- 8 King 140.
- 9 Ibid 141.
- 10 Frederick Turner, *Beyond Geography: The Western Spirit Against the Wilderness*, (New Jersey: Rutgers University Press, 1983) 91.
- 11 Cosgrove 288.
- 12 Ibid 288-89.
- 13 King 141.
- 14 Ibid 141.
- 15 Turner 90; King 141.
- 16 King 141.
- 17 For a discussion of the idea of myth as invisible, unchallenged cultural archetype, see the introductory chapter of: Ronald Wright, *Stolen Continents: The New World through Indian Eyes*, (Canada: Penguin, 1992).
- 18 Diamond Jenness, "The Ojibwa Indians of Parry Island, Their Religious and Social Life," *Canada Department of Mines Bulletin*. No. 78, Anthropological Series No. 17, 1935. (NP).
- 19 Turner 86-90.
- 20 Eduardo Galleano, "Genesis," *Memory of Fire*, trans. Cedric Belfrage, (New York: Pantheon Books, 1985) 41-2.
- 21 Turner 95.
- 22 Ibid 95.
- 23 Ibid 92.
- 24 King 145.
- 25 c.f. Wright Chapter One.
- 26 King 21.

