

The Mind is a Brittle Object: *the animal powers have their way with me*

Does someone out there truly believe a bear cares whether it gets shot at a bait station or splashing in a salmon stream or frolicking in a berry patch, or that a wolf cares that death comes in the form of a single bullet from a quiet marksman hidden 300 yards away or a hail of bullets from an airplane or the noose of a snare? The means of death are irrelevant to these animals. They want only to survive, but they can't.

Who Ever Said Hunting was Supposed to be Fair? By Craig Medred, Alaska Daily News column, January, 2004

I can see myself, eyes forward, editing towards perfect sentences on my word processor for a grade 4-6 teacher to encourage students to learn about wildlife management. My desk faced the coffeepot so I started conversations with any biologist or manager who visited this back corner of the Alaska Department of Fish and Game building in the bowels of Juneau officialdom. Invariably, the desire was probably just to get and drink a cup of coffee in peace but I often began conversations whether the coffeepot visitor was willing or not.

“So,” I say. “What about that Craig Medred column?”

“What about it?,” he says edgily or with a suppressed oh-no-don’t-start-anything undercurrent.

“Do you think it makes a difference how a bear or wolf dies?”

The blood drains from his face and the eyes dart. He stares at me blankly. He turns to leave, but hesitates, in the way that moose always stop and give you that do-I-really-have-to-go? look. I sense my opening.

“Don’t you think it might depend on whether you think they have” (long pause) “souls?”

Pure panic and the why-women-shouldn’t-be- in-game-management eyeroll. He’s gone.

“I mean us - and them,” I toss off.

I arrived in Alaska in 1974 to become a moose person. Enamored as I was of the states of mind that could be induced by drugs, rock and roll, and long trips into nature; I thought I was fleeing dimly-imagined, shudder-inducing conventional life paths open to a nice Jewish girl from Billings, Montana by way of Stanford University. I arrived to begin a program that would lead to a Master's degree in Wildlife Management, a seeming step out beyond the literality of zoology into a field where human nature was at stake. I was told it required both science and art, and eventually glimpsed the harsh and sweet humanity that raged at its core.

I first became entangled with science in 7th grade under the guidance of a gnomish Mr. Henley. I remember him as both beaming and balding, wearing a white shirt before they became buttoned down and a somewhat improbable bow-tie. Rather than laying on us the reams of facts that science generated, he strove to make us figure out what science was really about. We observed, we asked questions, we generated hypotheses, we predicted and experimented and concluded. Mr. Henley required that we actually carry out a science project each quarter. The 50's mentality of "duck and cover" nuclear bomb drills and shelters and the potential genetic effects must have weighed heavily on my mind since I came up with two projects related to the effects of radiation. My first project involved tadpoles, which involved an actual field trip to net them in a pond near my house. I made a phone call to the local hospital and was given an appointment to bring my jar of tadpoles in for an x-ray, my last free experience with an x-ray machine in the name of science. My second project involved barley seeds, which even in pre-Internet times, I learned could be ordered in an irradiated and non-irradiated state from the Argonne National Laboratory by aspiring school children scientists. This charming mail-out project would now probably be considered a terrorist act. For my third project, I read somewhere that the color of adult meal worms were affected by day length during the larval stages (i.e., more light, darker meal worms). I found out I could buy meal worms from a pet store which fed them to chameleons and frogs. I could order them but had to buy the entire 50-pound bag they came in packaged in, like dog food.

I can't remember what we did with the extra 49 pounds. My parents supplied a lamp and fortunately, my allowance/research budget could also extend to cover the high-tech item of a timer to turn the lamp on and off in simulated days and nights.

After a few days, I found the tadpoles dead and beginning to reek. After only one cycle of light, the mealworms also had a funny odor and were blackened husks. The barley plants sprouted and grew and I collected actual data to demonstrate that irradiated seeds produced fewer plants from the same number of seeds and paler plants. (Richard, my meticulous older brother who was to become a professional statistician, always suspected a watering bias.) Mr. Henley gave me an A for each of the projects. I had indeed asked scientific questions, developed hypotheses, set up experiments, and communicated my results in a lab report. In the case of my failures, I identified the variable (oxygen for the tadpoles, heat for the mealworms) that aborted the intended experiment. But even though my amateur conduct of science involved death, this somehow remained beside the point. My role in placing the tadpoles in the way of harmful rays and suffocation, and the mealworms in the way of a death star went unremarked and unpunished.

Biology lab was pure revelation –the insides of animals, the forms of gut and gonad, vessels and ganglia, in organized tableaux of connection and function just beneath the skin and connective tissues. But it also involved ghastly cats whose veins and arteries were filled with hard plastic and who slowly congealed in pools of body fluids mixed with biting formaldehyde as their parts were removed and examined over several weeks. Frogs were handed to us alive and we were instructed to hold them around their middle, then to smash the back of their heads briskly on the desk, to stun them and pith their brains into mush so they would be motionless when we examined their still-beating heart.

In college, I began with the idea of studying biology, but was overwhelmed by large classes filled with pre-med students who created competitive standards for memorizing large quantities of material. I faltered at organic chemistry, getting lost trying to understand chemical bonding processes that I could not visualize and understand and seemed to lack the capacity to memorize.

It was like trying to learn the Chinese language while lacking the aptitude for remembering the attributes of the elements of the ideograms. I wandered into alchemy as a subject to bolster my chemistry grades with credit in directed reading. My professor chose to look on this as a healthy interest in the history of chemistry, even revealing and demonstrating his own interest in medieval glass-blowing techniques. But I kept wandering, into the thought patterns before science, through a maze of symbols signifying psychological entanglements with matter both heretical and transcendent. Before the logic of proof and disproof set in and ruled, experiments could have something to do with salvation; the work could be that of the human soul seeking to transform its base nature, so like lead, into the pure gold of divinity and immortality. The subsequent triumph of scientific method and truths felt like a mental curtain descending.

Meanwhile, science was my part-time job. I worked at routine bottom-feeder lab technician jobs to help pay for college and worked with a variety of “study animals.” I fed the butterflies in Paul Ehrlich’s lab after his *Population Bomb* went off and he was seen more often on late night television than at the lab that inspired his musings. The checker spot butterflies who flew free in the Jasper Ridge Preserve a few miles from the Stanford campus were the subjects of caterpillar feeding experiments in the lab related to the relative effects of genetics and camouflage adaptations to food plants on the eventual color patterns of the butterfly wings. I fed caterpillars, a simple job of making sure they are placed on, and stayed on, the right food plant and the plants were kept far enough apart that the caterpillars couldn’t move to another plant. I also fed the adult butterflies, who would normally eat nectar from flowers and rely on their extraordinary vision to zero in on ultraviolet landing patterns on the petals. But since the genetics of the adult butterflies were the experimental variable, each genetically-related group was caged together and taken out only to be fed sugar water in lieu of fluttering about in hunt for nectar. Sugar water has neither color nor smell, so feeding a butterfly is a relatively complicated maneuver. I would bring the butterflies in jars into the room, close the door, and take them out of the jars one at a time. As I grasped each butterfly, I avoided damaging its delicate wings by sliding my thumb and

forefinger on either side of the thorax just at the base of the wings, taking care not to dislodge the delicate scales that are essential to its aerodynamics. I avoided looking directly into their glittering complex of lenses or I could lose my nerve and let go. But persevering, I would hold the butterfly firmly but gently, and use a long pin (insect mounting pins worked well) to probe the mouth to locate the curled-up tube which was the feeding proboscis, and then carefully unfurl it. I would maneuver the tip into a drop of sugar water on the desk. The sugar taste would register on the concentrated taste cells in the proboscis tip and the butterfly would begin sucking daintily and then greedily. I could let go at this point for it would suck and suck, opening and closing its wings in the delirium of the sugar rush. After several days of my careful tending, the butterflies were ground up and added to the gels whose colored bands mapped genetic similarities before the days when total genomes could be laid bare by biochemical magic.

My other lab job involved white mice in the lab of Colin Pittendrigh. Pittendrigh was a famous undergraduate lecturer who ranged from his discoveries about mosquito ecology in the bromeliads of the tropical forests of the British Empire to his more recent discoveries about biological clocks in a style that would have been way over the top in anyone without his mane of white hair and rich Oxbridge accent. Like Ehrlich, he commanded a large lab to conduct his biological clocks experiments. The lab had roomfuls of wooden cabinets divided into boxes, each one with a white mouse in a cage with food tray, water bottle, exercise wheel, and light that could be set with a timer to a particular light/dark regime in the manner of prisons everywhere. The pattern of activity by the mice was recorded in seismograph etchings representing the revolutions of the exercise wheels. My job was fairly mindless – it consisted of adding food pellets, filling water bottles, and cutting apart the seismograph record apart into records for each individual animal that I would then pasting onto a separate sheet to create a continuous record for each animal. At the end of the experiment, I was told to dispatch the 50 mice into the incinerator. This time, I balked and received a two-day reprieve to find an alternative. There were, alas, no places to put mice out to pasture who had lived their lives for science. Setting them free was not an

option and they were presumably deranged by their life experience, or lack of it, to the extent that they couldn't be sold or even given away as pets. I finally took some consolation in finding a pet store that would take them and give them the somewhat appropriate food chain fate of being fed to a boa constrictor.

I took to hanging out around the neurophysiology lab, attending graduate seminars about action potentials and taking high-level classes about learning and memory. I became dazzled by the conundrum of brain/mind, an enigma that fascinates me still. But I soon got the distinct impression that the mind part of the equation was not a particularly reputable subject to the neurophysiologists who spent the majority of their time operating, crudely, on a large number of their particular study animal to tease out and study the nervous system part of the equation. The lovely marine invertebrate *Aplysia*, which is classified inelegantly as a sea slug, was the animal of choice at the time due to its small number of relatively giant neurons that could be melded with electrical systems, then trained to learn a simple behavior whose electrical firings were recorded in the luminous tracks of an oscilloscope.

Confused about my future direction, I dithered about leaving Stanford after graduating and continued with lab tech and teaching assistant jobs but began to feel increasingly like a guest that had overstayed my welcome. One day, another student took me into his lab tech job of feeding cats. These were no ordinary cats. They were study animal cats being used in follow-up studies to the ground-breaking analysis of the development of the visual system by the scientific team of Hubbel and Wiesel. I hadn't really grasped the reality of the experiment until I was surrounded by cats whose faces ended half-way up in an elaborate metal box studded with electrode connector points. They were like a high-tech Hieronymous Bosch idea of a cat. This connection was visceral, propelling me out and away from the laboratory science that could create such a life.

Going to Alaska was a quasi-rebellion. Quasi - because I arrived with a graduate fellowship and a project to study moose behavior. Rebellion because I was to study a beast too large and wild to be on the receiving end of electrodes and cranium removals, so not about brain at all but

behavior being manifest from the “black box” of the beast. Quasi- because a field study wasn’t that original - several of my friends in the Human Biology program at Stanford had their field adventures among Jane Goodall’s chimpanzees. But whereas chimps were on the cutting edge of human origins, moose were completely outré to the world of early 70’s Stanford by any measure, where scientists were famous for unraveling the mechanisms of DNA and protein synthesis, visioning memory as a hologram, and inventing transistors. Moose were thus a study animal of wonder, so uncool I thought they were cool.

I soon learned after my arrival at the Department of Wildlife Management at the University of Alaska, that the most frequent relationship of moose to Alaskans was of meat to the table. Second, in suburban Fairbanks and Anchorage, moose were a neighborhood experience - the visitor to the may eat your garden or exotic shrub; terrorize your dog or cat, tear down your fence, become entangled in your swing set, or scare your child to tears on a walk to school. Third, moose were a beastly, but comic delight, immortalized in trinkets and cartoons. Moose figure in stories, usually as the unpredictable objects of wily and resourceful hunters or as a startling and incongruous appearance at a baseball game, on the bicycle or jogging trail, outside your window, or as messy flattened fauna on the railroad tracks.

With the exception of squirrels and other small mammals, you couldn’t find a more prosaic member of the wildlife clan that mediates the material and mythological realms of Alaskan consciousness. Anthropologist Richard Nelson was once told by the Koyukon Native people of Interior Alaska that the moose was the only animal not even mentioned in “stories of the Distant Time” in which most animals have a role in creating some otherwise inexplicable aspect of the world and Raven was the creator of humans.

Moose as object of science is in fourth place after meat, nuisance, and inspiration for trinkets and stories. Their observers were then mostly a tribe of hardy real men who flew over them in airplanes to count them, occasionally drugging them with darts and rassling them to the ground to palpate their pregnancies or collar them with tracking devices. In 1974 when I arrived in Alaska,

the dynamics of their populations were of intense interest to hunters and the subject of a raging debate about “controlling” the populations of wolves who preyed on moose. Wolves have the dubious ecological luck of occupying the same food chain position as humans, doing an overly efficient and sly job of hunting down moose and caribou, thus competing directly with humans. Our technology of snow machines, airplanes, and high-powered rifles seem hardly a fair match with a competitor that has only slashing teeth and canine body language to sustain cooperative hunting in packs. But, as Craig Medred duly opined years later, “fairness was an idea brought to the hunt in the late 1800s by a bunch of rich, old white guys ‘fair chase’ had little to do with being fair to the animals.”

Behavioral studies are rare in wildlife management in general, but they become slightly more likely for graduate students, because graduate students come cheaply. They are even more likely for female graduate students, since few macho skills are required to follow slow-moving grazing animals like moose around on the ground. The burning research question I was to be paid my \$400 monthly stipend to pursue turned out to be whether moose were “good mothers.” This was an important question to wildlife managers because moose hunting seasons occurred in the fall and hunters seemed to have a deep concern that orphan calves could not survive the winter. If it could be demonstrated that the presence of the maternal dynamic Bulkness didn’t make much difference, so the manager logic went, then hunters could be persuaded to kill cow moose without qualms in a places where bull moose were relatively rare

The way to answer the question seemed to be to follow some cows and calves around during the winter and observe maternal behavior firsthand. A Moose Research Center exists near Soldotna, Alaska, where small numbers of moose are enclosed in mile-square pens in which even a green female graduate student could be expected to navigate with a compass and manage to find her way back. Several of the moose had been equipped with radio collars. I learned to work the tracking equipment and got around on the old-style of rawhide snowshoes that were as long as I was tall. Uphill was a particular challenge with the tendency to slide back down and get the

trailing tips crossed and anchored, and a single well-placed branch of a shrub could snag the webbing and tip me over into a face plant in the snow.

The Jane Goodall groupies had impressed upon me that the scientific observation of animal behavior was supposed to be about being the neutral observer, whose presence doesn't change what the animal was going to do anyway. Never mind that Konrad Lorenz became the archetypal mother to generations of goslings. Never mind that Jane herself had one of the most meaningful moments of her life when a silverback gorilla gently held her hand. I was supposed to crunch through the woods on snowshoes, sneak up on a moose, then stand in one place for up to three hours, stay warm by adding four or five layers of clothing, eat my lunch, take notes or talk into a tape recorder, fidget, and eventually relieve myself by removing and replacing several layers of clothing, all without affecting the moose's behavior. This definitely conflicted with the karmic evolution of moose who, being an herbivore (albeit a large northern forest herbivore), was very nervous about the possibility of carnivores at all times. Moose are near-sighted relative to our 20/20 view of life and their large nose is more about submerging the mouth to root among the lily pads than keen smell, so the ears have it. Their large ears swivel like furred elliptical radar dishes in all direction and willow-crunching is punctuated by pauses to direct penetrating, myopic stares in the direction of noises off. In the winter, however, moose are reluctant to leave their meal. Thus they inevitably hesitate after their first steps and before ambling or trotting off from a perceived danger. I soon learned that they tolerated my presence as a source of annoying noises that were unlikely to be followed by negative consequences which I thought was close enough to the neutral observer concept.

During winter, it turns out that moose mainly move around looking for choice willow patches, eat, lie down and ruminate, doze, and react frequently to noises. As the winter wore on, I began to crave something more than the observation of these repetitious simple behaviors. I wanted a relationship with my moose. This probably had much to do with the state of my human relationships. I was living in a Fish and Game cabin miles from the nearest town with a single

male biologist whose recreational reading matter consisted of a seemingly eternally-interesting tall stack of Playboy magazines next to his easy chair in the cabin and Muzzleloader magazines in the outhouse. (My putative rebellion consisted of sneaking in a CoEvolution Quarterly.) He prepared his dinner each night by pan-frying the hunk of bloody game meat that had been left out all day to thaw. I was then allowed to boil my rice and steam the end-of-the road vegetables that were a pale memory of their truck farm cousins in California food co-ops. We drove into town together periodically where I was provided free housing on a cot in a loft above the Fish and Game boat and vehicle storage area. I did my laundry, I bought more vegetables, and I had no choice, despite the *Monkey Wrench Gang* admonition, but to eat at a restaurant called “Mom’s.” I was spared the possibility of playing poker with a guy named “Doc” because the week-end poker games that raged below my sleeping quarters into early morning were male affairs, to which an invitation for the pleasure of my company was about as likely as one to high tea in Soldotna. One time I returned just before quitting time at Fish and Game and the secretary thought I should know that the police had been looking for me. The deposit of my meager graduate student stipend had apparently been delayed so I had left a string of bounced checks in the wake of my last trip to town. She attempted to console me. “Sweetie,” she said, from the depths of her midwinter persona, “my mother said there would be days like this. What she didn’t tell me is that it could be weeks and months.”

In addition to not altering the behavior of the study animal, a second cardinal rule of the study of animal behavior, as dictated by the Alaska Department of Fish and Game, was not to name the individual animals. Jane Goodall’s David Graybeard, Flo, and Figan were strictly verboten, surely on the way down the slippery slope to Bambi, Peter Cottontail being chased by the demon farmer, and sartorially-inspired aristocrats at Toad Hall. Of course, there were several moose at the Research Center who were captured frequently and kept in small pens for close observation and experiments, with names like Wally, after Walter Hickel, or Rastus, racially inspired by its unusually dark coat. I compromised by greeting “my” moose by their collar numbers. “Number

69!” I would call out to my most locatable moose as soon as I caught a glimpse of her clownish yellow and green collar or yellow ear tags.

She appeared, if not happy to see me, at least willing to acknowledge that hanging out together would be okay and my noisy *faux pas* would be forgiven. The queen of solemnity listened thoughtfully as I passed the time of day. She agreed that the Playboy-reading hand-loader was a pill and that poker night was a drag. Yet she viewed me without comprehension or apparent sympathy as I proceeded through the seven stages of grief that accompanies being a human standing-out-in-The-Cold-waiting-for-a-moose- to-decide-to-move after I had donned the last layer of available clothing and converted the last quanta of energy from the last handful of gorp. Some days I would settle into her rhythm, eating my lunch as she crunched, peeing after her, and even dozing standing up as her large eyes closed and trying to keep my puny ears tuned. One day, just at the turn of winter into spring, I had my Zen Moose moment, merging into the cold, her Mooseness, and the side-by-side green and brown willow leaves before my eyes. One moment, I was preoccupied with what I was going to eat for dinner and the stiffening feeling in my fingers, and only barely aware of the life surrounding me. In the next moment, the moose was not my study animal, not my friend-substitute, not a comical animal designed by a committee, not a prey animal at the end of its winter tether. I was not a quirky post-adolescent, not a scientist, not cold, and not an observer. She – and I – were just of that place and of that moment out of time. The leaves and the moose and I went in an instant from figures to ground.

I never studied wolves as a wildlife biologist. My only experiences were the fleeting ones of a pair crossing the highway at night, listening to their howls from a tent in Denali National Park, seeing a pack on the move the next day, finding dens and tracks and scat. But this evanescence suits them, for while moose are relatively mythless, wolves are Little-Red-Riding-Hood’s-Grandmother-Eater; Watch-Sasha-being-snatched-off-the-sled-on-the-Russian-steppes; Romulus-and-Remus-suckled-by-a-she-wolf mythic.

This mythic nature was pretty much lost on hunters and Fish and Game biologists. They lobbied endlessly for trapping and aerial hunts of wolves in order to produce more moose for human hunters. In the early 90's, they succeeded in establishing a hunt conducted by the biologists themselves. In Fairbanks, they hired a mythic human character, Joe Want, as their wolf skinner. Joe Want was the kind of guy who wore oversize hip boots year-round, stuffing grass into the toes for insulation when the temperatures dropped below zero, and more grass when they kept dropping. He was the kind of guy who guided bear hunts off the Haul Road on horseback leading a pack string of mules well into the 80's. When I lived in Fairbanks and worked for Fish and Game after graduate school, I had an initial skirmish with Joe when I made a sympathetic face over a row of dead caribou stretched out on the lawn in front of the Fish and Game building. Joe launched into a lengthy diatribe that began with "You wear leather shoes, don't you?" But we eventually established a wary kind of storytelling relationship based on mutual incomprehensibility that edged into cynical respect.

One day after I had moved to Juneau and was visiting Fairbanks, I stopped by to say hello to Joe and found him in his own lair, a separate building from the main Fish and Game one, kept cool for the meat locker effect needed for the freshly-skinned carcasses hanging from the ceiling and the wolf skins stretched on their frames. But it was Friday afternoon, the traditional time for the end-of-the-week drinking party whose starting time, I recalled from my Fairbanks years, seemed to creep mysteriously forward during the winter. This was inevitably followed by a crack-down from the mysterious "Juneau" that was responsible for all insane bureaucratic edicts, such as the one that prohibited alcohol, much less alcoholic parties, in State buildings. This was apparently a post-edict period since the keg of beer was stashed in the skinning shed rather than being in plain sight in the conference room in the main building. Beginning around noon, biologists began arriving, leaving behind a ghost town of desks, in quest of a "don-t-mind-if-I-do" glass of beer. Soon, some 50 people were packed into the shed.

Fish and Game parties had a particular group protocol which consisted of serial alpha-male

storytelling about hunting, fishing, or the perils of the job interspersed with teasing of favored beta-males and females. The story teller or teaser held the floor. Side conversations were discouraged. As I found myself back in a familiar audience member role, I had plenty of time to take in the ambiance. I was uneasy, more uneasy than I had ever been at Fish and Game gatherings. Despite Craig Medred's characterization of the lawless, desperate aboriginal; rules about the treatment of dead animals were, and remain, central to Native Alaskan cultures. For the Koyukon, I recalled from Richard Nelson, wolves have great spiritual power. Elaborate rules govern people's behavior toward wolves and severe punishment comes to those who fail to show them proper veneration. And here we were, drinking beer and bragging in the midst of their meat, bones, and inside-out skins. Were we really exempt from rituals to host the spirits of the wolves perhaps hovering around us?

Who said hunting or trapping of any sort was supposed to be fair?

Certainly Alaska's aboriginal peoples never believed that. When your life depends on killing wild animals for food, there is no time to worry about fairness.

Alaska Natives held a deep and abiding respect for the wild animals on which their survival depended. They understood the foolishness of waste. But as to being "fair" to the animals they sought to kill, forget it.

Nobody needed rules when hunting was truly about subsistence. Then you killed what you needed to fill your belly. If that meant you wiped out all the animals in one valley, well, you moved to the next valley. - Craig Medred

It's many years now since I was welcome, or at least tolerated, as a silent member of the audience amidst the wolf carcasses and years after my later coffee pot ripostes. I moved on and left my cubicle, and the department, for good. My unquestioning faith in science vanished after 11 million barrels of crude oil was spilled by the *Exxon Valdez* oil tanker and I witnessed too

much of the best science that money could buy. The Habitat Division, where I kind of fit into the culture of us vs. the rampant developers, has been politically vaporized. Part of what propelled me from the world of habitat and wildlife management was my deepening understanding of the traditional relationships of animals and humans embedded in Alaskan Native cultures. I met Piers Vitebsky, a Cambridge anthropologist who has lived among and studied the Siberian reindeer herders and is an expert on shamanistic practices. I spoke about the possibility of developing cross-cultural education programs about the management of wildlife. “But you must leave the corral,” he told me, and I realized that Fish and Game was an enclosing identity that brooked no meaningful crossings of boundaries outward and no ways back.

Kachemak Bay, this place where I live now is edgy - on the edge of several cultures, both Interior and coastal Native cultures that mixed and influenced one another during 6,000 years of prehistory and various American sub-cultures during its 200 years of history. Dena’ina Athabascan Indians were the most recent arrivals from Interior Alaska to the edge and the best of both worlds, log houses and moose from the land; skin boats and clothing and seals from the sea. They left little behind, subscribing to an ethic that returned animal remains to their sources – land animals to the land; marine animals to the sea. But below the scant evidence of carbon in Dena’ina hearths where the meat was cooked are layers of shell middens, the northern and eastern edge of garbage heaps for waves of the Alutiit or Chugach Eskimo-speaking peoples radiating eastward and northward from Kodiak and the Alaskan Peninsula. They beached their kayaks on Kachemak Bay beaches and gathered its bounty of clams from the beaches, halibut and other flatfish from shallow waters, and seals and porpoises in the waters. Possibly, so the oral histories hint, Unangan people also came, from the Aleutian Islands stretching west to Asia. Some of these early people left behind ornaments of exotic jasper, stone lamp basins in which stone seals arise in the midst of their oils, and human burials whose skulls held bright stones in their eye sockets, presaging an appreciation of beauty that is sustained by the many artists that live here now on the edge.

The traditional belief of the Chugach and other Eskimo-speaking peoples was in the existence of *inue* or “indwelling” unseen powers in nature that were the internal structuring forces immanent within and imparting the very nature of phenomenon. The world was ensouled, with the *inue* cycling through living beings, entering at birth and departing at death. In humans, the *inue* acquired mind, and were personal to each individual, and only left during sickness and madness or at death. In addition to humans, individual souls were accorded to certain of the animals and while different cultures had different ideas about which animals have individual souls, for the Chugach, it was bears, whales, and dogs, the nonhuman alphas of land, sea, and camp. Raven was in a different category altogether, or several categories all at once as Creator, culture-hero, and all-too-human trickster who is often the butt of his own tricks and victim of his greedy appetites.

The *inue* have their counterparts in the thinking of the early Greeks. In Homer’s play, the word “psyche” referred to an individual human life, In the works of the early philosopher/scientists; the word referred to the ultimate substance, the source of life and consciousness, the spirit of the universe. By the 5th century B.C., psyche had come to mean the “conscious self”, the “personality”, even the emotional self. Finally, in Plato’s writings, it took on the meaning of “immortal self” - the soul, in contrast to the body. The psyche or soul was not confined to humans. Metempsychosis, the transmigration and reincarnation of souls, was also a Greek belief; “psyche” was also used as the Greek word for butterfly. The Greeks would have believed that a checker spot butterfly was no mere study animal, but a soul of the dead. The Latin word for soul is “anima,” source of the word animal.

In Western thought, it was Descartes who split apart soul and body in the 17th century and shrunk the psyche from an essential substance shared by all living things into the container of the individual conscious human mind. He withdrew the soul from nature; from all animals and plants, and from the human body as well. This dualistic split between body and mind gave science the whole of nature, including the human body; secularized nature, and handed the soul off to the arts

and religion. At the end of the 18th century, the scientists, the explorers, the trappers, the goldseekers, and the missionaries brought this legacy to Alaska – an insensible environment from which souls had departed or were at least no longer sought. The Christian religion accepted its role of preoccupation with the state of individual human souls but drew the line at firmly at plants and animals which were considered soulless. The missionaries had arrived to save Alaska Native souls, failing to credit the belief in spirit already in circulation within and among every living thing. In a fit of imperialism akin to book-burning in literate cultures, they forbade traditional dancing and feasting and the making of the masks and regalia that were the means of shapeshifting between dancer and animal. Shapeshifting, mythical stories, *inue* all went underground, like alchemy and other heresies. The Native children forced into schools where they were punished for speaking their Native language began to lose the intricate ecological knowledge woven into the words and categories of the living world.

From the other side of the cultural collision, with the exception of bears, whales, and dogs, animals had a collective, or species, *inua*, which placed a hunter in particular peril, since to treat one of the hunted animals improperly was to offend the entire species and reduce the chances of survival for his family group drastically. The shaman was the only person who could separate his *inua* from his body in trance and travel to realms above and below the horizon of human attention and experience, like the flight of birds, where he might entreat the animal souls to return in abundance. But with the advent of contact, deadly smallpox and influenza epidemics overtook the healing powers of the shamans and their role in wildlife management withered away to be replaced eventually by that of the game biologist who flew in airplanes and made entreaties to a Board of Game.

Abundance is at the heart of survival, the graphic rise of the curve that cushions the fate of every living thing. Wealth is the more tangible human construct. In all cultures, wealth is material, a concentration of “matter that matters.” Wealth is intimately bound up with culture, from the future value of a pile of salmon in the storehouse to the “futures” value of a mineral

deposit to the speculative value of a stock portfolio “unrelated to past performance.” Its capture and distribution are the very stuff of social relations. It is pyramidal with wealth begetting wealth through the control of goods, people, and technology to beget more. Barter salmon for another fish trap, command the people who depend on your largesse to survive to attack and enslave others, invest in mutual funds. Wealth for the Dena’ina and Alutiit people who first occupied this bay was as tangible as salmon and berries.

Abundance, on the other hand, is a state of mind or of the psyche, a feeling for a future of nurture. It is a muscular state of mind in Alaskan Native cultures, building up or wasting away in response to the exercise of relationship. It can arise in the stolid gaze of a moose, the whirling of bird clouds, the thrashing boil of fish silver, the broad foretaste and aftermath of the summer light, the dancing fringe of robes, the clapped and drummed rhythm of the Seal in the water. Abundance requires attention and proper behavior on the part of people who depend upon it. The Yupiit place open hands on the outer circle of their masks. The hole in the center is the passageway for their animals they must kill for food to return the following year. But they will only return if properly treated, hosted with respect and gratitude, so the relationship is not broken. Abundance exists in relationship to its eternal return and the rituals that sustain the cycling between the worlds.

The boundaries between the human and non-human are shifting and permeable. In story, animals transform themselves to be humanlike and humans visit the animal world of animal persons. They depend on human actions to keep them in place. The undifferentiated unity of the universe requires human attention to rules as acts of participation necessary to create difference and maintain connections. The rule is a boundary; the rule is a bridge. - Anne Fienup-Riordan, on Yup’ik culture

The Koyukon Athabascan people call the relationship “luck” – “the powerful force” as

described by Richard Nelson, “that binds humanity to the nature spirits and their moral imperatives . . . the difficulty is not so much in getting it but keeping it. Luck is sustained by strictly following the rules of conduct toward natural things. People who lose their luck have clearly been punished by an offended spirit; people who possess luck are the beneficiaries of the force that creates it.”

Before I followed moose around, I had never hunted. After I followed them around, I vowed never to hunt moose, but I decided to go on a caribou hunt. Getting to the point of taking the shot required planning, winning a lottery for a permit, convincing my friend Dan who was both hunter and Quaker to accompany me, and practicing with a rifle which, improperly-braced, kicked back and left embarrassing, tell-tale bloody scope marks on my forehead that lasted for weeks and scars that remain today. I plotted a hunt route through country where my insider knowledge as a student in wildlife management and backpacker gave me an advantage. After a long hunt, I shot a large buck caribou just at dusk. Dan and I packed out the meat and the hide in unseasonable 80-degree September heat. Magpies pecked holes in our game bags and the heat fueled the rapid hatching of maggots which we picked out one-by-one. Frazzled by heat, mosquitoes, blisters, and encroaching vermin, we decided a ride proffered by the kids of a down-on-their-luck mining family on their dog-powered VW bug shell fit within the rules of a “walk-in area/no motorized access.” The discovery of a hole in my pants’ pocket was the last blow, because it meant that I had shed my car keys somewhere along the 18-mile hunt route. The hot-wiring skills of the kids’ father were required so we could make our hasty urban hunter exit.

The hunt made a good story in the oral tradition with its twists and turns of the inept and suffering hunters and the backstory of the long-suffering guy friend and the blind optimism and ineptitude of the woman on her first hunt. But I told it for many years with little attention paid to the caribou other than as the subject to be found and killed and a mass of meat and hide to be brought back. So perhaps it is fitting that the beautiful tanned hide burned up in a fire that consumed the contents of only a few rooms in my house in Juneau. With its cue eliminated, the

story itself seemed to have been incinerated, much to the relief of my friends who had heard it one too many times.

Several years later, when I lived in Juneau, I took a road trip back to Interior Alaska and stopped at the entrance to place where I had hunted the caribou. I was stunned to see that the drainage contained more than dreams of gold. In the place where a hopeful family had panned and sluiced a few nuggets each day, a major mining development had occurred. A bridge for mining trucks spanned the creek I had gunned across in my Datsun pick-up, spewing rocks and praying for a dry distributor. A well-maintained, wide gravel road stretched up the valley in the place of the crude, narrow trail where we had blistered our feet. My body vibrated to the pounding of the mine operations in the distance.

I had come back to the scene so I could write the real true story of the hunt that would be inspired by the correct details of landscape and blooming wildflowers. I sat down and began to string words together but then had the odd sensation of being watched. I turned to see two enormous great horned owls peering at me. They had the gawkiness and awkward habits of recently-fledged teen-agers. The small spruce they were perched in was too small to bear their weight and they clung to branches that were bending and tilting them down towards each other and the ground. But they hung on and kept their unblinking eyes fixed on me for as long as I could remain still.

The mine went into the story with the 18 miles, the blisters, the sunburn, the maggots, the lost keys and the junior dog mushing contraption. But again, the story seemed doomed to extinction – these writings were in a notebook that disappeared in an airport luggage heist on my return from a trip to Moscow in the post-glasnost days of the no-longer-the-USSR.

That caribou hunt was my first and last hunt. Craig Medred's pronouncements stirred up the true story of the hunt, the one I had never told or written down. It boiled to down to the long moment between aiming and squeezing the trigger. In that moment, I was completely focused and conscious only of the image in the rifle scope and the blurred being on which the rifle was

trained. My human intent fused with caribou vitality in an all-encompassing way which the subsequent speeding bullet only mediated. In that moment, it mattered intensely to both of us the manner in which that vitality departed the caribou's body. In that moment, we were joined in knowledge that one of our lives was in danger and joined in belief that both of our souls were in peril. There were definitely rules to be obeyed. The future of abundance in my life hung in the balance.

We gutted and dressed the caribou as the night surrounded us in dark waves. Blood from our clumsy hands and sharp knives mingled with that of the caribou. Each rustling in the bushes quickened my gut with grizzly portents. We each lashed a quarter to our packs and hiked about a mile to a cabin where we took shelter. Within hours of the last caribou breath, we boiled up the heart. The energy coursed through my spent body like a lightning bolt.

On my return to the area of the hunt, in the moment of owl presence, I mirrored the incomprehensibility that, surrounded by a vast expanse of wildlands, they had been born and launched themselves into a few square miles of the world now occupied by an industrial complex. They reminded me that the modern threats to the *inue* of plants, animals, and environment were on a different scale from spears and bullets. Paul Ehrlich's flagship species, the checker spot butterfly is now extinct from its Jasper Preserve island of habitat. I'm sure it all happened following the rules the rich, white guys devised to be fair to the individual pursuers of wealth. Fairness to the animals was way beyond the point. In our time, our intentional killing of the nonhuman *inue* can be fast as a rain of bullets or slow as an expanding footprints of gravel, toxic pits, or pleasant suburban lawns.

We are cycling, or progressing, through new theories of mind and conceptualizations of the relationship of mind to brain. Or less elegantly put, the eternal question is how to get mind from meat? Some scientists contend that meat makes mind, a bottom-up process in which mind is an epiphenomenon, emergent but inseparable from the biochemical events of a living organization of

matter as machinelike as a computer. Some metaphysical philosophers insist the mind makes meat, a top-down process from a reality beyond that manifests itself temporarily, partially, and purposefully in the same organized, living matter as a pervasive, but dynamic indwelling, like an *inua*. My current favorite compromise is the one put forward by linguist George Lakoff and philosopher Mark Johnson who speak of the “embodied mind” in which all conceptual thought is grounded in the functioning of the body’s sensory and motor systems. Perceptions are mapped into subjective experiences and judgments and images. In other words, “our physical engagement with the environment is an ongoing series of interactions. . . Our basic concepts have evolved to ‘fit’ the ways in which our bodies, in the course of evolution, have been coupled to the environment, partly for the sake of survival, partly for the sake of human flourishing beyond mere survival. “

The meaning of the perception and connected subjective experience is expressed in conceptual metaphor. According to this schema, for example, a subjective feeling of “good” maps with “up.” To be happy is to be “up” because we have bodies that function in an upright orientation. You feel “up,” your spirits “rose,” you’re in “high spirits.” Or, conversely, you’re feeling “down,” you’re “depressed,” you have a “sinking feeling.”

Our language contains several metaphors of mind. The Mind is a Machine. The Mind is a Computer. The Mind is a Container with an inside and an outside and the contents of thought. The Mind, *res cogitans*, and Body, *res extensa*, are Two, are a duality. Descartes’ rationalization of the split between mind and body is a conceptualization, a metaphor, whose map cut the trails between mind, soul, and nonhuman nature. From the depths of the Pleistocene caves forward, across Asia and Siberia and the land bridge, through tens of thousands of years of aboriginal cultures, the connection has been firm. It has mattered, absolutely, how animals die by the intention of humans. It matters because the relationship has been understood in terms of a map where the movement in the journeys and transformations were in both directions. The manner of death and grateful, respectful treatment of the *inua* of a single animal could sustain the collective

relationship of human lodge to animal lodge; carelessness and disrespect could snap the tenuous thread of connection to future abundance and lead downward to starvation and death for the entire group.

Another metaphor for mind is that the Mind is a Brittle Instrument. She is of two minds, we say. She cracked up. She can break or be crushed. Experience can be shattering. You can go to pieces. Your mind can snap. We are educated and trained in this culture as “left-brained” linear thinkers. My left brain, your left brain craves coherence, craves a logical narrative. The theories and stories of scientific method will do nicely. In fact, we crave coherence so much that logical fictions and false memories can be entirely convincing and real. But if you let it, the sense of the world will rush into the right brain, in the inexpressible wholes of the animal powers. I saw the half-brained cat, merged with Her Mooseness, shivered through the Pacific Flyway procession of arctic-nesting ducks rounding the edge of the continent on their way home, felt the heartbeat of a sugar-starved hummingbird in my hand, saw the phosphorescent sea, glories and sundogs around the sun and moon, strange sights illumined by the Northern Lights, the eye of the wolf, the Lotus. Okay, maybe not the lotus. It’s all there, shadowing the logic of language and science.

Eastern cultures conceptualize the Mind as a Pool, liquid and boundless. As such, it reflects Caribouness, Butterflyness, Mooseness, Wolfness, Humanness, and all the inextricable “nesses” of World. If we create meaning through elaborate maps between bodily and subjective experience, then it appears that the destinations on our metaphoric maps are inextricable from our health and our wholeness. If we choose to wield death and destruction in the natural world, the manner in which we do so has meaning. Loss of abundance and diversity diminishes the animal soul, the world soul, and us simultaneously. A hail of bullets, the noose of the snare, the deceptive odor of gifting that is really the bait of a trap are instruments of murder, not disembodied killing, for bears, wolves, and humans. Fairness is not just between humans engaged in a game of winning and losing the right to satisfy unbounded desires that require the death of the “best” animals and disruption of the living systems. The fairness of the game must take into account the

very form and fact of being alive and interrelated through the passages between life and death.

Sea cow, what was your Unangan name? Sea otter, what did the Russians call you as they stripped you of your coat? Whale, what did they sing and drum as they boiled you into oil? Did the lusty loosening of faroff corsets contain a sigh of lubricious, gargantuan, Hawaiian grapplings? Where do you reside beneath the sea that you will never return? Where is the shaman you last hosted? Where are the bladders that were never feasted and cast back in the water to invite your return?

What do we hunt now, we who live in Alaska's communities, only partially bound by kinship, tradition, fear, or awe? What do we gather to nurture us through the Long Dark? How must we make and treat our harvests so they pass on in a way that abundance will feel welcomed to return? How to approach the powers that are greater than can be contained by any single human life.