DISCUSSION PAPER

Death and the ecological crisis

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Accepted: 22 October 2008/Published online: 17 January 2009 © Springer Science+Business Media B.V. 2009

Abstract In this essay I discuss the ways in which not recognizing that the death of organisms plays a part in our food producing systems, distances us from life's ecological processes and explore how this plays a role in devaluing the sources of our food. I argue that modern society's deep separation from our agricultural systems play a part in our current ecological illiteracy.

Keywords Environmental ethics · Food production · Ecological awareness

After teaching class yesterday, I hastily grabbed one of those over-packaged lunches so indispensable to those in a hurry to gulp down something quickly. This one was canned tuna salad and crackers. I felt guilty at the amount of unnecessary material piling up as I squirreled through the packaging to find my meal. I was taken back and shocked at what I found myself entangled in: a plastic outer covering with cardboard back, a can holding the tuna salad and its pop-top lid, a separate wrapper for the crackers, and a little plastic spoon in yet another little plastic wrapper. I knew better than this-I am an ecologist for heaven's sake. I felt tricked and shamed, betrayed by my own hurry and hunger into buying something that produced a small heap of rubbish and clutter. I looked at the remnants of a small lunch multiplying around me and looked around guiltily, hoping none of my students walked by during this moment of indiscretion. I moved to extract the food from these layers of cardboard, plastic, and aluminum. Visions of

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Department of Biology, Brigham Young University, Provo, UT 84602, USA e-mail: steven_peck@byu.edu overflowing landfills danced through my head and feeling a sneaky avarice I loaded the salad onto the cracker and took a bite. It was tasty. It was quite good, but there was something hidden in that bite so disguised and camouflaged that I almost missed it. I had been focused on the failures of western civilization in generating unprecedented waste. But I had forgotten something even more fundamental. Buried forgotten in all that packaging, was a life, hidden, unattended, unacknowledged and even unrecognizable-a being processed from all its rich biological complexity, to the simple categories of taste, color, and texture. During my hurried lunch, nothing of the lived life smashed into that processed can bubbled into my consciousness; nothing reminded me that an animated creature had died to make my meal. That life, a miracle that exists as far as we know only on this planet, was masked and hidden. The unlucky tuna that (who?) had once cut through the ocean as a powerful living being-a breathing, free creature, a vital agent-had ended up packaged and unrecognizable in a convenient quickie lunch product. Even the word 'tuna' for me had not been associated with a life; it had become the particular flavor of a product, one among many that I might choose. The juicy mass in the can, which bore the stamp of patterns pressed from the lid, was merely a lump of whitish, firm-textured food that went well mixed with pickles and mayonnaise. Just a choice of tastes I might enjoy to ease my hunger, but the significant detail that there was a life taken to provide that meal only made it into my mind by the most unlikeliest of routes, and on another occasion might not have even entered into my head at all. So it is with most of us. Our food is pleasantly presented and death forgotten.

This is where I take a different turn. I might be expected at this point to construct an argument against eating meat and the virtues of vegetarianism. But I am not going there. I am going to posit that we've forgotten the place that death plays in the cycles of the earth; that there is something missing in our culinary habits that is important to reacknowledge. As Mr. Spock, reminds us in the episode "Wolf in the Fold" as the *Star Trek* adventurers contemplate an alien force that feeds on the 'life force' of others: "In the strict scientific sense doctor, we all feed on death, even vegetarians". That vegetarians are likely to have forgotten a death was involved in their verdure seems to stem from our mammalian prejudice that somehow plants are such an 'other' form of life that that their death doesn't really count in our tally sheet of what matters. Carnivore or vegan, death is a part of every aspect of our survival but this fact we've somehow pushed to the margins of our consciousness. This has implications.

What is our relationship with death? Our own death can hardly fail to capture our attention, as Heidegger and Freud argued and tried to push to the center of our conscious concern. Death has been part of the human horizon of awareness for a long time. We've had to kill for a long time. Observations of chimpanzees hunting and killing monkeys give us our first hint that our common ancestor knew how to take a life.

Moving forward in time, the very first member of our genus Homo knew how to jog toward death. If you inspect the fossilized skeleton of a Homo erectus from the neck down, even physical anthropologists who spend their life among such bones are hard-pressed to tell it from an anatomically modern human. This striding bipedal form came into being a long time before we developed the rational soul that Aristotle so cherished with its capacity for language and formal reason. Why this physical form? To run. Our body is apparently engineered by nature to run. Dennis Bramble at University of Utah has pointed out that we are one of the best runners in the animal kingdom (Bramble and Lieberman 2004). Not that we are particularly speedy. Indeed, almost anything can outrun us in a sprint (have you ever tried to catch a chicken? I will be asking you to do so later.). But at running a goodly distance we are champions. Only the dog and horse are even in our league. Everything about us from the way our foot and knees are constructed, to the way our torso swings free from our hips and our stable foreword staring head are designed to jog for leagues. Not walking mind you. Running.

The story seems to be that our roots lay in scavenging and piracy. Picture a band of *H. erectus*, sitting around, the low foreheads encasing a slightly smaller brain, not quite allowing speech, but enough brains in place to make the same-shaped hand axes for over a million years (these were magnificent for crushing bones). These beasts (perhaps grouped in the shade of an Acacia tree), so much like us and yet so different are highly social—like the common ancestor that sprouted both us and the chimps. Maybe this band is grooming one another, maybe gestures are becoming more advanced suggesting the first motion toward symbolic representation. But then suddenly, ten kilometers away, black dots appear hovering above the horizonvultures. The reposing apes immediately leap to their feet and they run. Men, women and children all run together toward the circling vultures (except maybe the mothers with new infants-maybe them too). There is strong selection to get there quickly. The pride of lions that made the kill will devour most of it posthaste and what they leave will be snatched hurriedly by hyenas, jackals, and other scavengers. The band arrives at the kill and manifests the other trait that in all the animal kingdom only we and, presumably, our ancestors can do well. They pick up rocks and throw them. They have both speed and stunning accuracy at flinging rocks at their scavenger competitors and predatory providers. Although we cannot know for certain that they were as highly developed pitchers as we are (since throwing ability is a brain function and does not fossilize well), the anatomy for throwing is there and we may see the roots of baseball in this volley of well-aimed projectiles that drive the lions from their kill. Then with their well-made stone axes they chop off their booty and sit down to a sumptuous meal. Anthropologist, Richard Wrangham (Wrangham 2008) suggests they may have even cooked it.

These, however, are likely kills without reflective awareness. Like a wolf shredding the carcass of a caribou, death is just food. However, at some point later in the evolution wandering toward humanity, we became aware of death as a possibility for our own existence—necessarily as part of a burgeoning self awareness. The thought must have appeared for the very first time in one of our ancestors, perhaps as he or she slices open the hide of a freshly killed antelope, 'Hey, this will happen to me someday!' the Paleolithic equivalent of a kind of Cartesian cogito, "Things die, ergo I will too."

As evidence of this awareness of mortality much later than Homo Erectus in our family tree, we see that Neanderthals buried their dead with ceremony. Neanderthals did not mate with our species as evidenced by DNA analysis, but they shared a common ancestor with us about 600,000 years ago. The famous Regourdou burials show that death was something to acknowledge and mark in special ways. Here Neanderthals buried a person with ceremony; the body carefully positioned with the skull and arm bones of bear carefully arranged in ritually symbolic ways. Of course no one knows what these things actually meant to this species of near-human-whether they are sending them lavishly into the next life or honoring their memory, we cannot say. Their intentions are long gone, but we do recognize what they were doing. The hermeneutics of this other species' burial preparations brokers an easy familiarity and the meaning of their actions seems consistent with our ways of being human today. The evidence for funeral rites in modern humans is recognized from the about 28,000 years ago when two children buried ceremoniously at Sunghir Russha, covered carefully with red ochre. But for the origin of these rituals, we must go further back in time because they likely came from some ancestor common to both us and Neanderthals. Since DNA evidence suggests our last common answerer was around 600,000 years ago, death has been marked for at least that long. Interestingly, these death rituals seem part and parcel to the development of art, symbolic language, and the creative advancement of our tool culture. All these are features of ritual awareness are what put the 'Modern' in anatomically modern humans.

This preoccupation with death seems not only focused on our own demise. Much of the art seems to be a call to participate in the death of our prey. The caves in Altamira, Spain may be spiritual strivings to control aspects of the living world. Again, we see this recognition of death and its role in life. Our ancestors seemed highly attuned to recognizing and participating in these cycles of death and life.

Paying attention to death is something almost uniquely human. Certainly, mother apes and monkeys mourn over the loss of their offspring. Both chimpanzees and baboons will carry a dead baby around for days like a limp doll, mourning over its loss, and trying to care for it as if it were alive. But neither animal pays much attention to the body of a dead compatriot. Primatologists Dorothy Cheney and Robert Seyfarth describe in their book *Baboon Metaphysics* a baboon sitting down for lunch next to a dead acquaintance whose mangled body had been stuffed into the fork of tree by a satiated leopard (Cheney and Seyfarth 2007).

Most higher animals divide the world into agent-things and non-agent-things. We do. Agent things we expect to make choices, to act in explainable ways. Why did the coyote move from that place to this? We might say: To find food. To look for a mate. To find a place to sleep. All agent behavior is seeped in teleology. There is purpose to their action, kind of an imbedded rationality that transcends the taxonomic decent from human to slime mold. Even an ameba we know as acting agents as it turns toward the light. So agents act with purpose. Non-agents are the things in the world that are acted upon.

But for most creatures, once something is dead, it is no longer an agent. It enters into the world of non-agency and, if not eatable, treated as an artifact of the landscape like a stone or anthill. This is true of even our nearest simian relatives. This is not true for humans, however. (Nor oddly enough for elephants, who upon meeting the bones of a relative or acquaintance will reverently handle the bones and pass them among the herd as if remembering the person those bones once were. Even more striking, the more intimate they were in life, the longer they will handle and caress the bones.)

This distinction in our mind between agent and nonagent is very deeply embedded in our nature. And it may be the roots of our religious propensity itself. Richard Boyd argues that when we fill the world with angels and spirits, fairies and helping ancestors, they are category mistakes. They are agent explanations for what seems teleological in nature. Why did I happen on this roebuck while hunting? There is a purpose even in that, therefore agents must be involved. Good luck and bad luck and their manipulation find their root in teleological explications that need agents so we provide them. This distinction runs deep and it is in the transitions from life to non-life that we find our greatest mysteries. Our deepest magic has always been in this transition from agent to non-agent, whether in ourselves or our prey there is mystery here worth marking, meditating on, and trying to manipulate. Birth and Death. It is here that mystery begins and ends.

These mysteries may be what make us most human. Our capacity for compassion, our empathetic response may be rooted in our recognition of our mortality and the mortality of other creatures-and the absolute dependence of our life on theirs. We are embedded in life. Connections weave around us in the ecosystem services that provide for our maintenance and continuance. In cold scientific terms, all life is sustained through the transfer of energy, from the sun to the primary producers like plants and algae, to the secondary producers that eat the plants, on up through a food web of energy exchange, recycling through the earthy decomposers which support again the growth of plants in soils. Energy and material are exchanged, co-opted, stolen, given, and recycled. While describing it thus in modern ecological terms is accurate, these are things we recognized and celebrated very early in our human history. These cycles were recognized in rituals, noted in preparations for the hunt, and honored and maintained through spiritual practices that recognized the relationship between life and death.

But what is happening?

Death has become other and foreign. Something unpleasant, banished to the nether regions of our culture. We engage with it usually as distant tragedy as the headlines report the loss of a soldier's life, or a massacre, or another natural disaster that takes a number of lives. We are rightly horrified at such events, but we are rarely touched by them intimately. We don't see the torn bodies of our solders (and recently my government remains determined that we don't even see the caskets of our fallen heroes), we don't see the swollen corpses of tsunami victims except as passing frames in panoramic shots of devastation from which we shutter and turn away. Our funerals are quick quiet affairs where death is dressed up in its finest suit of clothes and quickly gotten out of the way. This is not to say that death does not impact us, of course it does. But death seems to be considered among the most unnatural of occurrences for which we spend a great deal of time and energy avoiding and trying to stop. We deny death until it happens. But I don't want to focus human death per se. While I think our lack of seeing death in the natural cycles of our life has implications for the way we handle the death of those we love, I think also there is a deep lack of understanding of the role death plays in supporting life itself. Our life.

Our disacquaintance with death has implications that I think hurt us. Some of our most horrible cruelties occur because we have distanced ourselves from one of the main ebbs and flows of life. Death is a part of life: the death of both animals and plants. Just because plants are such a foreign form of life, sometimes we devalue and excuse their death, but do not recognize that life and death rely on one another.

Rituals of death may be necessary to reacquaint us with the fact that life feeds on life. It may be that the rituals of our ancestors kept the relationship between life and death present so that taking a life never became mundane or taken for granted such that they became desensitized to their connectedness with these processes. Today, our sanitation and separation from death draws us way from the cycles of life. When we mask death's meaning behind sanitized packaging we loose, we have to loose, the reverence and fragility that our lives depend on the lives of other living things. Is it any wonder that we are in the midst of a worldwide ecological crisis when we have no awareness that our lives rely on ecosystem services? How can we value life, when we don't understand the role that life itself plays in our continuance? Death and life are inexorably intertwined. We feed upon the life of others. We have to. We have no direct accesses to the sun's energy itself and we must take it from those who do. But in masking these cycles and necessities we are loosing this reverence that we see going back to the very first creatures that we identify as human. It is in that reverence that we will find the attitudes and perspectives that will make taking care of our planet something of ultimate concern. When we understand that life takes life, we then can put ourselves in a context of meaning. We can develop a sense of gratitude to those of both vegetable and animal origin that contribute to our place in these cycles. Many of my friends in the environmental movement see vegetarianism as a higher form of environmental awareness, and I agree there are good reasons for eating lower on the food chain. But to me this often becomes a blatant form of anthropocentrism. It devalues our history as scavengers and hunters and pretends we've out grown our roots. It can become a form of elitism and arrogance that purports to put us on some sort of higher plane than the predators of the earth. We pretend we have reached a higher level of enlightened thinking. It buys into the conception that predation is bad, and that we are above that sort of thing. It separates us from the very cycles I'm describing. I rarely meet vegetarians who are anymore aware that a life has gone into their falafel than their neighbors are aware that a life has gone into their hamburger. Both groups have had their participation in life's cycles masked and attenuated. Both have forgotten our connection to the ecological cycles that gift and sustain life.

Many of the abuses that we see in our food production (which have not changed much since Sinclair's *The Jungle*) and which is one of the good reasons for being a vegetarian) could be cured if we developed a deeper reverence for life and a more profound recognition of life's processes.

Let's try a little experiment. I want you to go and get a live chicken. Kill it yourself. Put its head on a chopping block and remove it in a violent downward swing of an ax. You may have to borrow someone's place in the country. If you do it in the mall parking lot you will likely be arrested. Watch the blood stream from its still beating heart. You will get some blood on you quite likely. You'll see it transition from a living agent, which was a few minutes ago was blinking and tilting its head trying to get a better look at you, to something motionless and still (well, after a few minutes it will be still). Now pluck its feathers, pull its viscera from its abdominal cavity, and cut its parts into its familiar useable pieces: drumstick, breast, thigh, etc. Cook as desired. Finish this essay when you're done eating.

Of course, you didn't do it. Some of you were horrified at the suggestion. Can it be that this horror may be the root of our ecological crisis? Let me unpack this a little. Some of you were horrified because of the violence of this act. It is an unpleasant and nasty business. Yet, you would have no problem popping into a Kentucky Fried Chicken eating noisily the finger licking pieces snuggled cozily in the greasy bucket—not realizing that someone, somewhere had to do that very thing—perhaps in an even more violent and cruel way, necessitated by the millions of chickens that must be so processed.

Others of you were horrified at death itself. Killing another being is something untoward, unethical, and unwarranted. A gaggle of 'un's of which humans should move beyond in our enlightened status at the pinnacle of evolution. We have ethical responsibilities because we have moved beyond the limits of other, non-conscious animals. Rationality has brought us responsibility which necessitates our moving beyond what our primitive cousins the wolf, the bear and the lion must still engage. We are not like them, even though we understand that they are just animals and playing the role that nature demands of them, we are something better and other. Thoreau says it in *Walden* (2004, pp. 207–208):

Is it not a reproach that man is a carnivorous animal? True, he can and does live, in a great measure, by preying on other animals; but this is a miserable way,—as any one who will go to snaring rabbits, or slaughtering lambs, may learn,—and he will be regarded as a benefactor of his race who shall teach man to confine himself to a more innocent and wholesome diet. Whatever my own practice may be, I have no doubt that it is a part of the destiny of the human race, in its gradual improvement, to leave off eating animals, as surely as the savage tribes have left off eating each other when they came in contact with the more civilized.

Predators. We are not like them. We are better. We stand above Nature—not in relationship among its entities and processes.

The first horror of killing is based in the unpleasantness of causing death, and it is unpleasant, the second in a kind of arrogance, twin vices that separate us from nature and root our current culture in an active separation of what it means to be a human living nestled in connections and complexities that are necessary for life itself in all its diversity. By recognizing death's role in life, we gain a reverence for life that is deeply embedded in our real nature as one of Earth's creatures. Our responsibility derives not from just our rationality, which allows us to act on our impulses, but from our power to do harm. And that harm is exponentially enhanced when we are disconnected from, and other than, Nature. Our care for this world ultimately must come from a connection with Nature including a connection with death. This connection engenders reverence. When the death behind our food is masked in packaging that hides the life behind that food, our connection and reverence for life is damaged. The abuses of the modern slaughter house can only be countenanced by

separating us from the lives of the creatures processed there (even the word 'processed' seems to remove us from the fact that we are killing). Were we to wield the knife, or even watch the knife wielded, our use of animal flesh would be as reverenced as the gift it is.

So am I proposing we go back to slaying our own food so that we can maintain the connection between life and death? Perhaps. But actually, my proposal is much more modest. Next time you open a can of tuna, eat a piece of chicken, or put a fork into a salad. Pause a moment and remember the life given for this meal. Reverence that life and for just a moment situate yourself deeply within the cycle of life and death. Life matters. Death matters. Both rely on one another.

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