

As I've come to observe and reflect on the natural world and all its phenomena, I've become increasingly curious about the things that keep me alive and allow me to thrive. Recently, I've had the urge to cut out the unnecessary fluff that modern life considers "important" but actually holds me back from living life without being totally present and aware. My goal would be to "to cut a broad swath and shave close," in the words of Henry David Thoreau. Growing up has truly been a process of trial-and-error where I'm continually discovering more about the natural world and myself. The experience of going out into nature and exploring has enlightened me with understanding about what I find essential, by satisfying and sustaining me to the fullest. In the immersion, I long for less and my eyes perceive the world to be rich and engaging. To be "sustained" for me, is to be connected to, and nourished by, my surroundings.

I was born to be a maker. Using my hands and all of my senses fills me with a greater sense of being alive. I would even say that it is essential to my humanity. Though I've found much of an outlet in art making, that process alone does not satisfy my every day hunger to enrich my experience. I'm drawn to actions that involve the creation and transformation of material in many aspects of my life. My parents, who cooked, sowed the seeds that propagated my obsessions. Throughout my childhood, they prepared culinary creations that put Velveeta and Chef Boyardee to shame. Being involved with food was my earliest introduction to the sensory aspects of making. While those experiences were nice, anything that would have connected me to nature (not a tomato field in sight, let alone a forest) was absent in my childhood. It was only as I got older that I realized some essential piece was missing to my being; I was constantly longing to feel connected to something bigger than me. I never dreamed I could follow a breadcrumb trail that began with daily walks and would lead me to discoveries about humans and nature.

Going forth on my quest, I was determined to not become the granola-munching, kombucha-drinking hippie whose opinions are often the result of unrealistic optimism and Psilocybin mushrooms. I wanted to be in tune with my environment on a level of understanding that was multi-faceted. With that in mind, I started to form my own understanding, and asked myself, "How are people fundamentally tied to the land?" I wanted to explore this question both through research and personal experiences. What I've found is that human coexistence with the land is intrinsic on a historical, scientific, sensory, and social level. Humans have always forged a connection to the living landscape as a means of survival, and those relationships have evolved over time and with technology. People are part of the natural cycles of the earth that are constantly changing and evolving. When we are attuned to this, we can have experiences centered on supporting ourselves. That same sense of interconnection to the environment that sustained our ancestors through foraging, farming, and cooking can be our own nourishment in the modern era. I believe that these experiences tend to bring us closer to the true necessities that elude us in the day-to-day.

The Cycles: Foraging, Cultivation, Cooking



Cave painting of wild honey gathering

Foraging

A case study of the dedicated forager is the honeybee. The relationship of bees and other pollinating insects to the landscape is symbiotic and represents perfect co evolution in nature. The Human foraging instinct—our attraction to fruit and flowers—is a way we have coevolved, too. Being immobile, plants have to devise other ways for reproduction by relying on their animal counterparts.

“Herbaceous plants became widespread only in the last few million years, just as the human species was emerging. They made possible our rapid cultural development, and we in turn have used selection and breeding to direct their biological development. We and our food plants have been partners in each other’s evolution” (*On Food and Cooking* 253).

By offering up sweet nectars, ripe fruit, and abundant seed, herbaceous plants lure various creatures to take for themselves, while simultaneously dispersing the plant’s genes to its intended destination. It’s no coincidence that herbaceous annuals and biennials (plants that grow and die over the course of one or two years) arose just as the human species began to flourish. It’s to our own benefit that these types of plants developed with all their allure—the usefulness of these types of plants was the cradle of our existence and culture, and we, in turn, propagated the plant species. We favored these plants and spread the gene pool as people moved around in the way of the hunter-gatherer.

This exchange between animal and plant is a win-win scenario in nature that people, and bees, have had with plants from the beginning. Bees, however, utilize their forage and disperse plant genes differently. Bees may visit hundreds of flowers in a single foray, while storing nectar in a “honey stomach” to later become a new substance. At the same time, pollen sticks to their body, which is adapted to transfer pollen grains from one flower to the next. To make honey, bees have the ability to break down the nectar’s sucrose, a double-ring molecule, into its constituents glucose and fructose. This chemical action results in a high-energy concentration that’s used to feed all the activity within the bee colony. It also results in an anti-bacterial substance that is lethal to

microbes. Also produced from the nectar are propolis, royal jelly, and beeswax, each serving a vital function in the hive (*The Beekeeper's Bible*.) All of these substances are fundamental to the life force of the bee, all of which originally derived from the foraged nectar of hundreds of flowers. So too, have humans collected the raw materials of plants to fulfill needs such as food, medicine, and dyes.

The relationship people have had with what comes from the ground can be seen through the perspective of human beings as pollinators. Before agriculture, humans collected food, healed, and made use of the land in various ways. Nomadic societies became experts on discerning the edible and useful from the toxic. People's acute sense of taste, smell, and sight was our mode of distinguishing the deliciousness of the landscape. This was our first bond to the land and all that it provided.

In our own "primitive" methods, people throughout history have performed similar types of alchemy to the way bees have, a story which began with foraging and separating plants and experimenting with them in more basic or complex processes. Plants and their array of phytochemicals produce a wide range of flavors and colors, which warn against poisons or signal the presence of vital nutrients for people ("Love and Lies"). If a plant proved to be toxic as food, perhaps it might be better utilized as a healing remedy or an ointment, a pigment for creating dyes, or a useful fiber. Native American tribes are renowned for the herbal wisdom that they derived from the lush American plains. From natural dyes created by boiling berries and bark, to discovering aromatic herbs that encouraged dreaming, they incorporated the landscape into their traditions. The Navajo dye tradition is one of the first in the United States to develop, which was started with the wool from the sheep imported by the Spanish. The tradition especially focuses on plants that regenerate themselves through natural disturbances such as fire or flooding, but has been inhibited by human intervention (Burgess 51). The intimacy the Navajo people had with the land merged with the process of dyeing wool, and the two became an integral part of Navajo culture. In this way, the Navajo people have communed with the nature and coevolved, fulfilling each other's essential needs and creating culture in the process.

As I was exploring the relationship between human evolution and foraging, I found it surprisingly easy to pick out plants that are useful without prior knowledge of those plants. After a couple forays, I felt my eyes transforming what I previously just considered to be "greenery" into something more distinctive. The shapes of leaves, each low-lying shrub, clovers, the pattern in which flowers dangled from stems...an awareness with primordial roots was awakened within me by the bounty that I *sensed* in the land. Within the act of foraging is an understood exchange between the forager and the environment. This exchange has become intrinsic to human foragers and pollinators alike; a genuine relationship between plants and people is attainable by merely observing. To form this understanding, you need only harvest a few leaves that catch your eye and consider all the possibilities.



Jean-François Millet's painting "The Gleaners"

Cultivation

Just as the pollination cycle could be said to be driven by sugar (concentrated energy), cultivation relies on the natural environment's most basic cycle—the carbon cycle—to make those sugars. It's astounding to think that the very carbon being assimilated into plants through stomata in leaves and in roots becomes the basis of fuel that our bodies use as energy ($C_6H_{12}O_6$) and release through exhalation (CO_2). The atoms that make us up are 18% Carbon. When plants and animals die, their carbon decomposes back into the soil to become part of the thriving community of microorganisms: bacteria and decomposers feed from decaying organisms, transforming them into simpler and concentrated nutrients coveted by plants (and humans too).

We involved ourselves in this natural cycle of carbon when we began to cultivate and intentionally coax life out of the earth. Though we were a part of it in the first place as hunter-gatherers who used the land, breathed, and died, the dialogue has changed. When people transitioned from forager to farmer 10,000 years ago, they had to pay closer attention to what was going on in the soil. We became sensitive to organisms and soil nutrients that we could not see, like nitrogen-fixing bacteria. We coaxed the staff of life from the Earth and a layer of "black gold" (manure) and hoped for rain and sun in amounts we knew would eventually nourish us.

A variety of different hypotheses exist regarding why the foraging lifestyle was abandoned for the considerably more laborious process and less-varied diet that was the result of farming. Some experts say the causes were accidental, and that a forager disposed of inedible seeds (like the pit of a fruit) and then began intentionally sowing and harvesting (the people plant interaction theory). Population pressure and "overkill" theories pose the idea that increasing population, and the extinction of many animals that we relied on for food, along with the Ice Age, forced us to cultivate (Weisdorf 564.) For perhaps several reasons, we settled to become a society rooted in the ground. The shift away from hunting and gathering meant that we solely relied on the soil and sun for our livelihood. Hence, we found ways to unlock the abundance of solar energy by properly cultivating the land through farming. It became truer than ever that the soil's health was *our* health, since the nutrients that support plant life in soils correlate to the quality of food produced from it.

A fertile soil, that is, a soil teeming with healthy life in the shape of abundant micro flora and micro fauna, will bear healthy plants, and these, when consumer by animals and man, will confer health on animals and man. But an infertile soil, that is, one lacking sufficient microbial, fungous, and other life, will pass on some form of deficiency to animal and man. (Sir Albert Howard)

Today, Sir Albert Howard's words are as relevant as when he wrote them in 1945. Our dialogue with the landscape changed with the advent of agriculture and increasingly so into the industrial age, but the same carbon, nitrogen, and phosphorous in our soil makes up our very own cells and DNA. Though our society is in constant flux, so is the landscape we still utilize, as well as the ways in which we utilize it. The use of land for cultivation is a relationship that ended the nomadic lifestyle, and redefined what land means to us by accessing the energy in sun and soil.

The use of the place would necessarily change, and the response of the place to that use would necessarily change the user. The conversation itself would thus assume a kind of creaturely life, binding the place and its inhabitants together, changing and growing to no end, no final accomplishment, that can be conceived or foreseen. (Wendell Berry)

Wendell Berry theorizes that the human relationship with land evolved into a "creature" all its own. If the user of the land is in touch with the response of a place, or how the land reacts to how it is used, the user experiences a bond, one that is sustained by the constant communication and utilization between people and their environments. Hence, when one uses the land, he also changes himself when listening and adapting to the needs of the land, by noticing what's affecting it, and interacting with it.

To become more attuned to the constant shifts in nature is to enrich our lives. By actually *seeing* ourselves as life forms, we are not removed from the fluctuating environment. Simple observations of life can make us more aware of the cycling and recycling occurring around us every day. Our ancestors raised livestock and tended fields to closely communicate with the land—actions that would eventually become means for their existence. Experiencing cultivation first-hand for me has increased my awareness of all the nourishment traveling through the earth. I believe that great satisfaction can also be achieved through a fundamental relationship to the living cycles. Cultivating plants and animals has been a dialogue that humans initiated, and had listened to up to the industrial revolution.

World War I and II in America sped up production and sought to mechanize the agricultural system with new inventions and factories popping up everywhere. Farm-workers were replaced by specialized machines, food stuffs were packaged in shelf-stable cans and boxes, and pesticides were being produced from the same technology that created chemical weapons for the World Wars. This was all in the name of cutting food costs and making production cheap and efficient. While the intentions for the change in agriculture may have been for the benefit of the economy, it was to the soil's detriment and a detriment to our health, since industrial agriculture ignores living cycles and treats them as static commodities.

Industrial agriculture only looks to maximize yields, without considering the causes and effects to the ecological cycle (“History of Food”). Consequently, our society’s relationship to the land has been altered by this change. After all, people in the US can survive by buying ready-made, corporation-produced products without ever laying a foot in a garden bed. However, mass-consumption is far removed from the base that we once subsisted on. Is it possible to recover some sense of what soil meant from our previous conversation with agriculture? Since we don’t need to participate in farming to survive in the modern era, why should people take up the seemingly arbitrary task? The enjoyment and patriotism that was at one time originated from our relationship with land was lost somewhere with industrial agriculture and industrial eating. Numbness towards our landscape resulted from that loss of connection. To cultivate that relationship between Americans and the landscape once more is the reawakening of American culture, and a sense of pride toward the ways we cultivate the land and create “*terrior*,” or the “taste of a place.” *Terror* is how the land itself, the ecosystem, and people all interact to create a unique and diverse landscape of food and drink (Jacobsen 2). It’s a way to define ourselves in the land that we all live on as people of a particular place.

We are some of the first people in history not to have built-in connections to the land we inhabit, not to be able to take comfort and pleasure in its verities. Paying attention to *terrior* is one of the best and most enjoyable ways to reestablish this relationship. It can teach us much about who we are, why we like what we like, and how we go about living on this earth. (Jacobsen 13)

Perhaps the reason why industrial agriculture has led to a bland relationship with our environment is that we don’t have the built-in connections mentioned by Jacobsen. What we have the chance to do is reinvent a relationship with the land based on our appreciation and desire for real food that nourishes people, the soil, and connects us to our surroundings.



Ancient Egyptian bread making in clay molds

Cooking

Within the range of human-plant interaction that began in pre-history and continued through to the modern era, where does this idea of culture start? Not only did the landscape support us biologically, it also developed us culturally. So where does merely sustaining ourselves end and culture start with our bond to the land? One of the earliest methods of processing and preserving food—fermentation—led to cultural practices in almost every civilization separately (Katz 14). Fermentation, biologically, is the breakdown of complex carbohydrates into simpler ones by bacteria and yeasts (single-celled fungi) that are ubiquitous, except in the most sterile environments. Creating food and drink by fermenting it was the first form of “cultivation” before the invention of the plow. What humans developed from the process of fermentation was prolonged shelf life of perishable meat, milk, and produce. Beyond preservation, it also fulfilled human desires such as inebriation and a taste for complex and earthy flavors. How fermentation worked, as much as people relied on it, was shrouded in mystery for most of human history. The immaculate rise of bread dough, the altered state of consciousness when one indulged in wine, and the spontaneous bubbling action that occurs as a result of microorganisms feeding on sugars and excreting alcohol- it all could only be explained as divine. Hence, this discovery of processing our food with this microbe-magic was the work of the gods (Katz 14). Attributing the unexplained magic of fermentation to religious powers was one of the ways we included food in developing culture. Cooking over a fire and baking bread are also individual steps that allowed us to transform the materials from the land, consequently transforming us by way of evolution.

James Boswell’s “cooking hypothesis” arose from his concentration on cooking as the key that unlocked the extra energy needed for humans to create culture and civilization (*Cooked* 55).

Cooking is by now baked into our biology (as it were), something that we have no choice but to do, if we are to feed our big, energy-guzzling brains. For our species,

cooking is not a turn away from nature—it *is* our nature, by now as obligatory as nest building is for birds. (*Cooked* 56)

By cooking and transforming the raw stuffs of nature, our proto-ancestors were able to start expending much less energy digesting, chewing, and constantly eating. The discovery of cooking plants and animals over a fire allowed us to become modern *Homo sapiens* with a smaller gut, smaller jaw, and a larger brain. The fact that we cooked food rendered plants that were once toxic edible, denatured proteins, and made food easier to digest making energy more available. Cooking essentially does some of the digestion work outside the body, to put the process into perspective (*Cooked* 57).

To advance the idea of cooking from the evolutionary to the culturally significant, how we developed the processes of cooking food is incredibly diverse, with a long list of traditions accumulated behind it. Bread baking was the first food processing industry, dating all the way back to Ancient Egypt around 3000 BCE. The process of creating leavened bread became essential to feeding the growing population in cities like Giza, complete with specialized molds for bread called *bedja* and communal facilities for baking it (aeraweb.org). The complexity involved with the baking of bread reveals how human-environmental interactions that have led to a range of techniques, recipes, and food traditions. All the steps that bread making requires-- the cultivation of wheat, grinding and milling of the seed, kneading of dough, the contribution of yeast microbes, putting the dough into an oven fueled by fire—is each an individual transformation that ultimately leads to culture. In something as fundamental as bread, we can trace human evolution back to its individual parts, from which all of our cultures and traditions arose. Bread starters, or a yeast culture that can be sustained for generations, have been considered somewhat of an heirloom to immigrants coming to the United States (Katz 94). On the ship to America, immigrants carried a part of their homeland in the form of their yeasty companions. What is evident about cooking is that the complexity of culture arises from the very simple acts that were borne out of a reliance on the land. The need to grow and harvest wheat and experimentation with how bread could be made to rise were all advanced and elevated to the level of our diverse cultures. From traditional bread making to winemaking, and even the way we consume and enjoy these foods, comes from accumulated wisdom with the same roots of development all over the globe.

Our connection to the land is evident on many levels, from the most direct connections of foraging from the wild bounty of the landscape to the culturally raised traditions with our food. The natural cycles apparent in soils and in bread dough are pulsing through our veins, and call to us in every-day experiences. How do we reawaken ourselves to the subtlety and pleasure that can be derived from the landscape and how it sustains us? Our connection is evident everywhere, like in the way we savor a meal with friends or when we take delight in discovering ripe fruit growing in our neighborhood. We readily cherish those experiences that come from the very earth itself.

“In a sip of coffee or a piece of crackling there are echoes of flowers and leaves, fruit and earth, a recapitulation of moments from the long dialogue between animals and plants” (*The Curious Cook*). Being in tune with our senses that were adapted for the subtlety and variation that comes from landscape is the result of our history with the land. That sip of coffee, smooth with tones of fragrant berries, is reminiscent of our past interactions that are bound up in DNA—it’s like recalling our earliest memory. The mere

realization that we are involved in a symbiotic dance with nature makes us aware that we rely on it. That reliance is the basis on which we exist, and the way we experience and participate in the world.

“Eaters, that is, must understand that eating takes place inescapably in the world, that it is inescapably an agricultural act, and how we eat determines, to a considerable extent, how the world is used” (Berry 234). Eating happens everywhere and by everyone. This tie to the land is the most fundamental one, and is a common thread in our relationship throughout history. Eating is an extremely direct and powerful act that is constantly reaffirming our bond with the land. How the land is used will continue to affect our species by providing us with what we need to sustain ourselves—as food, and as culture. Our ability to reconnect and take pleasure in our sense of touch, smell, taste, and sight relies on how we *choose* to use it, since we’ve reached a point in history where our collective decisions will decide the fate of the land. If we unintentionally destroy it, our desires and experiences will only be half-fulfilled—our senses left yearning. As organisms that have used and sustained themselves by what comes from the earth, understanding that reliance will lead us to an increased awareness about our environments and ourselves. The very things that surround us have participated in what makes us humans who are intrinsically drawn to the land. My own conclusion about how I’m connected to the land lies in the fact that I’m a user of the land, and part of a cycle in which the land is affected by my actions. That realization has also made me aware of situations where I become the forager, the farmer, and the alchemist transforming plants into something I utilize as food, or as a meal shared with friends. Each activity serves to sustain and satisfy me. The dialogue with my environment truly contents the maker in me, and the part of that seeks out the greater meaning in seemingly basic actions. By participating in my individual dialogue with the earth, I become nourished in the same ways my ancestors did—by accepting my role and being conscious of the cycles that sustain me body, soul, and mind.

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