

Evolution of Ancient Chinese Wisdom and the Five Elements

By Joseph Adams, MTOM, Dipl.AC (NCCAOM) (Part I of II)

Introduction

The Yellow Emperor's Canon" widely regarded as one of the pillars of Traditional Chinese Medicine, originally included eighteen scrolls, nine of which are known as the "Plain Questions", or "Su Wen", and the remaining nine comprise the "Spiritual Pivot", or "Ling Shu". Together they are the "Huang di Nei Jing", or "Yellow Emperor's Canon of Internal Medicine".

In chapter eight of the "Su Wen" Qibo, the Yellow Emperor's physician, and court philosopher is quoted as saying, *"The principle of health preserving is rather delicate, one cannot understand its origins without looking into it carefully."*

With obesity and hypertension at near epidemic levels, now more than ever, it is incumbent upon us to search for ways to facilitate ideal health. I believe that by combining knowledge about the diet and lifestyle of our Paleolithic ancestors with the harmonizing capacity of Chinese medicine, we have the ability to promote profound health in a unique way. Bringing the two together requires looking closely at our progression as humans, as well as the development of Chinese Five Elemental correspondences.

In the first chapter of the "Su Wen", The Yellow Emperor, also known as Huang Di, asks Qibo about an ancient time when man lived in health and harmony with nature, *"I am told in ancient times people lived to more than one hundred years old, but the people at present are different, they are not so nimble even when they are only fifty years old. Is this due to the change of spiritual principles, or caused by the artificial behavior of men?"* Qibo answers, *"This was possible because those who knew the way of keeping good health in ancient times, always kept their behavior in accordance with nature."*

When was this golden time; how did the people live, and what did they eat? I have searched for answers so that we might all benefit from this ancient wisdom. Early in my research it became

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clear that there was no single diet that encompassed the breadth of man's variability, for even during one human being's life the requirements for healthful sustenance can change dramatically. There are, however, simple truths based on who we are physiologically that lay down a foundation from which we can make intelligent dietary choices. It is quite interesting that many of these simple truths about our physiologic disposition are enunciated by Chinese philosophers and doctors such as, Qibo, Sun Si-miao, and Huang Di. I have included many of their thoughts in tandem with research throughout the paper.

In the Tang Dynasty (618AD-907AD), the famous doctor Sun Si-miao said, *"When a person is sick, the doctor should first regulate the patient's diet and lifestyle. In most cases, these changes alone are enough to effect a cure over time. Only if changes in diet and lifestyle are not enough should the doctor administer other interventions."* Qibo felt that even by his times man had descended to such a state that more intensive interventions were generally needed. In Chapter 13 he cautions, "Disease nowadays cannot be cured by severing the source only."

In order to discover what foods are healthful or "natural", we must first realize what we are biologically adapted to. "Modern man" has been on the scene for at least 100,000 years, yet it was only in the last 10,000 years that cultivation of foods on any serious collective level came into play. Clearly the hunter-gatherer lifestyle and diet were successful, still some argue that the quality of life improved with the agrarian transition.

Although the change was necessary, I believe that agrarian life represents the beginning of our "natural" descent.

Evolution and Adaptation

So what is "natural"? This is something that evolutionary science defines simply, as what we are adapted to by evolution. Behavior that our species engages in over a long enough period of time becomes selected for in the species' collective gene pool. There are a number of considerations I address in searching for what is natural; genetic adaptation, fire use, brain vs. gut size, exercise, salt, calcium, dairy, grains, meat, and omega oils. After looking into these issues, I will then explore in Part II the development of Five Elemental Correspondences and suggest how these concepts might be merged with the natural human paradigm. Whether we are, in fact, evolved to eat foods made possible from the transition to an agrarian diet, forms the central theme of my quest. In the case of milk drinking and grain consumption, for example, the verdict is not in whether or not the genetic changes are enough to allow healthful adaptation.

"Erectines"

About 900,000 years ago in response to global cooling, the "Erectines" were forced to adapt to an increasingly varied savanna and forest environment, alternating opportunistically between vegetable and animal foods to survive. For whatever reasons, it was also around this time that a significant increase in large land animals occurred in Europe: elephants, hoofed animals, hippopotamuses, and predators of the big-cat family. It is unlikely to have been an accident that the spread of the "Erectines" to the European and Asian continent during this time frame coincides with this increase in game. Because of the considerably harsher conditions and seasonal variation in food supply, hunting as well as the ability to store items such as nuts, bulbs, and tubers for the winter became more important. These factors, along with the

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advancement of clothing and later the use of fire, helped enable colonization of less hospitable environments. Skin color lightened in response to the colder, darker areas, and allowed the sun to penetrate the skin and produce vitamin D. Fat layers and sweat glands facilitated acclimation to these new climates as well.

Neanderthal just a distant link? (135,000 to 35,000 BC)

Neanderthals began appearing in Europe and reached their prominence between 90,000 and 35,000 years ago before disappearing. There has been debate whether the Neanderthals were an evolutionary offshoot that met an eventual dead-end, or that they may have coexisted and bred with Homo Sapiens. Richard G. Klein of Stanford University claims, "there is no convincing evidence that Neanderthals and Humans ever mixed in substantial numbers. Consequently when Neanderthal died out, so did their genes." Analysis of mammal bone collagen provides a direct measure of diet and has been applied to a number of Neanderthals from the Vindija Cave in Croatia, France and Belgium. The isotope evidence overwhelmingly suggests that Neanderthals were top-level carnivores, obtaining most of their dietary protein from animal sources. A pattern of European Neanderthal adaptation as carnivores is emerging.

The Cro Magnons (35,000 BC to 15-10,000 BC)

Cro-Magnon moved into the region of what is today known as Southern France and Northern Spain. They used paints made from manganese and iron oxides to paint the walls and ceilings of their caves. All of which have the animals of the region as their major subject. The accepted theory is that the paintings conferred power onto the artist. By "capturing" the image of the animal, the artist hoped to gain power over it in the hunt. During the seasonal migration of herds, Cro-Magnon used cunning hunting skills and tools to kill their prey. [Wicander and Monroe 1993] Hunting, particularly of reindeer, horse, red deer, and bison, were important. Many of their caves were situated on valley slopes providing views of animal migra-

tion routes. According to Cavalli-Sforza, there is growing evidence supporting the idea that modern day Basque people of France and Spain may be descendants of the Cro Magnon.

Qibo's magical Ancient times? (20,000 BC to 9,000 BC)

During the transitional period known as the "Mesolithic Period", the bow and arrow were developed, and as a consequence gazelle, antelope, and deer were intensively hunted. Wild plant and game management also began to be practiced. This was the last period prior to the advent of agriculture in which human beings universally subsisted by hunting and gathering. They did process some of their foods, but these were simple methods that would have been confined to pounding, grinding, scraping, roasting, and baking. Grains, including wheat and barley were being gathered and ground into flour, as evidenced by the use of mortars and pestles in what is now modern day Israel. By 13,000 BC the descendants of these peoples were harvesting wild grains intensely and it was only a small step from here to the development of agriculture. Other foods that were gathered during the Mesolithic period in the Middle East included wild pulses, peas, beans, nuts, as well as fruits and seafood.

The Decline of Ancient times as described by Qibo and the fall from grace

Approximately 10,000 BC at the beginning of the "Neolithic" period, or "Agricultural Revolution", farming and animal husbandry emerged. The transition to agriculture was made necessary by increasing population pressures. Hunting and gathering can support approximately one person per 10 square miles, Neolithic agriculture supported 100 times or more that many. As the last Ice Age ended many species of large game became extinct, probably due to a combination of intensive hunting and the disappearance of their habitats. Conversely, wild grasses and cereals began flourishing, making them obvious choices as staple foods to be domesticated. Wheat, barley, legumes, fruits and nuts were being cultivated as early as 10,000 years ago. By 9,000 BC in the Near East, sheep and goats were being domesticated, cattle and pigs followed

shortly thereafter. Meat consumption fell as a direct result of this agricultural transition. By 5,000 BC agriculture had spread to all inhabited continents except Australia. Since the beginning of the Neolithic period, the ratio of plant-to-animal foods in the diet has sharply increased from an average of probably (65%-35%) during Paleolithic times, to as high as (90%-10%) since the advent of agriculture. Remains of fossil humans indicate a decline in health after the Neolithic period. In most respects, the changes from hunter-gatherer diet, to an agricultural one has been detrimental. With the much heavier reliance on starchy foods that became the staple of the diet, tooth decay, malnutrition and rates of infectious disease increased dramatically over Paleolithic times. Crowding further exacerbated this, which led to even higher rates of communicable infections. According to Mr. Michael Redmond, "Skeletal remains show that height decreased to as much as one foot, from the Late Paleolithic to the early Neolithic period." Signs of osteoporosis and anemia, which were almost non-existent in pre-Neolithic times, have been frequently noted in skeletal pathologies observed in the Neolithic peoples of the Middle East. In the archaeological record, rickets is rare or absent in pre-agricultural human skeletons, but it increases up to and during medieval urbanization.

A negative health trend has continued to present times with fast food, hydrogenation, and processed foods abounding. It is interesting that 4,000 years ago Qibo spoke of a long lost healthful "Ancient Time", from my perspective he didn't know how good he had it.

Progression of human species:	
3-4 million	Australopithecines
2.3 million	Australopithecus Afarensis Australopithecus Africanus Australopithecus Robustus
1.75 million	Homo Habilis
1.6 million	Homo Erectus
135,000-35,000	Neanderthal Man
35,000-15,000	Cro Magnon Man
40,000-----	"Modern Man"

Diagram (1)

Survival and Adaptation

The Cavalli-Sforza population genetics team has tracked gene dispersion around the world as a result of migrations and interbreeding. Their studies have included genes that control immunoglobulin types, an important component of the immune system. Their estimate is that the current variants of these genes were selected for within the last 50,000-100,000 years, and that this time span would be representative for most groups of genes. They further suggest that it is unlikely most genes undergo significant changes in time spans of less than about 11,500 years. However, when there are cultural pressures for certain behaviors that affect survival rates, genetic adaptations can happen more rapidly. The gene for lactose tolerance or milk drinking, and those genes associated with high-carbohydrate grain consumption both involve cultural selection pressures that came with the change from hunting and gathering to Neolithic Agriculture. Gluten is a protein in grains such as wheat, barley and oats, that makes dough sticky and conducive to bread baking. Rates of gluten intolerance are lower than for lactose intolerance, which makes sense given that milk drinking has been around for less than half the time grain-consumption has.

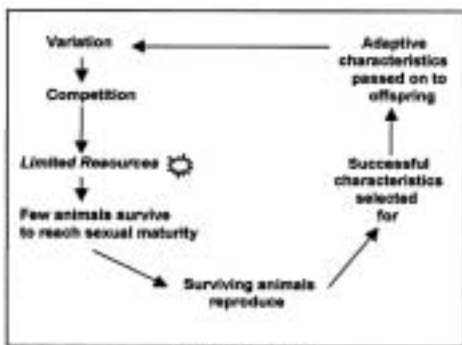


Diagram (2)

In chapter 40 of the "Su Wen", The Yellow Emperor asks, "There is a kind of disease with fullness and distension of epigastrium and abdomen. If the patient takes food in the morning he will be reluctant to eat in the evening. What is this disease? Qibo answers, "It is called distension of Grain."

Phytic Acid

In addition to gluten intolerance, phytic acid represents a second problem with grains. Whole meal cereals and seeds have phytic acid in their outer

shell's bran layer which strongly binds to minerals like calcium, iron, zinc, and magnesium to form insoluble salts called phytates. These phytates disallow absorption of the minerals they bind to, and pose dangers during their excretion. McCance and Widdowson found that bread prepared by high extraction techniques caused binding of these essential minerals in humans. They also showed that destruction of phytate improved retention of calcium. Over consumption of grain is one of the contributing causes of iron deficiency and rickets in third world countries today, and may also be responsible for mineral deficiency in some vegetarians [10-12 Fredlund K, personal communication].

Old methods such as malting, soaking, fermentation, and germination were discontinued subsequent to the agrarian transition with the change to large scale cereal processing. These old methods reduce the amount of phytic acid by activating phytases, which are enzymes also present in cereals. These helpful enzymes are easily destroyed during industrial cereal processing. Dietary fiber alone seems to have no impact on mineral absorption, consequently high intake of fiber from fruits and vegetables is safe at least in this respect.

Later in chapter 40 The Yellow Emperor says to Qibo, "When one contracts disease of the middle warmer, he must not take the refined cereals, and foods of delicious tastes."

Syndrome X

Syndrome X can also result from excessive carbohydrate consumption. Cereals, muffins, breads, white rice, pastas, cookies, donuts, and sodas, raises glucose and insulin to unhealthy levels. These chronically elevated levels are the primary factors leading to hyperinsulinism. All carbohydrates, from whatever source, are ultimately broken down into glucose. Insulin must be secreted by the pancreas in order for glucose to be taken up by the cells of the body and used as fuel. When chronically excessive levels of carbohydrates are eaten, insulin is overproduced, and the body eventually becomes less responsive to it. High levels of insulin have been correlated with high blood pressure, high cholesterol, high triglycerides, obesity, and heart attack. These combined afflictions have

come to be called "Syndrome X." The extreme end of Syndrome X is Type II diabetes, in which the body has become so insulin-resistant it can no longer control its blood sugar levels, or even Type I diabetes, in which the pancreas overloads, and is no longer able to produce insulin at all. Recent studies indicate diets higher in lean protein reduce symptoms of Syndrome X, and improve blood lipid cholesterol profiles. Conversely, other studies are showing that low fat, high-carbohydrate diets popular today do just the opposite. Grains in moderation do not seem to pose a serious health threat, but dependence on them exclusively, was understood by "those who knew the ways of keeping health in Ancient times", to be detrimental. Qibo might have been a spokesperson for Syndrome X during his day.

Dairy

Like high grain consumption, milk drinking presents problems for many people. Babies are born with the capacity to digest lactose by producing lactase. After weaning, this capacity is normally lost. 70% of the world's adult population do not retain the ability to digest lactose. "Lactose intolerance" is an interesting designation, since adult lactose intolerance would have been normal for virtually all humans up until agricultural times. The earliest milk drinking populations in Europe, Asia, and Africa began the practice around 4,000 BC. People lacking lactase who drink milk, may experience bloating, gas, intestinal distress, and diarrhea. However, not all persons deficient in lactase have these symptoms. The most common tests used to measure the absorption of lactose in the digestive system are the lactose tolerance test, the hydrogen breath test, and the stool acidity test. These tests which are performed at a hospital, clinic, or doctor's office can easily diagnose true lactose intolerance.

There is a close correlation between the 30% of the world's population who are tolerant to lactose, and the earliest human groups who began milking animals. These individuals are represented most among modern day Mediterranean, East African, and Northern European groups. Only about 20% of white Americans in general are lactose intolerant, but

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among other groups the rates are higher; 90-100% among Asian-Americans, including Asians worldwide, 75% of African-Americans, most of whom came from West Africa, 80% of Native Americans, and 50% of Hispanics worldwide.

Calcium & magnesium

The 12:1 calcium-to-magnesium ratio in most dairy products is in direct opposition with the 1:1 ratio from a Paleolithic diet. Depending on the amount of dairy one consumes, the resulting overall dietary ratio can go as high as 4 or 5:1. This high ratio leads to reduced magnesium stores and increases the risk of coronary heart disease. Magnesium helps to: lower levels of blood lipids (cholesterol), lower the potential for cardiac arrhythmias, lower the oxidation of LDL and VLDL cholesterol, and prevent hyperinsulinism. Whether it is completely healthy for the 30% of the world's population who are lactose tolerant to be drinking animals' milk, is still arguable.

Vitamin D

Vitamin D is a regulating factor in calcium absorption, and is formed by an interaction between the sun's rays, and our skin's oils. We may be at risk of vitamin D deficiency if we spend most daylight hours in doors. Circulating levels of vitamin D throughout the year were probably higher in stone-age men and women.

Sodium and potassium

Electrolyte minerals are necessary for normal heart function. According to Eaton, the typical adult American consumes about 4,000 mg of sodium daily, but less than 10 percent of this amount occurs naturally in food. The rest is added during processing, cooking, or seasoning at the table. Potassium consumption is lower, about 3,000 mg daily. In contrast, early humans consumed only an estimated 600 mg of sodium, but 7,000 mg of potassium daily. People, says Eaton, are the "only free-living terrestrial mammals whose electrolyte intake exhibits this relationship." This reversed ratio could be one reason why people are so prone to hypertension and other heart ailments.

The Evolving Brain vs. Gut Size

Recent findings seem to indicate a correlation between increasing levels of animal flesh in the diet, at the same time the human brain was in the process of near tripling in size. The cranial capacity of Australopithecus ranged from 375-550cc. Homo Habilis weighed in at 500-800cc. Our brothers, Homo erectus, boasted a 775-1225cc brain. Modern humans, Homo sapiens are even larger at 1350cc. The evolutionary factors that facilitated the increase in human brain size are open to speculation, but it seems likely that the evolutionary increase in brain size would not have taken place without an increased intake of long-chain fatty acids, an essential component in the formation of brain tissue. [Crawford 1992]

Animal prey is the likeliest source for these required amounts of long-chain fatty acids because they are much richer in animal foods than in plants. As further substantiation of this, human cranial capacity has decreased by 11% in the last 35,000 years as grains have replaced meat in the diet, the bulk of it (8%) in the last 10,000 [Ruff, Trinkaus, and Holliday 1997]. This evidence of decreasing brain size represents corroborative evidence that animal foods play an important role in human brain development.

Studies by [Aiello and Wheeler 1995] show that the brain, which constitutes 20-25% of the human metabolic budget, and the intestinal system, are both so metabolically energy expensive that in primates particularly, an increase in the size of one comes at the expense of the size of the other. The suggestion here is not that the shrinkage in gut size caused the increase in brain size, but rather that it was a necessary accompaniment. The Human gut has evolved to be more dependent on nutrient and energy-dense foods than other primates. The design of the relatively compact human gut is less efficient at extracting sufficient energy from fibrous foods and is considerably more dependent on higher-density foods. In other carnivores, and omnivores, larger brains, to body size ratios, go hand in hand with less complex guts.

In chapter 47 Qibo cautions, "*Fatty and delicious food can cause the inner heat of a man*". Because of the high-energy

expenditures of our Paleolithic brothers, fatty foods were a necessity. This may be the root of many people's inexplicable compulsion to fat laden foods today.

Omega oils

On the basis of estimates from studies of modern-day hunter-gatherer populations, it is clear that humans evolved on a diet that was much lower in saturated fatty acids, containing ratios between 4:1, and 1:1 of omega 6 and omega 3 fats. This ratio appears to be biologically optimal. Free range beef and poultry have a significantly higher Omega 3 to 6 ratios than animals restricted to grain lots. Omega 3 and omega 6 fats do not occur naturally in our bodies, but are an important component of practically every cell membrane. Unsaturated fats in our cell membranes are to a great extent determined by what we eat. On the other hand, proteins in our cells are genetically determined.

Opportunistic exploitation leads to use of Fire

Even at the time a wildfire is still burning, birds of prey are attracted to the flames to hunt fleeing animals and insects. Later land predators appear when the ashes are smoldering, to pick out the burnt victims for consumption. Others, such as deer, appear after that to lick the ashes for their salt content. It would have been inconceivable that human beings, being similarly observant and opportunistic, would not have taken advantage of the windfall provided by wildfires. Even before humans had learned to control fire purposefully, their early exposures to it would have already introduced them to the role fire could play in obtaining edible food and providing warmth.

Evidence available at this time indicates that the earliest reasonable estimate for widespread use of fire for warmth and cooking began 125,000 years ago. The chances are very high that we are in fact adapted to the cooking of starchy root vegetables such as yams, legumes, and meat. Cooking does in fact make certain types of foods more digestible. Protease inhibitors, which are widely distributed in the plant kingdom, inhibit the ability of digestive enzymes to break down protein. Cooking reduces the effect of most protease inhibitors on digestion. With meat, the likelihood is that it was eaten

raw when freshly killed, and what could not be eaten on the spot would likely have been dried or cooked to preserve it for later. Regardless, cooking did expand the range of utilizable foods, and may have enhanced survival.

Exercise—a Day in the life

Loren Cordain has conducted studies comparing energy expenditures of prehistoric and modern people. Using a formula known as the "Clever equation," he can calculate the energy expenditure for an organism based on its weight.

Cordain compared estimated prehistoric energy expenditures with information collected from existing hunter-gatherer societies like the Ache in South America, the Kung in Africa, and the Inuit in the Arctic. Humans in prehistoric times often would spend a day or more tracking and hunting animals at a running or jogging pace. Women were also very active, carrying children, moving camps, finding and hauling vegetables and other food stocks.

In Chapter 74 of the "Su Wen", The Yellow Emperor asks, "*How to treat disease caused by insufficient Energy?*"

Our Paleolithic ancestors were clearly much more active than we are. Unfortunately more than 60 percent of adults today do not achieve the recommended amount of regular physical activity. In fact, 25 percent of all adults are not active at all. Inactivity is one of the four major risk factors for heart disease, on par with smoking, unhealthy cholesterol, and even high blood pressure. In

contrast, exercise improves strength, endurance, cardiovascular health, and also helps control blood pressure. Walking has to be the most fundamental human fitness activity, and offers distinct fitness benefits no matter what shape you're in. There are few animals with the capacity to match our endurance, many are faster, but we can literally jog most animals into the ground. The benefits of walking and exercise cannot be overstated.

Stress

Qibo says in chapter 39 of the Su Wen, "When one is in a joyous mood, the energy will be harmonious, and both the Ying and wei energies will be unobstructed. So it is called relaxation of energy."

Contemporary stress tends to be more pervasive, persistent and insidious because it stems primarily from psychological rather than physical threats. Stress is associated with ingrained and immediate reactions over which we have no control. Heart rate and blood pressure soar: blood sugar rises to furnish more fuel, blood is shunted away from the gut to the large muscles of the arms and legs, and clotting if need be occurs more quickly. These immediate and automatic responses have been exquisitely honed over the course of human evolution as life saving measures to facilitate our ability to deal with physical challenges. Unfortunately, the nature of stress for modern man is not an occasional confrontation with a saber-

toothed tiger, or a hostile warrior, but rather a host of emotional threats that occur several times a day. Our bodies still react with these same, archaic fight or flight responses. Repeatedly invoked, it is easy to see how they can contribute to hypertension, strokes, heart attacks, diabetes, ulcers, back pain, and other "diseases of civilization".

Part II of *Evolution of Ancient Chinese Wisdom and the Five Elements*, by Joseph Adams, LAc, will address: Disease in a Natural Setting; The Impossible Time Machine; Five Element's Earliest beginnings; Fu Xi (about 4,000 BC) other sources (2852-2738 BC); Shen Nong period (2800 BC); Nei jing or Yellow Emperor's Canon of Internal Medicine (221 BC - 220 AD); Soup for the Qan (1330 BC); Spring and Autumn Period (770-475 BC); Three elements in the Chândogya Upanishad; Ye Tian Shi (1690-1760 A.D.); The Five Elements and Our Internal System ; The Five Tastes; The Four Food Groups; and Eating and The Four Seasons, followed by a closing summary commentary.

Joseph Adams recently graduated from Emperor's College in Santa Monica and is looking forward to starting his own acupuncture practice. Direct any questions or chart requests to Joseph Adams: qimoves@yahoo.com