HUNGER Management

The euphemisms and analogies help us understand "weight challenges" to reorient our "primal hunger." A universal message grounded in science and common sense.

Food Matrix

Bruce Thompson MD

Contents

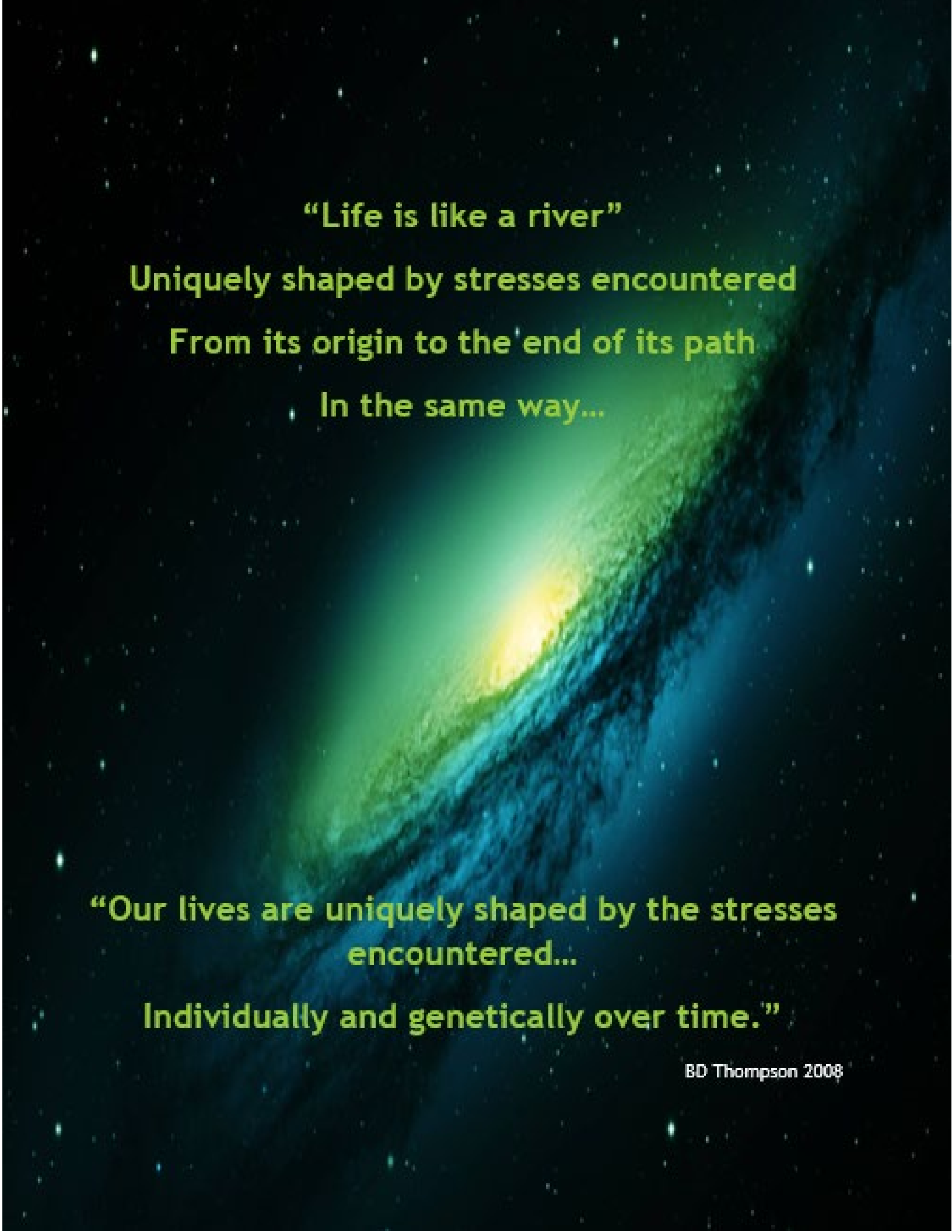
DEDICATIONS

Dedicated to the present and departed members of the Philippine Medical Association of Oklahoma physicians who have made a difference in the lives of countless Oklahomans. And to David Kem, MD, and Gordon Deckert, MD. You all have left fingerprints of grace on our lives and shall not be forgotten.

ACKNOWLEDGEMENTS

I am overwhelmed in all humbleness and gratefulness to acknowledge my deep gratitude to all those who have helped me to put these ideas, well above the level of simplicity and into something concrete. Any attempt at any level could not have been satisfactorily completed without the support and guidance of family and friends. Special thanks to Jocelyn Thompson of Millete Publications for her editing skills and insights.

I would like to express my very special thanks of warm to my sons, Andrew and Matthew Thompson, who worked on this book "Hunger Management" and for their research and writing contributions on “The Third Renaissance of the Food Matrix.” Also, Julian Thompson for his technical contributions.


"Life is like a river"
Uniquely shaped by stresses encountered
From its origin to the end of its path
In the same way...
"Our lives are uniquely shaped by the stresses encountered...
Individually and genetically over time."
BD Thompson 2008

INTRODUCTION

Hunger Management, "a road to health and longevity" written by Bruce Thompson. After years of study, he describes a visceral way to sustain health and control weight without spending more money instead, saving it! In it, he looks at eating behaviors and weight problems in a new and refreshing way. The euphemism and analogies help us understand “weight challenges” to repurpose our “primal hunger.” A universal message grounded in science and common sense. As told, “we have innate abilities that will help us adapt to global food security and live long healthy lives.”

The book starts with a forewarning about the growing industrial “food matrix” because food scarcities are a natural part of Earth’s environment which shaped the evolution of humankind’s biology. These earthly fluctuations have resulted in the genetic efficiency of physical features and metabolic systems. In modern times, food is always available, and our former ways of living transformed into the conundrum we now face. Serious weight conditions are growing beyond epidemic proportions around the world. The implications for health problems in association with this phenomenon are common knowledge. Offspring diseases such as diabetes, hypertension, heart disease, strokes, and cancer are emerging as the leading global health threat with significant economic challenges.

The food industry continues to produce ever-increasing amounts of high-calorie foods. “Machiavellian food industry” merged with “Merovingian marketing.” Merovingian marketing is a phrase coined by the author describing the psychological and physiological strategies designed to effectively eliminate choice based on the paradigm of “cause and effect.” He uses analogies to “The Matrix” movie where humanity was living imprisoned by an altered reality generated by machines.

According to the Merovingian archetype, our choices are illusions. There is only "cause and effect.” In the movie scene from "The Matrix Reloaded," he demonstrates the effect of an aphrodisiac program he wrote and inserted into a dessert which he sends to an attractive woman seated at another table. The spiked dessert affects the

woman based on the program with predictive outcomes in both physiological and psychological behavior, “cause and effect.” The Merovingian strategy proclaims that everyone is a slave to their most basic human drives. This is analogous to hunger drives and desserts loaded with sugars triggering the “cause and effect” principle. These strategies have earned the industry billions. “But in such a fashion, we, the consumer, are blamed for “bad decision-making.”

Neo contends, “We still have a choice” but, do we? Is our choice of eating behaviors an illusion?

Yes, it is still possible to avoid the complacent state of overeating by choice! A growing hunger management paradigm shows that dietary restrictions combined with physical exercise have many health benefits. The advantage of this model goes beyond weight loss and into slowing the aging process itself!

The author realized that a naturally occurring hunger drive was being overlooked as the cornerstone for the failures of weight loss programs. He looked at turning this adversarial relationship we have with the hunger experience into one for natural health and well-being. Through many discussions, along with years of personal research, he has been able to describe a model that helps navigate today's complex food industrial matrix. This model embraces hunger as a necessary road to weight control. He says, “we must first start with clearing the ambiguity in how millions around the world view hunger.” His method is to use a commonsense approach and communication style that brings this message to people from all classes and backgrounds.

“He urges us to manage the daily experience of hunger to our benefit, it will help to achieve a healthy lifespan.”

The advancements in modern science are revealing harmonious effects of what Thompson calls “Fasting hunger.” Today, he counts himself among the growing numbers of people incorporating such principles into their lifestyles. He says, “I strongly believe that by developing an understanding of this model, its benefits for

health and longevity, we can improve the vivacity with which we experience daily living.” The immoderation of overeating can become outdated for many! It starts with a choice to face your appetition head-on!

At prima facie, the force of human drives that we all experience daily may seem unmanageable. Read this book and begin to turn primal hunger drives into a tool for healthy living! In these pages, there is a clear description of our natural response to food and how it is camouflaged not only by psychological barriers and confusing terminology but also by the food and marketing industry. He hopes the readers will develop a profound understanding of the “human hunger drive” to help endure the constant stream of food marketing campaigns.

Worldwide, "food with high sugar and carbohydrate contents in general, are cheaper and more readily available. Furthermore, recent paradigm shifts in the workplace could lead to less physical activity and more value on convenient foods. As described by Thompson, the magnitude of unmanaged hunger is worldwide, with an upward trend of excess food consumption.

Approaching the year 2018, 39% of American adults had moderate weight conditions, and 42% were severe. Stated another way, seven out of every ten adults were threatened by weight. Remarkably, the same is true for all high-income countries. Even in nations at the lowest end of the per capita income scale, about 25% of adults face the same problem. Including areas across South Asia and Sub-Saharan Africa for the first time in their history.

A growing number of organizations are promoting options for healthy weight control based on various strategies and ideologies, but nothing seemed to be working.

The findings from research published within the past year state, “with a high degree of accuracy, that by the year 2030 nearly half of all adults will have obesity.” The widespread presence will be higher than half in twenty-nine states and no state will have less than thirty-five percent. Severe obesity will likely become the most common weight category.

The next time you're walking through a shopping mall or grocery store, just look to your left and then to your right, only one will survive the weight pandemic over the next eight years. What will be your outcome? Will you be "The One?" The choice may still be yours.

What is standing between thousands who face the challenges of modern food security and the path to a healthier future?

Thompson attempts to answer this question by starting with the birth of what he calls, "The Food Matrix." Here humanity is living imprisoned by an altered reality generated by industry.

Throughout your reading, you will see why it is vital that we break through the complex barriers blocking the road to "health and longevity."

Hunger management is a strategy for healthy aging relying on physical activity, restriction of energy intake, and maintaining essential nutrients.

Join the Hunger Management Group on Meta, formerly known as Facebook for more information and updates.

Also, visit the website "Hunger Management Book" to get your free copy of the first edition of the book along with the audio.

So, let's get started!

BIRTH OF THE FOOD MATRIX

The very first version of the "Matrix in the movie" was designed as a utopia, but the human minds eventually rejected this simulation resulting in its failure. A subsequent version of the Matrix was designed to become much more of a specter, but the incorporation of human suffering still proved unsuccessful.

Studying the human psyche, the component of "choice" was introduced in the third renaissance. The Matrix finally became the most stable. Choice allowed those born and connected to the Matrix to accept the "simulation as reality." Giving them a feeling of self-determination where a decision results in organic changes in their existence, even if their minds were only faintly aware that options were not real[1]. This is analogous to the "choices we have about food overconsumption" when born in a world where "food is available at all times." A system designed by the food industry to keep us "satisfied with feelings of good health" despite the dangers that lurk beneath like diabetes.

Figure 1 Humankind entering into the age of agriculture. Similar to the birth of The Matrix in a blockbuster movie. A world designed to control the human mind. Agriculture and marketing are designed to drive consumer behavior.

So, let's take a journey to discover the reality behind the food industry and "The Food Matrix."

[1] The Matrix Wiki

Around 10,000 years ago, agriculture was born! The embryonic development of the "Food Matrix" followed the epochal migration of humans out of the Southern plains of Africa. Humankind spread to the Middle East, Europe, Australia, Asia, and America, eventually giving birth to what would become the “Food Matrix.” Little did they know, eons of successful human adaptations would lead to never-before-seen challenges. It began along "The Fertile Crescent[2]," a strip of land with plenty of water and rich soil for plant growth. Over time, this new skill expanded from the Persian Gulf up to the Tigris and Euphrates rivers, westward throughout the Mediterranean Sea and to Egypt along the Nile River, eventually to all continents.

Figure 2 This region is one of the cradles of civilization because it is one location where settled farming first emerged. Early civilization began after humankind started changing the landscape and modifying natural vegetation by domesticating plants as crops. This was the development of “agriculture” around ten thousand years ago.

Lifestyles passed down through hundreds of generations for thousands of years changed as agriculture continued to spread. The industrial food matrix would go through many iterations over thousands of years, trying to adapt to the inefficiencies at the hands of farmers, economies, and environmental conditions.

[2] Fertile Crescent

The following is one such story of humanity's greed and lack of understanding that led to an ever-increasing force of the food matrix that seems to take on a self-perpetuating lifeform, changing, and adapting. From one era to the next with increasing complexity and efficiency.

The First Renaissance

In the "first renaissance," agriculture freed humanity from the struggle of daily life in the wild and the beginning of civilization. Marked by stages of growth and transformations, humankind marveled at their creation. Food availability grew from herding and farming through the millenniums, forever changing how humans lived. As crops and animal domestication flourished, humankind found more leisure activity. Many began to participate in activities outside food production. Mental constructs and imagination emerged, distracting humankind from the primal nature of their hunger drive. For it, “the hunger,” receded, hiding deep inside of their psyche, and would become unchained in a world of growing abundance.

The infant food matrix flourished. For a time, it was good, as societies grew to dominate over the lands with the creation of the first cities and states.

The Second Renaissance

A few thousand years ago the agrarian populations grew into the millions as humankind continued to marvel at his abilities of farming and herding. Magnetized around farming communities and trading centers. Villages, towns, cities, states, and nations begin to spring up. Inhibition of primitive drives like hunger was necessary to collaborate and resist the urge to take other people's goods instead of barter or buy. Such population density brought various consequences for humans, including the requirement for cooperation. Thus, their primal hunger drives receded even deeper into humanities’ psyche. This way of life spread quickly over the lands as cities grew.

By the second century, Rome had over a million inhabitants and the beginning of modernity. This transition was a critical turning point that opened the door for

inequalities and exploitations by profiteers within the complexities of the emerging food industrial machine.

Selected animals were domesticated by humankind for their birth rates and profitableness and herds grew. Grains and other provisions were also selected for their ease to plant and grow.

Droughts, infestations, natural disasters, and diseases of man and crops challenged this adolescent period of the food industry, followed by famines, starvation, and malnutrition. Communicable diseases would quickly spread across trade routes, such as the plagues that recurred many times, killing millions.

The "Third Renaissance of the Food Matrix" would eventually emerge with unparalleled efficiencies.

The Third Renaissance

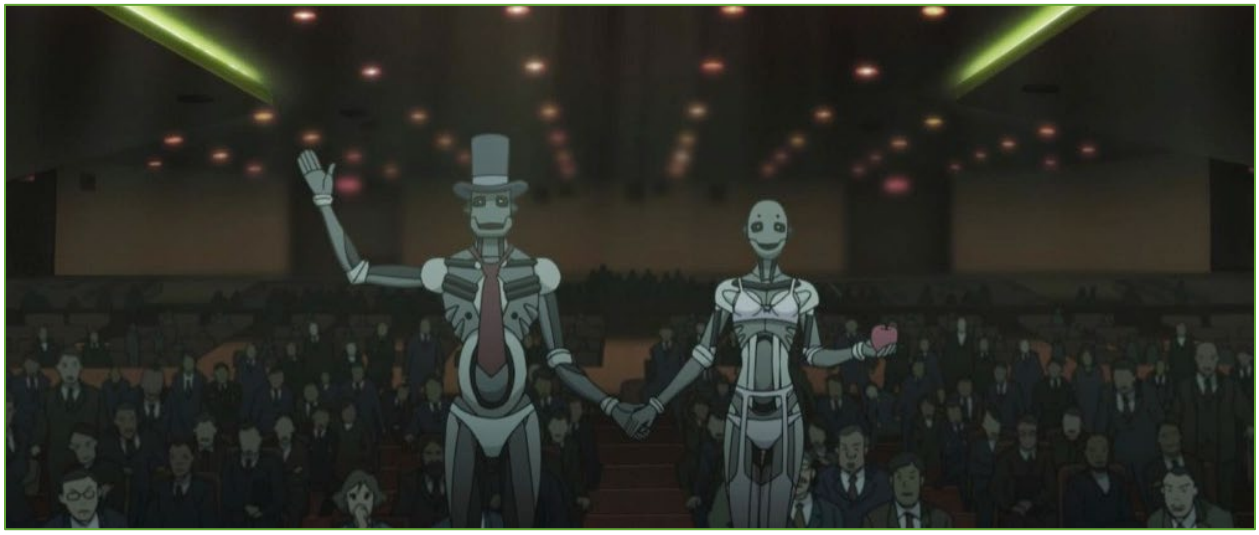


Figure 3 The Third Renaissance of the Matrix. Machines reasoned with humankind, but man would not listen. The struggle between man and machine began. Like the struggle between farmers and the growth of the industrial food complex led to the "third renaissance" of the Food Matrix that would grow to dominate over the lands and the beginning of commercialization. A focus on ever-increasing production, distribution, marketing, and sales with greater efficiency.

Recently, two college students, Matthew and Andrew Thompson, authored essays that describe the "Third Renaissance" of the Food Matrix. They wrote that there was a boom in American agriculture in the mid to late nineteenth century as more settlers had moved west during the period of "Westward Expansion." This transition was the beginning of an agricultural movement that led to the emergence of

"commercialization!" It first had seemed like a tremendous up-and-coming market to invest in with the Transcontinental Railroad, helping farmers move their crops and farming tools boosting crop yield production, but these all were two-edged swords of the maturing food matrix.

Figure 4 Farming family in the Midwest circa the 1930s during the "Dust Bowl" of the American Midwest.

Figure 5 Farmer workers from the South circa the 1920s during The Great Migration from the American South.

From the mid-nineteenth to the early twentieth century, farmers in the United States, particularly in the west, had one of the most demanding professions throughout American history due to the economic hardships such as tariffs that inflated costs, and expensive railroad fees, and the deflation of their produce. The farmers created unions, du devenir producers, and distributors of their goods. The next major economic struggle was the deflation of their goods and crops due to increased crop yields culminating in an overproduction that affected prices.

The farmers encountered challenging financial situations that would begin to place more power in the hands of a few. They attempted to control the political and economic machinery unsuccessfully.

At the beginning of the 20th century, dreams of success and fortune were just that, "a dream."

Yet, farming influenced changes in American society in more ways than expected by introducing new perspectives, techniques, and machinery to the farming business. Though success was occurring throughout the population of farmers in America, failure soon followed. Inevitably, the Industrial Revolution resulted in fewer human resources needed for farming. Additionally, with the ever-increasing complexities of agriculture, many people began migrating to urban centers for employment. What was once the primary means of sustenance for families was now obsolete. With this movement, the industry quickly began aggressively promoting food focused on increasing availability and consumption to follow wherever people migrated. Food was transported and placed in markets for purchase with easy access and consumption, eliminating the total dependency on the old ways of hunting, foraging, and farming. The growth of large distribution centers, marketing firms, and farming equipment manufacturers soon left little benefit to the average farmers.

Figure 6 Machiavellian archetype from the Game of Thrones.

The industry soon ushered in a new generation of Americans with ever-increasing food availability to eat at any time. Advances in technology finally began to "stamp out" hunger! The rise of "Consumerism was just around the corner" as the industry took on Machiavellian principles.

The troubling effects of agriculture, the food industry, and consumerism became more transparent as we entered the last half of the 20th century. As a result, the hidden and uncontrolled nature of human hunger would lead them down the dark path of overconsumption. At the beginning of this transformation, few would realize the long-term effects of overconsumption. The corporatization of food production blossomed.

Figure 7 Dolphin Thompson, a public relations professional, presents President JF Kennedy with an award from the Washington media association in the 1960s.

Dolphin Thompson, an international public relations professional, gave a speech before the Public Relations Society in 1964. He warns us that "in today's world in which science and technology have guaranteed man from becoming a victim of many natural forces of life, there is yet, a tremendous minus factor, he says, at times seems to threaten the very existence of man on this planet. Mr. Thompson had the atom bomb in mind. I am sure he would be quite surprised to find out that overconsumption of food takes the credit for far more deaths than any bomb, including nuclear. He went on to say, which still rings true, that "…man has ignored the human side of his world," thus relying too much on our technology to solve problems, in and of itself, creates one. Still, humankind has not fully considered that they could become the architect of their demise.

The emergence of "commercialization" began to affect social and economic order. It encouraged the acquisition of goods and services in ever-increasing amounts. With farming overproduction and the emergence of industrial machines such as railroads, shipping, and air transportation, the supply of goods grew beyond consumer demand.

The birth of “Merovingian-like” marketing campaigns was purposed to influence our choices of foods and dietary behaviors. By psychological tactics designed to influence consumer choices with unconscious manipulation, effectively eliminating choice based on principles of “cause and effect.” For example, some breakfast cereals offer to lower cholesterol while also being ladened with addictive sugars. Unknowingly, a growing false reality was growing and manipulating consumers. To date, evidence shows that significant consumer drivers like comfort, leisure, or increased enjoyment

are supplying momentum in food marketplaces and propelling consumer buying behavior.

The industrial revolution in the 20th century led to overproduction. The supply of goods would grow beyond consumer demand and so manufacturers turned to planned obsolescence and advertising to manipulate consumer spending. Products now had “shelf life” where commodities were purposed to become outdated.

The growing concerns of experts argued, "we are troubled by the ensnarement of the food industry, and it's difficult to determine if we can survive its effects."

Thus the “Third Renaissance of the Food Matrix” was created by the industrial food machine and marketing. The age of “consumerism” had emerged! A new social and economic order that created the acquisition of goods and services in ever-increasing amounts.

The Fourth Renaissance

Figure 8 Image depicting the designs of programs to control the human mind and behavior.

Appearing before our eyes is the "Fourth Renaissance of The Food Matrix," the rise of online grocery shopping, "location independence," and "digital nomads.” The

industrial food matrix has become unimaginably successful, taking on a life of its own. There have been many iterations of the global industrial food complex design, and the current one has a level of “unmatched mathematical precision” that could reach every corner of the world by 2030. A term called “Global Food Security.”

Past failures of The Matrix designs in the movie were due to the inability of the machines to understand the best environments to control the minds of humans. The Matrix movie archetype, "the Architect," who designs the programs of the false reality, always tries to balance the "equation." To keep humankind from rejecting the program, living longer, and thus producing more energy for the machine. Likewise, the current design of the industrial food machine attempts to keep us from rejecting its programs thus providing more dollars.

The current design of The Food Matrix is still unbalanced because it has not incorporated the natural world of wild-type food variety and frequency of feeding. A growing number of people are rejecting its programs because of overconsumption and disease, the beginning of what has become the nemesis of the modern era.

Figure 9 The Architect from The Matrix movie. He designs computer programs that govern the rules of systems in The Matrix. Similar to DNA codes of humans that govern the rules of our biology like hunger. It is our response to these rules that determine the success within the systems.

The problem we face with food security is overnutrition, which leads to severe weight challenges that are difficult to overcome and the continued expansion of the food matrix. Four legs of this industrial growth have been described as *availability*, *access*, *use*, and *stability*. In 1996, The World Food Summit concluded that "food security exists when all people, always, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

"World food security" is a global and massive industrial scaled effort and a path of the food matrix to achieving its goal. Global food and health organizations say their goal is to "end hunger" by achieving food security with sustainable agriculture by 2030. Thus, the path widens for the growth of overconsumption.

Developing nations do not know enough about the two-edged sword slung by the Merovingian and Machiavellian profiteers within the industry. Experts agree that as the world reaches food security, consumer behavior will continue toward unhealthier choices.

Consuming higher-calorie foods with addictive qualities continues to trend upward, making the food industry billions. More value is placed on convenience due to the busy lives of urbanites. The rise of digital nomads and location independent workers fueled by the COVID-19 pandemic has increased profits on convenience foods. Foods like restaurant meals and ready-to-eat foods from grocery stores.

Convenience food products are abundant in calories, fats, salt, and sugars that affect the brain's pleasure center, triggering dopamine release and giving us a false sense of nutritional health. The food industry seized these concepts in both physiology and psychology, using them like the proverbial carrot to attract our dollars.

To date, no country with growth in food security has experienced a reduction in the prevalence of individuals challenged by excess weight. So far, Indonesia is the largest country affected by this two-edged sword but, the list is growing.

A false sense of security is expanding worldwide that could further entice many to the irresistible temptations of the industrial food machine. With these goals, the global complex of food distribution will gain attempt complete control of world hunger, potentially becoming a pervasive force for a growing problem, “the weight pandemic.”

The following is a foreword from a report published in 2021, a call to action by the “land leaders,” to seek new ways to collaborate and innovate. In it, they lay hopes to tell a remarkable story of our species that overcame our primal hunger drives and merged successfully with what I call, the fully matured, “Global Food Matrix.” This report was produced by the brightest minds of the day, from the four corners of the world. Leaders in farming, science, climate, education, economics, marketing, and more. It was named, “The 21st Century Agriculture Renaissance: Solutions from the Land.” They point out that there has never been a greater need for an Agricultural Renaissance…many voices echoing across centuries of scarcity and abundance, challenging us to find novel ways forward, paths that produce abundance for the Earth’s expanding population, and prevent wasteful destruction of resources.” We have altered the land we depend on for our survival…rapidly depleting the soils, seas, rivers, and forests.

During the 2020 pandemic, many came face-to-face with the reality that “any prolonged collapse of global food system would create a world of scarcity and struggle…and face the greater threat of the inescapable forces of nature that we have tried to control.” Those of us who manage living systems and natural resources to produce food and fiber must understand and acknowledge the past to embrace the present and prepare for a challenging, less-predictable future.

The United Nation’s Sustainable Development Goals for 2030 conjure a bold vision for humanity that is possible but has yet to exist. They lay out an ambitious framework for how humankind might come together in collaboration to build a better world, with systematic international cooperation and strategic design to bring our human systems into alignment and harmony with natural systems. This vision requires participation

and leadership from farmers, ranchers, foresters, and all their partners in agriculture to establish the social and environmental foundation. This will likely occur only with "The Fifth Renaissance" that lay in the future.

A PRISON FOR YOUR HUNGER

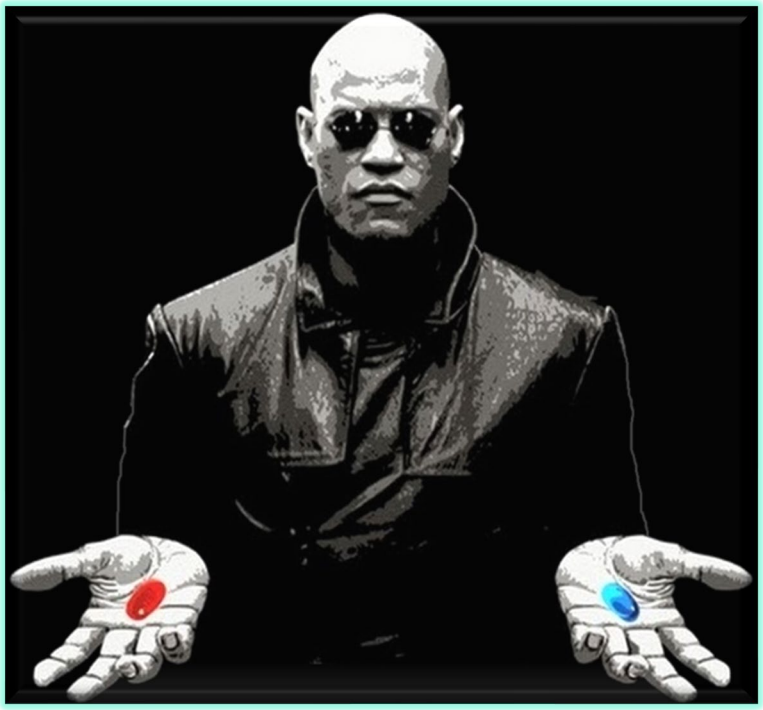


Figure 10 Morpheus from the movie, The Matrix. He is holding a red and blue pill.

"Let me tell you why you're here." You know something. What you know, you cannot explain, but you feel it. You felt…there is something wrong with the world. You do not know what, but it's there. Like a splinter in your mind…do you know what I'm talking about?" Do you want to know what it is? -- asked by Morpheus, from the movie trilogy, "The Matrix." Morpheus went on to describe the Matrix, a false reality constructed by artificial intelligence to imprison the human mind in order to use their bioenergy.

Mr. Anderson, also called "Neo," in this blockbuster movie, aided by the Oracle to seek self-knowledge, freed himself from the constructed reality made by artificial intelligence. In the beginning, Mr. Anderson, Neo, was given a choice, "to take the blue pill or the red." The blue pill allowed humans to return to a false reality; in the movie, the red pill revealed knowledge with the ability to "free themselves from the prison for their minds."

Likewise, take the red pill that represents knowledge of our past and present. From such, one can harness the power of “mindfulness,” and free us from the prison for our “hunger.” As Morpheus said, “I only offer the truth!”

Unlike the movie Matrix, this prison is one you can “see, taste, and smell, a construct for your hunger!”

The concept of “self” is one of the most commonly studied psychological variables that impact consumer behavior. Knowledge of self is bound to our past, especially for us to successfully prepare for a challenging and uncertain future. Humanity must understand and acknowledge “the past to embrace the present." And it is this knowledge that is necessary to free ourselves. So, let's begin by looking at how the past led to the development of the false reality of the industrial food matrix, “a prison for our hunger.”

Nutrient scarcity has been a natural occurrence on Earth that shaped genetics and patterns of human behavior over time. Overnutrition, lack of hunger management, and increasing food availability are the stresses affecting the bodies of many individuals, and genetic changes may occur after many generations to come if we continue along this path. “We are what we eat,” according to Sir David Attenborough, a world-renowned naturalist. We are also shaped by how often we eat.

The nucleus of weight control failures often arises by underestimating hunger’s power. Human hunger is best understood as a biological program, not just a mental one, a dynamic state with physiologic implications. When our physiologic hunger pangs begin, ancient DNA programming is activated, and we are motivated to hunting-like activity. Countless numbers of human beings will continue suffering for eons before a genetic anomaly appear that frees us from the food matrix. Meanwhile, the marketing of addictive foods is directed at our willpower to keep us plugged into the construct of overconsumption.

In the real world, outside any influence by the food matrix, our ancestors followed these overt hunger drives without question. As in the movie, outside the Matrix was a harsh environment filled with daily challenges of survival.

Inside the less challenged but fabricated reality of the Matrix, Neo had to wake up that he was being used like a copper-top battery to supply energy with no control over his fate. Likewise, our hunger drives deliver the food matrix with billions of dollars, and if you want to have some control over your fate, you will need to "wake up" to the harsh realities of the real world. If we start to resist hunger, it will have effects on the food industrial matrix, reducing its influence over our lives, and forcing it to make changes. Neo's battle for self-control against Agent Smith is analogous to resisting our "hunger drive," a formidable force. Enduring the hunger state long enough unlocks healthy metabolic pathways.

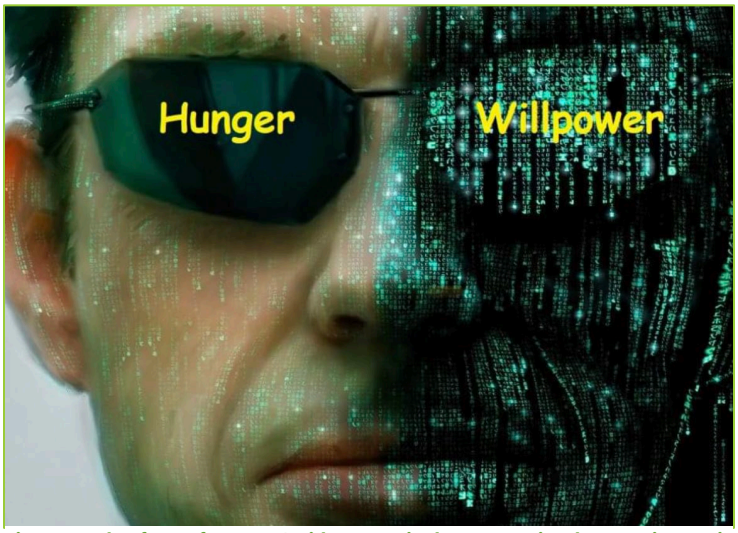


Figure 11 The face of Agent Smith, a sentinel program in The Matrix movie designed to keep humans trapped inside the Matrix as a power source for the machines. Analogous to the Food Matrix that needs our dollars, Smith keeps us trapped in a pattern of overconsumption. Thus, the struggle between Neo and Smith is like our personal struggle between Willpower and Primal Hunger r that could free one from the construct of food abundance.

Neo succeeded after reaching self-knowledge of an innate power of control. "Temet nosce," a Latin phrase placed on a plaque above the kitchen door of the Oracle that translates to "thine own self thou must know," directs Neo on a path of self-discovery.

Endurance of hunger that arises from calorie restriction is a necessary experience to avoid the traps of overnutrition. To quote many philosophers, "fasting calls upon us to know ourselves, to master ourselves, and to discipline ourselves the better to free ourselves…to fast is to identify our dependencies, and free ourselves from them."

Healthy adaption to modern times may very well rely on discovering our strengths and weakness, knowing ourselves, and understanding what constructs are attempting to control and capture our primal hunger for monetary reasons. Like Neo who had to face Agent Smith once freed from the Matrix. So too, we must confront hunger face-on, the equivalent of Agent Smith, a constant battle within one's psyche.

In this blockbuster movie, it was a brutal battle between Neo and Agent Smith. Two internal forces inside the Matrix, seek to control the other like “Doctor Jekyll and Mr. Hyde.” Similarly, there is a struggle between two driving forces within us, one acting with cunning and brute ferocity, the other with reason and logic.

Yet, “neither can ever survive without the other.”

So, what are these mutually opposing forces? I am speaking of our hunger drive and our willpower. Such resolve to endure hunger is called “mindfulness,” a sustained fortitude rooted in an awareness of your control of the present moment. Amusingly, the “NEO-cortex," a highly developed region of the brain, is the seat of our inhibitory control more commonly referred to as “self-control.” Such awareness is our greatest asset to guard against the industrial food matrix programs that are searching to capture our hunger drives.

Gordon Deckert, a psychiatrist extraordinaire, well-known for his lectures on human behavior states, “a man can never be free until he understands his past!” In this respect, our ancestral history paves a road to self-knowledge, focusing on highly adaptive activities to survive.

Surviving food scarcity required behaviors that were successful for thousands of years. For millenniums, the human hunger drive compelled us to adapt to the “real world,” a world of the wild.

They lived under harsh conditions or in isolated regions of the world with far less daily caloric intake. The lands provided them with varieties of wild nutrient types. Their activity was "often-strenuous" through the days or weeks, hunting and foraging. Jared

Diamond, an American author, known for his popular science books, describes humanities' early lifestyles as "…vicious, ruthless, and dangerous…no food was grown or stored. "There is no respite from the struggle to find food…the hunters' lifestyle requires fitness for living in the real world."

For thousands of years, Native Americans settled in villages from where they set out daily to hunt, fish, and gather berries, nuts, wild plants, and roots from the surrounding forests, rivers, and lakes. They tracked wild animals over long distances as did their hunter-gatherer ancestors. In the modern era, health experts strongly agree that such a basic level of strenuous exercise in a similar fashion is necessary for optimum fitness. The life of our ancestors discovered by anthropological findings showed how they managed generation after generation, adapting even down to the microbiological level.

Figure 12 Australia's Aboriginals. Image on the left taken circa 1920s. On the right circa 1990s.

The image on the left shows photographs of Australia's Aboriginals before and after the modern food industry. It is essential to understand that we still have the physical ability to endure the challenges of winter, migrations, and droughts, which is the real world. Since the years of agriculture, food and physical activity are the only factors that significantly changed our lifestyles. Since our predecessors first began to put down the spears and arrows in the years, our bodies have stayed the same. Today, our biology can endure extended periods of food scarcity followed by brief periods of food abundance. Your human body is more adapted to significant amounts of time without food than you may realize. Now, food is more easily accessible, tending to remain affixed to its locations in supermarkets, restaurants, and the like. Today, for most people, there is little motivation to engage in such strenuous pursuits. Many are "plugged-in," like in the movie The Matrix where our

physical abilities lay dormant. A similar construct of the modern food matrix is characterized by a sedentary life.

Yet, the energy expenditure we once used for hunting is still vital for supporting good health. The agricultural goal to supply the world's nutritional needs offers excellent hopes for the future. But the current trend in weight problems is causally related to the primal drives of hunger in an environment of ever-growing food availability and marketing.

Unmanaged hunger urges lie beneath the failure of health and weight management strategies and programs. The idea of an effective model to manage hunger drives could inspire creativity and mindfulness purposed to prevent overnutrition and its many problems that reduce the chances of a long healthy life. For some people, it may require collaboration with others who practice such a model that recommends regular fasting and equivalent physical exercise levels.

Researchers now realize the importance of continuing with our ancestor's level of calorie intake and calorie-consuming activity. Popular documentaries have noted in such groups; that there was no obesity, and modern diseases are non-existent. To most people, this makes sense. Their success is how we got here. We are their offspring and survived to this day. Many people are beginning to agree that we can learn from our ancestor's eating and working activities. Acting on the knowledge of our past hunting and eating behaviors can set us free from mindlessly overeating.

By tolerating more extended periods without food, we guard against the powerful urges to gorge. Like Morpheus in the movie, The Matrix, "Neo, sooner or later you're going to realize, just as I did, there's a difference between knowing the path and walking the path." We have innate powers to domesticate this ancient beast, human hunger, and turn it into your well-trained pet.

Health may still be possible by bending the rules of our DNA, adjusting to world food security, and avoiding the mindless psychological conditioning of overconsumption.

Understanding the language of the food matrix will help to free our hunger, a language rooted in the psychology of the mind.

LANGUAGE OF THE FOOD MATRIX

Figure 13 Computer language of the Matrix.

Decoding the language of the industrial food complex to see how the world's weight problems are connected to language, culture, and social practices. Words such as Craving, Appetite, starvation, and hunger are not clearly defined. These terms are often used interchangeably, yet there are significant differences in their meaning. Clarification is needed to help the readers understand that "hunger" should stand alone because of its importance in human biology. Hunger in social and political arenas makes it even more confusing. To make things worse, many health organizations casually use the word “hunger” to describe starvation, malnutrition, and famine.

In sociopolitical arenas, the term hunger takes on yet other meanings, like being in jeopardy by insufficient quality and quantity of nutritious food. The subliminal effect may be an unconscious averting of hunger. As a result, modern society internalizes hunger as a negative feeling and is dangerous; therefore, frequently eating is healthy, which is a psychological distortion because most people know about problems that arise from being overweight. However, as you see, malnutrition, famine, and food insecurity are the problems. Study after study reveals that regularly experiencing hunger during Intermittent fasting, though unpleasant, is necessary for longevity and

good health. These differences in description and lack of consistency are significant challenges in calorie restriction and weight management. For example, world food programs "combat and fights hunger." More precise would-be statements like "fights undernutrition and malnutrition" are potential health problems. The hunger experience is not a medical problem; it is part of a balancing system in biology. A natural physiologic response to nutrient and energy balancing.

Other commonly used words that distort the meaning of hunger include appetite and cravings. These two experiences are psychological and rooted in environmental conditions and cues. For instance, past experiences during early childhood may play a vital role in forming eating patterns. Sometimes, cultural variations can also account for the types of foods or dining practices an individual may prefer. Even peer pressure may coerce one to adopt the eating patterns of their social group. Both experiences are not associated with a physiologic necessity of nutrients or energy. However, it is essential to remember that both play specific roles in our eating practices. So, it is crucial to distinguish craving and appetite from the primal drives of hunger. Unlike appetite or cravings, hunger is a necessary part of our physiology for good health.

The term appetite describes an individual's overall eating pattern. For example, phrases such as "Russell eats everything on the plate," "Sandra eats three times a day," or "Brad can eat an entire chicken a dinner" accurately describes this term. So, to say a person has a "good appetite" may be more clearly understood as one who "has a specific quantity or pattern of consuming food."

When experiencing a craving, we may find ourselves preoccupied with a sudden desire to enjoy a distinct flavor, texture, or dining experience. For instance, one may suddenly feel a slight inclination to consume a handful of strawberries or an overpowering impulse to devour a "double bacon cheeseburger" or an entire tub of ice cream. A person sensing such specific desires or inclinations is a transient experience. The eating patterns of appetite and desires of cravings may range from mild to intense and yet both different from hunger.

Calorie restrictions are a growing phenomenon across the globe where hunger is accepted without fear. Hunger is a natural result of food restrictions and healthy dieting. Like fear, a primary emotion seems threatening, but it is not. In this modern era, a change in thinking is occurring, where tolerating hunger naturally leads to better health and weight control. We are confronted with new perspectives after realizing hunger and dietary restriction are two sides of the “same coin.”

"Intermittent fasting," “Time-restricted feeding,” “calorie restrictions,” and “fasting” all result in the sensation of "hunger!" A person is hungry, not “reduced calories.” One would not go around saying, “I am reduced-calorie, or I am calorie-restricted, but rather I am hungry!” Hunger arises from the gastrointestinal, fat, and brain systems characterized by a cascade of chemical messengers of nourishment and energy balancing. Hunger has profound effects on the choices we make regarding food consumption.

From the Merovingian perspective, our choices are illusions. There is only "cause and effect.” Neo contends, “We still have a choice” but, do we? Is our choice of eating behaviors an illusion?

According to the Merovingian, people search for power to have dominion over those who do not, referring to the power to control programs within the Matrix thus influencing humankind's behavior. Is this so different from the marketing of the sugars, fats, and salts by the industrial food matrix for money? Are these addictive elements that spike our foods like the Merovingian's program inside the spiked dessert with predictable outcomes? 39% of adults in the world are now overweight or obese.

We are starting to realize the marketing of high-calorie foods does influence our behaviors. But does it eliminate our ability to make choices?

The Frenchman compels Neo to ask the question, why? Why do you need the “Key Maker?” The answer is that the Key Maker has keys to open programs inside the Matrix. Once inside the program, it can be analyzed, changed, moved, or deleted.

Figure 14 The Key Maker from The Matrix movie is analogous to scientific researchers who work to unlock our DNA codes to discover their purpose.

Understanding these programs was necessary for Neo to discover his purpose! So, I urge all of us to ask the question, why? What is the purpose of "hunger"?

To answer this question, we also need keys! Keys to decipher "biological programs" written inside our bodies' cells that drive "hunger" and discover its "purpose."

The Key Maker is analogous to our scientific researchers who work to unlock DNA codes that control biological processes.

DNA codes are like computer programs that determine the rules of the operating system. Similarly, DNA determines the rules that control biological operating systems within the body. And it is "these rules that can be used to understand the choices we make" about food overconsumption!

Global sugar consumption provides a clear window into consumer choices for higher calorie, lower-nutritional valued foodstuffs. Social media are exploding with imagery of users in developing countries glorifying foods laden with processed ingredients, refined added sugars, and little more. Some scientist even considers sugar as addictive as a drug, and it is being trafficked around the world.

Sugar is the main ingredient of what is regarded as the most delicious food, so much that it is called a "treat." Many experts agree that sugar consumption is an essential

link between overeating and metabolic syndrome -- an imbalance of energy intake and expenditure.

Figure 15 Selfies of high-calorie pastry in developing countries.

Figure 16 Globesity describes a very large population of the weight-challenged.

Over the past century – but particularly over the past 50 years – the supply of calories has increased worldwide. The global average supply of calories available for consumers to eat was 2200 kcal per person per day. By 2013 this had risen to 2800kcal, a 22% increase since 1960. Rates continue to increase as calories have become more readily available and convenient. To burn just 600 kcal, you would have to play an hour of full-court basketball. Yet, our daily activity level is also on the decline[3]

Surprisingly, India consumes the most sugar of any country or region, followed by the European Union, China, and Mexico. Of growing concern is that by 2026, global sugar prices will decrease by twenty percent, allowing even more accessibility to this high-calorie condiment.

According to a growing number of experts, children are particularly vulnerable to sugar and could be the first generation in the modern era to have shorter lifespans than their parents.

[3] *Obesity - Our World in Data*

“The Matrix is everywhere…the industrial food matrix is all around you”! Technological, industrial, and agricultural advancements already exist such that enough food can be produced for one and a half times the world's current population. That is enough food to feed more than eleven billion people! According to Eric Holt Gimenez, Executive Director of Food First and the Institute for Food and Development Policy. Our global environment is quickly changing where we will have all the food we can consume. On the surface, this seems like a movement in the right direction.

The message has been clear for years, “the world must rid itself of hunger before it’s too late.” Many nations gladly join in such efforts to save people from terrible malnutrition and famine. Television advertisements and charitable campaigns have become ubiquitous, sending out urgent pleas for citizens to join in the fight. These endeavors are seeing significant success and making food more available to underserved communities.

When food security is present, people begin to overconsume foodstuffs resulting in overweight directly due to a lack of hunger management. The issue of overconsumption is non-discriminatory, responsible for heart attacks, strokes, high blood pressure, diabetes, and a host of other “offspring” maladies, the “silent killers.” Grandmothers, grandfathers, uncles, aunts, brothers, sisters, and children are all affected by this growing problem. Obesity is responsible for 4.7 million premature deaths each year. In the United States, the most food-secure nation, more than 300,000 deaths are linked to weight-related conditions. Families worldwide are losing loved ones prematurely, cutting short the potential differences they could make. Today, evidence shows that leading causes of death are, without a doubt, based on the relationship between weight and metabolic derangements.

The quality of life, as well as the measures of health within food secure communities, is not seeing the significant improvements thought to come with the elimination of food scarcity. So, why are the world’s efforts not achieving their intended advancements with measures of health still declining? The question we should be asking is this: have we been battling food security itself, or has it been something

else? Why has incorrect labeling of the problem led us in the wrong direction? Everyone experiences hunger but not starvation or malnutrition. Hunger is used because people experience it daily and think this is like starvation. But it is not. Most people in developed countries have never experienced starvation. Although it begins with hunger, starvation is marked by well-defined stages resulting in inanition.

While, in modern times, we do enjoy the ability to produce more foodstuffs than ever before, diet-related health problems continue to multiply. How can this be? The reality is this: what we are facing in this present moment is not a problem of abundance. Rather, it is how frequently we are consuming and the amount of nutrient-deficient food products we are yielding that poses the most serious threat. Today, a vast number of easily available foods are, quite simply, over-processed and overconsumed, lacking in nutritional value. While these products are often produced efficiently and on scales of massive proportions, the low-nutritional values they supply are having far-reaching, detrimental effects. At the same time, a sizable part of the human population is engaging in notably fewer physically demanding activities when compared to their predecessors over the years. With choices limited by a growing lack of healthy food varieties, which have been selected for their profit potential rather than for their nutrient value, alongside a significant reduction in physical activity, humans find themselves in a precarious situation. Unfortunately, as the food industry continues its fight to end the problem of food scarcity, these phenomena are the unintended yet insidious side effects of their efforts. Furthermore, they are happening on a global scale. Despite the avid promotion of international “awareness,” one of the residual consequences of these efforts, the condition of extreme weight, has emerged as a primary threat to world health.

Another key factor in the emerging weight-related crisis lies in the reality that fair accessibility to healthy foods is severely unbalanced. For substantial portions of the world, high-quality foods are often priced beyond the range of affordability. In developing countries there is certainly an increasing availability of cheaply made, highly processed foods and beverages, supplying little nutrition to support the

development of healthy minds and bodies. Here, in the United States, communities of lower socioeconomic standing are being classified as nutritional deserts due to the lack of quality food options. This is not to say there are no outlets for food sales in these areas. Most regions have access to practical forms of food distribution. However, sources and distributors of the whole, natural foods are almost non-existent in areas of lower socioeconomic standing. Sadly, the trickle-down effect of this discrimination results in dietary disparities and health-related complications. This milieu is affecting a considerable number of communities worldwide.

In a 2020 report published in the Lancet, Barry Popkin, a professor of nutrition at the University of North Carolina, referred to the dynamics of the double burden of malnourishment and the changing reality of nutrition. He says, “activity-saving technologies are spreading worldwide, resulting in significant physical activity reductions.” He contends that this, combined with easier access to unhealthy foods will result in an ever-increasing burden on healthcare systems. Once considered a high-income country problem, excess weight problems have grown to include all classes, particularly in urban settings. “Its global implications are huge,” said Popkin. “No country in the globe has reduced overweight or obesity levels. This is astounding given the huge health and economic costs linked with overweight and obesity.”

In 2017, the countries that had the biggest leap in percent of the population who are obese, after the United States, included Saudi Arabia, Algeria, and Egypt. The fastest rises were found in Latin America, Africa, and China. “The future health and economic burden facing all these countries are immense,” Popkins said. “The change in physical activity preceded the global increase in obesity,” said Ashkan Afshin, assistant professor at the Institute for Health Metrics and Evaluation. “We have more processed food, more energy-dense food, more intense marketing of food products, and these products are more available and more accessible.” “The food environment seems to be the main driver of obesity.” Adam Drewnowsk, director of the Center for Public Health Nutrition at the University of Washington, said getting people healthy food was easier said than done. “It is all nice to talk about the need to eat less

unhealthy foods," but, "unhealthy foods cost less; healthier foods often cost more, and people eat what they can afford."

As previously mentioned, efforts to combat the dual menaces of malnutrition and overnutrition have often been undertaken by charitable organizations, national governments, municipalities, and other entities. For instance, public school systems within the United States replaced high-caloric, low-nutritional drinks sold in their vending machines with healthier beverage options. Yet, despite such efforts, extreme weight is still on the rise. In the United States alone, the 2017- 2018 severe excess weight rate stood at 42.4% in all adults, with no significant differences between men and women. According to researcher E. S. Huang, by the year 2030, 115 million adults could suffer extreme weight conditions; diabetes would be expected to double the present situation to an astounding forty-four million people.

THE FOOD MATRIX

Figure 17 The Frenchman (AKA) The "Merovingian." Trafficker of information like marketing.

The food matrix is looking for you! When you experience the onset of hunger, you notice effects that at first are hard to put your finger on; more importantly, why? When you may have just eaten a steak only a few hours earlier. During the period between meals, our senses become heightened. When hunger creeps in, ancient survival traits become activated. Vision, hearing, smell, taste, and touch work with greater awareness. Foods that you can do without suddenly taste delicious. On a visceral level, we begin to use these elevated senses, setting about the task of finding food.

In modern society, advertisements aim to trigger eating behaviors. These triggers are visual, olfactory, and auditory events. The “sizzling” sound of a hamburger or the smell or sight of a “juicy steak” arouses our senses; our "bell rings" and "off we go."

Marketing companies are like the Merovingian archetype, sometimes called The Frenchman within the Matrix, "trafficker of information," funding scientific research that controls the trafficking of people to food products. "Two burgers for the price of one," with "fries and drink." Billions of dollars are spent annually on advertisements

that attempt to stimulate our feeling of hunger. We are succumbing to a construct of psychological proportions started at a microbiological level.

Figure 18 Advertising that triggers hunger drives.

Food marketing firms construct programs targeting your hunger drives, capturing your attention using clever advertisements. Experts agree that marketers use psychological triggers to increase the consumption of high-calorie-density foods they produce. “Nothing gets the brain so activated as the sight, sound, taste, and smell of food.” Images on food packaging often show serving sizes three times suggested on the nutrition label; shopping malls put cafes and bakeries near staircases to ensure enticing smells get pumped throughout the building. High-calorie delights are from the eater’s point of view when placed on build-boards, computer screens, and television. “You lock right in on it and imagine how good it would taste.” Fast food companies actively construct restaurant locations that make such delights conveniently available. Low socioeconomic populations are held hostage to such industry tactics. Overnutrition is occurring, leading to obesity from high-calorie foods with fewer healthier options from which to choose.

These Merovingian tactics aim to affect individual behavior unconsciously such as, eating off a 12-inch plate versus an 8-inch plate, or with the light levels low or high, or while watching movies. Food companies pay for access to unbelievably detailed information like people eat more while watching “action,” “horror,” and even “romantic” movies.

Sociocultural changes and generational types are targeted such as the culture and trends of the Baby Boomers, Millennials, Gen-Z, and more. These efforts of the industry are employed to overcome resistance to food by indirectly controlling willpower and behavior.

“Unconscious attitudes” about bodyweight management influence our reactions to models orchestrated by Merovingian advertising. This correlates with “weight control beliefs” and “willpower.” People who believe they can lose weight are more likely to attempt weight loss programs. A marketing study showed that those who believe they can control their weight respond favorably to thin models in ads and commercials. Those who feel powerless about weight control respond favorably to overweight models.

With the current trend in overnutrition worldwide, it is not surprising that more people are welcoming larger-sized models in TV advertisements. As a result, many around the world are succumbing to feelings of helplessness and denial about their weight thus increasing the risks for serious disease.

Another strategy is to search out “nutritional gatekeepers,” family and social members who control the purse string to increase sales. Feeding mothers were targeted, at the expense of practicality and good nutrition, convincing many that manufactured infant formulas were superior to breastfeeding.

Neuromarketing affects the sensory perceptions through marketing and advertising stimuli. A prison you can “see, taste, and smell, a construct for your hunger!” The marketing industry spends millions of dollars on a milieu of campaigns resulting in negative impacts on consumer behavior. Food marketing research shows that many

“hidden persuaders” exist that can contribute to how much food a person eats. Today such unfair strategies use scientific understanding about our neurophysiology in their advertising and marketing campaigns.

As we go further down the rabbit hole, many consumers think they still have self-control and find themselves continuously led down the path of seduction. We see that most grossly underestimate their caloric consumption, especially when trying to trade between healthy and unhealthy foods. For example, “I ate healthy at lunch so I can splurge at dinner.” Kima Cargill, Professor of Psychology stated, “our imaginations unconsciously infuse foods with nutritional properties, allowing us to deny their harmful effects conveniently.

By denial and self-deception, “we anoint foods with goodness to soften our guilt and justify our indulgences.” In other words, when one assumes that because a company made one excellent product all their products will be good, are both cognitive distortions and psychological defenses.

Neuroscientific technologies in the marketing field are being effectively employed to affect human behavior. Understanding the influences underlying consumption has become an increasingly important goal for marketers in the food industry.

Overall, the primal drive of hunger is the source of our vulnerabilities unleashed by denial and distortions that keep us trapped. Mindful of various psychological mechanisms is vital to free use from nutritional deceptions. Otherwise, we will remain enslaved to the designs of Merovingian marketing programs.

Experts in human behavior and marketing agree that “for many, dietary failures happen when people are distracted and unable to remain focused.” Many cultural norms like eating three times daily will be challenged by our innate abilities to survive danger and undo such a sense of helplessness in the face of a growing pandemic!

TRAPPED BY THE FOOD MATRIX

Figure 19 From the movie, "The Matrix." In the machine world where humankind was grown. They were plugged into the computer world of the Matrix. Living their lives in "a dream world."

According to the Merovingian archetype once we know the troubling effects of overeating and continue despite this knowledge then "choices become illusions."

Surveys reveal more than half of Americans view overweight as acceptable. Subliminal messaging in advertisements shows more overweight people across the board, even in cartoons leading to even more denial in the incredibly young. It happened before with cigarette smoking when it became socially acceptable. Subliminal messaging of the Marlboro Man commercial where smoking was synonymous with being a "rugged cowboy" increased the profits despite its toxic effect on health. It was later dubbed "cowboy killers." The same is happening with excessive weight and food consumption. It is on the decline after decades of confronting the problems caused by smoking, such as cancer and lung diseases.

"Advertising, music, atmospheres, subliminal messages, and films can have an impact on our emotional life, and we cannot control it because we are not even conscious of it," as told by academics, philosophers, and writers. The food matrix quickly constructs eating environments purposed for "increased consumption." It assumes that "the more distractions, the more you eat."

The effect of "unconscious eating behaviors" favors the industry by normalizing such constructs. A researcher who worked in consumer behavior and marketing research paints a rather challenging outlook. Promoting "increasing awareness" and offering "nutrition education" is unfortunately ineffective. They point out that "we are aware of only a fraction of the food decisions we make." Also, we are unaware of how our environment influences these decisions. Or we are unwilling to acknowledge such influences. According to marketing professionals, "marketing and psychology are closely related. If psychology is the "systematic study of human behavior," then marketing is the "systematic study of human behavior in the food marketplace."

Unconsciously defending one's ego is what psychologists call defense mechanisms. There are many, but the one referred to as "denial" is the most pathologic, as many experts agree. For example, a way of thinking, feeling, believing, or behaving that is toxic but continues because of this self-constructed psychic wall. Today's marketing takes advantage of such psychological barriers. Overcoming this psychological barrier is particularly important for people who have threatening medical problems that are self-inflicted such as, smoking or overeating.

Healthcare providers struggle with the tasks of education and motivation especially when time is limited, and denial is present. Often anger and aggression is the response when such a person is confronted with these self-constructed psychic barriers. When psychic barriers are present you may refuse to accept or even be willing to discuss overconsumption as a problem. As a result, many continue gaining excess weight.

Overcomers will need to desensitize their psychic to the words like "overweight," "obesity," and "fat." Unmasking the cloak of denial, reconditioning, and strengthening willpower is necessary to fight the primal forces of hunger, a resolve we label "mindfulness." Aversion to these simple words helps to support the toxic effects of overeating. Coming face to face with such terms, more importantly, these feelings, is the first step toward gaining a state of mindfulness. Because without managing the condition of hunger, despite the claims of weight loss programs, weight control is most difficult to accomplish. Even in the face of denial, the facts are still, we can choose healthy responses. "The red pill or the blue." Armed with self-awareness, "Temet Nosce," many develop abilities to take corrective action!

Simply put, "the brain and body negotiate physical activity and emotional responses" such that you can adjust to hunger in adaptive ways. Self-imposed psychological barriers are problematic for accepting diet programs and treatments for weight. The goal is to free your mind from your hunger drives, the food industry, and marketing ads. Yet, many would rather stay plugged into such constructs offered by the food matrix.

Once the cloak of denial is removed, healthy adaption to primal drives is possible. It is helpful to have encouraging, constructive, and optimistic thinking that promotes good feelings during stressful situations like fasting and hunger. A growing number of people, including the World's most outstanding achievers, are practicing gratitude and meditation, which helps us weaken the effects of hunger. Recognition of psychological tactics and “learned inhibition” is more difficult to endure when the constructs of unhealthy distractions are all around us.

In the real world, our ancestors did not face such trickery of the mind. Such an approach is like programs hacking programs as in the Matrix movie. In their world, our ancestor’s survival were the driving force, not Merovingian marketing tactics. Simulating the strenuous and variable hunting environment of the past is still a part of our genetic identity. This level of physical activity and eating patterns is necessary

even for scientists, doctors, and researchers, or they too will find themselves among the victims of Merovingian marketing and the matrix of “big food.”

In conclusion, emotions like happiness and anger can be experienced or suppressed by choice. We are emotional creatures and can balance emotions and responses to stress. Hunger is like anger, a feeling, and we individually choose specific responses. We have the power to control reactions to psychological triggers and primal drives through knowledge, awareness, and motivation to "survive." Overcoming the weight crisis will require individual and group creativity to resist barriers to healthy weight control. New concepts of group intelligence and mindfulness are emerging as tools to train our bodies and minds. Developing concepts about ourselves even at the microscopic level of existence can help to understand the model of hunger management. We can survive this pandemic of food overconsumption within the food matrix of the modern era.

FREE YOURSELF FROM THE FOOD MATRIX

Figure 20 Neo freed from the Matrix. He was no longer controlled by the false reality.

Innately, most want to control their destiny through education and awareness to navigate the complexities of our food industry. In psychology and sociology, we study the global responses of cells that make up a human being and its brain. They explore how human beings understand the world around them as in cultures, societies, beliefs, thoughts, and behavior patterns. Many learn eating habits by psychological conditioning. A famous Classical conditioning experiment showed that a dog salivates at the sound of a bell associated with feeding, colloquially referred to as “Pavlov’s bell.” Over time, both physiological and psychological changes occurred simply to the sound of a bell. One sensed a kind of happiness in the animals at the sound of the bell, having learned the stress would soon be relieved.

As with all creatures, hunger is stressful, and avoidance of this stress is the path of least resistance and associated with pleasant feelings. Satisfying hunger is a mighty

reward. Animal experiments in psychology use the stress of hunger and food as a reward to train or see an individual behavior or response. “Hunger is a strong motivator of action, then to in-action, when sated.” For example, training wild animals to press a series of buttons from inside a cage to open the door and obtain food, is called Operant conditioning. Hunger is the stress or motivator that increases the animal’s actions and curiosity about getting food. To alleviate the stress by obtaining food, it must take a series of designed steps it learns for which the satiety is the reward. Such training can domesticate the animal. It will become a pet and obey commands or perform a set of actions that alleviate the stress of finding food.

Similarly, we follow the path of least resistance to avoid the stress of hunger and open ourselves to psychological manipulation. The food and marketing industry says it is still a choice to resist the cues and rewards that promote food consumption. This is a fundamental principle of capitalism in a free society. The Bureau of Consumer Protection[4] was formed to help protect unknowing citizens from Machiavellian tactics where they occur. Even so, ultimately, it is our responsibility to make the right choices.

Before reconditioning, self-examination, and taking responsibility for weight and other health issues, we must develop a clear understanding and need for corrective action, without being offended by discussing weight issues consistently while taking the message to others within your family and social groups. Healthcare professionals know that compassion, empathy, and being direct with patients are best. This is one reason smoking and its offspring conditions are starting to decline.

Yet, we still have a long way to go because overeating and smoking have gotten so deep inside our psyche. Weight control is most difficult because goals are less clear when compared to exercising, smoking cessation, or wearing seat belts. Especially, when pervasive marketing strategies exist that fuel the world of consumerism!

[4] Bureau of Consumer Protection | Federal Trade Commission

Healthy adaption to avoid overeating for some people will require reconditioning by using internal inhibition. Extending the periods between meals will eventually lessen a conditioned response. If you have a snack every day at a specific time because you feel hungry, practice delaying for a particular period, like 5 or 10 minutes. Continue such delays on the following days until you reach a goal. Some people try to engage in an activity that is not compatible with eating. When you experience hunger try engaging in an activity, breaking the link between that activity and eating could be a solution. For example, snacking while watching TV. Creative ideas like family activities that change the routine and are not associated with urges to eat. Practicing tolerance to hunger also helps with other types of stresses, including exercise.

Hunger is closely related to a human emotional experience. When eating, we sense pleasure or happiness. The opposite occurs when reframing from eating, dissatisfaction, and anger. Hangry is a term coined by a psychologist who thinks hunger is remarkably like the emotion of anger. A well-known study revealed that a person with knowledge of a situation can center their locus of control and choose a suitable emotional response to any situation. Two groups were injected with adrenaline, where one was told about adrenaline's effect, and the other wasn't. Adrenaline affects the nervous system and signals danger referred to as the "fight or flight response." Increased heart rate, pupils widen, and blood vessels narrow. An actor was placed secretly within the group who was unaware. This actor proceeded to simulate a heightened emotional response after being injected. Surprisingly, everyone in this group also showed an emotional response that spread among them like a "contamination." The other group that had no secret actor and was aware of the effects of adrenaline showed no such vibrant pattern. This suggests that a person educated about the physiological effects of hunger has a better chance of not being affected by contamination. Thus, this group would not become emotionally unsettled or "HANGRY." In the food matrix, a person who is still plugged in, hunger may have an emotion resulting in uncontrolled eating or even predatory aggression. Once aware, we can avoid labeling hunger as an unpleasant emotion and thus manage our responses. When hungry, it is easy to get contaminated by advertisement programs,

groups, or cultures that regularly respond to it as a negative emotion and must be resolved quickly by eating. Armed with this knowledge, we can experience hunger without anxiety despite its physiologic effects. You don't have to follow the cultural norm when you decide that it is not healthy, instead make different choices like exercise and fasting with the reward of a healthier body.

On a neurobiological level, we are using specific abilities of the brain to inhibit responses to acute stresses like hunger. Inhibitory control training is a novel behavioral intervention. Such training has the goal of increasing tolerance of stressors like hunger. There is already evidence suggesting that training indeed can decrease food consumption. It takes a conscious effort and practice! Indeed, this was revealed by Jude Buckley and his group at the School of Psychology, University of Auckland, suggesting that self-regulation of physical activity versus sedentary behavior was based on higher brain functions. Such functions can free your mind from inhibiting the sensation of avoiding the pain of exercise. Thereby, engage in painful physical activity, like running or lifting weights, given the rewards it would bring to your health. As in operant conditioning, the rewards of long-term health led to repeated desired behavior, in this case, "exercise management" and, for purposes of this book, "hunger management."

Interestingly, the regular experience of fasting hunger can have physiological effects like those associated with exercising. In addition, entering this state can introduce beneficial metabolic outcomes to the human body. Withstanding hunger during a fast is a challenge for many people despite the potential for enhanced physical well-being, just like the challenge of an active lifestyle versus an inactive one. This was the life of our ancestors; they were not plugged into a matrix designed to capture their hunger drives.

NEO vs AGENT SMITH

Figure 21 From the Movie, "The Matrix" is Agent Smith on the left and Neo on the right. Archenemies in this blockbuster trilogy.

Hunger was the driving force to hunt and was the life of our ancestors. In humans, exercise mimics hunting and strengthens tolerance through self-control and willpower. Exercise is an integral part of resisting the immediate urge to eat, leading to a metabolic switch that metabolizes stored energy sources. This behavior is the same for most species on Earth. Exercise also enhances recovery from the effects of fasting and helps the timing of resting, sleeping, glucose regulation, increasing ketone levels, and increased protein synthesis for growth and repair.

The 3-H's. "Hungry hunter hunt!" This pattern is another key to "hunger management! It is simple, "when you are hungry, you hunt!" and when you are full you "rest and digest."

"Free yourself from the control of the Food Matrix by fasting and exercising." Exercise and fasting are the modern world's simulations of the wild, "hunting after the onset of hunger." These activities result in long-term adaptations that will enhance cognitive, and physical performance, and disease resistance.

Cells and organ systems adapt to this bioenergetic challenge by activating signaling pathways that bolster energy levels. Cell sense and regulate what energy source it uses and happens in a matter of seconds. Converting to this system for energy requires the stress of physical activity, which uses up the immediately available glucose within the blood circulation and liver. An energy transformation happens as our body sense a sudden change in available glucose.

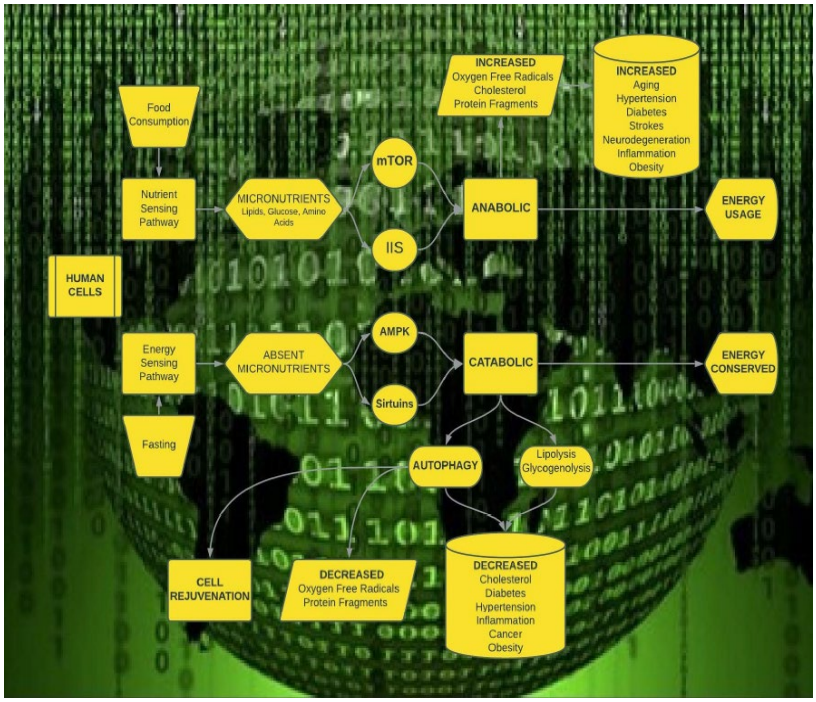


Figure 22 Diagram illustrating cellular Nutrient and Energy Sensing Pathways. Energy pathways are activated during food scarcity or fasting.

The muscle consumes glucose quickly during the beginning of exercise, followed by the release of glucose from the liver. Then a “switch” occurs. This phenomenon is referred to as the “second wind.” A burst of energy that comes from processing stored energy like fat combined with increased oxygen utilization, a period considered pleasurable. The usefulness of this phenomenon to hunter-gatherers was to track prey over long distances and endurance during food scarcity.

The conversion back and forth of biological energy systems was a regular event for our ancestors. Using stored fats for energy instead of glucose is called "Metabolic Switching." Frequent metabolic switching causes greater energy production efficiency that persists beyond the fasting and exercise periods and into the fed states.

Fasting or markedly reduced caloric intake two days each week results in elevated levels of ketone bodies produced by a metabolic switch. A marker for ketosis is easily detected by a urine analysis during a routine medical visit with your healthcare provider. This metabolic transformation to fatty acids is a significant energy source, especially for our brains which consume more energy than any other organ. This switch is favorable for good health and may have therapeutic implications to prevent brain disorders. The heart, the body's most active muscle, primarily uses the same source of energy. The adult heart's use of fatty acids can range from minor to 100% of the energy it requires and has cardioprotective effects.

As a result of fasting hunger and exercise, molecules stimulate molecular pathways to the vitalization of cells, tissues, and organs. It also leads to proteins and molecules which influence health and aging. A complex orchestra of events where “fasting hunger” is the conductor, balancing our primal hunger drive with harmonizing precision. Players in this molecular symphony include AMPK[5], mTOR, IIS[6], Sirtuins, and others that regulate nutrients and energy.

All cells continually need energy in the form of ATP, “the energy currency of the cell. Adenosine monophosphate-activated protein kinase-1 (AMPK) has a key role in ATP “production and conservation” during food scarcity. This protein has the interest of research scientists because of its potential role to reduce offspring diseases of overconsumption like diabetes, obesity, and hypertension.

[5] AMP-activated protein kinase (AMPK)

[6] Insulin/Insulin-like growth hormone factor-1 (IIS)

Sirtuins and AMPK both activate added sources of energy through a process called "autophagy."

Autophagy is a vital catabolic process of using our internal energy sources. Half a century ago, Christian de Duve coined the term "autophagy" to describe a process where structures within cells are transformed to be used for energy or recycled into new structures. This process is an adaptive response to food scarcity, energy balancing, and development. Autophagy is a term that is quickly on its way to becoming mainstream over the next few years.

Eating too frequently can harm humans by accumulating protein fragments referred to as cellular debris like Tau protein aggregates. There is a connection between cellular debris and diseases like cancer, Alzheimer's, Parkinson's disease, infections, and other metabolic disorders. Autophagy restores vitality to cells by removing such clutter making it more efficient. Fasting hunger and strenuous exercise start metabolic switching and autophagy. Together they improve the chances of a long healthy life.

A study published by Jennifer Regan's group at the Institute of Immunology and Infection Research, School of Biological Sciences, evaluated the evolutionary benefit of what they referred to as "predictive flexibility," which means an organism's traits and characteristics can change in response to the environment. An example is a bird that alters egg-laying in response to spring-like temperature to increase food availability for its offspring. The study suggests climates could affect fitness by altered nutrients and energy signaling. Such information is useful when considering our nutritional needs could change between the seasons. For example, one may consume more fatty foods as winter approaches because body fat helps to keep warm, and food is scarce.

Cues that signal the coming spring or summer season can change behaviors. Animals react to changes in sunlight that signal the approaching cold months of winter that trigger eating behaviors and metabolic switching. It is possible to use environmental

changes, like fall, winter, or summer, to improve the effects of fasting. For example, two days of fasting each week may not be as adaptive during winter when fat is needed for insulation and preparing for food scarcity. A study published in The Journal of Primatology in 2013 showed such dietary changes occurred in response to seasonal demands in wild primates.

Predictive plasticity can be integrated into individual hunger management strategies depending on your geographic location and large seasonal variations. In Hawaii, the seasonal variations are negligible compared to Illinois. So, diets with higher calorie and fat content during winter may be adaptive in Chicago compared to Honolulu.

But no matter where you live on Earth, a battle between hunger and willpower is analogous to Neo and Agent Smith and is inevitable! This battle is at the forefront of dietary failures and successes. “It takes fortitude rooted in the moment to endure the hunger experience during a fast.” If you are distracted, then primal hunger will take control. You are led to mindless consumption of food, manipulated by the Food Matrix. A matrix where marketing and a culture of overconsumption are all around you!

WORLD OF SIMULATIONS

A vision of weight control in the modern era surrounds a world of simulations that mimic our ancestral family in many ways. Mirroring ancestral eating patterns and physical activity levels will help maintain a balance between nutrition and energy. In a world that has become so fast-paced, convenience is highly valued. Consumers are being forced to make decisions to cut back on healthy sides of their lifestyles to keep up with the frenetic motions of their day-to-day experience. Tragically, one of the most frequent victims of this behavior is diet and exercise. Attempts to manage our hunger and consume low-calorie, high nutrient food conflict with the overwhelming marketing effects delivered by the food industry.

At the same time, the food industry relies on our own biological and psychological processes to do half the work for them. What does this mean? I am speaking of our primal hunger urges and drives!

Figure 23 Simulations, in one form or another, are a part of everyday life. Exercise is simulating the hunting experience and intermittent fasting simulates the variability of a successful hunt.

Copying aspects of our ancient environments is a novel approach that provides us with remarkable advantages for survival. The relationship between hunger to fed states had been balanced within the varied territories on Earth over countless generations. With the introduction of agriculture, things began to change. Years later, the natural balance of our ancestral world is being challenged by the constant fed state we find ourselves in.

It is easy to ignore diseases that develop slowly until immediate threats happen such as a myocardial infarction, better known as a "heart attack." This is a failure to adapt to the environmental changes brought by the agricultural and industrial revolutions' effect on our lifestyles regardless of whether it is psychological, social, or biological. Millions of species, including other hominids, have gone extinct in environments that rapidly change, such as weather or food availability. Challenges to our growth, development, and reproduction are continually being stressed or challenged by conditions on Earth either natural or human-made.

By developing an understanding of the dietary practices of our ancestors, what foods they consumed, the amount of energy expenditure they needed, and how often they ate, we can learn to live adaptive, healthier lifestyles.

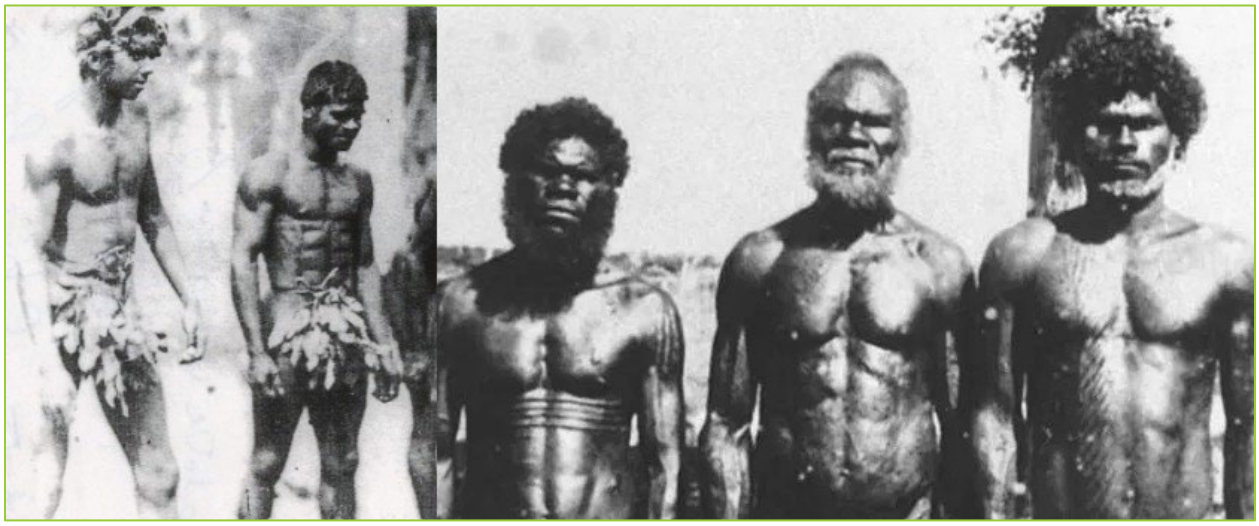


Figure 24 Australian hunter-gatherers early 20th Century photo.

There is a growing interest in such ancestral lifestyles, food varieties, and hunting activities by researchers trying to uncover their diets and physical conditioning. Such studies reveal that exercise and fasting will enhance mitochondrial function, stress resistance, and antioxidant defenses while upregulating autophagy to remove damaged proteins and recycle their components. Eating the best food types with vital nutrients, low calories, fasting hunger, and regular strenuous exercise is the perfect simulation.

Hunger is a primal force within each cell that has not adapted to overconsumption and overnutrition in our modern society. Our inept management of this primal hunger drive is the foundation of modern diseases starting to plague our existence, especially in the aging population.

At present, there are no effective ways to adapt to global food security except by reducing calories and exercising at levels like in our past. We hope to get their healthy characteristics, skills, and knowledge from scientific endeavors and archeological insight that can be assimilated into our modern world.

Modern humans have remarkable adaptive abilities proven by how our species has survived across the globe. After hundreds of thousands of years did our ancestors migrate beyond Africa. Very gradually, humans moved from tropical and subtropical environments and adapted over thousands of generations using the diversity of the land. They survived ice ages and droughts. When domains change, we must adapt or risk extinction.

Natural environmental changes occur slowly as compared to fabricated ones in the present. In modern times, our most logical approach to such rapid and stressful changes is to simulate the most favorable condition for survival.

In a brief time on the evolutionary scale, the agricultural and industrial revolution affected the quantity and diversity of food. We went from “feast to famine” to “feast to feast,” which is as dramatic as going from Hawaii to living in the Antarctic. In one place, you are highly adapted to warm tropical weather where your body temperature

is conserved. Due to such extreme changes, our ability to balance body temperature would be overwhelmed; extinction would be inevitable. We simulated the temperature most suitable for homeostasis[7] and survival such as extra clothing, building houses, campfires, and heaters to create an environment that we previously adapted to eons ago.

A quote from Confucius, "by nature, men are nearly alike; by practice, they get to be wide apart," can be applied to our lifestyles when compared to our ancestors from thousands of years ago. We are growing apart from the natural responses to hunger, and our practices are moving us further away from behaviors that survived ice ages and the like. "Our choice of immediate action is to simulate!"

Another rationale for simulations in the modern era stems from the Evolutionary Discordance hypothesis – that "human evolution ceased thousands of years ago, corresponding to the beginning of agrarian societies, and our ancient genetics are unequipped to cope with the modern era."

Healthy simulation is an adaptation to prevent diseases of civilization arising from modern diets and lifestyles. Ancient diets varied by geography, climate, and specific ecological niches. The hypothesis predicts that adaptive simulation of the nutritional characteristics found in preagricultural, and preindustrial diets confer health benefits. Efforts to bring back the diversity and quality of wild-type foods are gaining momentum. The growth of vegan diets and revolutionary ways to grow crops and raise herds have significant economic value. Such changes are closer to simulating ancient diets. There are ecological concerns as well with using less fresh water and producing fewer carbon emissions.

Examples of other simulations for healthy living that we can consider include Vitamin-D metabolism for solid bones. Humans depend on ultraviolet light (UV) to indirectly

[7] In biology, *homeostasis* is the maintenance of physical and chemical balance by living organisms using feedback loops to achieve optimal functioning.

activate Vitamin D. At the same time, UV light can damage DNA leading to various skin cancers. Melanin evolved to protect the skin from harmful UV exposure in equatorial regions while allowing just the right amount to continue Vitamin D metabolism. However, when such a person moves to areas of the planet with less UV light, taking Vitamin D supplements to simulate the amount they would get from living in equatorial regions is a clever idea to protect against osteopenia. In this example, we see rapid changes in the environment due to transportation technology directly challenging natural biological characteristics responsible for strong bones.

On the other side of the coin, in the skin with less melanin, we should make specific simulations to protect from increased cancer risk when living in equatorial regions.

Figure 25 Marathons. Long distance runners are modern simulations of the hunter-gatherers.

Exercising and sports can be considered a simulation of hunting-like activity; fasting is a simulation of the uncertainty of available food in the wild. Our ancestors ran as fast as modern-day track and field athletes. These are skills transmitted genetically over time, our genetic identity. Even as we begin to solve food supply problems, varieties, and quality, hunger will still cause overconsumption. Overeating healthy food will still be at the root of weight problems. Simulation of adaptive environments is the key to managing our hunger drive.

What simulation can we use to tolerate fasting hunger?

Simulations are not always comfortable such as fasting, but it is necessary to activate ancient metabolic pathways that shaped our resistance to environmental stress that otherwise lay dormant no matter what type or quality of food we are consuming.

Agriculture reduces our innate need to hunt wild animals and plants, where now we rely on fasting hunger and exercise programs based on self-control rather than self-preservation.

In public schools around the United States, low-calorie drinks have replaced higher-calorie beverages in vending machines. Yet, despite such undertakings, weight problems in the United States have increased and remained the highest percentage in the world. Easy access and overeating of even low-calorie foods and drinks will still result in weight problems.

Why do we continue to eat much more than we need?

Most people are asked the question, “where did the notion of eating three times a day arise,” no one seems to know for sure. Yet, people in modern societies are busy doing just that. A person would have to be a super hunter or a super athlete to need such energy requirements regularly. In ancient times, infants would feed when they grew hungry because they needed food for growth. However, once the baby was weaned, it was needed to join in the tracking and killing of prey. Mealtimes were no longer regular but became dependent on the success of the hunt. Today, we see cases in which obesity develops soon after retiring from sports.

This is often the direct result of consuming the same amount of energy while decreasing the strenuous activities of their profession. Hunger drives do not change, and when presented with unlimited access to food sources, consumption can prove challenging to resist. In the case of the super athlete, that individual must throttle down their energy intake after such a career change.

After the agricultural and industrial revolution, profound changes in diet and lifestyle occurred, which changed the natural biological rhythms of human beings. Like retiring athletes, we have stepped away from our once natural preference for hunting which requires strenuous physical activity. It became simply unnecessary. Unfortunately, these changes occurred too fast for the human genome to adapt.

According to Loren Cordain, an American scientist who specializes in the fields of nutrition and exercise physiology said, “the previous nourishment system, hunting, and gathering, had all but guaranteed a healthy diet, defined by variety.” Equally, the lack of hunting, the variety of wild-type foods it brought, and the energy expenditure it once afforded to us have been detrimental to overall human health. We now suffer from a dual problem of malnutrition. When food is available all the time, overnutrition begins. This fundamental assumption has become entrenched in our way of living.

Yet, there is no way to sustain the world’s growing population without agriculture. Imbalances are resulting in a society that habitually overeats without enough exercise. The body's internal equilibrium gets deranged. Regular physiologic "feedback cycles" are disrupted, resulting in disease and higher rates of morbidity. For example, the more you eat, the more you want to eat and not the opposite; for humans in our current environment, this is a pathologic “positive feedback cycle.”

As nations worldwide become increasingly saddled with soaring healthcare costs, it makes sense to begin initiative-taking strategies aimed at preventing and reversing disease. Pharma companies have started to get involved in improving physical health through the manipulation of biological processes. Working in conjunction with clinics, they offer pharmaceutical measures such as human growth hormone in treatments that are showing positive impacts on multiple health measures. However, the costs of such therapies can be staggering, and insurance companies often refuse coverage for payments. For most people, this is a barrier to access for this type of medical intervention.

As is clear, the adverse effects of weight-related issues on our economy are stunning, costing billions. Over twenty percent of America's total healthcare costs are associated with weight problems in one way or another. According to the economist, they spent more than 190 billion dollars, about $580 per person in the US, treating excessive weight and its offspring conditions far more than any other country. Economics and Statistics Administration led by Carmen DeNavas-Walt revealed that

174 billion dollars, about $540 per person in the US, could cut poverty in the United States. Furthermore, 50% of the causes of poverty can be tracked to severe weight conditions and the threat they pose to the health and well-being of those classified as head of household.

Simulation and improvisation are necessary now more than ever with the rise of location independence and digital nomads. How will we respond to hunger when work can now be done online; freelancers and entrepreneurs travel only with laptops. Employment models are using the internet and technology, including professional fields such as doctors and lawyers. Remote workers feel they are more productive: according to a survey, 91% of remote workers believe they "get more work done" when working in places outside the office. Even politicians used remote speeches, as was seen in the 2020 presidential election. Our displacement from a very physically active lifestyle in our natural outdoor environment to an inactive, indoor lifestyle is the foundation of chronic diseases.

This is a foundation upon which Jared Diamond bases his view of the modern era and states, “Hunter-gatherers practiced the most successful and longest-lasting lifestyle in human history.”

The intuitive solution is to simulate the healthy activity pattern of our ancestors as much as possible and achievable. Suggestions for exercise mode, duration, intensity, and frequency are outlined in a review article published in The American Journal of Medicine by James O’Keefe in 2010. He focused on realigning our daily physical activities with the hunter archetype. Small groups of people would hunt animals and forage for plants. The success of obtaining nutrients was uncertain due to environmental variables. Distances required to obtain food changed, and days were more challenging than others. They adapted to the characteristics of the land, such as forests, plains, mountains, or deserts. Chasing animals would require bursts of running and fast-paced walking with periods of rest.

Endurance and intelligence were the advantages of the hunter, especially when faced with fast and dangerous animals.

Through the centuries, we have learned to examine the environment around us, searching for potential dangers and for ways to increase our safety, growth, and reproduction. Often this examination is based on trial and error, finding the best workable way to survive for eons. Curiosity is motivating archeologists to look at fossil records and isolated hunter-gatherers to understand their diets and lifestyles. One such group was found on a small island off the coast of Australia, where they may have been living for about six thousand years.

A photograph was taken of an Australian Aboriginal, and in it, you will see the lean muscular bodies of a person who still lived as hunter-gatherers. No overweight! The other is a person in the modern era with a remarkable difference. It is happening globally, irrespective of race or gender. An activity like walking and running over varied terrains was needed in our ancient world. You can imagine the daily variability of their actions. In the International Journal of Sports Medicine, Loren Cordain's group from the Department of Health and Exercise Science at Colorado State University estimated the average daily distances covered were in the range of 4 to 9 miles. The hunters' daily energy expenditures for physical activity typically were at least 800 to 1200 kcal or about 3 to 5 times more than the average American adult today.

Research investigating the best physical activity for human health and performance can be guided by the evolution of our species. The stresses of pre-agrarian environments selected the most adaptable genetic characteristics working for more than two million years. In 1998, Cordain's group discussed logical and almost intuitive arguments for present-day humans to simulate the patterns of ancestral physical challenges. They say, "the model for human physical activity patterns was established not in gymnasia, athletic fields, or exercise physiology laboratories, but by natural selection acting over eons of time." Their paper examined how evolution has genetically determined the modern day's best physical activity patterns and

performance. Based on the “evolutionary discordance hypothesis,” the part of our genome that decides basic anatomy and physiology has remained unchanged over the past 40,000 years. Thus, the complex interrelationship between energy intake, energy expenditure, and specific physical activity requirements for current humans is still the same.

Scientists are intensifying efforts to learn about such diets and lifestyles. Jared Diamond goes on to describe how small groups of humans, ranging from a dozen to a hundred hunter-gatherers, survived multiple ice ages, kept close to nature, and still managed to conquer the world. He says, "I believe the few remaining tribes and nomad groups left on the planet have a great deal to teach us.” I also think that our most recent ancestors who survived the treachery of slavery have much to teach about man’s stress endurance. Turning back to the ways of our distant ancestors, which required strenuous work to satisfy hunger, seems illogical, primitive even. We live in the 21st century, a time of great metropolises, powerful technological capabilities, and vast strides in sciences.

The provocative question is still; how did we get here today? Remarkably, they suffered not from the "modern diseases" to which we now find ourselves increasingly vulnerable. These contemporary afflictions can be traced to a reduced variety of foodstuffs, overeating, and a lack of strenuous physical activity. The Agricultural industry has become so entrenched in our society poses a dilemma. It is the primary means for feeding Earth’s more than seven billion inhabitants, a number that continues to grow rapidly.

So, it is easy to see that finding ways to integrate ancient lifestyles during the modern era is challenging to say the least. Hunter-gatherers were forced to abandon their lifestyles as modernization ushered in the growth of more sedentary civilizations. Ancient lifestyles include exercise combined with dietary restrictions, and modern medicine opens the road to health and longevity. We have remarkable opportunities for the future by managing our hunger drives thus avoiding overconsumption. This will pave the road to a long and prosperous life!

PRACTICAL MATTERS

In the latter part of the 21st Century, as lifespans increased into the sixth decade, interest in nutritional needs broadened. Medical science began to turn its attention to the value of understanding the human body's biological responses to the types of foods we were eating and the way we were consuming them. At the time, Americans found themselves eating more Convenience foods and increasing caloric intake. While this allowed them to keep up in a faster-paced society, an unintended consequence of this lifestyle was beginning to rear its ugly head. The sacrificing of nutrient intake for an increase in quantity consumed insidiously became the norm. Inevitably, this resulted in trends toward overweight, obesity, and poor health. In time research would reveal just that.

Evidence continues to mount, reinforcing the reality that the quality of foods we consume and how often we eat them will directly change the quality of life we lead. So, why has it been so challenging to make what, at face value, seems to be such an easy decision?

We have learned a great deal about reducing food consumption and its effect on health. However, we know much less about implementing it across a large population. Along these lines, enriched health by "dietary restriction" is now beginning to reach the mainstream, and it will be in our interest as a nation to devise strategies that target the weight-challenged populations across the world.

Several challenges will likely shape consumer behavior and calorie restriction research over the next decade, such as calorie restriction mimetics like metformin in diabetic patients. These straightforward experimental models have been highly informative about the molecular mechanisms of metabolic switching to AMPK pathways, particularly those linking improved signaling to oxidative stress resistance. But it is still extraordinarily complex and challenging to describe what cells are experiencing during nutrient scarcity. Direct analysis of metabolic changes should begin to play a

more prominent role in the field. It may prove essential in figuring out precisely how to deploy metabolic mimetics of fasting.

Along these lines, it is remarkable that increased metabolic vulnerabilities seen in the modern era were absent from hunter-gatherer models and that regular metabolic switching is consistent across many animals. Developing realistic adaptive and therapeutic strategies will be helped by correct models of fasting and hunger management. A further challenge for society is to develop abilities to integrate reduced feeding across many cultures and regions. Improved health among populations of developing nations will reduce the strain of diseases on their healthcare systems.

Figure 26 Exercising and hunger management promotes healthy aging.

Conquering aging served as the foundation of medical science. Since antiquity, we have searched for ways to avoid suffering and death. Today, technology is revealing promising results on youth and longevity. Large groups' desires for longer, healthier lives speak to the search for a general aging process. “We know without a doubt that aging can happen with little or no age-related decrement in physiological and cognitive functioning.” Effectively reducing calorie consumption naturally affects

longevity and slows aging rates, including memory loss, muscle loss, immune system response, and improved functioning between organs. Suppose the principles of hunger management are adopted.

In that case, one could begin to experience new frontiers of successful psychosocial development offered by long years of a healthy life, such as autonomy and social integration.

At present, over thirty-five million people in the United States are 65 years of age or older, accounting for about 13 percent of the population. Their numbers will double in 2030, resulting in one in every five Americans being over sixty-five. By the year 2025, Japan will have twice the number of old persons as children. Also, by this time, there will be over one billion older people worldwide, according to Social and Psychological Aspects of Aging. This increase in life expectancy to well beyond 80 years of age will result from better public health measures, improvements in living conditions, medical care, and hunger management that reduce death rates and dependency.

Of significant concern is psychosocial aging with the expectancy of normal brain abilities to perform executive functions. Preserved critical thinking and problem-solving skills increase the chances of personal growth, learning new things, and adaptability. Such elements are essential to aged persons across cultures, including life purpose, satisfaction, and contentment with perceived autonomy, independence, and self-esteem. Most people tend to measure successful aging by accomplishments, financial security, productivity, humor, and physical appearance.

Figure 27 Most people in their older age experience happiness.

The majority of people experience happiness in their older ages. However, there are still unpleasant perceptions surrounding the idea of aging and becoming old. Younger people think that older people are more depressed and unhappy with their lives; however, that is not the case--ninety-one percent of people over seventy-five claim that they are happy. Everyone experiences aging, and we should educate ourselves about the process. It should not be feared. What people search for, as we age, is good health and most fear comes from the idea of suffering.

Stated another way, a goal of modern medicine is to achieve both healthspan and lifespan. Hunger management is one of the most practical ways to carry out this goal. Science reveals the substantial benefits of exercise and decreased food intake that balance energy and prevent structural damage within the cell. The effect of slowing the aging process by hunger management offers one of the safest and most natural ways to achieve good health throughout the adult aging experience.

According to many experts, the widespread adoption of dietary restrictions will face barriers such as healthcare providers having little to no training in the principles and techniques of intermittent fasting or calorie restriction. Food abundance, extensive marketing, and three meals with snacks every day in our culture make it a challenge to endure hunger long enough for metabolic switching.

“Creativity and adaption of foods to contain low calorie and high nutrient value is a key.” In attempts to keep already taste preferences, creative foods that mimic the high-fat diets without the fat are becoming available. We can also change our acquired tastes from our childhood years. There are a growing number of available diets from which we can draw.

The good news is some health education centers are developing programs to help students understand calorie restriction diets and fasting. Also, they are trying ways to implement such strategies using a multidiscipline approach that targets high-risk populations.

“A hunger management model is an individual approach to fasting hunger based on your personal goals.” A model of this type requires an understanding of fasting, so you know what to expect day by day. Those who already follow this model overcome hunger and irritability. With time and practice their abilities to concentrate improved. Hunger management becomes a lifestyle using regular metabolic switching. It takes able willingness to adhere to endure fasting hunger.

There are populations like on the island of Okinawa that have consumed far fewer calories per day without problems; it is a lifestyle. Okinawa had one of the highest averages and largest lifespans worldwide.

However, as expected, after the introduction of fast-food chains, the life expectancy in Okinawa has started to decline in the younger generation.

Doctors from the University of Hawaii, after reviewing the literature in 2016, revealed that diets were contributory, especially if started early in adulthood. A low-calorie or

calorie-restricted diet contributes to longevity in Okinawans and lowers the risk of age-related diseases, including diabetes, cancer, atherosclerosis, and neurodegeneration.

It still is possible that we will see increases in lifespan and more youthful physiology in humans at advanced ages as the move toward hunger management gains momentum.

The pharmaceutical industrial matrix is looking at a gold mine employing drugs that mimic the effects of fasting. Such drugs would have a broad range of benefits for many health conditions. Epidemiological evidence may be showing an extension of average and maximum life span and lower chronic diseases. A growing number of people have already jumped on the bandwagon by using human growth hormones and calorie restriction mimetics like Metformin or Resveratrol. These drugs impose a mild metabolic challenge, strengthen mitochondrial functions, and inhibit nutrient-sensing pathways like mTOR. However, the safety and efficacy of such medical interventions are not likely to be as effective or as natural compared to fasting.

Besides, this may lead to even greater consumption and waste of food which is already topping a trillion dollars annually. It just doesn't make much sense to take drugs so you can eat more foodstuffs! Maybe good for the food industry, but it would lead to another form of greed.

Adopting a healthier lifestyle by hunger management is not complicated; it saves cash and is helpful across most age ranges of human life. These effects produce much less concern for the ethical issues of living longer because a healthy person with life experience has many benefits to social and economic growth. As mentioned previously, the food industry can produce enough food for more than 10 billion.

Using our natural resources wisely by reducing waste and overconsumption is the principle of "hunger management."

People are searching for the knowledge and the tools to understand and restore themselves. The mainstream populations are learning more about intermittent fasting and other natural routines. We are driving ourselves to do extraordinary things and unleashing creativity!

We are slowly plowing our way out of this Machiavellian mindset. Instead, a growing number of people embrace minimalism, low consumption, and a simple life even in the largest metroplex. It will take collaboration, group intelligence, and mindfulness to adapt to the abundance of food.

We can adapt to the challenges of excessive weight globally through usable models, growing concepts of supportive global communities, and sharing nations. We can focus on our bodies, train them, get them into shape, and train our minds.

“Spread these ideas and promote good health and prosperity.” It is exciting to see our thoughts shape our reality and the potential for a successful life without significant diseases.

PANDEMICS AND WEIGHT

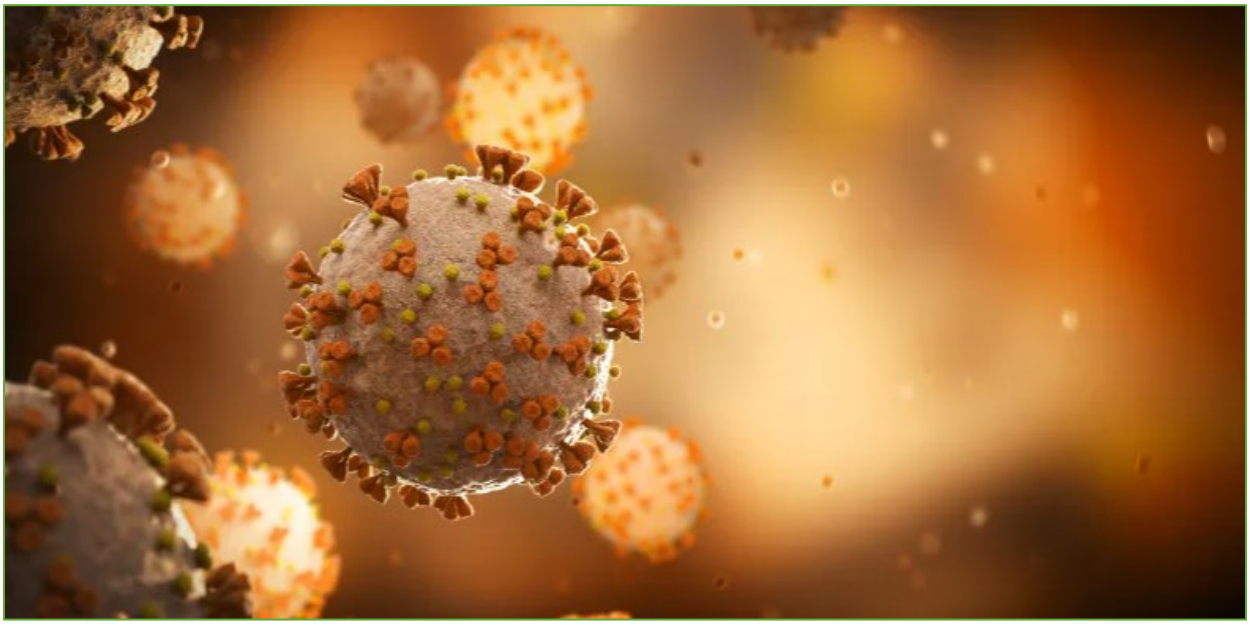


Figure 28 Illustration of a coronavirus.

Then came the next imbalance of the food Matrix. At the outset of the 20th century, we began to understand the consequences of some aspects of agriculture, living near animal livestock. We learned that this arrangement was, in fact, a principal architect of zoonotic infections.

Most people are familiar with the 1918 flu pandemic, which originated from a pig farm in Kansas. This type of infection is referred to as zoonotic because it transmits to humans from animals. The virus hit when the world was engulfed in war and quickly spread via highly mobile troops traveling all over the globe. As a result, untold millions lost their lives to this dreaded disease. It was known to target young, healthy people.

To history, this outbreak became known by the more familiar moniker, the Spanish Flu. It occurred near the end of World War I, and, in the interest of national security, most countries chose not to report their actual death tolls from the virus. Yet, Spain did. Inevitably, the virus became strongly associated with the northern European nation and was dubbed the Spanish Flu!

In 1918, the rate of obesity was much less than today, and no statistics are available to show the impact of the Spanish Flu on the weight-challenged. I suspect; however, a similar pattern would appear as with any pandemic, which initially affected the elderly and those with high blood pressure, diabetes, cancer, immunocompromised, and overweight.

Another zoonotic germ emerged to drive yet another worldwide pandemic, the 2020 COVID-19. This virus hit at the height of global overweight and obesity. The SARS-CoV-2 virus quickly spread across the globe by traveling the airways. Enormous amounts of data were collected, which revealed how it targeted the vulnerable, particularly the weight-challenged.

This population had the highest rates of co-morbid conditions. According to the CDC, “obesity tripled the risk of hospitalization.” Ninety percent of patients with COVID-19 and severe weight were likely to suffer severe disease and death. Intubation and ventilation were more difficult for these severely ill patients. In July 2020, doctors were beginning to report that even moderate weight problems increased a person's chances of dying from COVID-19 by forty percent.

Weight is strongly associated with an increased risk of severe illness and death from coronavirus disease. As the waves of the pandemic crashed the shores of all nations, the emergence of new strains continued to threaten global medical systems, and vaccination strategies were implemented across the world. Scientists published a review in late 2021.

In this review, they discussed the potential mechanisms linking excess body weight with COVID-19 morbidity. Elevated body weight contributes to metabolic dysfunction, chronic inflammation, impaired immunological responses, and multisystem disorders, which increase vulnerability to severe illness during this pandemic. Evidence from previous pandemics suggests that even vaccines are less effective in the obese population over the long term.

They concluded, “lifestyle changes can boost metabolic health and immunity that is critical to mitigating the risk of severe illness from viral infections.” There is evidence that intermittent fasting is a strategy that reduces the impact of COVID-19.

Experts warn, "while the attention currently is focused on COVID-19 vaccination, and rightfully so, the nation cannot lose sight of the work that awaits when the pandemic is controlled.” The nation needs to find ways people can support their weight loss journeys that create long-term success. Consequently, if we take care of the obesity epidemic, we can almost guarantee the nation will see a drop in rates of heart disease, diabetes, stroke, kidney disease, hypertension, and liver disease -- all of which are risk factors for developing severe infection.

Such events present a menacing message: what other circumstance, one greater than the COVID-19 Pandemic, lurks around the corner that may further endanger the weight-challenged? The growth of uncontrolled weight is a ticking time bomb that is placing us in the crosshairs of more pandemics to come.

The beneficial effects of fasting hunger on conditions like weight, inflammation, and aging holds the potential to minimize risks associated with pandemics like COVID-19 and reduce modern society's offspring of "silent killers." By taking this view, we can begin to see the benefits of managing hunger to mitigate health crises like viral infections.

Our challenge is to tolerate dietary restrictions without anxiety over this unpleasant sensation, learning to live with it as a part of our daily nutritional experience rather than spending our days trying to eliminate it.

A growing number of people are embracing healthy strategies involving hunger management such as "Time-Restricted Feeding" and "Intermittent Fasting" that improve the chances to change the outcome of “pandemics and weight.”

OVERCONSUMPTION AND CARBON FUELS

Next, I will speak about a future vision based on the adaption of the "hunger management" model. Perhaps the greatest renaissance in human history will look back to this period as, "*THE TIME OF OVERCONSUMPTION and CARBON FUELS*[8]."

Figure 29 Carbon fuels and climate pollution.

We start with a visionary journey into the future, looking at humankind's adaption to the industrial food matrix. Seniors now live much longer with increasing average lifespans approaching 90 years and are vital contributors to society's success. Humans of all ages will eat far less than we do now with a much higher hunger tolerance. They receive benefits from the anti-aging effects of regularly experiencing the phenomenon of fasting. There is no preoccupation about what to eat and where to go.

[8] Overconsumption and Carbon Fuels

They spend less money and enjoy their meals far more. They will not be anxious about the next meal. Will manage hunger positively. Future humans will be more mindful of the mental and physical effects of hunger and avoid overconsumption. The cost savings were enormous across vast areas of society, including vital reductions in our carbon footprint.

A shift occurred in a measurement called the "Age of Dependency Ratio," which increased dramatically. This ratio shows that people over sixty-five still contribute to society. Their population is now part of the labor force and considered essential for governments, economists, bankers, businesses, universities, and other major economic segments. The future has the most sizable number of older productive people with long-term positive effects on Medicare and Social Security. The enormous cost-saving to these generations eliminated poverty from reductions of chronic debilitating diseases.

Transport, housing, and the industrial food matrix had been the three most giant carbon footprints on the planet. Food's carbon footprint is the greenhouse gas emissions produced by growing, rearing, farming, processing, transporting, storing, cooking, and disposing of the food you eat. In the 21st century, food produced about eight tons of emissions per household, which is now around five tons, a reduction of 5% of the total. This achievement alone stopped the runaway greenhouse effect. Worldwide, reports showed that livestock agriculture produced half of all manufactured emissions; they now account for 35%. Future generations coined our current time on this planet as "the age of overconsumption and carbon fuels."

Humankind's survival may very well depend on adapting to the modern food matrix. Such adaption is based on adequate physical activity and the "restriction of energy intake" while keeping essential nutrients. The primary goal of medicine is to reduce the time a person suffers from diseases and disabilities during their lifetime, referred to as healthspan. This goal will continue far into the future, where good health will last as we age, matching the lifespan.

Life expectancy increased because the mechanisms taking place during fasting hunger are evolutionarily conserved, having anti-aging effects. Consistent improvements in disease risk reduction effects occur even in the non-weight challenged individuals.

Just think about the older generations' amount of knowledge and experience accumulating through time for the benefit of many. Tolerating hunger was vital to weight management that, for so many years, perplexed nations living with epidemic weight problems and offspring diseases.

Even now, many are asking questions like, "will hunger management offers us a life with less disease and better chances at longevity" or "will we be healthier than the present group of older people?" The answer is yes. If you substitute the phrase related to calorie restriction with the word hunger, then it looks promising. Research is confirming such ideas. Imagine a country with the healthiest older people unlike any before in history. For this reason, calorie restriction research and Longevity have been on the President's Council on Bioethics for quite some time.

At present, there is an urgent need to reduce age-related health conditions, including metabolic disease and disability. Obesity and mortality risks are increasing in our seniors around the world. Over the past 15 years, 4.3 million seniors between the ages of 65 to 75 joined the weight-challenged ranks, according to the 2019 America's

health rankings senior report.

Figure 30 Weight challenges at older ages is increasing in developed countries.

"Hunger management" is a novel paradigm that aims to improve the adverse effects of aging. This approach is available to everyone, which is especially important as global food security is reached. As Spock of Star Trek would often say, "live long and prosper."

FUTURE IMPLICATIONS

"We are living in the age of human overconsumption." Anabolic metabolism from eating too often is stressing nutrient-sensing pathways to the tipping point. Globesity is ever-increasing. Regular fasting improves energy metabolism regulation, reduces signs of disease in a variety of organisms, and extends longevity. It is a healthy behavior despite its uncomfortable sensation. Current

Pharmacological intervention may lessen oxidative stress and delay age-related pathology in humans in the same fashion as Dietary restrictions. Such medical management of these metabolic pathways that mimic decreased nutrient availability can improve our health. Researchers are studying the positive effects of rapamycin and Metformin. Rapamycin inactivates mTOR, and Metformin activates AMPK. These kinds of drugs are called calorie restriction mimetics. If medications like this work, then the impact on public health would be enormous. But we still need to learn more about the complex metabolic effects of such drugs that could break the relationships between overnutrition and disease. Amazingly, fasting and exercise activate pathways like AMPK that positively affect our metabolism and the characteristic of long-lived species. Therefore, the principles of hunger management offer the best natural approach based on growing scientific knowledge and archeological revelations.

Beyond extending lifespan, enduring hunger can also reduce the development of age-related cancers, immune, brain, endocrine alterations, and motor dysfunction in recent animal model studies. Reducing metabolic stress by fasting causes cells to produce proteins that increase resistance to disease processes and increase growth factors that protect the brain. Brain cells' ability to make genetic repairs decline with time. This process may explain neurodegenerative diseases like Alzheimer's and Parkinson's. Brain cells are among the longest-living cells in the human body and to maintain their function over the decades of a human life span makes it crucial that they repair naturally occurring DNA damage. Ongoing research suggests that regular metabolic switching may effectively reduce brain disorders as we age. The goal is to preserve meaningful human consciousness throughout the lifespan.

Growing technology will answer questions and shed light on the molecular and cellular biology of aging and health. Such as 3D imaging to see cellular activity, a novel bio-Imaging approach to provide biological insights with implications for how we view and understand living organisms. Another such development is Microarray technology, proving to be a tool for showing how fasting hunger or calorie restriction affects the molecular mechanisms of aging. Such technology has revealed that aging results in decreased activity of metabolic and biosynthetic genes and gene expression patterns that show stress responses. Also, caloric restriction preserves gene expression longer and repairs or prevents damage to cells.

There is no definitive intervention for ensuring healthy aging in humans despite the impressive advancements and active research toward understanding its molecular foundations. Such cellular pathways are extraordinarily complex, affecting any part of these pathways may have unwanted problems. Simulation of natural conditions seems far less risky. Humankind's health success may very well depend on "freeing us from overconsumption" by dietary and calorie restriction methods to match healthspan to a long lifespan.

The course of the evolution of human eating and activity levels is starting to appear. The information in this book hopes to foster dialogue and creativity about how we perceive hunger in the modern era. We should promote ongoing research, publications, pharmacological discoveries, energy metabolism strategies, and dietary restrictions.

DIETARY RESTRICTIONS

Figure 31 Exemplifying dietary restrictions. Types include time-restricted feeding and reducing calories.

Restricting calories results in a strong feeling to feed, and one's adaptive response to this feeling can promote long-term health and longevity. The current paradigm of healthy weight control and energy balance centers on taming our "eating responses" thus activating adaptive metabolic responses. Convincingly, a rapidly growing number of scientific studies are proving that the model of restricting calories from eating abundant amounts or too often is a necessity to match healthspan with lifespan.

Dietary restriction of foodstuffs is gaining the interest of a growing number of people among the more developed nations. They are viewing calorie restriction as the most natural way to control weight. Groups have formed such as Calorie Restriction Society and Calorie Restriction with Optimal Nutrition all based on reduced caloric diets. Reported outcomes in members include low rates of diabetes mellitus, increased effectiveness of our hormones, reduced inflammation, and lower oxidative stress. Diets are based on a reduction of calories and are difficult to adapt to. The powerful

influence of hunger prevents people from adhering to such diets when there is a growing body of information showing multiple health benefits.

Many futurists suspected that our hunger was getting out of control, and it was about eight decades ago that early studies of calorie restriction began. As early as the 1930s, researchers have been on the right track, but it has been difficult to prove until recent developments in molecular biology. Data shows that this method positively affects most features of aging such as nutrient and energy balance through enhanced communications between the heart, kidneys, and liver. Increasing numbers of studies are proving that reductions in calorie intake induce anti-aging effects and weight loss. In a landmark, 25-year study of Rhesus monkeys placed on calorie-restricted diets appeared younger, more active, smaller, and less chronic illness. The results of such studies show the increased survival to the natural life span without significant health issues, for humans, which means at least 122 years. To date, it has been the single most robust method to increase longevity and delay aging and disease across many different living organisms. A barrier to humans when it comes to restricting food intake is hunger. These animals were kept in cages and had no choice! Motivation to act decisively still is elusive to many who are searching for healthier lifestyles and suffer from the overweight condition. Lack of hunger endurance stands in the way! The animals with restricted diets in the Rhesus monkey experiment were hungrier compared to the well-fed animals.

Substantial progress over the past two decades is shedding light on the mechanisms, biological consequences, and benefits associated with dietary restrictions. Several common themes have emerged from this research. First, metabolic switching is a function of the cell's ability to resist stress and improve metabolic pathways that produce energy, regulate metabolic by-products, and reduce Oxygen free radicals. Second, metabolic switching leads to the inactivation of mTOR signaling pathways[9] and reduced the risk for cancer development. Third, metabolic switching leads to the

[9] Mechanistic or Mammalian Target of Rapamycin

initiation of autophagy and improvements in cellular functions. Fourth, restrictions reveal the remarkable diversity of the Fat cell that regulates anabolic and catabolic pathways, with induction of autophagy and utilization of classical pathways like glycolysis and oxidative phosphorylation. We have exited the period when anabolic metabolism from eating often could be considered synonymous with good health.

A review article published in late 2019 in the New England Journal of Medicine looked at the effects of intermittent fasting on health, aging, and disease. “Fasting hunger had health benefits,” according to **Rafael** de Cabo and Mark Matteson. Deriving energy from adipose cells, energy storage cells have consistent effects of significantly improved health span overtime during the period without food. Aging and life span are the focus of initial studies of caloric restriction. But fasting had added benefits that included reduced free radicals, weight loss, and enhanced protein metabolism. There is an adaptive response passed down through many generations that improve bodily functions between the kidneys, heart, and liver. This effect improves glucose regulation, stress resistance, and reduced inflammation all of which have anti-aging benefits. During the fast, the body is preparing for the “hunt,” when optimal functioning of the person is required to improve the chances of success in capturing and consuming food sources. Intermittent fasting and time-restricted eating are methods of dietary restriction and prompting critical areas of the body’s cells to undergo growth and flexibility. But most people eat too often thus preventing metabolic switching. Intermittent-fasting regimens include several strategies that are growing in popularity. Alternate-day fasting, 2 days each week called 5:2 intermittent fasting, and daily time-restricted feeding.

Groups are using this information to guide fasting times to reach specific goals such as lower glucose, increased well-being, mental improvement, generation of more vibrant cells, and improved immunity. Time-restricted feeding, a key part of intermittent fasting regimens, has gained considerable attention in recent years. This most popular method has no restriction on the type of food to eat, “ad libitum food within time frames.” The various time-restricted regimens show reductions in body weight, total

cholesterol, and concentrations of triglycerides, glucose, and markers of inflammation as well as improved insulin sensitivity. Such findings are encouraging for groups who manage fasting hunger by such regimens. The goal is more time between eating that reduces caloric intake. This seems intuitive when viewed through the history of the ancient past; a pattern that has led to the successful development of humankind through the ages. Further changes to include high-value nutrient intake and exercise to reduce disease risk factors.

CONCLUSIONS

Humans are complex multicellular beings. Life as we know it consists of fundamental living units that make up our bodies, referred to as cells, microscopic living entities. Cells are far more complex life forms than we could have imagined just a few decades ago; they make up our bodies and brains.

Each cell holds information, DNA, transmitted and changed by the stresses met by their predecessors over countless generations. Cells adapted to such environmental stresses gradually but are now experiencing rapid changes in diets and lifestyles.

> "...man has ignored the human side of his world," thus relying too much on our technology to solve problems, in and of itself, creates one!
>
> Dolphin Thompson 1964

As mentioned, our bodies consist of trillions of microscopic living cells, including the brain. The tiny world of our complex multicellular bodies is incredible; trillions of cells perform billions of metabolic events, adaptive mechanisms, and communications. They are working by feedbacks systems that occur inside a living creature many times smaller than a grain of salt. Our efforts to decipher such incredibly complex activity that is taking place at this level of life are helping us understand our hunger drives.

Proteins such as hormones and adipokines are at the foundation of the human hunger drive. Affecting the mechanisms of nutrient and energy-sensing that detect the presence of nutrients needed to keep body growth, structure, and the energy to drive the body's movement and metabolism.

Researchers discovered these hormones and proteins regulate energy and nutrient balance. One such hormone is ghrelin, known as the "hunger hormone." A peptide hormone produced by gastrointestinal cells induces hunger by its interaction with the hypothalamus. Other proteins are circulating inside our bodies that have balancing properties like leptin which controls satiety. If communication between cells is disrupted or changed, problems arise, such as overeating. For example, if a person is resistant to elevated leptin levels, they may experience pervasive hunger leading to morbid obesity. Overall, these proteins orchestrate healthy responses in our bodies. Imbalances lead to metabolic syndromes.

Fat cells also produce a hormone called adiponectin that positively responds to low-fat stores from fasting. This hormone helps to prevent metabolic derangements, including heart problems. Such proteins and hormones have beneficial effects of increasing growth hormone secretion, reducing cholesterol clearance, and better insulin and glucose utilization.

Low adiponectin levels due to obesity are associated with the development of atherosclerosis and metabolic syndrome. When we are hungry, many beneficial effects are occurring, in addition to the potential for weight loss. Resistance to these proteins develops due to overconsumption disrupts homeostasis and increases the risk of serious diseases. The strategy is to have a model that you can use to understand hunger drives in a positive light. Knowing that enduring fasting hunger is beneficial, although unpleasant, like exercising, has healthy outcomes. Hunger management offers a strategy for healthy aging based on science and common sense. Normal aging includes physical, social, and psychological elements dependent on the individual's health. Fasting hunger is necessary, and it attenuates the effect of biological aging and diseases such as Alzheimer's due to the accumulation of cellular debris and structural damage within our cells, especially neurons.

The Brain and body constantly negotiate responses to stresses such as hunger or exercise. The highest level of brainpower comes from the neocortex and humans have the most developed neocortex that we know so far. It attempts to control lower

brains functions involved with primal drives that could disrupt cultures, economies, and nations.

Mindfulness is the phenomenon of awareness of the moment. In particular, the individuals' emotions, physical conditions, and behaviors at any given moment, focusing on specific adaptive responses. This evolutionary development of our brains is where we find the answers to weight control by managing hunger. Our brain has elevated levels of consciousness and inhibitory control that allow us to adjust behavioral responses to stressors such as cravings, hunger, anxiety, anger, fear, and other emotions. "Our brain is analogous to the Center for Disease Control, a surveyor or a watchtower for the rest of the body, and adaptive behavior is driven by curiosity," searching for threats to our survival. When threats are perceived, driven by primal drives and psychological triggers of hunger, the human brain and mind can negotiate our responses. Adaptive inhibition requires conscious effort and practice; otherwise, the individual has little chance of managing hunger in positive ways.

The agriculture and industrial revolutions marked a dramatic shift from thousands of years of hunting the land for food. It changed our ancient lifestyles, resulting in social conflict, exposure to zoonotic diseases, and overnutrition worldwide. Today, employment models are changing, like working from home increased as a pandemic spread across the globe in 2020. As a result, there is an ever-increasing consumption of convenience foods with far less physical activity. Excessive global weight problems continue to rise with economic strain and early death. Well, thought out weight control programs, including many books on intermittent fasting, and diets repeatedly underestimate the primal drive of hunger which becomes the nucleus of their failures. Yet, our human hunger drive is the least talked about! Hunger is a drive that calls us to action and is often quoted by coaches when motivating intense competition among athletes and, in our past, those competing for resources of the land.

Food shortages are a natural part of Earth's environment which shaped the evolution of many cellular processes. These fluctuations have resulted in the biological efficiency of physical and even metabolic characteristics. The results are competition

between and within species where the hungriest and strongest usually survive. With food available all the time, such biological adaptations go unused, leading to chronic lifestyle changes. Offspring diseases such as diabetes, heart problems, and severe excess weight begin to take hold. Even as international organizations work to end food insecurity around the globe, weight problems are increasing across all age groups. Such organizations perhaps unknowingly are using the word "hunger" in misleading ways. A perplexing question is before us, how to end world food insecurity without simultaneously affecting overweight and obesity? Our mismanagement of hunger is the reason for unhealthy behaviors that are being internalized as the norm. We must begin to view hunger in positive ways. Scientific evidence has shown that calorie restriction or physiologic hunger in a controlled fashion has positive health benefits. We are running from hunger as though it is a terrible condition. Companies are using our weakness to hunger and encouraging us to spend billions on drugs and food consumption. However, living cells require conditions, which they adapted to here on Earth over billions of years. These living creatures may have some degree of consciousness that may be impossible to prove, but we know they actively search for nutrient and energy sources.

Scientific interest in calorie restriction's effects on the cell's molecular pathways is of intense investigation. Within the past decade, the research and discovery of molecules and compounds responsible for nutrient and energy regulation during food scarcity have received funding, especially from big pharma hoping to cash in on a "miracle drug." These drugs would mimic the effects of fasting. Such nutrient and energy-sensing pathways like the IIS, mTOR, sirtuins, and AMPK are significant targets of drug-induced weight control because they have been linked to aging and health. Restricting calories and various diet programs, when used effectively, results in the feeling of hunger, and it is our response to this process that makes weight control so tricky. Drugs that affect our human hunger drives or mimic its physiologic effect may have unwarranted consequences because there is so much crosstalk between these molecular and cellular pathways.

In this book, I have focused on hunger as stress with physiologic implications and emotional responses instead of appetite or cravings. A developing change in thinking is occurring where restricting calories can be used to combat overweight and obesity by embracing our "hunger drives." Hunger drives are inseparable from our biology or DNA—an ancient adaptive response to the needs of growth, repair, and reproduction on a cellular level. At present, hunger stands in the way of weight control for most people trying various diets. Psychological conditioning is all around us aimed to start feeding behaviors telling us hunger is terrible. However, hunger does not kill; it is malnutrition and starvation.

The current view proposes, quite simply yet overstated, to stop eating so often and exercise regularly. The challenge of looking at hunger as a beneficial condition with unpleasant feelings is a key to good health.

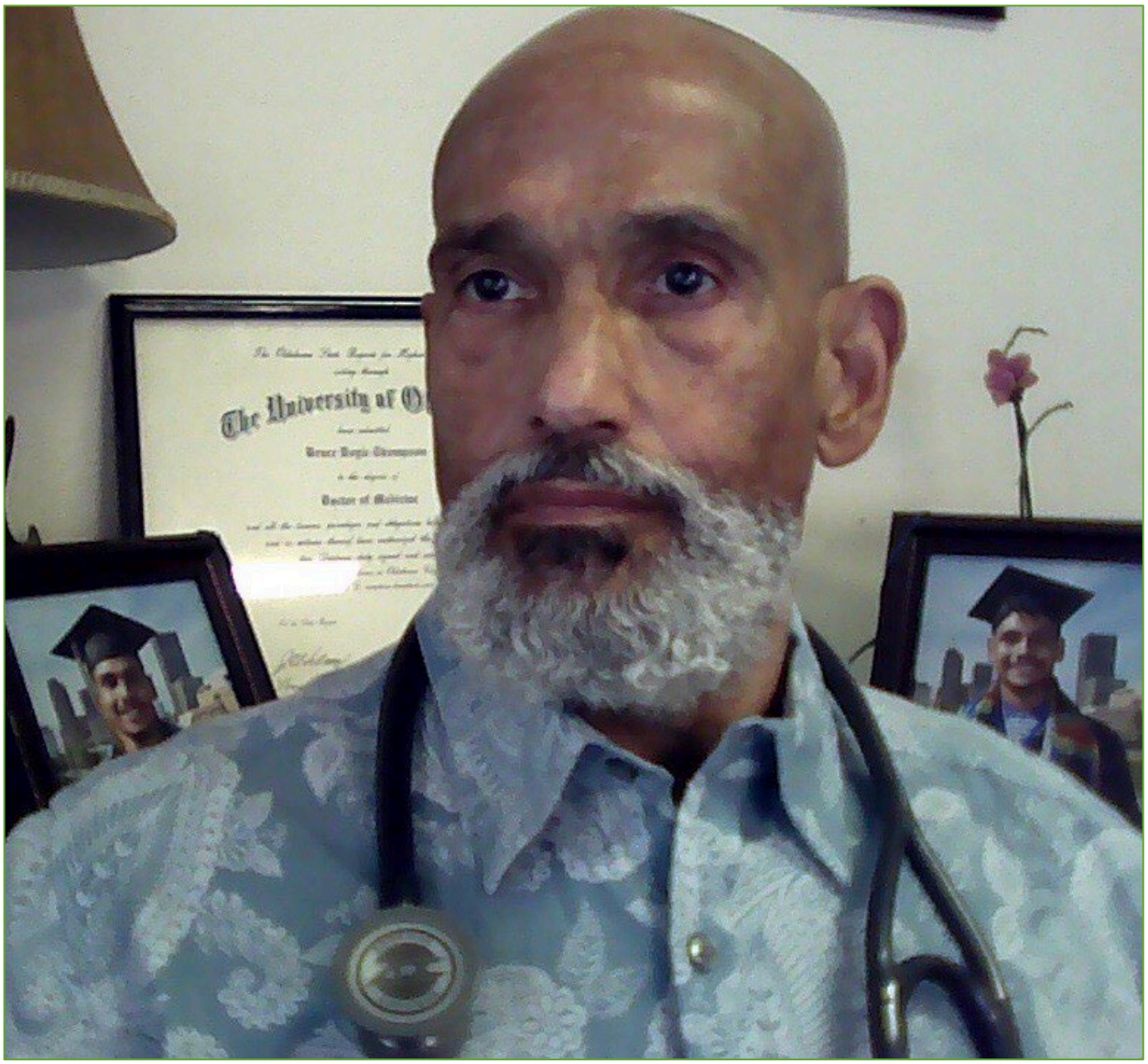
A myriad of named diets like Keto diet, Noom, South Beach, or Nutrisystem, to name a few, emphasize various food types which are well-thought-out methods yet, weight problems are still trending upward. You can explore these diets and exercise plans online. In the modern era, simulating various adaptive lifestyles is all around us. An example is sports and exercise that simulate hunting. Weight control by fasting or calorie restrictions is also an adaptive simulation. In this way, we are imitating our distant ancestors' healthy lifestyles. Knowing their responses to hunger was evolutionarily successful. Mirroring ancestral eating and activity levels can help support a balance between nutrition and energy.

People have lived with fewer calories and more activity without obesity and other silent killers for thousands of years. Efforts are ongoing to uncover the hunter-gatherers’ patterns of activity in hopes of supplying vital information. These early ancestors had access to a wider variety of nutritional foods and wild animals. We know that the daily energy expenditure and diets low in calories with high nutritional content are quite different compared to the present day.

In conclusion, living cells require conditions adapted to here on Earth over billions of years. The remarkable "Fat cell" evolved millions of years ago in response to changing environmental conditions of food scarcity and fasting. Fat collectively forms one of the body's organs like the liver, spleen, pancreas, and brain. They process excess fatty acids found in foods and store them as triglycerides. Free fatty acids can be used during fasting times and are much more efficient than reliance on carbohydrates. Lipids supply six times the amount of energy found in the latter. Extended periods of hunger activate the use of such adaptive processes. Today's ever-increasing food availability leads us away from healthy strenuous activity and the patterns of feedings that regularly started the metabolic switch to fatty acid metabolism.

Audiovisuals links

1. Hunger Management Introduction Part I
2. Hunger Management Part II
3. Road to Health and Longevity
4. Autophagy Part I
5. Autophagy Part II
6. The Third Renaissance of the Food Matrix
7. Hormones and Adipokines Controllers of Hunger
8. Overconsumption of Food and Carbon Fuels
9. Intermittent Fasting Dietary Prevention for Breast Cancer and Heart Disease
10. Fasting and Prayer
11. The Food Matrix - A Prison For Your Hunger
12. Author of Hunger Management Book



Doctor Thompson graduated from the University of Oklahoma College of Medicine in Oklahoma City. He pursued post-graduate training in primary care internal medicine from Honolulu's University of Hawaii Integrated Medical Residency Program. He had the privilege of treating patients from all levels of society, from multicultural communities of urban and rural Hawaii, Nevada, and Oklahoma. As house physician to some of Maui's and Las Vegas' leading hotel resorts, he provided healthcare to an international rainbow, including some of Hollywood's elite, professional athletes,

entertainers, community leaders, sugar cane farmers, and hotel maintenance. He spent years practicing emergency medicine and inpatient hospital care.

He states, "the sooner you understand the negative effects of eating too frequently and no longer fear the "hunger drive," you will experience confidence in navigating the complexities of the marketing and food industry. Doctor Thompson was the first to focus on hunger management and write about its usefulness for health and longevity. With advancements in modern science, the mechanisms underlying "fasting hunger" are being revealed.

Doctor Thompson mimics his ancestors' activity levels and incorporates hunger management into his lifestyle. He exercises daily for several hours at basketball, swimming, free water diving, and tai chi chuan. Staying on top of the latest in his field of medicine is a priority. He regularly reviews journal articles cited for continued medical education, attends medical grand rounds, and engages with peers.

He has helped many of those who have adopted this way of life. Doctor Thompson believes in spreading the knowledge of health and well-being to one individual who then shares with another the good news, "the answers to the weight epidemic have been within us all this time. He states, "now is the time to stop silently growing health problems related to overconsumption that is causing so much suffering and economic burdens worldwide." He volunteers lectures and motivational speeches to community groups and organizations about managing hunger, "the road to a healthy life." He believes that "we should cherish every mind for within one may lay the key to our future!"

Table of Figures

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