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A burning question for yoga is “how does it work?” This is answered by two models, a modern Mechanical/Physiological Model and an ancient Energetic Model. The Modern Model is based on the scientific fields of biology, physics and chemistry, while the Energetic Model is based on the belief in a form of energy called “prana” (or “chi” in the related Chinese system), which represents the life force.

In both models, a block or alteration of process can lead to cascades (ripples) of effects which we cause dis-ease. In the Modern Model, these phenomena are “materialistic” and “reductionistic”, requiring “objective” measurement of the tangible; while the Energetic Model accepts a “subjective” realm as a dimension that is implicitly elusive and unmeasurable, similar to emotion, pain and music.

We believe in the electron, which we will never see, because we see its effects. Likewise, while we can’t see the life force directly, we do see its effects. The discovery of Epigenes can bridge these models, as explained below.

## DNA

The discovery of DNA’s “genetic code” in 1953 by Watson and Crick captured our civilization’s attention because it implied that our “programming” was hard-wired and therefore could be “de-coded”. The hope, and for many still the belief, is that we can improve upon life by modifying genes. This discovery has indeed helped understand disease and develop processes such as when bacteria produce human insulin by genetic modification at an efficiently not yet achievable otherwise.

However the honeymoon with DNA and Genetic Modification is over. While we can manipulate genes, we clearly do not yet understand them enough to do so. There are regions of our DNA that are arrogantly called “junk”. This is similar to nuclear energy, where we have seen time and again that we cannot anticipate every dangerous scenario. DNA modification and Nuclear Energy are like ecological and evolutionary heroin—we can get a quick fix but they will take us down.

Furthermore, the genetic approach has serious limitations. For example, human genes differ from other apes by less than 1% which is not enough to explain the huge differences between species.

## Epigenes

The discovery of Epigenes is the nail in the coffin of DNA’s supremacy. Epigenes are molecules which, like software, modulate the expression of DNA’s hardware. They can act like on-off switches, valves, carpenters or bombs. Epigenes are transmitted from grandparents and parents to the child to alter gene expression during fetal development, childhood, and into the later decades. For example, a grandmother’s lifestyle in her teens can affect her grandchild’s risk of infertility and cancer in their 30’s.

The great and scary aspect of Epigenes is that they take the power away from DNA (and pharmaceuticals) and places most of the weight on our lifestyles. Indeed, even the staunchest geneticist will reluctantly confess that at best, only 20% of our health is determined by our genes; the rest

is lifestyle. Identical twins can have opposite health profiles based on their lifestyles. Epigenes are in part encoded lifestyle and experience. These discoveries are moving us back to the ancient models of web-like connectedness.

## The Gene Pool, -Omes and Information

The concept of the gene pool, from which we tap and to which we contribute is technically called the “genome” and refers to the collection of genes in an individual or species. “Gen-omics” is its study and application. Likewise, Epigenes form a pool called the “Epigenome”; and there are other -omes and -omics as well (see table). These pools of information, acting like complex databases, are dynamic, constantly interacting and change through ongoing experience. They may encode and influence preferences, behaviors, emotional pat-terns, and “inherited” problems such as addiction and autoimmune disease.

Sample –Omes	
-ome	Description
Genome	The totality of genes and their information
Epigenome	The totality of epigenes and their information
Biome	The totality of organisms living in us and on us
Metabolome	The totality of metabolic (biochemical) products and their information
Proteome	The totality of proteins and their information

## Yoga and other Ancient Methodologies

Prana energy can work in part by modifying the –omes. Epigenes may be sensitive to electro-magnetic energy, in both good and bad forms. Yoga, acupuncture, tai chi, etc, by virtue of their model, practice and legacy, bridge the Modern and Energetic Models by seamlessly connect our energy (spirit), physiology and structure.

The ancients figured out many millennia ago that we are all connected and essentially one. Physics got there a few decades ago, and now biology is finally catching up. In some ways it can be overwhelming and dissatisfying to

realize that “everything influences everything else”. On the other hand, recognizing the beauty and power of our interconnectedness validates other paradigms and methodologies. It explains how the one can change the many; how individuals such as Mahatma Gandhi and Einstein can change our civilization.

The application of these concepts, the growing use of yoga for health, and ecologic approaches to infection and sustainable food cultivation will hopeful help our civilization re-direct its current self-destructive trajectory.

## IMPORTANT NOTES:

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3. Dr. Cheikin’s website has related articles such as “Revolutionary Concepts”, “Physiological Yoga” and many others.

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