From Sifu Paul

Greetings everyone,

Despite our recent cold spell, we've crossed the midpoint between the Winter Solstice and the Spring Equinox in the Northern Hemisphere. This significant seasonal marker has many names in many traditions. It's Imbolc/Saint Brigid's Day in the Gaelic tradition — Imbolc means "in the belly," as the earth is pregnant with the seeds of spring; Candlemas in the Christian tradition; and let's not forget Groundhog's Day in the U.S. (yes, he saw his shadow). There are many others. In the Chinese/Daoist tradition, a year is divided into 24 periods of time called Solar Terms that track with astronomical events and other natural phenomena. The Solar Term that is the midpoint between the Winter Solstice and the Vernal Equinox is called Start of Spring. It doesn't feel like spring yet, but we've all noticed the lingering sunlight.

Winter is a time of gathering and storing. The yin of winter is followed by the yang of spring, a time of sprouting and rising up just as the fish that rested at the bottom of the pond return to the surface. This transition between late winter and early spring is a time to stimulate the body through relaxed activity like T'ai Chi and Qigong in order to begin our transition into spring with a healthy bodymind. It is a time to cleanse and clear out the past and make way for new beginnings. Let our T'ai Chi and Qigong classes online and in the studio be part of your transition into a healthier spring.

In this issue: a guide to the stages and development of a practice, how the practice of Qigong can change the brain, and more. Celebrate the emerging light.



Another Midpoint

The middle of February marks the middle of the first quarter of the new year. Thanks to all who have paid dues and made donations this quarter. Your support sustains us as we move toward the warmer weather and expanding our class offerings.

The Evolution of Practice

The study and practice of T'ai-Chi Ch'uan from beginning to advanced levels evolves naturally in three distinct phases. The first is the stage of imitation, the second is the stage of assimilation, and third is the stage of innovation. To recognize each stage and allow it to develop and evolve naturally from one into the next is the way to cultivate depth and mastery in T'ai Chi.

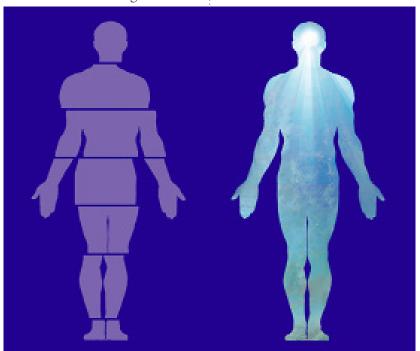
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Celebrate the emerging light of approaching spring!

Imitation: (1) to seek to follow the example of; (2) to mimic; (3) to reproduce in form and content

Imitation is the most primal form of learning we know. From the first utterances of speech to our first walking steps, humans have always learned by imitating the world around them. We awaken these innate human functions by imitating through sight, sound, touch, and our other senses. Through imita-

tion and the assistance of our caregivers, we acquire the ability to walk, talk, feed and dress ourselves. and perform other basic life skills. As we mature. we cultivate interests and seek to imitate



those who are accomplished in those areas. It might be an athlete, musician, dancer, actor, or someone in another discipline we admire and seek to imitate.

At some point, we may perceive our own limitations and seek out instruction from a qualified teacher. Finding a good teacher isn't always easy and could be the subject of an entire article. Once a connection is made with a teacher, we find ourselves once again engaged in the act of imitation, this time on a new and deeper level. As our instruction unfolds, we find that imitating the teacher requires a precision of movement we hadn't formerly encountered. Our new movements contain an understructure of meaning in both principle and execution, which may make our performance of them seem awkward and robotic. Through continued practice and receiving

corrections from the teacher, something deeply satisfying begins to occur: assimilation.

Assimilation: (1) to absorb and incorporate; digest

In time, the principles behind the movements are understood and assimilated by the mind and body. This process happens incrementally over time and continues on deeper, more subtle levels as long as one continues their

> practice. There is. however, an initial recognition that one's movements have become relaxed and fluid, and they begin to feel like the teacher's movements look. When this occurs. the thin veneer of mere

imitation has been transcended, and we are on another, more internal level of practice.

Over time, as our understanding and assimilation of T'ai Chi deepens, we begin to naturally personalize our practice. Our areas of interest and specialization become clear, which shape and guide our T'ai Chi. We begin to see the principles as flexible guideposts rather than immutable laws. The body begins to follow the dictates of the mind, and our natural instinct

Contact Us

For timely updates, follow Twin Cities T'ai Chi Ch'uan on Facebook.

Email: mail@tctaichi.org

Website: tctaichi.org

Phone: 651.767.0267

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Evolution of practice:

- 1. Imitation
- 2. Assimilation
- 3. Innovation

The Yin Year of the Golden Ox

Symbols are deep expressions of our human nature and have been present in all cultures throughout our human history. They speak to our mind, emotions, and spirit through art, myths, religion, and rituals.

This is the year 4718 in the Chinese

lunar calendar. Based on their 60-year calendar, the year 2021 is a yin energy year—receptive, gathering, magnetic, feminine. The new year represents rebirth and a time of yin and yang ruling in harmony. The symbols of the 12 animals and 5 elements further describe the essential nature of this cycle of time.



The ox is a symbol of the earth element and our material essence as it perseveres and assists our soul to embody its unique sense of purpose. Lao Tzu is often seen riding an ox. The metal element, in its highest expression as gold, is related to the perfection of all matter at all levels: body, mind, spirit, and soul.

We should bathe our brain and nervous system with the golden light of Qi flow through our practices. Be steadfast, grounded, and as purposeful as an ox in the year 2021.

for creativity begins to emerge. At this point, we enter the stage of innovation.

Innovation: (1) the process of making changes; (2) a new method, custom, idea, etc.

The history of T'ai Chi is a story of innovation. From its roots in Shaolin through the Chen, Yang, Wu, and other family styles, T'ai Chi is an art that has passed through the creative minds of many individuals whose willingness to innovate within a tradition has led to its survival and continued evolution. Every prominent figure whose innovations have changed the course of the art has passed through the first two stages.

All of us have our own unique reasons for practicing T'ai Chi, and we each have inherent strengths and weaknesses that influence the way we innovate within our practice. Once all the fundamental principles have been assimi-

lated, someone more oriented toward energy work and meditation would, by necessity, innovate differently than someone more interested in martial arts, for example.

Teaching is another vehicle for innovation in T'ai-Chi, since the best teachers have the ability to make the art accessible to diverse groups of people and must remain creative in their approach to teaching. True innovation, however, is not arbitrary or designed to cover weaknesses in comprehension or technique. Rather, it is a natural outgrowth of having worked slowly and deeply through the first two phases. Two core principles of mastery are: (1) start at the beginning and (2) don't skip any stages.

Cultivating an awareness and enjoyment of the three phases of practice—imitation, assimilation, and innovation—will allow you to continually progress and meet your objectives for as long as you choose to practice. <<

We are all unique practitioners and therefore all innovators.

How Qigong Changes the Brain

Qigong is an ancient exercise and healing practice that consists of meditation, controlled breathing, posture, and movements. The word "Qigong" is a combination of two Chinese ideograms: "Qi," meaning "vital energy," and "gong," meaning "skill or achievement."

Qi is the foundation of traditional Chinese medicine (TCM). Qi is energy in all its splendid dimensions: vital, internal, universal energy in the broadest sense possible, embracing all its known and yet-to-be known manifestations. The brain, functioning as the command center of the central nervous system, requires nearly 20% of the body's total energy pie. Two-thirds of that slice powers some 60 to 70 trillion energy-charged neurons (nerve cells) to transmit signals. Neuroscientists now describe the brain as biochemical, bioelectric, and neuroplastic. The neuro-universe of biochemical secretions and bioelectrical discharges comprises a complex but coordinated information processing system that radiates an electromagnetic field now documented by several scientific instruments, including ECG, EEG, and MRI. The neuroscientist V. S. Ramachandran once observed that "the number of brain states exceeds the number of elementary particles in the known universe."

For the first time ever, scientists (at Northwestern University) have captured images of that flash of light that sparks at the very moment a human sperm cell contacts an egg. Qi is that burst, that invisible explosion of biochemical, bioelectric energy that commences at conception.

Modern quantum physics brings us closer to the ancient Eastern concept of Qi, informing us that there is no difference between energy and matter. All human systems carry on with energy-making consistency. We learned from Einstein that light and matter are purely expressions of the same thing. Matter is simply stationary light, and light is moving matter.



An ever-increasing body of research now informs us that even through adulthood, many attributes of the brain can be altered. Neuroplasticity is the brain's ceaseless ability to rearrange itself by creating new neural connections. The "plastic" brain can, to some extent, compensate for injury and disease. It can change in reaction to new situations, new thoughts, and disciplined practices.

Qigong is the practice of cultivating and balancing Qi. In the practice, we improve the biochemical, bioelectrical, neuroplastic brain with the constructive habits of skill development, mindful meditation, and controlled breathing. As Qigong practitioners, we are positive neuro-influencers, constantly altering, changing, and developing our brains for better mental, physical, and spiritual health. We may consider ourselves Qigong "specialists."

Human Brain

The neuroplastic brain changes its actual structure and profoundly rewires itself in response to new demands. From that first flash of light through old age, the brain is dynamic, ever-changing, ever-evolving, ever-adapting to circumstances. Neuroplasticity informs us that not even intelligence is fixed in the brain at birth but that it is continuously developing throughout the human life span. "Positive neuro-influences" cause the birth of new neurons and the sprouting of new connections. The brain's ability to create new

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We can rewire our brains through mindful practices like Qigong and T'ai Chi.

neurons and connections between neurons is known as neurogenesis. On the other hand, "negative neuro-influences" damage and destroy nerve cells.

Research in neuroscience confirms that exercise causes a significant increase in neurogenesis in an area of the hippocampus important for learning and memory. New neurons are generated in the hippocampus each day, and the numbers of cells produced can be increased by physical exercise. Their survival is considerably improved through effortful learning.

Both neuroplasticity and neurogenesis teach us that we are not helpless. The power to create and to destroy our biological brains lies within us. In the field of neuroscience, mental stimulation and exercise are thought to be "neuroprotective." Through neuroplasticity, these life forces increase connections between neurons, spiking cellular metabolism and the production of nerve growth and neuron repair.

The mental stimulation, exercise, and "effort-ful learning" experiences of Qigong can shape and grow our brains over time. Consider the three foundations (the Three Intentful Corrections) of Qigong practice: (1) posture and movement, (2) controlled breathing, and (3) mindfulness and meditation.



The First Foundation of Qigong Practice Is Posture and Movement

We use both stationary and moving postures as we practice. Although poor posture produces predictable patterns of muscle imbalance (postural distortion patterns), it is generally ignored in modern high-intensity, calorie-burning Western fitness programs.

Poor posture stresses each of the human body systems, including the central nervous system, the circulatory system, the digestive system, the musculoskeletal system, and the respiratory system. Poor posture produces a negative neuro-influence. Some neuroscientists argue that stress kills brain cells.



Therefore, we practice Qigong exercise for both posture and movement. We develop motor skills through repetitive movement. We are what we repeatedly do. Neuroscientists argue that "cells that fire together wire together." Repetitive movement activates the parasympathetic nervous system and the relaxation response. With relaxation, we become able to execute movements more quickly and precisely. More than two decades of scholarly research indicates that our brains react to training with learning-induced plasticity, structural reorganization, and functional change.

Neuroplasticity tells us that we can become more skilled through sustained effort. The practice of Qigong posture and movement produces a positive neuro-influence. The brain's clusters of neurons ignite bioelectrical, biochemical pathways that match themselves in harmony with our practice.

Since Qigong is a lifetime journey, we constantly learn and develop new skills. When we learn, we form new pathways in <

Foundations of Qigong practice:

- Posture & movement
 Controlled breathing
- 3. Mindfulness & meditation

the brain. With persistent practice, our body's biochemical energy systems increase in effectiveness and efficiency. Without this evolution, our brains would sooner or later remove, or "prune," the connecting cells that formed the pathways.

Learning changes are greatest when we become expert in a specific discipline such as Qigong. The areas of the brain that support the field of expertise develop over time, increasing the brain's volume of grey matter (neurons) and white matter (connections between the neurons).

The Second Foundation of Qigong Practice Is Controlled Breathing

When we control our breath, we become master of our Qi. During moving Qigong training, we practice conscious breath control as a form of meditation. Most often, we engage Yogic or Buddhist breathing, also referred to as "abdominal breathing," "diaphragmatic breathing," or "belly breathing." Modern science recognizes that the diaphragm is the body's principal breathing muscle. We relax, retain a straight spine (posture), and place the tip of the tongue on the upper palate just behind the upper front teeth. We breathe deeply into the abdomen, filling the dantian, and we breathe out from the dantian. Taking long, deep breaths slows the heart rate and activates and calms the parasympathetic nervous system.

"When water is still it is like a mirror...

And if water thus derives lucidity from stillness how much more the faculties of mind?

The mind of the sage in repose becomes the mirror of the universe."

— Chuang Tzu

We are nose breathers. Breathing through the nose releases air more slowly than the mouth, thus conserving Qi. Mouth breathers, on the other hand, breathe quickly and shallowly, activating the sympathetic ("fight or flight") nervous system. Researchers have observed that when patients have been directed to breathe out of their mouths, a significant decrease in brain wave coupling results. Neuroplasticity is a critical component of the respiratory control system. Respiratory plasticity can be generated by the positive neuro-influence of exercise. It can also be activated by negative neuro-influences, including stress and injury.

While pacemaker cells in the heart control the human heartbeat, a neural circuit in the brain stem regulates our breathing. The rhythmic neural activity in this region can be altered by breathing rhythm. Slow, controlled breathing reduces circuit activity and improves cognitive functions. Rapid, irregular breathing intensifies activity. Both affect emotions.

A recent study from the Feinstein Institute for Medical Research in New York validates both the neuroplasticity of the brain and the benefits of controlled breathing. As breathing changes, the brain changes. "Breathing can act as an organizing hierarchical principle for neuronal oscillations throughout the brain."

The Third Foundation of Qigong Practice Is Mindfulness and Meditation

Mindfulness and meditation are united with gentle movement and slow, controlled, deep breathing. Mindfulness meditation can be thought of as focus, concentration, and awareness that includes the practice of meditation. We focus on our thinking, emotions, and movements and how we impact those around us. We focus within to cause calmness and balance. Both Qigong and T'ai Chi are now often referred to as "meditation in motion" or "meditative movement." As we exercise with correct posture and graceful movement, we become knowingly conscious of the interaction of our movement, our controlled breathing, and our meditations.

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When we control our breath, we become master of our Qi.

Mindfulness meditation changes the brain. Following an eight-week trial of a control group that practiced mindfulness meditation for 20 minutes a day, Massachusetts General Hospital scientists observed actual increases in gray matter concentration, and the amygdala, the brain's "fight or flight" center, appeared to shrink.

Multiple clinical studies indicate that the persistent practice of meditation "induces neuroplasticity phenomena, including the reduction of age-related brain degeneration... the improvement of cognitive functions... improvements in attention, working memory... spatial abilities and long-term memory." The American Heart Association now recommends meditation "as an adjunct to guideline directed cardiovascular risk reduction."

Mindfulness meditation is required to effectively practice moving Qigong meditation, as we must combine the mind, posture, movement, and breath. Ancient, experienced, ever-learning, ever-evolving, the mind-body practices of Qigong and T'ai Chi are foundations of Traditional Chinese medicine (TCM). The Three Intentful Corrections of Qigong practice—posture and movement, controlled breathing, and mindfulness and meditation—are now the subjects of neuroscience research that documents that these ageless practices change our brains for the better.

Donald Felty, Ph.D., is a certified T'ai Chi Ch'uan instructor, wholistic life coach, author, and motivational speaker.

