ROSICRUCIAN DIGEST

Volume 103 Number 2 2025

Science

ROSICRUCIAN DIGEST

Vol. 103 - No. 2 2025

Official Magazine of the Worldwide Rosicrucian Order ®

© 2025 Supreme Grand Lodge of the Ancient and Mystical Order Rosae Crucis. All Rights Reserved.

This publication is provided for your personal, private use only, on an "as is" basis, without warranty, and may not be used for any commercial purpose. No part of this publication may be reproduced, distributed, displayed, or transmitted in any form or by any means, including electronic, without the express written permission of the Supreme Grand Lodge.

ROSICRUCIAN DIGEST (ISSN #0035-8339) is published two times per year by the Grand Lodge of the English Language Jurisdiction of the AMORC at 1342 Naglee Avenue, San Jose CA 95126.

The front cover of this issue features an image of scientists studying the heavens, from Robert Fludd's *Utriusque cosmi historia*, 1617.

The archive for the *Rosicrucian Digest* going back to the 1920s can be found at: www.rosicrucian.org/rosicrucian-digest-archive.

Contents

Science and the Mystical Experience: Where Inner and Outer Worlds Meet

Grand Master Julie Scott, SRC

Thomas Wijck, An Alchemist*, seventeenth century.*

For millennia, mystical experiences—those deeply personal moments of profound insight, unity, or transcendence—have been described by mystics across traditions and cultures. Long viewed as subjective or unprovable, these states of consciousness are now gaining attention in the scientific community, which is uncovering measurable changes in the brain and body that align closely with Rosicrucian teachings on spiritual development and the nature of reality.

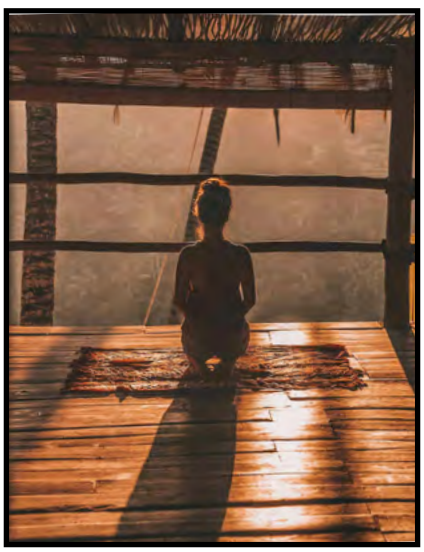
Modern science is now validating what Rosicrucians have long practiced: that mystical experiences reflect real, measurable changes in consciousness and can lead to lasting transformation. Through meditation, attunement, and self-discipline, Rosicrucians seek union with the Divine—not as a metaphor, but as an actual vibratory experience of divine interconnectedness.

Mysticism is no longer "otherworldly." It is being recognized as a legitimate dimension of human consciousness—one that is now supported by science and cultivated by Rosicrucian tradition.

Here are just a few examples:

1. Brain States and the Default Mode Network (DMN)

Modern neuroscience has shown that deep meditation and altered states of consciousness deactivate the Default Mode Network (DMN), responsible for our sense of ego and personal narrative. In mystical experiences, this reduction of self-referential thinking allows a feeling of union with all life—a concept long emphasized in Rosicrucian philosophy as part of achieving Cosmic Consciousness. A Rosicrucian lesson states: "The ego must be quieted so the inner self may rise into conscious awareness and attune with the Divine."



2. Gamma Waves and Transcendent States

Research has found that advanced meditators produce high levels of gamma brain waves during meditation. These frequencies are associated with unity, compassion, and insight. In the Rosicrucian teachings, this reflects the vibrational harmony that occurs when one attunes to higher planes of the Cosmic. A Rosicrucian lesson states: "When Cosmic contact is made, the entire being vibrates at a frequency harmonized with spiritual octaves, producing a state of attunement."

3. Heart-Brain Coherence and Emotional Mysticism

Researchers have documented that positive emotional states like awe, gratitude, and love lead to heart-brain coherence, supporting deeper perception and emotional intelligence. Rosicrucians describe the heart as the seat of the soul's expression and a vital psychic center where spiritual consciousness can be awakened. A Rosicrucian lesson states: "The heart center acts as a conduit for the soul's vibratory expression, essential in higher spiritual attunement."

4. The Field and the Unified Source

Quantum physicists like John Hagelin, Ph.D., describe a Unified Field—a source of all laws of nature, which is self-aware and unbounded. This echoes Rosicrucian descriptions of Actuality, the noumenal realm from which all material creation arises. Rosicrucians teach that we can access this field through meditation, intoning vowel sounds, ritual, and other techniques. A Rosicrucian lesson states: "The noumenal world, or Divine Actuality, is the spiritual essence behind all phenomena—a field of pure potential, accessible through the soul's higher faculties."

* * *

While science may never fully capture the depth and meaning of mystical experiences, it is increasingly able to observe, measure, and support what mystics have long taught: that states of expanded awareness are real, transformative, and rooted in deeper aspects of our human nature.

Mystical experience is not just the domain of monks or sages—it is a natural capacity of consciousness, waiting to be awakened. And now, science is beginning to agree.

In this issue of the *Rosicrucian Digest*, we explore Science and the Mystical Experience—Where Inner and Outer Worlds Meet.

The Nature of Reality

William Hand, FRC

Let us begin this article with a few quotations.

Sir James Jeans, *The Mysterious Universe* (1930):

> The stream of human knowledge is heading towards a non-mechanical reality. The universe begins to look more like a great thought than a great machine. Mind no longer appears to be an accidental intruder into the realm of matter. We are beginning to suspect that we ought rather to hail it as the creator and governor of this realm.

Max Planck (1944):

> There is no matter as such. All matter originates and exists only by virtue of a force which brings the particle of an atom to vibration and holds this most minute solar system of the atom together. We must assume behind this force the existence of a conscious and intelligent mind.

Nikola Tesla:

> If you want to find the secrets of the universe, think in terms of energy, frequency, and vibration.

Albert Einstein:

> There comes a time when the mind takes a higher plane of knowledge but can never prove how it got there.
>
> Time is not all what it seems, it does not flow in only one direction and the future exists simultaneously with the past.
>
> Now he has departed from this strange world a little ahead of me. That means nothing. People like us, who believe in physics, know that the distinction between past, present, and future is only a stubbornly persistent illusion.

Sri Aurobindo:

> Consciousness is the fundamental thing in existence. It is the energy, the motion, the movement of consciousness and all that is in it. The microcosm and the macrocosm are nothing but consciousness arranging itself.

Norman Friedman, *Bridging Science and Spirit* (1994):

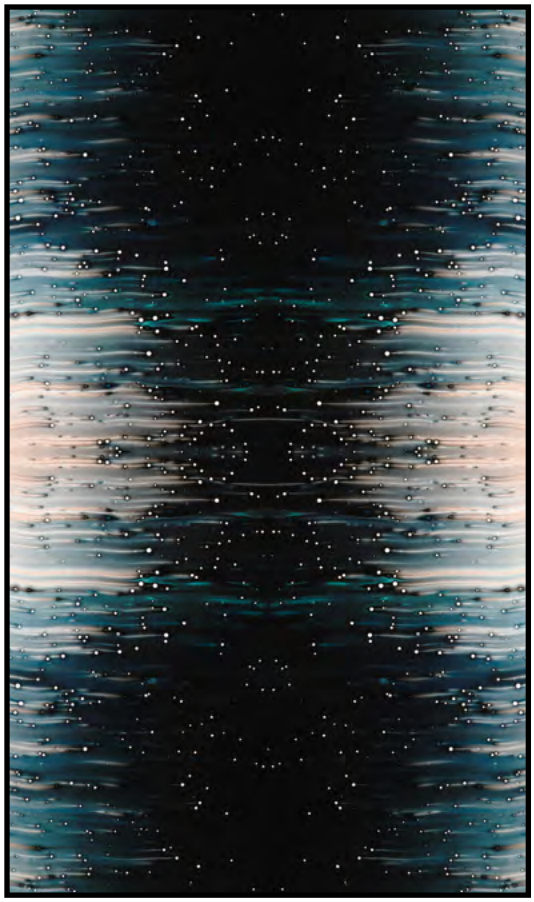
> One of the most significant contributions to contemporary physics was Einstein's discovery of the equivalence of mass and energy. A fundamental equivalence we have seen in this examination is that of matter/energy and consciousness. This means that all existence is a form of consciousness and is alive in some sense; inert or dead matter is an illusion.

Helen Blavatsky:

> Illusion is an element that enters into all finite things, for everything that exists has only a relative, not an absolute reality. Whatever plane our consciousness may be acting in, both we and the things belonging to that plane are, for the time being, our only realities.

Albert Einstein was as much a mystic as a scientist. Was he accessing a higher state when he thought $E=mc^2$? He could have alternatively interpreted the equation as energy=(motion of consciousness)^2. Energy is consciousness in rapid motion. Consciousness in motion generates its realities by focus of intention. If you apply this definition to your own volition, you may agree that it is equally valid.

What do you see when you look at the world around you? People, trees,



plants, houses, animals, etc. Everything looks solid and permanent, but is it really? Quantum physics tells us that, at the sub-atomic level, all is just energy expressed as waves of varying frequency. It is only when something comes along and observes (decodes) these waves, and all the complicated connections with each other as others decode as well, that a consensual physical reality springs into view.

At a basic level, matter itself is combining quantum waves allowing atoms to form, which then combine and form molecules, which then combine and build structures such as rocks, water, minerals, etc. The complexity of this process in the material universe is colossal but is undertaken according to laws of physics and attraction.

So, we have a complexity of waves (known to Rosicrucians as "vibrations") that potentially can stay as waves or, if decoded, more familiar structures. All people would agree what a chair looks like, or a rose, or a bird.

Our physical senses decode the complex frequencies of the quantum waves comprising the chair. Given that all people have similar senses (and brains) then all can agree that a chair is a chair. There might be subtle differences of course but nearly all would agree on seeing a chair or a bird or a rose or anything else. With these experiences, we label objects and give them names so we have the experience of a solid external reality "out there."

The combining of quantum waves is down to the laws of physics, and these laws limit the physical universe to what we understand now; basically, "space-time." And so, if we use just our senses and brain, we see a universe constrained by the laws of physics. There is a sense of time as physical structures change. Physical reality is a kind of moving simulation.

Let us expand on this by considering virtual reality (VR). In VR you live in an artificially-created world where you find objects and interact with them. But it is a world created by programming-code running on a computer, code developed by something else, a team of programmers. You can immerse yourself in these new worlds and convince yourself that this is the universe, all that is; but it is only a simulation governed by the constraints of the code. Unnervingly, if the code is hacked then the simulation and your perception changes.

Now, substituting "laws of physics" and "interaction of quantum waves" for "code," you can then hopefully see that physical reality and VR worlds are conceptually very similar. In a VR world you decode by looking, moving, and interacting. In physical reality you decode by looking, moving, and interacting. We

call this "living." You are immersed, but not totally! In the VR scenario you can take the headset off and everything changes. In physical reality you can meditate or go to sleep and everything changes. After bodily death, the change in your reality will be immense, for you will have no physical senses left.

Let us do a thought experiment. Remove senses one by one, what are you left with? With no senses, you cannot decode physically but you are still "there." So where is your "there?" This leads us to ask what it is that is doing the actual decoding. Here we come to the essence of this article. It has to be consciousness doing the decoding. And if this is the case, then decoded objects exist as part of consciousness.

But what is consciousnes? I will offer a definition, apart from the usual "awareness on different levels," and see where it leads us. If we say that energy (and all scientists agree that the working of our universe is down to energy) is "consciousness in motion," namely, that it is a force, then it is a force that just IS, it is a timeless force, an intelligent force that operates in myriads of ways that Rosicrucians call "the Cosmic." The Cosmic incorporates the laws of physics in the universe we know about and also in other dimensions and universes that we do not know about or have not yet realized.

Now we can see the beauty of Einstein's conventional $E=mc^2$ equation. E = consciousness in motion = mass x the speed of light squared. Matter, therefore, has an equivalence to consciousness.

So, reality is down to consciousness, and it is also about perception, given that we are ultimately decoding quantum waves. What we perceive is what we believe and what we believe is what we experience. So our experience of the world is down to our perception. If our perception changes, the experience of our world changes too. Change your perception and your reality changes.

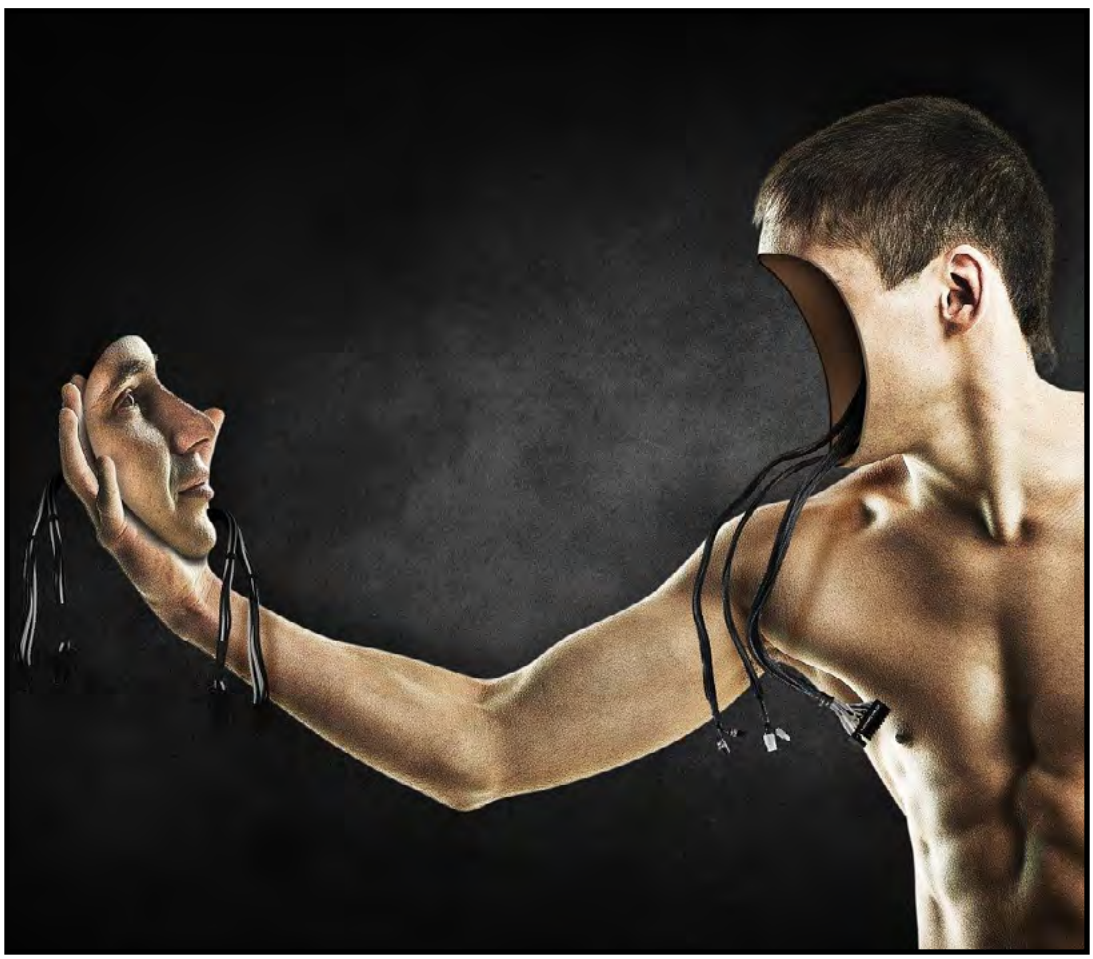
In centuries past, people had a perception that the world was flat. After all, it looked flat and that was therefore their reality. Of course we can now perceive the world as a globe and so, our "reality" is different. But both these realities, flat-world versus globe-world, are equally valid, for we can never know the "actuality" lying behind every perceived "reality." We can only know what we perceive, and this is our reality. In centuries to come,

higher dimensions or more universes may be discovered and our Earth may then be experienced very differently: a new reality!

Finally I'd like to say a few words about time. Time is a strange thing, we are all aware of it due to change and things like the regularity of seasons. But it is a concept, necessary for understanding our physical space-time universe. But when we think of the past or even re-create visions of the past, where are we? When we sit quietly, creating realistic visualizations of the future, where are we? Most everyone will say we are "in the present," or as some would say, "in the now." But when are you ever out of the now? When are you in the past or in the future? Never, because they are concepts and we only have the now.

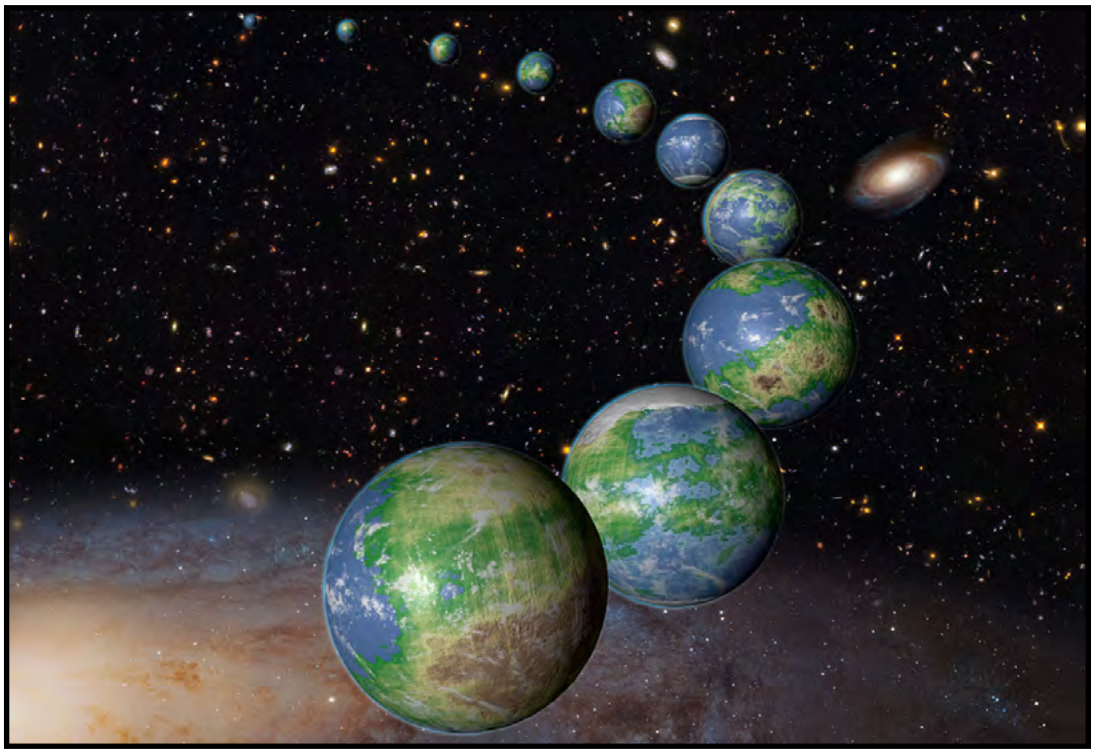
We need a measure of something called time in order to measure speed or rate of change or understanding vibrations. Even space is measured in terms of time when we measure distance in terms of "light years." But that is only because our physical universe, our physical reality, is constrained by the speed of light. Other dimensions, other universes and other realities will have different rules, a bit like putting a different VR game into your headset!

Hopefully, you will now have an understanding that reality is about how you decode something, an experience. Changing your perception, changes your reality. If a critical mass of people were able to change their perception to one of a better world, the whole world would change to conform to that perception, and our dreams and hope for a better future would be realized. That's worth thinking about! Do we now need a new headset!?



Parallel Worlds

Michael Shaluly, FRC



A NASA artist's modelling of what Earth-like planets could look like.

A couple of generations ago, the thought of parallel worlds was little more than science fiction. Even in mystical circles, the subject was perhaps too far-fetched for many students to explore. Today, not only do we continue to contemplate the concept of parallel worlds in our mystical studies, but certain segments of the scientific community are stating that parallel worlds must exist.

We live in parallel worlds now, though we don't recognize it as such. There is the world we accept objectively because it seems real, and there is also the world that we live in but are unaware of. Our lives are both visible and invisible, aware and unaware. We know without question that there is a reality we perceive that differs from actuality. Just as there is a sympathetic nervous system that autonomously guides our bodily functions, so too is there a spiritual sympathetic system that guides us to those people, places, and situations that we need and that need us. Everyone animated with life is spiritually guided, even those who reject such a notion. Since we know that by far the invisible world is the greater part of us, then it is natural for us to seek it out and attempt to understand it. This quest is the mystics' journey - to travel beyond the powerful illusions that grip us as humans and open our minds to the greater nature of our Creator.

Relinquishing commonly held notions is difficult for us. We like and feel comfortable with what we can see, feel, and touch. The thought of infinity goes beyond our limited human brain capacity. The thought of Cosmic Consciousness, of knowing everything all at once, is also beyond the function of our current state of consciousness. In this category of the inexplicable falls the concept of parallel worlds, a theory that we may be

simultaneously living different lives and experiences and with differing outcomes. The mystic, as a walking question mark, should at least entertain this possibility within the infinite framework of the Cosmic, just as physicists are now doing in their attempts to uncover a unifying theory of everything.

Parallel theory found a place in science with the advent of quantum physics, where particles and elements act in inexplicable ways. Particles in the quantum world can seemingly be in more than one place at once, change their properties when observed, and sometimes even appear to move faster than light. In 1954, a theory out of Princeton University introduced the idea of parallel universes, each like our universe, all branching off from one another. Within these universes, all outcomes may exist; wars have had different outcomes, species extinct in our universe have evolved and adapted in others, and so on.

The theory attempted to answer the erratic behavior of quantum matter, where observations revealed photons acting as particles and waves, sometimes simultaneously, sometimes in ways not yet fully understood. Further, they can appear to change form just from the observation of them. The physicist Werner Heisenberg suggested that just by observing quantum matter, we affect the behavior of that matter. Thus, we can never be fully certain of all of the properties of a quantum object. This led some physicists to theorize that all quantum particles don't exist in one state or the other, but in all possible states at once. The sum total of possible states of a quantum object is called its wave function. The state of an object existing in all of its possible states at once is called its superposition. When we observe a quantum object, we break its superposition and essentially force the object to choose one state from its wave function. This theory accounts for why physicists have received opposite measurements from the same quantum object: The object appeared to be in different states during different measurements.

A scientist of that era, Hugh Everett, proposed an alternative to the traditional view that measuring a quantum object causes its wave function to collapse into a single definite state. Instead, he suggested that all possible outcomes of a measurement taken of a quantum object occur at once, each in a different, non-interacting branch of the universe. The universe is in this theory duplicated, splitting into one universe for each

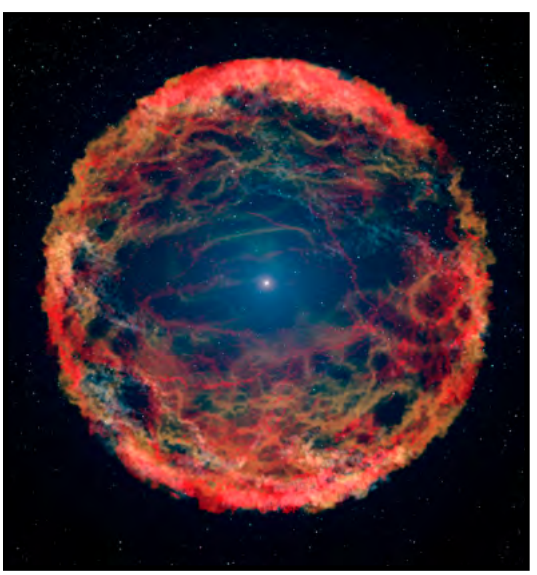
At left is NGC 2020 and at right is NGC 2014, two nubulae that make up the Cosmic Reef.

possible outcome from the measurement. For example, say an object's wave function is observed to be a particle in one instance, and a wave in another. When a physicist measures the particle, the universe splits into two distinct universes to accommodate each of the possible outcomes. A scientist in one universe finds that the object has been measured in wave form. The same scientist in the other universe measures the object as a particle. This also explains how one particle can be measured in more than one state.

There have been other theories shown to be possible that suggest there are universes parallel to our own. Physicists have engaged in reverse engineering—they have studied what they could observe and worked backward toward smaller and smaller levels of the physical world in the hope to reach the final and most basic level that will serve as the foundation for understanding everything else. This led to a theoretical subquantum level called string theory that has also concluded that there are parallel universes. String theory was popularized by the Japanese American physicist Michio Kaku. His theory says that the essential building blocks of matter and physical forces in the universe exist on a subquantum level. These building blocks resemble tiny rubber bands or strings that make up quarks (quantum particles), and in turn electrons, and atoms, and cells and so on. Exactly what kind of matter is created by the strings and how that matter behaves depends on the vibration of these strings. It is in this manner that our entire universe is composed. And according to string theory, this composition takes place across 10 separate dimensions.

Like the Many-Worlds theory, string theory proposes that parallel universes could exist. According to the theory, our own universe is like a bubble that exists alongside similar universes. Unlike the Many-Worlds theory, string theory supposes that these universes can come in contact with one another. String theory says that gravity can flow between these parallel universes. When these universes interact, a Big Bang like the one that created our universe can occur.

While physicists have managed to create machines that can detect quantum matter, the strings proposed by string theory are yet to be observed, which makes the foundation of string theory entirely theoretical. However, many studies have been performed using better and better instruments that reveal the elegance and oddities of the quantum world. One such study was undertaken in recent years at Berkeley Lab, studying photosynthesis. Researchers detected "quantum beating" signals— coherent electronic oscillations in both donor and acceptor molecules—generated in the photosynthesis process of a leaf. They observed wavelike motions of energy that seemed to explore all potential energy pathways simultaneously and reversibly. In other words, without taking any time, the light seemed to look at all possible pathways simultaneously and chose the best path to take for efficiency.



A NASA artist's impression of a supernova.

Three young stars shine amidst the Taurus Molecular Cloud.

Light works in us in this manner as well. We are also a part of this material world, and the photons and quarks work in us just as they work throughout the universe. Science has proven that photons can travel all pathways of a leaf simultaneously without a time penalty, and at the same time travel only the most efficient pathways for photosynthesis to occur. This can be interpreted as a form of consciousness, a form of thought, of divine direction that carries this out. It is the very same Divinity and divine guidance that resides in us. We therefore can relate to the age-old saying that time and space are an illusion of our objective consciousness. As infinite, invisible beings, not only can our thoughts move and manifest immediately, but also our thoughts can transcend the illusion of time and space. Indeed, then, parallel worlds can exist, for we can change a thought, correct a thought, and even an action now, in the future, and in our past. We are finding the causes and effects of quantum physics all around us, and we will find more as the years go by, and our instruments improve. Much of what we are finding clarifies and verifies our mystical teachings that have been in existence for thousands of years. We know everything is infinite in nature, though it may not seem so at first. Our first degree tells us that matter itself is made up of Spirit energy. This energy is of an immaterial nature, and thus, even matter is of spiritual origin. Perhaps that is why AMORC chose to name this energy "Spirit." If we look at the concept of string theory, we are ultimately made of vibratory patterns that are linked throughout nature and resonate with each other. Our incarnation into this material world so strongly seems like a beginning, and our transition from it so strongly seems like an end. Yet, we know that we are more than our name and our physical body; we are eternal, vibratory energy connected to all things, and taking part in being's ceaseless effort to be.

When we say that we are a part of creation, we tend to think about the beginning of what we call creation. Creation, however, is not something that started and then stopped. It is continuing and always becoming. We witness creation every moment we are alive; we create things ourselves, we watch as our environment changes with natural events, human and animal interactions, and so forth. There is a constant evolution of movement and change and we are integrated with this movement. With string theory and parallel theory, we can recognize the possibility of a world without time, of universes without beginning or end, and where all things interact simultaneously. Consciousness itself is interwoven with us and within this realm. We are an instrument through which the infinite expresses itself.

The thought, contemplation, and study of parallel worlds can assist us in expanding our consciousness towards a greater understanding of our place in the universe. All around us is a beautiful and infinite creation, and within this creation, we are the Divine's expression! Let us strive to raise our consciousness beyond the dimensions of our material world and allow Divine will to work through us.

Universal Intelligence: The Plant Kingdom

Julian Johnson, FRC

A section of Pando, a quaking aspen in Utah that is the world's largest tree by weight and landmass at around 6,000 tons, with an age that stretches back at least several thousand years.

Research on the subject of the Universal Intelligence of the plant kingdom goes back about one hundred fifty years to the era of Charles Darwin, and the amount of research is voluminous. For Rosicrucians who think about consciousness, the research gives a new view of the world around us. This is illustrated by an experiment in which researchers showed people a short film and then asked them to note what they had just seen in the short clip. One part of the clip had a horse in it, another part of the clip had two birds, and another had three people, and that was what people reported. But in all of them, primarily what was there were plants, trees and other flora. The research showed that people have what the scientists called "plant-blindness." We really don't notice plants. However, what present research shows is that plants are as sentient and intelligent as other living creatures.

Universal Intelligence lives in the plant kingdom. A basic Rosicrucian tenet is that there is one intelligence, one consciousness. In accounts of people who've had momentary experience of Cosmic Consciousness, one of the key features is awareness of an imminent intelligence that's in everything, surrounding everything, and which we're part of. So that Universal Intelligence is really what this is about. What we see in the animal kingdom and in humans, manifests in very similar ways in plant life. So, one Universal Intelligence is not new to us. All living things manifest this Intelligence and you can see it in the smallest gnat. The tiny little creature that's ducking around us—it's trying to live, trying to find food, trying to reproduce, and trying to avoid irritation. It's doing nothing unique in its objectives. It may not watch Netflix, but it acts similarly to other forms of life.

We find that whether we consider a protozoan or a larger animal, the behavior we see with living things, we similarly see in plants—self-preservation, seeking nutrients for food, reproduction, and avoiding irritation—trying to be in comfort, not discomfort. Most of us learned about plant reproduction in school, so there's no need to go into detail here. We know there's pollen and there are seeds, etc. Most of science, up until the present time, looks at plants as being almost inert, in the sense of being passive actors—not active agents. Scientists observe how plant reproduction takes place. Bees visit and carry away pollen, a seemingly passive role for the plants.

From a scientific point of view the key features that researchers look for in categorizing intelligence is the ability to take in information from one's environment, the ability to process and integrate that information, then deciding how to act on the information and lastly, and this is really where scientists lately have been somewhat forced to yield regarding the intelligence of plants—the ability to solve problems. Besides the preceding, there is a separate scientific debate as to whether plants are conscious. Many get stuck on that point, however it is enough to remember that plants are active problem solvers.

One of the most interesting comments about this subject is an observation that plant life is, ironically, the closest thing to alien life on our planet. Plants don't have eyes and ears and legs and move around in the ways we're used to seeing in other life forms. Nonetheless, plants are sentient creatures responding to their environment, and they share the world with us.

Let's look at some plant characteristics. They are sessile, which means that they don't move around; they are rooted in a fixed location. It's very interesting when you think about them. Scientists who are interested in this field recognize that plants have to solve all the problems that other animals face: being able to survive in their environments, getting food, etc. But they can't get up and move to address their needs. Pretty much every other living creature moves to get what it needs, if it's not immediately present in its own environment. Plants are rooted, so they clearly have to be very creative in getting

A resilient desert shrub called a fire bush or calligonum, that is native to sandy deserts across North Africa, the Arabian Peninsula, and parts of Asia. In order to reach water, its roots can grow 30 feet deep.

what they need. While people don't see plants as conventionally moving creatures, plants do move through growth. That's the behavior they employ to access resources not immediately present. Related to this, plants act on a much slower timescale than our own. Plants move so slowly compared to humans that we think that nothing is happening. However, we can see these behaviors clearly through time-lapsed photography. In an ironic twist on this fact, there was a *Star Trek* episode where a type of alien creature came to Earth that functioned on a much faster scale of time, and they looked at humans as being inanimate. They began to do with people what they wanted. They saw people as inert and inanimate so they had them for lunch and other things like that.

What's also interesting is that plants, in addition to having functions that are akin to human senses, actually have additional senses. You could say that plants have the five senses we're accustomed to, plus additional ones. Another point is that plants have sophisticated means of self-defense to protect themselves as all living creatures do. They also communicate with other plants through various means. They have memory. They exhibit purposeful decision-making: They crunch incoming data and, in effect, say I'm going to do this, not that. They can distinguish self from non-self. As we know, plants reproduce through a variety of means: wind, insects, animals, etc. for distributing their seeds and pollen.

A look at plant bodies reveals that plants are very different, which has made it so confusing for traditional scientists to get their arms around plants. Plants don't have lungs, they don't have kidneys, they don't have livers, they don't have organs like animals do. Even tiny bacteria have different organs. There is the nucleus, the mitochondria, and other elements. Plants

The milk thistle is named so for the milky white sap that oozes from its leaves when crushed. It is still widely researched and used as a natural liver detoxifier, due to the compound silymarin.

don't have organs as we know them; they don't have a brain. Many scientists have great difficulty in recognizing intelligence when something doesn't have a brain. But if you simply look at a key defining characteristic of intelligence—problem solving—we see plants meet this test, even without an obvious brain.

Plants are modular. Instead of having internal organs, plants have everything in each part of the plant because they must withstand being eaten. If something ate half of an animal, or human, they'd be dead. Plants must tolerate that. They can't move. They can't run away. So, in the instance of being eaten, if they had a brain or specific organs, if they were localized, they would not survive. There is a lot of research showing that the root tips are really where a key amount of processing goes on in plants—it is mediated or stimulated or takes place in the root tips and a little area right behind the root tips. So, the processing area of plants likely exists below the ground.

Sight

Now we're going to go through human senses. Let's begin with sight. One of the basic premises of sight is response to light. Plants can perceive and process light. Evidence of this is that shoots always grow towards the source of light. And they'll do a lot of things in order to succeed at that. On the other hand, roots always grow away from the source of light so they're aware of light as well. They have what we perceive as sight. They respond to that part of the electromagnetic spectrum that we call light and do so in more sophisticated ways than even humans do. They differentiate between different parts of the light spectrum, not so much for aesthetic purposes, but they'll respond differently to sensing more infrared light on the spectrum. If they're trying to seek light, they obviously don't want to be where it's more likely to be shady, in terms of the canopy. So, they're going to seek out more direct light. They can perceive the difference based on the light spectrum. There are other things they do that are really fascinating. Clinging plants such as vines can sense an object in their environment and can even discern an appropriate object to wrap around.

Smell

The sense of smell is a recognition of chemical molecules in the air. Like humans and other animals, plants can pick up what we would say is a scent in the air. In fact, this is a key part of how plants communicate and defend themselves. Plants emit chemical signals and respond to chemical signals emitted by other plants. For example, plants issue different chemicals depending on the nature of the threat. If it's a bacterial threat, there will be a different chemical emitted by some plants than if it's a herbivore threat. For example, if a caterpillar is eating a plant's leaves, a specific chemical is emitted. Sometimes a chemical is emitted to notify the rest of the plant and sometimes it's to notify plants around as well. So, plants emit chemicals and other plants can sense and process those molecules, which again is what we do with smell in order to respond.

Now for some bad news: For those of you who like neat lawns—that nice smell of fresh cut grass - that's grass going "Oww!" Screaming, plants are emitting multiple chemicals saying their body is being attacked, as well as working to mitigate the injury inflicted by the lawnmower or grazing deer.

A wooly bear caterpillar munches on a budding daisy. African daisies have petals that close at night and on cloudy days—a behavior called "nyctinasty," thought to protect their pollen from moisture.

Despite their fame, Venus flytraps exist naturally in the wild in only a small area of the Carolinas. They grow in nutrient-poor, acidic bogs, which is why they evolved to supplement their diet by catching insects.

Touch

Plants actually respond to physical contact with other objects. A video on YouTube (https://youtu.be/dTljaIVseTc) shows a plant reaching out in its environment and as soon as it touches a nearby pole, it immediately begins to attach to that pole and wrap itself around it. Some may be familiar with the plant called the *mimosa pudica*; it's a plant that collapses when you touch it. There are also the carnivorous plants like the Venus flytrap which respond when touched by insects. There are also the clinging vines. They can discern what is a good surface to wrap around. Others will look for trees. They don't wrap around the tree; instead they attach themselves to the tree. So, plants respond to an object's surface.

Taste

Plants can recognize different herbivores. Based on the herbivore's saliva, plants will emit different chemicals. For example, plants have been shown to recognize one type of caterpillar versus another or other kind of insect. They release specific chemicals to ward off the caterpillar.

Venus flytraps and probably most types of carnivorous plants can discern when something is not food. They'll close up and basically stay closed for about twelve hours if it's not digestible. If they find something that is digestible, they'll stay closed for about five to twelve days. So, basically plants demonstrate they have a way to taste or respond to chemicals that they encounter in their environment for securing nutrients or food.

Hearing

Plants can also hear. Many people talk to their plants based on the assumption they can hear or respond to the physical vibrations that the voice creates, that is, the sound or pressure waves of the movement of air. Well, they're correct. For example, in laboratory experiments, scientists can take certain types of plants that are known to respond to caterpillars with a chemical defense, and, if they simply play the amplified sound of a caterpillar eating a leaf, the plants will issue a chemical response as if it was actually being eaten by a caterpillar. Plants recognize the sound of the eating and they will put out chemicals that ward caterpillars off. Similarly, plants will respond to the sound

of water flowing through an underground pipe, wrapping themselves around the pipe, below ground—as if seeking to get access to water.

Scientists are investigating plants that make a type of clicking sound at the root level. They believe there is some type of communication taking place through clicking sounds that are interpreted by other plants. All of these examples provide evidence that plants have the capacity to hear and interpret sound. With hearing added, we see that plants share the five commonly recognized senses possessed by humans and many other animals.

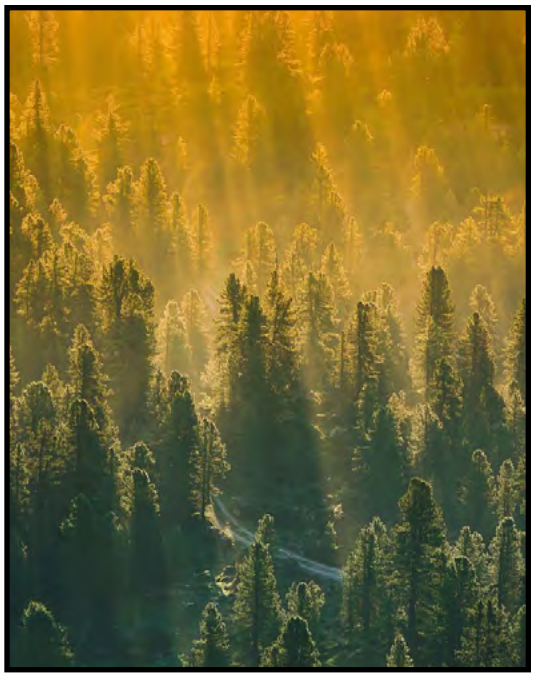
Other Senses

Beyond these five senses, plants have several other senses, including a sense of gravity. Shoots will always grow upwards and roots will always go down. There's an intelligence in plants that will make sure that the stem grows up and the roots down no matter how you position or plant the seed. So, they can sense gravity. Plants also have other senses which allow them to sense humidity, water, and oxygen.

Like humans, plants use their senses to assess their environment, particularly to identify nutrients or food. Since plants can't move, they seek out nutrients in the ground they're in. When they identify nutrients in the soil, they shoot out roots to get access to it. For carnivorous plants like the Venus flytrap that typically exist in more acidic soil where appropriate nutrients aren't as present, they get their nutrients from the animals they eat.

Like with all living things, self-preservation is a biological instinct. So, let's look at plant self-defense. As noted earlier, plants put out chemicals to deter herbivores. The acacia tree is an example. When acacia trees are being grazed by antelopes, they emit tannins. Tannins are the bitter stuff in teas. Acacia trees will put out tannins to make themselves unappetizing. There is a scientific report showing that, in at least one instance in a

The roots of the banyan trees at Angkor Wat are now an integral part of the temple structures, paradoxically holding some parts of the ruins together while also compromising the ruins' structural integrity.



Coniferous trees like the pines seen here are among the oldest types of trees on Earth, with some species having existed for hundreds of millions of years.

South African game reserve, the trees put out enough tannins to kill multiple animals in a herd of antelope.

Plants also emit chemicals to attract help. When certain corn plants are being eaten by caterpillars, they'll emit a chemical that attracts wasps that eat caterpillars. They're not the only example. Just imagine: the caterpillars come along and the plants put out a call and help comes just like in *Star Wars*, but it's to kill a bug. More broadly, plants very often communicate with one another when being attacked by a pest by issuing chemical signals to one another, a behavior often seen among forest animals who employ certain calls when a predator appears.

Plants also communicate at the root level. There's an enormous underground communication network between plants. In a forest, there are literally miles of underground connections between the trees. Scientists have called this the WWW—the Wood Wide Web. There are also fungal connections linking trees. Below the surface of the soil there are enormous fungal colonies. They connect plants at the root level and there are exchanges of information and resources, such as water and nutrients. Research has also shown that in the sharing of resources, plants will favor their own kin, although not exclusively.

One example is that larger trees will provide nutrients to smaller trees that are in the shade. If you look at the forest canopy, light is heavily blocked off. Trees in a shaded area don't get much sunlight. Yet a small plant needs solar energy to grow. In an example of resource sharing, some trees will provide through the root level, nutrients to smaller trees, until they get large enough to break through and get access to more light on their own. Another example can be seen with trees that stay green year-round. Evergreens will share nutrients with trees that lose their leaves. As leaves are the primary place of photosynthesis, without them, there isn't an opportunity for photosynthesis. So, evergreens have been shown to share resources with trees until the seasons change.

Let's further explore memory in plants. There are a couple of ways that we've already seen this. If a plant has been subjected to a particular pest in the past, for example an insect herbivore or a bacteria, they will more quickly produce appropriate defensive chemicals than a naïve plant that has never been exposed to that same pest. Somehow plants retain memory that they've encountered the threat before and respond more readily.

Just like our own bodies have antibodies that respond more readily because they've been primed by some past experience and will more immediately go in and attack what's putting our bodies in danger.

The Venus flytrap has memory and a seeming ability to measure time. There are three little hair-like elements on the top and bottom sections of the pod of a Venus flytrap. These are not the many tendril-like appendages on the outside perimeter of the pod that hold the animal trapped when closed. If an insect touches one of the hair-like elements inside the pod and then another within twenty seconds, the pod springs shut. So, the plant remembers that it's been touched once and if touched again within a 20-second time period, it closes on its prey.

The *mimosa pudica* plant that we discussed earlier is another plant that closes up. Scientists researched ways to see if the plants could be habituated not to respond. Scientists dropped a plant from a height of six inches onto a piece of foam and the plant closed its leaves in response. However, after four to five repeat droppings, the plant no longer responded by closing its leaves. The plant appeared to recognize that it was not in danger. A month later, when again dropped six inches onto the foam, there still was no response. However, if the plant was instead shaken, it would close its leaves. For at least a month, the plant retained the memory regarding the foam.

Plants can also recognize self versus non-self; they typically avoid wrapping around their own stalks. Also, they won't compete with their own roots and they don't compete the same way or try to block off their own offspring at the root level. So, there's a kind of recognition of a child-plant of the species.

Plants also make choices. For example, roots looking for nitrogen in the soil. A plant has to use energy to grow roots or stalks. Their resources are limited, so they use their energy just like we do—prudently. So, when a plant encounters

The reaction of the Mimosa Pudica *is called "thigmonasty," and it may help protect the plant from herbivores by making it look less appetizing.*

nitrogen in the soil, researchers have found that the plant is able to decide whether a patch of nitrogen, which might be very rich, is a better place to grow and invest by growing out more roots there, versus another patch. But what's interesting is that when one patch is not as dense but is increasing in density, the plant will grow out roots toward the area that's increasing in density, even though at the immediate point it is less dense than another patch. It's making a decision about how it's going to use its resources. Another example is that a plant will direct itself around obstacles. If a plant is growing roots down and encounters a stone or obstacle in its way, the plant will make a right or left turn rather than just remaining stuck there. It also seems that plants are able to discern an object before they actually come into physical contact, although researchers are not sure how they do it. But the plant will begin to turn to avoid the object. So,

they're making intelligent problem-solving choices.

In another experiment demonstrating plant choice, two plants were placed several inches apart. One had a weak type of stalk and the other was a tomato plant with a stronger stalk. In between the plants was a little seedling. The seedling was a parasitical plant. It latches on to other plants and gets resources from them. Using time-lapsed photography, the parasitical plant was seen growing toward the more favorable source, which was the tomato plant. Overall, the evidence shows that plants make choices and have the ability to solve problems.

There was a widely publicized book in the 1970s called *The Secret Life of Plants*. One of the book's subjects, Cleve Backster, was an expert in the use of the polygraph machine or lie detector. One feature of a polygraph machine is that it measures electrical conductivity based on the presence of moisture. In an unrelated experiment utilizing plants, he concluded that plants seemed to respond to thoughts directed at them. Based on his findings, he continued down this line of research. Later other scientists failed to replicate the experiments, so his hypotheses were considered to be debunked and lost attention. A TV program called MythBusters took up Backster's experiments with plants. In a video that appears on YouTube (https://www.youtube.com/watch?v=FhsbM9LxPAk), the program hosts set out to debunk Backster's work. They were surprised by some of the results. Backster did many more experiments with plants, pointing toward plants being much more sensitive to the consciousness of other entities around them than we humans generally are cognizant of ourselves.

If you find the subject of the intelligence manifesting in plants intriguing, there are lots of books on this subject. Ultimately, for the mystical student, the emerging scientific insights lead us back to our recognition of the Oneness of the Cosmic Consciousness in all things.

The Sonoran desert provides unique challenges to its plants, with temperatures capable of ranging 50 degrees in a single day, and parts of it getting only 3 inches of rain per year.

Transcendental Amnesia: Remembering our Dreams

Gurinder Singh, FRC

KingaBritschgi on DeviantArt, But a Dream Within a Dream*, 2014.*

"Mister Sandman," the 1954 hit song by Pat Ballard, is known to millions around the world for its dreamy harmonies and a chorus that asks "Mister Sandman, bring me a dream." What if I told you that you don't need the Sandman to dream? What if I said that every night, you're already visiting realms of profound wisdom, divine guidance, and untapped potential? Former Imperator Ralph Lewis once wrote:

> Dreams are perhaps one of the oldest mysteries of humankind. Perhaps they were likewise the first experience that man [people] had of the duality of their own being. In fact, some authors on the subject of primitive religion and the psychology of religion believe that the idea of soul and of the inner self came to humankind from their dream experiences.

Like stars that vanish with the first light of dawn, our dreams dissolve at the threshold of morning. We stand at the shoreline between two worlds—one of ordinary perception and one of extraordinary revelation—and as the tide of consciousness shifts, the delicate shells of night wisdom are washed away. Even though science confirms that every single person dreamed last night, studies show that most people forget 95 percent of their dreams within five minutes of waking. This isn't just ordinary forgetting—it's transcendental amnesia, the forgetting of our connection to the cosmic consciousness that speaks to us through our dreams.

Most of us experience what I call "transcendental amnesia"—the phenomenon of forgetting these

profound mystical experiences as soon as we return to waking consciousness. This article will not be covering where dreams come from, and the various possibilities of interpretation that each dream has. There's a plethora of good resources like "Dream Psychohistory" by Lee Irwin, a *Rosicrucian Digest* article from the 2022 No. 2 issue; *The Inner World of Dreams*, a book by Phyllis L. Pipitone; and various other *Rosicrucian Digest* articles and videos on the RosicrucianTV channel on YouTube that cover these topics. Today, we're going to explore transcendental amnesia specifically—this fascinating phenomenon of forgetting our most profound dream experiences.

This article will help us discover why our dreams matter, how to remember them, and most importantly, how they can transform our spiritual practice. But first, I'd like to invite you to participate in a quick exercise.

If you have something to write with, please take a moment to jot down the first fragment you remember from any recent dream—just a sentence or two. Don't worry if it seems random or insignificant. This small act of recording a dream fragment is actually your first step in overcoming transcendental amnesia.

Take a moment to look at what you've written. Does it contain a symbol? An emotion? A message? Even the smallest dream fragment can contain profound wisdom when we give it our attention. Throughout your day, I invite you to reflect on this dream piece and notice if new meanings or connections emerge as we explore the mystic landscape of our dreams together.

The Rosicrucian Perspective on Dreams

Throughout history, from the dream temples of ancient Egypt to the mystical traditions that influenced our Order, dreams have been recognized as gateways to higher consciousness. As Rosicrucians, we understand that dreams are not random neural firings but meaningful experiences that bridge our inner and outer worlds.

The psychohistory of dreams reveals a fascinating journey across civilizations. In ancient Egypt, dream incubation was

Thomas Cole, Dream of Arcadia*, 1890.*

kh1martson on DeviantArt, Dream World*, 2021.*

practiced in temples dedicated to Serapis and Isis, where seekers would sleep in sacred spaces hoping to receive divine guidance. The Greeks established dream temples called Asclepieion, where the sick would sleep to receive healing dreams from the deity Asclepius. The Chaldeans of ancient Mesopotamia developed elaborate systems for dream interpretation that influenced Jewish, Christian, and Islamic dream practices.

This rich historical tradition continues in the Rosicrucian approach to dreams. In her book *The Inner World of Dreams*, Rosicrucian author Phyllis L. Pipitone wrote that dreams are "a voyage into a mysterious world, teaching us about ourselves and the world around us." This perspective aligns perfectly with our Rosicrucian teachings.

Our founder, H. Spencer Lewis, had much to say about dreams. In his work *Self-Mastery and Fate with the Cycles of Life*, he explained that, when we fall asleep, a fascinating process occurs. The physical body rests, but our consciousness doesn't simply shut down. Instead, it shifts.

In modern society, some have described sleep as a "teleportation mechanism to breakfast"—we close our eyes at night and suddenly it's morning. But that perspective misses the profound journey that happens between.

Rosicrucians have long taught that not all dreams are mystically significant, but we should use common sense in interpreting them.

Have you ever awakened at 3 or 4 a.m. from a particularly vivid dream? That time—between 3 and 4 a.m.—is especially significant in many mystical traditions. In Rosicrucian understanding, it can be a time when the veil between different states of consciousness is thinnest. When you wake at that hour, it's often because something important is trying to reach you, like a letter slipped under your door from a world that exists alongside our own but at a different frequency of being.

Lee Irwin mentioned in his article that there's a special category of dreams called "initiatic dreams." These are unsolicited, vivid, and deeply symbolic experiences that constitute about 2-3 percent of all dreams. They can be mythic encounters with archetypal figures, psychic experiences like telepathy or precognition, or mystical moments of direct sacred experience. These dreams don't just happen—they initiate us into deeper understanding.

What makes initiatic dreams particularly powerful is not just their content—their symbols and scenarios—but the states of consciousness they induce. As Rosicrucian scholar Lee Irwin explained, "Initiatic dreams tend to be rather weak in content but much stronger in states." These altered states of consciousness are the true vehicles for esoteric knowledge and transformation.

The Science and Practice of Dreaming

Modern science confirms what mystics have known for centuries—dreaming isn't optional. We all dream, every night, during REM sleep. Studies show that dreams help process emotions, consolidate memories, and solve problems. When people are prevented from dreaming, they quickly begin to experience psychological distress. We need to dream.

From an evolutionary perspective, dreams serve crucial functions that have helped humanity survive and evolve. Scientific research suggests that dreaming has been conserved across mammalian evolution precisely because it offers significant adaptive advantages. Dreams allow us to simulate potential threats and rehearse responses in a consequence-free environment. They help integrate new information with existing knowledge, promoting cognitive flexibility and creative problem-solving—abilities that have given humans evolutionary advantages throughout our development as a species.

But to see dreams as merely biological mechanisms is to miss their transcendent beauty and mystery. Dreams can transport us beyond the ordinary boundaries of

Henry Fuselli, The Shepherd's Dream*, 1793.*

perception into a realm where all humans become brothers and sisters, where the artificial separations between us dissolve. In dreams, we experience the unbroken wholeness of existence as an undivided flowing movement without borders. Dreams reveal that beneath the seemingly fragmented nature of our waking consciousness lies an undivided wholeness—a flowing, dynamic reality where past, present, and future exist in harmonious relationship.

John Collier, Priestess of Delphi, *1891.*

Do you remember when you last felt truly seen? Not the superficial seeing of everyday encounters, but the soul-deep recognition that comes when another being truly perceives your essence? Dreams see us this way—completely, without judgment, beyond our carefully constructed masks and personas. In the words of a beloved poet, "Attention is the beginning of devotion." Dreams pay attention to parts of ourselves we've forgotten or neglected. They attend to wounds we've bandaged but not healed.

They notice splinters of potential embedded under the skin of our consciousness, waiting to be drawn out and realized.

Beyond mere biological necessity, dreams appear to be vital for our psychological and spiritual evolution as well. Carl Jung, the pioneering psychologist whose work bridges modern psychology and ancient mysticism, recognized dreams as messages from what he called the "collective unconscious"—a reservoir of shared human wisdom and archetypes that transcend individual experience. Jung saw dreams as a natural healing system of the psyche, helping us integrate disparate aspects of ourselves and guiding our individual evolution toward wholeness, or what he termed "individuation."

Jung's approach to dreams echoes ancient wisdom traditions in fascinating ways. His concept of the collective unconscious parallels the Akashic Records in Rosicrucian thought—a cosmic memory bank containing all events, thoughts, words, emotions, and intent ever to have occurred. When we dream, we may be accessing this collective wisdom, just as ancient priestesses at the Oracle of Delphi or shamans in indigenous cultures accessed non-ordinary states of consciousness to retrieve information inaccessible to ordinary awareness.

But here's something fascinating that bridges science and mysticism: dreams operate outside our conscious control. Just as meditation creates the conditions for mystical experiences but doesn't force them, our dream state opens us to guidance that comes on its own terms. And like meditation, dreams can be a form of telepathy—not just with others, but with parts of ourselves we normally can't access.

Rosicrucian scholar Lee Irwin discussed the "psychohistory of dreaming"—a developmental journey that evolves through consistent self-analysis. As he explained: "Dreams and dreaming are not static or simply recurrent or only mapped to a limited 'immediate' surface causality." Instead, they're dynamic, situational, and developmental. When we take an "existential-phenomenological

approach" to our dreams, recording not just their content but their phenomenological characteristics, we allow each dream to manifest its unique value and significance over time.

Think of your consciousness as a vast kingdom with many chambers, or a labyrinth with countless paths. In waking life, you only access a small portion. But in dreams, doors open. Barriers dissolve. Messages come through. The key is not analyzing too hard—it's simply paying attention.

Bernard Sleigh, Brunhilda's Dream.

The psychohistory of dreams teaches us that dreaming is not merely subjective but intersubjective, forming responsive relationships with others and the world around us. As Irwin noted: "Dreams are not simply 'inner' or 'subjective' but much more intersubjective, forming responsive relationships and reactions with or to others in on-going life events." Our dreams are like quantum entanglements across the fabric of consciousness where the boundaries between self and other become permeable, revealing the deeper implicate order beneath our seemingly separate existences.

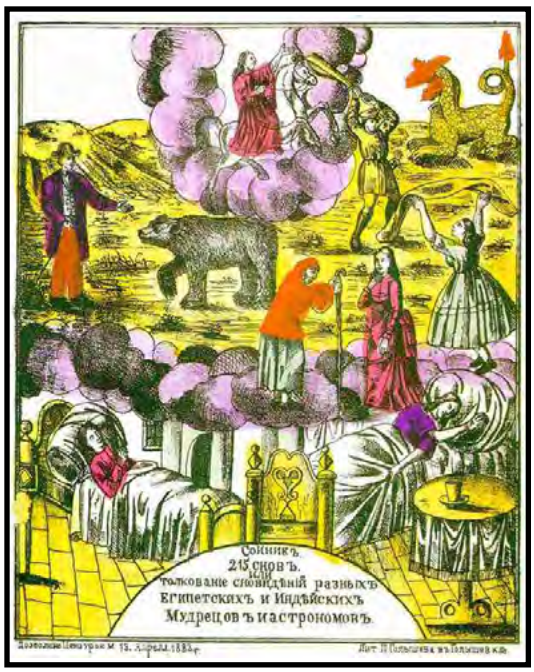
Have you ever felt that your dreams were communicating in a language older than words? Your dreamscape is embedded with symbolic materials that respond to invisible currents of meaning. These dream images aren't random; they're precisely calibrated instruments, aligning your personal consciousness with universal rhythms that have guided humanity since we first gazed at the stars.

This brings us to a critical practice: recording your dreams. Keep a journal by your bed. When you wake—especially from those 3 a.m. experiences—jot down what you remember immediately. Don't worry about capturing every detail perfectly. You don't need to recall 100 percent of the dream at 4 p.m. that day. What matters is creating the habit of acknowledgment.

In my own practice, I've noticed something peculiar about nightmares. They often come when I oversleep. It's as if something is trying to wake me, to guide me, saying "Enough rest—it's time to move into the day." These aren't random terrors but messages conveyed in sometimes strange ways.

There is a sense of urgency in these dream messengers, reminiscent of nature's own rhythms and cycles. Have you ever witnessed how the world transforms at dawn? There is something infinitely healing in these repeated refrains—the assurance that dawn comes after night, and spring after winter. Dreams, too, have their seasons and cycles—periods of darkness followed by illumination, confusion followed by clarity. They are the cosmos whispering to us in the language of symbols and emotions, creating a momentary harmony between our conscious and unconscious selves.

Like a rare leopard that appears at the edge of our vision, only to vanish when we turn our head, our most profound dreams often elude our grasp. Yet their footprints remain in the sand of memory, their presence felt long after they've disappeared into the forest of forgotten things. What elusive messengers visited you last night, leaving only the faintest trace of their passing?



Lubok-style cover of a Russian dream book, 1883.

Think of yourself as a messenger—a rainbow bridge between different states of consciousness. In dreams, you're not just receiving guidance; you're actively participating in cosmic communication.

H. Spencer Lewis's Water Bowl Technique

One of the most powerful yet simple techniques passed down through Rosicrucian tradition comes from H. Spencer Lewis. He recommended placing a bowl of clear, fresh water near your bed before sleep.

This isn't merely symbolic. Lewis understood something profound about water's molecular structure—it acts as a psychic receiver and amplifier. The water molecules are extraordinarily receptive to subtle cosmic energies and thought vibrations. As you sleep, the water collects and magnifies these energies, potentially enhancing your dream experiences.

Lewis taught that water serves as a threshold or gateway between dimensions of consciousness. Just as we physically cross water to move between lands, the bowl by your bed creates a symbolic crossing point for your consciousness during dream states.

The practice is simple yet powerful. Before sleep, place a small bowl of fresh water on your nightstand. As you prepare for bed, gaze quietly into the water for a moment while holding your intention to remember your dreams. Lewis recommended a specific breathing technique—breathe rhythmically while visualizing cosmic energy being drawn into your psychic centers with each inhalation and directing this energy toward the water with each exhalation.

You might even whisper your intention to the water. In the morning, observe if the water has changed in any way—ripples, bubbles, or even a subjective sense of the water having a different "energy." Many Rosicrucians report that this simple practice dramatically enhances dream recall and increases prophetic or initiatic dream experiences.

What makes this approach particularly fascinating is that Lewis didn't view it as merely mystical. He attempted to explain it through scientific understanding, discussing electromagnetic fields, vibrations, and resonance—bridging esoteric knowledge with emerging scientific concepts of his time.

The Physical Foundation for Mystical Dreams

While Rosicrucian practices like the water bowl technique prepare us psychically for significant dreams, we must also prepare physically. The body and spirit work in harmony, not opposition. H. Spencer Lewis himself emphasized that psychic experiences require both spiritual and physical preparation.

A personal experience beautifully illustrates this principle. When my German Shepherd was a puppy, I

discovered something fascinating about the relationship between physical energy and rest quality. If I didn't take him for at least a mile run every single day, he would transform into a whirlwind of restless energy—barking incessantly, pacing anxiously around the house, and developing a particular fondness for destroying my socks!

But on days when he received proper exercise, the transformation was remarkable. Instead of that frenetic energy, he would settle into deep, peaceful sleep. You could almost see the dreams flickering behind his eyelids as his paws would occasionally twitch in response to whatever adventures his dream-self was having.

Our bodies aren't so different. When we deny ourselves proper physical expression during the day, that unexpressed energy doesn't simply disappear—it manifests as restlessness during what should be our most receptive state. Just as my puppy couldn't access deep, restful sleep without physical release, we can't access the deeper realms of dream consciousness when our physical energy is creating static in the system.

Consider your evening meal. Heavy foods, especially those rich in fats and proteins, require significant energy to digest. When your body diverts energy to digestion, it has less available for dream consciousness. Rosicrucian tradition suggests a light meal at least three hours before sleep, preferably consisting of easily digestible foods like fresh fruits, vegetables, and whole grains.

Practical Techniques for Dream Recall

The following are some practical techniques to overcome transcendental amnesia and remember more of your dreams.

Lee Irwin recommended dream recall with "the three R's of dream work": Record, Reflect, and Research. First, record your dreams immediately upon waking—whether through writing, audio recording, or digital means. Second, reflect on the symbols and emotions without rushing to interpretation—some dream meanings may reveal themselves over months or even years. Third, research the symbols and themes that appear in your dreams, recognizing that while they have personal significance, they also connect to collective wisdom.

When setting your intention before sleep, affirm silently: "I will remember my dreams tonight. I will recall them clearly in the morning." This simple practice dramatically increases dream recall.

Second, remain still upon awakening. When you first wake up, don't jump out of bed. Don't check your phone. Instead, lie quietly and ask yourself, "What was I just dreaming?" Often, fragments will surface if you give them space to emerge.

Third, keep that dream journal within reach. Write down anything you remember, even if it's just a color, a feeling, or a single

Redrawdigital on DeviantArt, Child's Dream - In the Clouds*, 2023.*

Kyla-Nichole on DeviantArt, A Midsummer Night's Dream, *2012.*

image. Over time, these fragments form patterns.

You may notice that some dreams feel qualitatively different from others—more vivid, more symbolic, more meaningful. Rosicrucian scholar Lee Irwin calls these "psychonoetic dreams"—literally "soul knowledge" dreams that impact you deeply on a soul level and transform your awareness. Pay special attention to these dreams, as they often contain the most profound guidance.

Fourth, practice "the three R's": Record your dreams in detail, Reflect on the symbols and emotions, and Research their meanings through Rosicrucian texts and your own intuition.

Fifth, consider the timing of your dreams. Those that come just before waking often contain the most accessible guidance. If you consistently wake at certain times—especially that 3-4 a.m. window—pay special attention to the dreams that precede those awakenings.

Thomas Edison, one of history's greatest inventors with over 1,000 patents, deliberately utilized the hypnagogic state—that boundary between wakefulness and sleep—to solve problems and generate creative insights. His method was brilliantly simple yet effective.

Edison would sit in a chair holding steel balls in his hand, positioned over metal pans on the floor. As he began to drift off to sleep, his muscles would relax, releasing the balls, which would crash into the pans and wake him. At this precise moment of transition between consciousness states, he would often have breakthrough insights about whatever problem he had been contemplating.

This "in-between sleep" method allowed Edison to access what he called "a spiritualistic source" of knowledge. He once remarked: "Ideas come from space. This may seem absurd, and I cannot explain what I mean. . . . the ideas that come to me are not thought out in my mind at all, but seem to strike me from without... they are revealed to me."

Edison understood what Rosicrucians have long taught—that deep insight often comes not from the straining of the conscious mind but from allowing yourself to receive wisdom from beyond ordinary thinking. He created a practical method to capture the inspirations that typically fade

away as we cross the threshold into deeper sleep.

Conclusion: Transcending the Amnesia

Time works differently in dreams. What feels like hours can be minutes. What seems like a moment can contain eternity. In much the same way, our amnesia about dreams isn't permanent—it's fluid, changeable.

As Oscar Wilde so beautifully put it: "A dreamer is one who can only find their way by moonlight, and their punishment is that they see the dawn before the rest of the world." Dreams show us what's coming before others can see it. What looks like punishment—being awake when others sleep, seeing what others miss—is actually a profound gift.

But Wilde also reminded us: "They've promised that dreams can come true, but forgot to mention that nightmares are dreams, too." This balanced perspective acknowledges that not all dream guidance comes as gentle whispers. Sometimes we need thunder to wake us up.

Think of dreams as letters from your higher self. Sometimes these letters are written in code—symbols personal to you. Other times, they're written in the universal language of archetypes that Carl Jung explored so deeply. But always, they contain wisdom if we're willing to receive it.

And remember, as a Rosicrucian lesson taught us: "It is quite impossible for another to interpret your dreams." Dream interpretation must be personal. If a dream holds real significance, you must interpret it yourself, for only you understand the unique symbolic language of your psyche. As our tradition advises: "If your dream means anything at all, it must be interpreted by you; and if it seems unusually significant, the thing to do is to analyze it as best you can and make a note of the date and day, recording your brief analysis of it."

The practice of remembering dreams isn't just about collecting interesting stories to tell at breakfast. It's about healing the split between our waking and dreaming selves. It's about reintegrating wisdom that belongs to us but that we've forgotten through transcendental amnesia. To be human is to live suspended between

Sebastiano Ricci, Dream of Aesculapius*, ca. 1710.*

the scale of snails and the scale of stars. In our dreams, we traverse these scales effortlessly, being at once infinitesimally small and cosmically vast. We experience standing on the threshold of two eternities, in the past and future—a sacred liminality where the membrane between worlds thins and the cosmos can speak directly to our sleeping souls.

Have you noticed how differently time flows when you're dreaming? How a lifetime can unfold in minutes, or a moment can stretch into eternity? Dreams inhabit what neuroscientists might call the "space between stimulus and response"—that infinitesimal gap where time dilates and our truest freedom resides. In that space, dreams reveal the body's ancient wisdom, bypassing the cerebral pathways of stress and anxiety to speak directly to what one might call our molecular autobiography—the story written not in words but in the very chemistry of being. The body remembers what the mind forgets, and dreams are its most eloquent language.

When we work with our dreams consistently, something remarkable happens: the line between dreaming and waking begins to blur in the most beautiful way. We start to bring dream wisdom into daylight hours. We recognize symbols and synchronicities in our waking world. We become more fluid in our consciousness, more receptive to guidance regardless of our state.

I want to conclude with a lighter perspective from Dr. Seuss: "You know you're in love when you can't fall asleep because reality is finally better than your dreams." There's profound wisdom here. When we integrate our dream guidance into waking life, reality itself becomes more magical, more meaningful. We fall in love with existence in a new way.

Tonight, as you prepare for sleep, I invite you to try these Rosicrucian

William Blake,
The Song of Los, copy D, object 5*, 1795.*

practices. Place a bowl of water by your bed with intention. Ensure you've had some physical movement during the day. Keep your journal ready. And remember that you're not just resting—you're embarking on a journey to the inner kingdom of your consciousness. You're entering the labyrinth of your highest wisdom. You're accessing guidance that can transform your path.

Set the intention to remember. Keep your journal ready. And perhaps most importantly, approach your dreams with reverence but also playfulness. Dream work is serious mystic business, but it's also a cosmic dance of symbols and stories.

Mr. Sandman isn't bringing your dreams—you're creating them together with the Cosmic Consciousness. You are both the dreamer and the dream. And when you overcome transcendental amnesia, you'll discover that the wisdom you seek has been with you all along—night after night, dream after dream—like stars that have always been there, shining in the darkness, whether or not we lift our eyes to see them.

Intuition

Hugo Casas, FRC
Grand Master of the Spanish Grand Lodge for Europe, Africa, and Australasia

Plato (center left) and Aristotle (center right) are seen in a detail of Raphael's The School of Athens*, 1509. Both philosophers discussed the golden mean in their work.*

Many people have likely heard of the golden mean. It is that virtue which makes us stand or progress at an equal distance from the two extremes, that is to say, which keeps us away from excesses and places us in the middle ground.

As I was thinking about this, I realized that I could fall into the error of the extreme by finding deep definitions of intuition, such as that of the famous philosopher Dane Rudhyar, which reads: "Intuition is the holistic perception, the awareness of being: the ability to be aware of the identity of the whole."

Based on this concern, I then thought that this piece should be more informal, fraternal, and I looked for a more friendly definition, something that is simple to understand but at the same time has some depth. The following definition came to mind: "Intuition is that thing that you know, that you don't know how you know it, but that you know that you know."

After repeating this several times, I realized that, with this definition, I lacked some information, which is why it was not a good way to start, and why I had to apply the middle way, the one that the Rosicrucian teachings offer.

From the very beginning, our teachings explain that all human beings are endowed with an objective consciousness, which is based on our five physical senses and on the set of subjective functions or faculties i.e., mental processes such as imagination, memory, reasoning, etc. We are also endowed with a subconscious mind which acts under the control of the Cosmic Consciousness present in our whole being. This does not mean that we are animated by four different types of consciousness: objective consciousness, subjective consciousness, subconscious consciousness, and Cosmic Consciousness. In reality, in the human being, there is only one consciousness at work, Cosmic Consciousness, which, as we observe in the case of the human being, is multiple in its manifestations and corresponds to the Cosmic, that is, to the set of natural and universal laws through which the Divine Intelligence manifests Itself in the whole of Creation.

Therefore, if all human beings shelter the universal flow of Cosmic Consciousness, which is perfect in the image of its source, this means that we are permanently linked to this Intelligence and possess It in the depths of our being, so that It is also in the depths of our being that the knowledge of the past, present, and future is to be found. In other words, given the presence of Cosmic Consciousness in our being, we all potentially possess the key to all the mysteries of the universe.

But then why don't we have access to this source of knowledge at all times or whenever we need it? Because our objective consciousness, that of our five physical senses and subjective functions or faculties, is limited to the perception and interpretation of the material, visible, and tangible world. Therefore, in order to gain access to this knowledge, we have to use other faculties that transcend the limited powers of our mind, faculties that Sri Aurobindo called "supramental," intuition being one of the main ones, since it enables us to transcend the limits of our mental faculties.

It is curious, even paradoxical, that we are used to sharpening our senses when we want to see or hear something, and yet, for intuition to manifest and be effective in us, we must silence objective reasoning and listen to the greatest of masters, our Inner Master.

We can consider intuition as the faculty of perceiving immediately, without any kind of intermediary, and of understanding without the intervention of reasoning, a situation, a behavior, a principle, a law, or any knowledge; however, as it is not a mental faculty, it does not depend on our brain either, although it needs the brain to manifest itself in our objective consciousness. From the Rosicrucian point of view, intuition is a spiritual faculty, to be more precise: its roots are in our most divine dimension, that is, in the soul, and for this reason, when it occurs in us, it has that marked realism that we have all experienced at some time, although, being so influenced by rationalism, we find it very difficult to give credence to that which deviates from logic or shows some sort of empirical basis, which is why we find it difficult to approach intuition or intuitive thinking.

But let us continue to be walking question marks: if intuition is a spiritual faculty, how does it manifest in us? The answer lies in the Sixth Law of the Rosicrucian Ontology, which states that, "A person is a double being in their nature, but triple in their manifestation." That means a person is composed of a dense physical body and a soul of a spiritual nature. When the soul is incarnated in the physical body of a human being at birth, it generates an intermediate body called the "psychic body" which allows the soul to be in contact with the physical body and

An image from The Mirror of the Wisdom of the Rosicrucians*, published in 1618 by the pseudonymous "Theophilus Schweighardt Constantiens."*

Claude Lorrain, detail from Odysseus returns Chryseis to Her Father*, ca. 1644.*

to manifest itself on the terrestrial plane. Intuition is one of the means by which our inner self can manifest in the physical body, for it is the repository of the Knowledge that we must acquire from life to life and without which it is impossible for us to become aware of the perfection of our own nature, the ultimate goal of our evolution.

Intuition can manifest itself in different ways in us: through thought, through feeling or emotion, through the reception of an inner voice. In all cases, in this way, it is possible to obtain answers to the specific questions we ask ourselves, as long as these questions are legitimate and acceptable from the cosmic point of view.

The following question often arises: how can we develop intuition in ourselves? First of all, we must have the inner certainty that it is a latent and existing faculty within us, and that it can therefore be developed, stimulated, maintained, and exercised in all facets of life, if we allow it to manifest itself without obstructing it with mental processes. Doubt and skepticism will not benefit our intuitive thinking, and it will therefore be necessary to give it similar importance as the importance given to our intellect or to our objective perceptions. This may be why some people are more intuitive than others.

Another important point in developing our intuition is that it cannot be developed in all the fields of our lives. In other words, we will only be able to perceive what we are able to understand, and so we will have little or no chance of receiving insights into matters that are not close to our temperament or background.

The development of intuitive thinking takes place in us to the extent that we remain in harmony with the Cosmic, for it is in the Cosmic that intuition has its source. It must pass through us as if we were a channel, and in this sense meditation, especially in its passive phase, plays an essential role, for it is a time when we are in harmony with the Cosmic, which will facilitate the reception of intuition.

Since I mentioned earlier that within us lies the knowledge of the past, present, and future, it is important to distinguish between intuition and premonition, because, even if it is very subtle, it does exist. We could say that intuition corresponds to an event that has already taken place, even if we have no objective knowledge of it, while premonition, which means "prior warning," is closer to an inner perception of an event that has not yet taken place, although it should be understood that premonitions do not necessarily have to happen, especially if they directly concern the free will of the

people involved. It is therefore preferable to consider premonitions as probabilities or warnings.

As we have just seen, there are a number of factors to be observed in order to release this and other dormant faculties which we all treasure and which we must seek to awaken through our mystical experiences and our work in our sanctums, but this does not mean that the development of the faculty of intuition requires exclusive conditions which are difficult for the majority of people to meet. Even science now indicates that it seems enough for the human being, especially up to the end of the infantile stage, to have a healthy development, in contact with the greatest possible diversity of stimuli provided by the natural and human environment, on which the intuition feeds, for this development to take place. Educational theorists, parents, and educators should take this seriously.

And since I have referred to science, it is also remarkable to notice that this field, through the statements of many scientists, agrees that no scientific discovery or creative production has ever been the sole result of objective mental activity. Perhaps this is why Einstein said that intuition is the only thing that really counts, or why Thomas Alva Edison tried to induce short dreams when working on his inventions. When he felt blocked and unable to continue his research, Edison would simply try to sleep, and he claimed that this practice always gave him additional insight into the questions that blocked him, thanks to the intuitive symbols he received during these short sleep phases.

In fact, contrary to popular belief, the scientific method combines both intuition and empirical observation to reach new horizons and new knowledge. New ideas are born of intuition, without which the information acquired through random observation would be an accumulation of meaningless circumstances. Intuition and reason place these same observations in a meaningful relationship and in an ordered system that allows the new ideas formulated as hypotheses by intuition to be verified and validated.

Sir Francis Bacon, in the seventeenth century, and Immanuel Kant, in the eighteenth century, recognized the role of intuition in research activities and defined it as the thought process that aims to arrive, without diversions, to the object or phenomenon under study. The

Utagawa Kuniyoshi, Palace of the Dragon King, Tawara Tōda Hidesato is Awarded Three Gifts*, 1858.*

Mexican scientist Arturo Rosenblueth stated that, in the scientific method, intuition is manifested as the problem or phenomenon to be studied, and that the formulation of the working hypothesis, the selection of the experimental method, and the final construction of the theory are also essentially intuitive. He added that in research, experience is important, but the decisive factor is intuition.

Einstein is also said to have shared the following idea: The intuitive mind is a sacred gift and the rational mind is a faithful servant. We have created a society that honors the servant and has forgotten the gift.

Carl Gustav Jung, MD defined intuition as an unconscious process resulting from the emergence to consciousness of an unconscious content, a sudden idea, or a presentiment. It is similar to a process of perception, but unlike conscious sense activity and introspection, this perception is unconscious. Jung also differentiated between instinct and intuition, which are not identical, since instinct, from a biological point of view, is an innate behavior present in many species, which appears as an already determined adaptive response without the need for learning and, therefore, oriented towards evolutionary success, whereas intuition seems to be exclusive to human beings and is the result of learning and experience.

If I refer to the fact that intuition seems to be a human characteristic, it is because it is difficult to deny the extraordinary abilities of some animals such as dogs and cats, of which we all know extraordinary stories in which, for example, after being separated from the place where they lived with their masters, they managed to find their former home after journeys of several hundred miles.

Finally, we must also consider as excellent the survival techniques and ways

Hilma af Klint, Group X, No. 1 Altarpiece*, 1915.*

of life of our primitive ancestors, who had no other guide than the learning that their time offered and, in the end, it is their intuition that has allowed us to be here today.

Therefore, we must learn to trust our intuition. There is no doubt about its reliability; the problem is to know how to interpret it correctly and to develop the capacity to become aware of the intuitive faculties we possess. We also have to take into account the fact that we are trying to use a faculty that we have not developed with age, as is the case with the abilities related to the senses. We are also confronted with the fact that we have not been brought up in the world of intuitive development, quite the contrary, because as children we were told not to pay attention to these impressions, that all these matters were a product of our imagination and that we were dreaming. So we have to ask ourselves what it means to reactivate a potential faculty that we have not cultivated and used for many years, and about which our consciousness has

been implanted with the idea that there is no point in using it.

The result of all this is that we often come to the erroneous conclusion that our personal intuition is not correct and does not work, even though we are more or less aware that intuition, despite not belonging to us, has its roots in the Cosmic, in the Universal Spirit which is in all the atoms of our being, and which, therefore, not only does not make mistakes, but is capable of perceiving the solutions to our problems and bringing them to our objective consciousness, even though we are not able to interpret them.

Intuition looks for patterns to give quick answers and these patterns emerge through proper training. Let us be aware that we have spent our whole lives communicating with other people and trying to decode what the media tells us, and that this communicative intuition provides us with many clues to which we look away because we continue to believe in the primacy of the rational path and that it alone is worth listening to.

I now propose a mystical experiment related to our theme: we have understood the importance of being able to listen, on our mystical path, to our Inner Self, our Inner Master, in order to get in touch with our most divine dimension, with our soul. That is why I would like to draw your attention now to the following poem entitled "Yo no soy yo" (I am not I), written by the Spanish Nobel Prize winner Juan Ramón Jiménez:

I am not I.
I am this one
walking beside me whom I do not see,
whom at times I manage to visit,
and whom at other times I forget; who remains calm and silent while
I talk,
and forgives, gently, when I hate,
who walks where I am not,
who will remain standing when I die.

Now, intone the vowel sound AUM three times. This vowel sound produces a harmonization between the physical, psychic, and spiritual aspects of our being, which is effective when we wish to harmonize with our Inner Self. Each of the three letters of this vowel sound represents a point in our sacred triangle as it manifests on the visible and invisible planes.

The vowel sound AUM is normally intoned on D below middle C. Since this

Winslow Homer, Dressing for the Carnival*, 1877.*

Vassily Kandinsky, Composition IX, *1936.*

note is very low, we will intone it on D above middle C.

As mentioned earlier, the human being is double in nature and triple in manifestation. So I now recommend that you concentrate for a few moments on the triangle, formed by the three lit candles. The first one represents our physical body; the second one our spiritual body i.e., our soul; and the third one our psychic body.

Now, while holding the image of this trinity of lights, close your eyes and take a series of deep positive breaths, that is, inhale deeply through the nose, holding the air in your lungs for a few seconds, but without discomfort, and then exhale through the nose.

Become aware of your breathing and focus your attention on the movement it produces.

Since the purpose of this mystical exercise is to commune with your Inner Master, mentally affirm this desire with the following request: "I wish to commune with my Inner Master." Repeat this request as often as necessary, until you feel it in your mind and heart.

In this state, surrender to Cosmic Communion.

When you are ready, slowly return to the objective plane, take a deep breath and become aware of your surroundings; take another deep breath and move your feet and hands; take a third deep breath and, when you are ready, open your eyes.

In humility and supplication, bow your head slightly forward, and recite mentally the following closing:

> *God of my Heart, God of my Realization, I thank You for the privilege of approaching You, and for all the gifts I have in my life. In all humility, I beg You to inspire me on the path of goodness and to raise me in the understanding of Your laws, so that I may be a living expression of Your perfection. My deepest desire is for people to know happiness and Deep Peace, so I ask You to help all humanity and guide them on the path of evolution. So Mote It Be!*

With this experience completed, I wish that through the tools that the Grand Architect of the Universe has made available to us, and through our efforts as Rosicrucian students, our soul, the rose, will blossom, and that its live petals will be our guide on the mystical path that leads us to Peace Profound.

So Mote It Be!

Entanglement, Causality, and the Cohesion of Space-Time

Michael A. Amaral, MD, FACS, FRC

Entanglement is an extraordinary quantum mechanical property where two particles remain connected to one another, no matter how far apart they may be in the universe. Far from simply being a curiosity, entanglement may exist across time and provide not only cohesion to space-time, but also a primordial scaffold for causal links. This suggests the existence of symmetrical relations between events separated in time and raises the possibility that the future may influence the past.

I have previously argued for a worldview where time periods coexist and where the past is as indefinite as the future.[1] This implies that the laws of physics are not only invariant across space but also across time. Causality is the underlying principle that links causes and effects, the influence of one event upon another across time and space. Those considerations raise the question as to whether or not there may be some kind of elementary scaffold that would bring cohesion to space and time and allow such a thing as causality to occur. Entanglement is a quantum mechanical property, where two particles created together remain connected no matter how far apart they may be. This phenomenon of entanglement appears to create relations across space and time that could be the scaffold we have been searching for. The asymmetry between cause and effect would then be secondary to the perception of the arrow of time. The implications are that events occurring far apart in time may be related independently of causal chains and that the future may influence the past.

A Brief Review of Time

It is difficult to conceive of more than the three spatial dimensions that we routinely experience, and especially difficult to visualize how the world would look like if our senses could perceive across time. We call "Time" the background dimension against which we plot past, present, and future. But we also call "Time" the ever-ongoing flow of the present from the past into the future. "Time" therefore appears to be made of two distinct components, one being the background dimension and the other the constant movement of the present. For clarity, the word *Time* will be used for the background dimension and the words *Time flow* for the movement of the present.

We have seen that, if we pursue the implications of the modern theories of special relativity as well as quantum mechanics, we must come to the conclusion that time periods coexist and that the past is as variable and as indefinite as the future. This obviously raises the problem of time paradoxes and of why would our observations of the historical, archeological, and geological records suggest a frozen and stable past. It was argued that any change in the past cannot

"instantly" affect the present, but must move towards our current epoch along the causal chains at the same rate as the time flow, therefore never catching up with the present.[2]

The Time Invariance of the Laws of Physics

The laws of physics follow certain basic symmetries. The first, for example, is charge conjugation, where every particle is replaced by its antiparticle. A second is parity, which represents spatial reflection of a particle (in a mirror). A third is time reversal where an interaction is time invariant if it is unaltered when viewed moving forward or backward in time.[3] Another type of symmetry is that the laws of physics do not vary with their location, no matter where one is in the universe (translational and rotational symmetries).[4] Similarly, those laws should remain invariant with regard to time (except perhaps for the very special situation of the Big Bang, the initial explosion that is believed by scientists to have created our world). If those laws were different for the past, the present, and the future, it would not be feasible to make any prediction as to what the future might be or as to what the past might have been. We would then also have to explain what is so different about the present that the laws of physics suddenly change at this precise instant. Even if there are differences in some physical quantities across time (size of the universe, entropy, etc.), the workings of the laws themselves (i.e. their mathematical formulations) remain the same.

The Arrow of Time

One of the problems of modern elementary particle physics is that the mathematical expressions of its laws do not make a distinction between past and future, in contradistinction to our common experience. A particle can (mathematically) as easily move toward the past or the future (time reversal symmetry). The reason for a direction (an arrow) to time has proven to be elusive.[5]

Several distinct processes have been described to contribute to the arrow of time:

1. Thermodynamics: The entropy (a measure of order, or lack thereof) of the universe has been constantly increasing (increased disorder).

2. Radiation of energy: An accelerated particle radiates energy while the reverse doesn't happen.
3. Cosmological: The universe is expanding.
4. State vector reduction: In quantum mechanics, particles occur in distinct alternative superimposed states (for example having opposite spins at the same time). A measurement (by an observer) or an interaction (with another particle) reduces all those states to only one, which is the reality we observe.[6]

From the above considerations, one can't help but have the feeling that there must be some kind of thread across the time dimension, some kind of cohesive fabric or scaffold that keeps it woven together and allows events to move smoothly from one moment to the next. John Wheeler, who was a prominent physicist, said that "time is nature's way of keeping everything from happening all at once."[7] The "one-way" direction of the arrow of time is an essential component of causal links.

Causality

The concept of causality has been debated for centuries.[8] Some philosophers believe that causality only represents our interpretation of a stable or constant connection between events. Others have argued that events occurring together or following one another are not necessarily always related in a causal way. They feel that there must be an influence from one event unto the other for a causal link to exist. This is the position of Mario Bunge[9] who defines the causal principle as follows (in formal logic formulation): "If C happens, then (and only then) E is always produced by it" (where C stands for Cause and E for Effect). For Bunge, there must therefore be a time correlation between events (they must both occur within a certain time frame), but there must also be an action (a production as he calls it) from one unto the other. Beyond the debate, Bunge's definition is the one that approaches most our common experience of causality, as we use it in our daily life.

The question is: Is there an underlying principle in the modern laws of physics that would allow for such a thing as causality (as defined by Bunge) to occur? What is it that would allow for one event to influence another smoothly across time and/or space?

Entanglement

Entanglement is an extraordinary quantum mechanical property where two particles created together remain connected, no matter how far apart they may be in the universe. If a measurement is made on one of them (such as measuring its spin), the other instantly takes the opposite value.

Quantum mechanics has been one of the most successful theories of

modern physics. One of its quintessential components is the uncertainty principle of Heisenberg.[10] This principle states that not all values of a particle (such as spin, velocity, or position) can be known at any given time. The principle also implies that all quantities concerning particles constantly vary.

Einstein and two colleagues, Podolsky and Rosen, attempted to refute the principle of quantum uncertainty in an article now known as the EPR paper.[11] Einstein and his co-authors didn't like the idea that science, physics, and the world was suffused with indeterminacy and wanted to demonstrate that quantum mechanics was an incomplete description of reality. Using the example of two particles created simultaneously by the same process (such as two photons created by a two-levels drop in the energy of an atom's electron), the authors argued that those particles always had to have a definite velocity and position. This was due to features not allowed by the uncertainty principle and now called "hidden variables" as they came to be known.

More recently, John Bell showed that those concepts could be tested using the property of spin rather than position and velocity.[12] The experiment was conducted by Alain Aspect, in Paris, France, using photon polarizations.[13] This actually disproved the EPR hypothesis. It showed that, in this specific situation, there was no hidden variable (although they might exist under other circumstances), and also showed that an instantaneous connection existed between the two particles. It is this instantaneous connection across space that is called "entanglement." For the interested reader, I refer to the excellent discussion of this topic in Brian Greene's *The Fabric of the Cosmos*, in the chapter "Entangling Space."[14]

Amir Aczel, in his book *Entanglement*, states: "Entangled entities (particles or photons) are linked together because they remain intertwined forever. Once one is changed, its twin—wherever it may be in the universe—will change instantaneously."[15] Multiple experiments have now confirmed the initial findings of Alain Aspect.

Entanglement is an established fact of science and is currently routinely being used to encrypt messages.

We therefore have a situation where particles may remain connected no matter how far apart they are in the universe. So far, the applications have been for cryptography, as mentioned, and for the strange phenomenon of quantum teleportation, whereas a particle (or rather, its properties) can be teleported from one location to another (there are major challenges in teleporting larger objects and it is unclear if large object teleportation will ever be feasible).[16] Such an incredible property as entanglement must play some more fundamental role in our world than simply being a curiosity. How can this fit in our view of the world?

The question comes to as whether or not entanglement is only an experimental curiosity? There are many situations in nature where particles are created together and could therefore be entangled. Some types of particle interactions (such as collisions) could also cause the effect to occur. Entanglement might be much

more prevalent in nature than thought. For example, the strange properties of a salt (lithium holmium fluoride) can only be attributed to its constituents being entangled.[17]

Entanglement Across Space

Imagine a long rectangular piece of paper with vertical lines through it at regular intervals, for example lines A, B, C, etc. If entangled particles are produced at B, with each member of the pair going in opposite directions such as one goes toward A and the other toward C, they might interact with other particles at those locations. The properties of entangled particles are always opposite (for example, they will have opposite spins).

Therefore, if a particle interacts at A, its twin will immediately take the opposite value at C, where it might be also interacting with another particle. The results of those interactions will therefore be different (possibly opposite) but related through entanglement. If one considers that multiple particles might be created and interacting, one gets a relation between what is happening at A and what is happening at C. With entangled particles being created at each line, going in different directions and interacting with other particles, it can be appreciated how related effects can occur along the paper sheet.

Similarly, entangled particles naturally created in three-dimensional space would interact with other distant particles and therefore create relationships between events in the different regions of space. Those relationships would actually create some sort of cohesion between those regions. It would be expected that most of the interactions would be in the immediate surroundings and taper off with distance.

This also suggests a relation with what we understand of causality: Going back to our paper sheet, an event at A compels the twin particle to take an opposite value at C, with a resulting separate event, which, nevertheless, is connected to A. We could therefore state: "If A happens, then, and only then, C happens," fulfilling the criteria set forth by Bunge. Note that in this example, there is an "action" or "production," as the event at A compels the type of event occurring at C. However, note that there is also a symmetry, which is not supposed to exist in causal links: We could be talking as well of the events at C compelling the events at A.

It would be easy to draw a time axis along the length of the paper. The above-mentioned events would then occur along

the time dimension and their relation to the principle of causality would be even stronger. Can there be entanglement across time?

Entanglement Across Time

Entanglement has only been studied across space. Indeed, the definition is of an instantaneous effect at a distance. When doing his experiment, Alain Aspect placed his detectors about 10 feet (3 meters) from the source on either side. If one imagines that Aspect's laboratory is actually in a spaceship and that the spaceship is moving relative to a stationary observer, then the detectors will trigger simultaneously for Aspect, in the spaceship, but the events will not appear simultaneous to the stationary observer according to the rules of special relativity.[18]

Daily life occurrences also have relativistic effects: For example, an observer simply walking toward or away from an apparatus located only 0 feet away, will cause simultaneous events to stand across the present by about 10^{-31} seconds (that is 1 divided by a 10 followed by 31 zeros, an incredibly small number). This could not be detected by our best clocks (a cesium atomic clock can only measure down to about 10^{-18} seconds)[19] but it is still orders of magnitudes above what is considered the smallest meaningful amount of time, called Planck time and equal to 10^{-43} seconds.[20] Even trivial motion relative to simultaneous events would make them lose their simultaneity.

Besides relativistic motion, there are other ways by which particles might be able to travel in time: A particle could fall in certain types of rotating black holes or follow certain trajectories around very heavy objects such as primordial cosmic strings, which exist, according to some theories. Most entangled particles would probably hover near the present, with a decreasing density as we progress further toward the past or the future. Some authors, such as Brian Greene suggest that entanglement across time might happen. [21] Roger Penrose quotes the term "quanglement" for entangled quantum information (about the status of spin and

other parameters of the particle) and states ". . . quanglement links have the novel feature that they can zig-zag backwards and forwards in time." [22]

Entangled particles on either side of the present would relate past and future events in the manner previously described in the sheet of paper example. If event C (past) happens, then (and only then) E (future) is always produced by it. The symmetry encountered on the paper example would not be perceivable because of the arrow of time and of the time flow.

As with the example across space, entanglement across time appears to provide cohesion between events by relating them to one another. Therefore, the phenomenon of entanglement appears to provide a cohesion factor, a fabric, from region to region and from time period to time period. It also appears to provide a scaffold for causal links, at least at the level of elementary particles.

Can the Future Influence the Past?

This question would have seemed ridiculous not too long ago. However, if we consider a universe where time periods coexist and if entangled particles can find themselves on either side of the present, it is certainly possible to imagine a mechanism by which events in the future may influence events in the past: If the twin of an entangled pair, located in the future, is subject to a measurement or an interaction, this would force its partner located in the past to take an opposite configuration, and therefore influence events there.

There may be other ways for the future to influence the past. Let's look at the two-slits light experiment: Photons from a light source pass through two parallel slits causing an interference pattern to occur on a screen beyond the slits. This experiment illustrates the wave properties of light and was carried out by Thomas Young 200 years ago. However, if you shoot photons one at a time and an observer finds out through which slit each individual photon goes through, the interference pattern is lost. The loss of the interference pattern appears to only relate to the knowledge of the whereabouts of the photons and nothing else. This was shown in a experiment called "the delayed choice quantum eraser" initially suggested by Marlan Scully and Kai Drühl.[23]

One version of the experiment uses a device that makes the initial traveling photon create another particle on its way to the screen.[24] This new particle is detected separately through a different

detector. Again, if an observer checks whether or not the second particle has been detected (therefore gaining knowledge of the whereabouts of the photon) the interference pattern is lost. The interesting (still hypothetical) question comes when the detection of the second particle is delayed—let's say for a few years—by using some storage device. What happens then? Does the fact that one does or doesn't detect the second particle in the future influence the current results in the present? The answer would be yes. The decision, in the future, whether or not to verify if the second particle is detectable does influence the result of the experiment in the present.[25]

Conclusion

If it was possible for the senses to see across time and if the whole history of the world was laid before a privileged observer, they might see causality in a different light. When considering two entangled particles, it is impossible to state with certainty which one influences the other as they set their properties outside of time and space.

Such an observer would therefore have a difficult time determining whether it is the particle in the past that influences the one in the future or if the opposite is taking place. Our perceived asymmetry stems from the arrow of time. Connections between events along the time dimension therefore appear to gain their causal properties because of our concomitant perception of the arrow of time and of the time flow that orders them in a certain way. With the time dimension unfolded, what seems to be really happening is a system of reciprocal influences. Entanglement appears to provide the necessary elementary cohesive scaffold for space-time and for causal links. It may relate events across time that may not otherwise be connected by traditional causal chains. One implication is that the future may, at least in some circumstances, influence the past.

Endnotes

1. Michael Amaral, "On the Feasibility of Time Travel and Its Implications," *Rose+Croix Journal*, June 2004, 1–9.
2. Amaral, "On the Feasibility of Time Travel and Its Implications."
3. Roger Penrose, *The Road to Reality: A Complete Guide to the Laws of the Universe* (New York: Alfred A. Knopf, 2004).

4. Brian Greene, *The Fabric of the Cosmos* (New York: Alfred A. Knopf, 2004).
5. Greene, *The Fabric of the Cosmos*; Peter Coveney and Roger Highfield, *The Arrow of Time: A Voyage Through Science to Solve Time's Greatest Mystery* (New York: Fawcett Columbine/Ballantine Books, 1990).
6. Penrose, *The Road to Reality*.
7. Greene, *The Fabric of the Cosmos*.
8. Paul Edwards, ed., *The Encyclopedia of Philosophy,* vol. 2 (New York: Macmillan Publishing Co., 1967), 56–66.
9. Mario Bunge, *Causality and Modern Science*, 3rd rev. ed. (Mineola, NY: Dover Publications, 1979).
10. Paul A. M. Dirac, *The Principles of Quantum Mechanics,* 4th ed. (Oxford: Oxford University Press, 1958).
11. Albert Einstein, Boris Podolsky, and Nathan Rosen, "Can Quantum-Mechanical Description of Physical Reality Be Considered Complete?" *Physical Review* 47 (1935): 777–780.
12. John Bell, "On the Einstein Podolsky Rosen Paradox," *Physics* 1 (1964): 195; John Bell, *Speakable and Unspeakable in Quantum Mechanics* (Cambridge: Cambridge University Press, 1993).
13. Alain Aspect, *Three Experimental Tests of Bell Inequalities by the Measurement of Polarization Correlations Between Photons*, PhD diss., 1983.
14. Greene, *The Fabric of the Cosmos*.
15. Amir Aczel, *Entanglement* (New York: Plume/Penguin Group, 2002).
16. Penrose, *The Road to Reality*; Greene, *The Fabric of the Cosmos*.
17. Thomas Rosenbaum, cited in "New Spin on Salt," *University of Chicago Magazine*, August 2004, 6–8.
18. Stan Gibilisco, *Understanding Einstein's Theories of Relativity* (Mineola, NY: Dover Publications, 1983).
19. Robert Service, "Time's Romance of the Decimal Point," *Science* 306 (November 9, 2004): 130–131.
20. Greene, *The Fabric of the Cosmos*.
21. Ibid.
22. Penrose, *The Road to Reality*.
23. M. O. Scully and K. Drühl, "Quantum Eraser: A Proposed Photon Correlation Experiment Concerning Observation and 'Delayed Choice' in Quantum Mechanics," *Physical Review* A 25 (1982): 2208; Sharon Begley, "The Mind of the Quantum," *Newsweek*, June 9, 1995, 67.
24. Greene, *The Fabric of the Cosmos*.
25. Greene, *The Fabric of the Cosmos*; Yakir Aharonov and M. Suhail Zubairy, "Time and the Quantum: Erasing the Past and Impacting the Future," *Science* 307 (February 4, 2005): 875–879.

Exploring the Efficacy of Vowel Intonations

Melanie Braun, SRC

An important Rosicrucian teaching advocates working with "vowel intonations" to aid the student in meditation and to create physical and spiritual harmony. Modern science, especially in the realm of quantum physics, has begun to confirm some of the ancient mystery school teachings about the power of vibration and sound. This article attempts to connect recent thoughts, demonstrated through experiments with sound, with Rosicrucian teaching in its exploration of how sound affects the cell.

Rosicrucian teachings hold that intonations formed from vowels, consonants, and specific musical tones are truly beneficial to the persons intoning and hearing them—in fact, they are even capable of stimulating and affecting cells and centers in the body, and in the space in which they are intoned.

Ancient Mysteries

Ancient mysteries teach that in the beginning, the Creative Force "spoke," and this sound, this vibration, this Word, became the unit of all existence: "The six days were created [through the Word], being lights emanating from the Word and illuminating the world."[1] As created beings, we embody this primeval sound in our physical, mental, and spiritual selves. Our very bones, blood vessels, and nerves are singing the song of the universe: "From the deepest interior of the atom there are shrill tones dozens of octaves above the highest tones of a violin. This is the music of the atomic nucleus . . . this is the symphony of life, this unimaginably complex tapestry of music that is sounding within us every moment of our life."[2]

In ancient times, "when the world was ruled by the wise,"[3] the intuitive knowledge of the vibrations of that creative energy was manifested in life and ritual. Traces of vocal expression are first found in our animal forebears; studies of animal behavior show that "vocalizations reflect changes in the signaler's affective state, emotions, and motivation . . . based on research with rhesus monkeys and other species, it appears that . . . components of our own musical capacity have been in place for a long time."[4] The natural practice of mothers chanting or singing to their children and the use of other soothing or expressive sounds suggests that "ancestral adults could well have followed a similar course in ritualizing natural vocalizations at times of strong emotions and when solidarity was displayed or required."[5] As the use of sound became more sophisticated, human beings realized that its application could raise vibrational levels in the consciousness. In fact, chanting or another form of music is in all accounts connected with ritual, primitive religion, and the first stages of religious expression.[6]

In ancient Egypt, the laws of music were even engraved on the temple walls. The Egyptians took the seven vowels

from Asian languages and used them as musical characters.[7] Invocations to the seven planets were composed of vowels and designated musical modes. It was believed that a word or vibration is capable of actually disintegrating matter, due to the relationship of the vibrations of that word with the vibratory state of the matter involved. This was central to the soul of Egyptian "magic."[8] In the Hermetic writings, we read that Egyptian words contain in themselves the energy of the objects being spoken about, that is, each symbol contained in itself a vibrational complexity. A word was "the sound of spirit striking the air and declaring a person's whole wish . . . a sound full of action."[9] In like manner, the ancient Egyptian ritual for preserving the pharaoh's influence after transition consisted of a musical enchantment: "The Hierophant made the seven notes [which corresponded to the astral waves of the seven planets] resonate magically . . . then the atmosphere of the tomb was animated by lines of subtle energies . . . [forming] a wondrous fluidic spiral."[10] At this point, the seven notes would resonate into the higher octaves of unheard sound, deriving their power from these higher energies. Other uses of the original vowel sounds included healing and creating well-being.

In Kabbalistic study, it is taught that Hebrew letters and words are elements of power. In the Kabbalah, sound, "when properly manipulated," can bring one to ecstasy.[11] Thought and word (sound) were taught as the same essence. Most spiritual systems have chants, sometimes called "mantras," to assist with centering and meditation; some also teach the relationship between these chants and certain energy centers in the body. The Rosicrucian vowel system speaks of the use of combinations of sounds and pitches to

stimulate "psychic centers" in the human being with the purpose of maintaining health and raising the consciousness of the cells as the spiritual self evolves. After study of the esoteric claims of sound and psyche, one could raise the question: is there evidence on the scientific and intellectual levels to support these propositions?

Rosicrucian Theories And Science

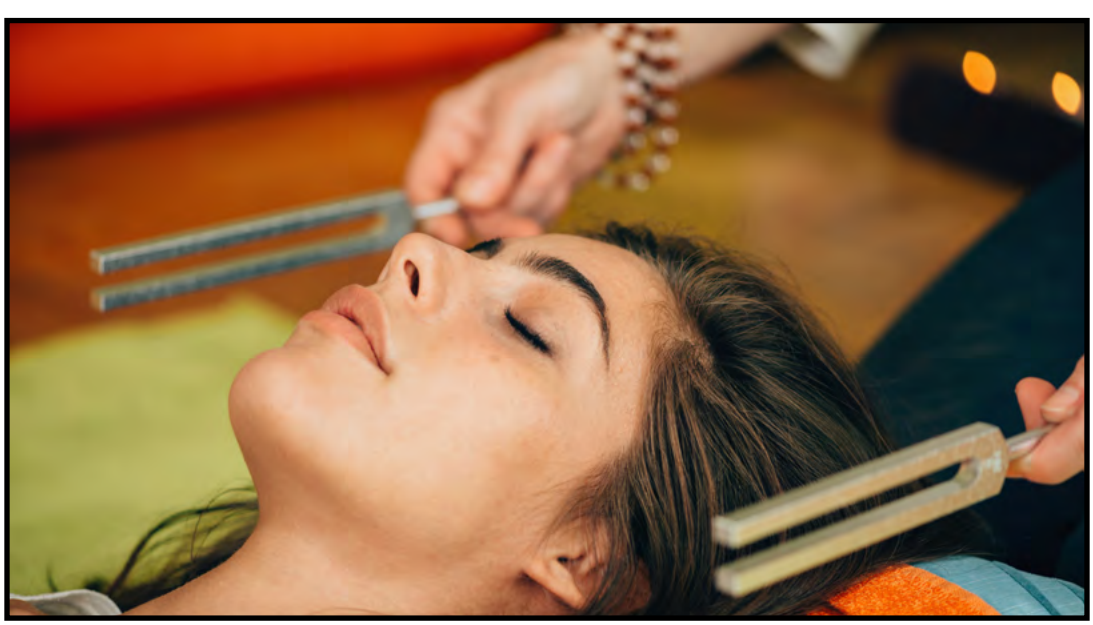
To examine this question, we must first refer to a principal Rosicrucian teaching which holds that everything is vibratory in nature, from the lowest cell to the densest matter to the most transparent space. Indeed, this is a law of physics. Sound is the articulation of a vibration, heard by human beings at certain auditory levels. Each sound also has its counterparts in harmonics or overtones, vibrating sympathetically into the highest octaves. The teaching states that this is how intonations connect us with higher energies and enhance a state of meditation.[12] It goes on to say that the vowel intonations, when intoned on a given pitch, actually cause centers in the body to resonate in

harmony, enabling energy to flow freely, meditation to be enhanced, and health to be maintained.

Science has for some time been examining many aspects of esoteric principles which were kept hidden in ages past.[13] With the advent of modern particle physics and quantum mechanics, many principles of vibration which were once the realm of mystery schools have become scientific theory. In quantum physics, the fundamental forces of nature are vibratory; the "music" created by the combination of waves is matter. The principle of modern physics that is most relevant to our study is that of resonance. Of course, the word means "re-sounding" and refers to the sympathetic response of one vibrating object to another vibrating object. In their brilliant study *The Living Energy Universe*, authors Gary Schwartz and Linda Russek constantly go one step beyond the status quo. When discussing the principle of resonance with an example of two tuning forks, they posit that resonance is a two-way street: not only does tuning fork B pick up vibrations from A, which is sounding, it also returns vibrations to A over and over again, resulting in a cumulative state of vibration within the tuning forks.[14]

A conclusion could be postulated when this study is related to vowel sounds and their resonance within the body: the "centers" affected by the intonations gradually build up memory and response so that regular practice, especially when done in a group setting, has a cumulative, healing effect. The various combinations of vibratory frequencies in the body respond more immediately with each intonation session, made more powerful when coupled with visualization techniques and directive thoughts.

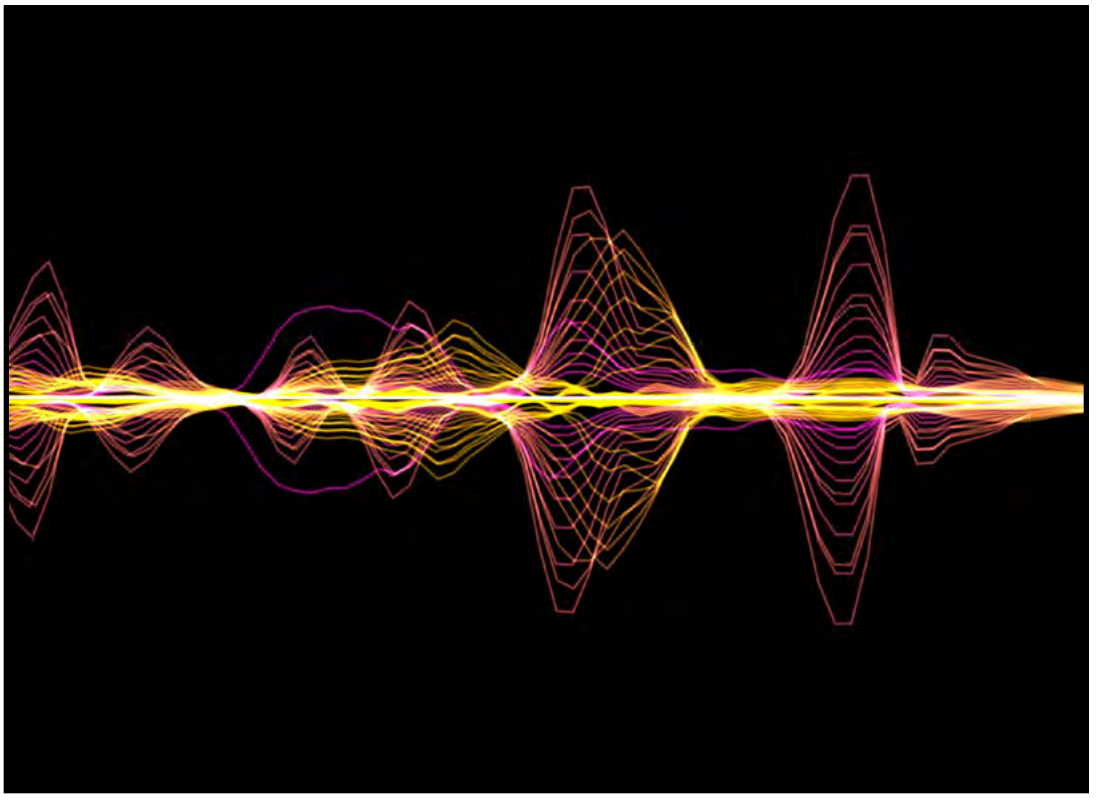
Science has for some time realized the power of sound. Ultrasound is used in various capacities; plant therapy has demonstrated that sound can affect growth. The work of Alfred Tomatis shows the effect of sound on the nervous system, especially in his focus on overtones and the music of Mozart.[15] "Vowel sounds," intonations, and soundings are capturing the attention of mainline scientists and medical professionals as well. One such practitioner, Dr. Mitchell Gaynor, an oncologist in New York City, uses sound



in the forms of intonation and Tibetan bowl resonances with his cancer patients to speed healing. He refers to the work of scientists and psychologists such as David Simon, M.D., in San Diego and Mark Rider, Ph.D., in Dallas, who have conducted studies that determine empirically that music, especially chant, is actually metabolized in the body and acts as a healer and positive influence on the immune system.[16] He goes on to describe the effect of "intoning" as related to the phenomenon of entrainment, which seems to be a slightly more complex form of resonance, involving motion and rhythm as well as sound frequencies:

> The seventeenth-century Dutch scientist Christian Huygens noticed that the pendulums of two clocks, hung side by side, would begin of their own accord to swing to the same identical rhythm. The reason that entrainment occurs is that the more powerful rhythmic vibrations of one object, when projected upon a second object with a similar frequency, will cause that object to begin to vibrate in resonance with the first object.[17]

The phenomenon has also been described as "the synchronization of two or more autonomous rhythmic processes [which] have been identified in many natural systems. When one physically oscillating system entrains another, it means that the timing of repetitive motions by one system influences motions by another oscillator such that they fall into a simple temporal relationship with each other."[18] This dynamic can be observed in the animal kingdom when birds fly together or fish swim in schools. Essentially they are "feeling" the motion in unison. Another example is the harmony felt between a mother and her baby, or between two "soulmates." The human body in general also exhibits this attraction towards harmony, which is its natural state. It has been observed in the laboratory that two individual living cells from the heart, seen under the microscope, each pulsing separately, suddenly move closer, shift rhythms, and begin to pulse perfectly together. [19]



Entrainment Applied to Rosicrucian Intonations

This phenomenon of entrainment could be said to lie behind the effect of vowel intonations. If a certain sound, intoned at a certain pitch level (wavelength), affects a nerve center in the human being, it is perhaps because that center begins to vibrate sympathetically and synchronously with the intoned vowel, causing motion in the form of cell activation and even repair. According to Rosicrucian teachings about the vowel sounds, the process is described thus: the intonations "start certain rates of vibrations in the room which harmonize with other vibrations of the universe and affect a certain condition connected with the aura."[20] The "rates of vibration" are of course the sound waves, configurations which enliven the air in a room and cause all bodies which are in harmony with them to resonate.[21]

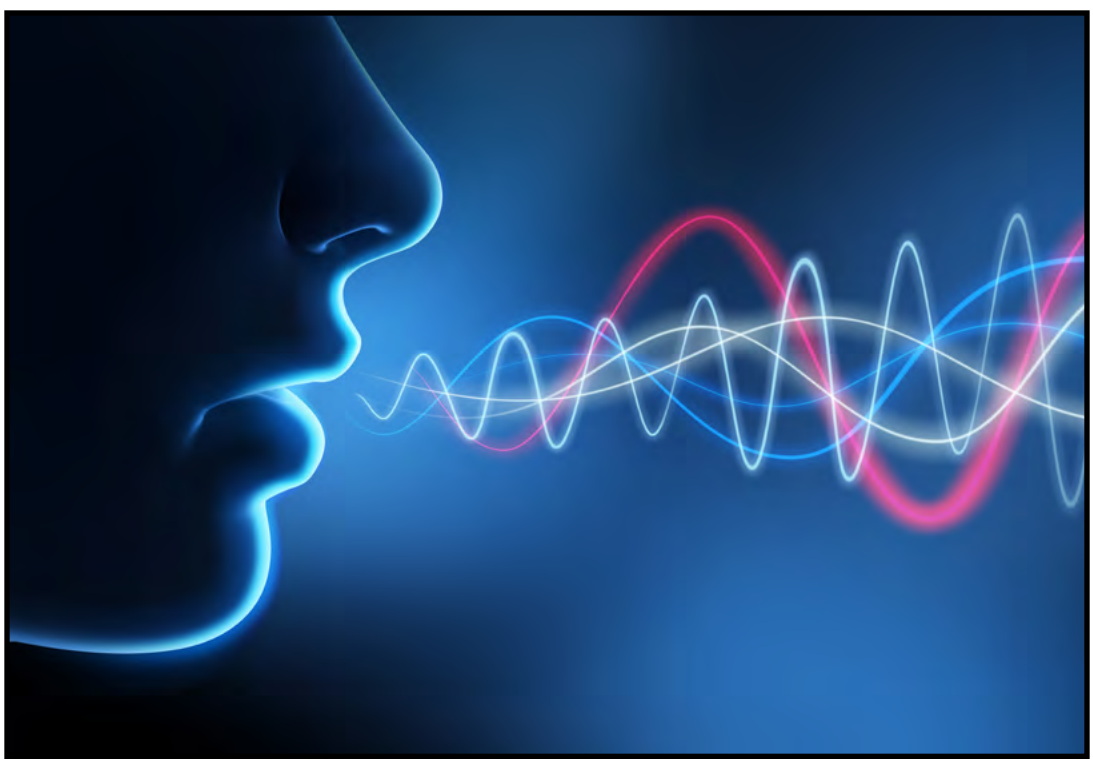
The requirement that the vowel sounds be intoned at the "proper" pitches presents another question. We could ask, is there any evidence that one pitch is more effective than another? We know that the cell is the basic unit in the body, and that vibration is the simplest unit of music. Each pitch has its own sound wave. The cell vibrates; therefore a tone, a sound focused at one pitch level, and vowels, which are compounds of musical tones, have an affinity with the cell. In fact, science has developed a study called "cymatics," after the Greek word for "wave," which is looking into the theory that each molecule in the body has its own frequency and that our bodies are therefore "harmonies" composed of frequencies of component cells.[22]

In a paper dated 1986 from the Beckman Research Institute in California,[23] geneticist Susumu Ohno reported that, in order to detect the flowing patterns of genetic equations, he decided to convert them into music. He devised a simple rule for the conversion:

each of the four basic nucleic acids in the genes was assigned two consecutive notes from the musical octave; the notes were then strung together in the exact genetic sequence. When living mouse RNA was converted by this process, it was found that a portion of the genetic material, when translated into notation and played on the piano, had the same melody as parts of Frederic Chopin's Nocturne, Op.55, No.1!

When the process was reversed, and the Funeral March of Chopin was converted to chemical equations, entire passages appeared to be identical to a human cancer gene. Ohno explained this amazing finding as a natural law which both nature and music follow.[24] Since cells are composed of atoms, and each atom projects a tone, when we take into account the phenomenon of overtone partials, cells should respond to sympathetic sounds, because every tone actually includes all the tones in the universe.

In Mindquest experiments performed in the laboratory at Rosicrucian Park in the 1970s, scientists reported human reactions using galvanic skin response instruments when certain vowel combinations on particular pitches were intoned.[25] In related Mindquest experiments a decade later, Fourier transform analysis was used to measure vowel intonation waves; it was found that many factors affect the efficacy of the intoned sound. Harmonics, vocal chord resonance, even throat and sinus cavities affect the sound produced. From these results, it could be surmised that each person has a particular pitch or pitches which resonate more consonantly in the body; the effects of the given pitch of an intonation could be experienced differently by various persons intoning it. However, there are certain traditional pitches which may or may not resonate more strongly. The conclusions of the researchers state, for the record, that "the value of such an analysis comes if we



accept the hypothesis that vowel sounds are more effective when properly done."[26]

The Effect of Pitch on the Body

Gaynor also reports on an experiment in which two French scientists, Fabien Maman, a composer and bioenergeticist, and Helene Grimal, a biologist, using a camera mounted on a microscope, were able to observe the inner structure of human cells. They used both healthy and cancerous cells, observing them while various acoustical instruments were played and vocal pitches were intoned. As an ascending musical scale was sung into the cells, Maman reported:

> The structure disorganized extremely quickly. The human voice carries something in its vibration that makes it more powerful than any musical instrument: consciousness . . . It appeared that the cancer cells were not able to support a progressive accumulation of vibratory frequencies. As soon as I introduced the third frequency in the sequence, the cells began to destabilize.[27]

The same scientist reported his discovery that "every human molecule has a particular corresponding musical frequency. The masses of particles behave . . . among themselves as if they were musical notes."[28] Of course, this concept was first introduced by Pythagoras, the "intellectual and spiritual godfather of sound medicine,"[29] who based much of his school of philosophy on ancient Egyptian principles, namely that there is music, unheard by us, existing in each human organism, which causes, depending on circumstance and mathematical proportion, consonance or dissonance between the soul and the body.[30] Again, quantum physics reiterates the ancient teaching that even the smallest particles of matter may now be realistically considered "nodes of resonance."[31]

In continuing the discussion of how intonation may affect the body, we discover that sound frequencies have been shown to create geometric forms and shapes in matter; the scientists Ernst Chladni and Hans Jenny performed now classic experiments which allow us to "see" sound waves when matter affected by vibration changes shape. Chladni (1756-1827) in particular experimented with circular and square plates on which he scattered sand. A violin bow was drawn up and down on the side of the plate, and the sand formed itself into distinct patterns. In other words, he showed that sound frequency can "rearrange" physical properties.[32] So, it can be observed that intonations have the possibility not only of eliciting cell responses through resonance, but also of actually causing structural movement and rearrangement of bodily energies to speed healing through the harmonic principle.

Conclusions

The experiments and their effects discussed as part of this exploration indeed seem strongly to suggest a confirmation of the Rosicrucian teaching about vowel

intonations—that their effect is not merely emotional but arises from powerful energies which can enliven a space and affect the human organism. When vowel intonations are used as part of a disciplined study and meditation regime, with knowledge of the principle of overtones and octaves known as the "cosmic keyboard," they can effectively access the physical and psychic bodies as a healing and stimulating force. As we seek to reflect the higher energies, we realize that ". . . it is only through harmony and resonance that energy is transmitted from one state to another, [so] when we resonate in harmony with the Cosmic, we become divinely conscious." [33] Focusing the power of sound through vowel intonations is one way to achieve this.

Bibliography

Andrews, Donald Hatch. *The Symphony of Life*. Lee's Summit, MO: Unity Books, 1966.

Buletza, George F., Ph.D., et al. "Mindquest: 'The Psychic Power of Sound – Part II.'" *Rosicrucian Digest*, January 1977, 17–20.

Campbell, Don. *The Mozart Effect*. New York: Avon Books, 1997.

Copenhaver, Brian P. *Hermetica*. Cambridge: Cambridge University Press, 1992.

DeMohan, Elias. *The Harmonics of Sound, Color and Vibration*. Marina del Rey, CA: DeVorss, 1980.

Dissanayake, Ellen. "Antecedents of the Temporal Arts in Early Mother-Infant Interaction." *In The Origins of Music*, edited by Nils L. Wallin et al., Cambridge, MA: MIT Press, 2000.

D'Olivet, Fabre. *Music Explained as Science and Art*. Translated by Joscelyn Godwin. Rochester, VT: Inner Traditions, 1987.

Gadalla, Moustafa. *Egyptian Harmony: The Visual Music*. Greensboro, NC: Tehuti Research Foundation, 2000.

Gass, Robert, with Kathleen Brehony. *Chanting: Discovering Spirit in Sound*. New York: Broadway Books, 1999.

Gaynor, Mitchell L., M.D. *Sounds of Healing: A Physician Reveals the Therapeutic Power of Sound, Voice, and Music*. New York: Broadway Books, 1999.

Godwin, Joscelyn. *Harmonies of Heaven and Earth*. Rochester, VT: Inner Traditions, 1987.

———. *The Mystery of the Seven Vowels in Theory and Practice*. Grand Rapids, MI: Phanes Press, 1991.

Hauser, Marc. "The Sound and the Fury: Primate Vocalizations as Reflections of Emotion and Thought." *In The Origins of Music*, edited by Nils L. Wallin et al., Cambridge, MA: MIT Press, 2000.

Heline, Corinne. *Music: The Keynote of Evolution*. Santa Monica, CA: New Age Bible and Philosophy Center, 1994.

Humes, Edward. "Waltz of the Genes." Associated Press, January 5, 1988.

Julius, Frits. *Sound Between Matter and Spirit*. Spring Valley, NY: Mercury Press, 1993.

Lesesne, John. "Mindquest: 'On the Nature of Vowel Sounds.'" *Rosicrucian Digest*, June 1985, 21–24.

Lewis, H. Spencer, Ph.D. *Rosicrucian Manual*. 26th ed. San Jose, CA: AMORC Publishing, 1980.

Lubicz, Isha Schwaller de. *Her-Bak: Egyptian Initiate*. New York: Inner Traditions, 1979.

Murchie, Guy. *Music of the Spheres: The Material Universe from Atom to Quasar, Simply Explained*. 2 vols. New York: Dover, 1967.

———. *The Seven Mysteries of Life: An Exploration in Science and Philosophy*. Boston: Houghton Mifflin, 1978.

Ohno, Susumu, and Midori Ohno. "The All Persuasive Principle of Repetitious Recurrences Governs Not Only Coding Sequence Construction but Also Human Endeavour in Musical Composition." *Immunogenetics* 24 (1986): 71–78.

Reik, Theodor. *Ritual: Psycho-Analytic Studies*. New York: Farrar, Straus, 1946.

Schwartz, Gary E.R., Ph.D., and Linda G.S. Russek, Ph.D. *The Living Energy Universe*. Charlottesville, VA: Hampton Roads Publishing, 1999.

Steiner, Rudolf. *The Inner Nature of Music and the Experience of Tone*. Hudson, NY: Anthroposophic Press, 1983. (1987 reprint.)

Waite, A.E. *The Holy Kabbalah*. Secaucus, NJ: Citadel, n.d.

Wilson, Onslow H., Ph.D. *Glands: The Mirror of Self*. San Jose, CA: AMORC, 1983.

Websites

https://physics.kenyon.edu/EarlyApparatus/Acoustics/Chladni/Chladni.html

www.nslij-genetics.org/dnamusic

Endnotes

1. A. E. Waite, *The Holy Kabbalah* (Secaucus, NJ: Citadel, n.d.), 230.
2. Donald Hatch Andrews, *The Symphony of Life* (Lee's Summit, MO: Unity Books, 1966), 55, 58.
3. Joscelyn Godwin, *The Mystery of the Seven Vowels* (Grand Rapids, MI: Phanes Press, 1991), 71.
4. Marc Hauser, in *The Origins of Music*, ed. Nils L. Wallin et al. (Cambridge, MA: MIT Press, 2000), 78, 98.
5. Ellen Dissanayake, in *The Origins of Music*, 403.
6. Theodor Reik, *Ritual: Psycho-Analytic Studies* (New York: Farrar, Straus, 1946), 295.
7. Fabre d'Olivet, *The Secret Lore of Music*, trans. Joscelyn Godwin (Rochester, VT: Inner Traditions, 1997), 164.

8. Isha Schwaller de Lubicz, *Her-Bak: Egyptian Initiate* (New York: Inner Traditions, 1979), 301.
9. Brian P. Copenhaver, *Hermetica* (Cambridge: Cambridge University Press, 1992), 78, 58.
10. Godwin, *Mystery of the Seven Vowels*, 70–71.
11. Mitchell L. Gaynor, *Sounds of Healing: A Physician Reveals the Therapeutic Power of Sound, Voice and Music* (New York: Broadway Books, 1999), 39.
12. Guy Murchie, *Music of the Spheres: The Material Universe from Atom to Quasar, Simply Explained*, vol. 2 (New York: Dover, 1967), chap. 11.
13. Elias DeMohan, *The Harmonics of Sound, Color, and Vibration* (Marina del Rey, CA: DeVorss, 1980); and *Murchie, The Seven Mysteries of Life: An Exploration in Science and Philosophy* (Boston: Houghton Mifflin, 1978).
14. Gary E. R. Schwartz, Ph.D., and Linda G. S. Russek, Ph.D., *The Living Energy Universe* (Charlottesville, VA: Hampton Roads, 1999), 89–90, 223–26.
15. Robert Gass, *Chanting: Discovering Spirit in Sound* (New York: Broadway Books, 1999), 30; and Don Campbell, *The Mozart Effect* (New York: Avon Books, 1997).
16. Gaynor, *Sounds of Healing*, 18.
17. Ibid., 48; see also Gass, *Chanting*, 35.
18. "Neurobiological foundations of neurologic music therapy," https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2014.01185/full.
19. Gaynor, *Sounds of Healing*, 68.
20. H. Spencer Lewis, *Rosicrucian Manual*, 26th ed. (San Jose, CA: AMORC Publishing, 1980), 203.
21. Frits Julius, *Sound Between Matter and Spirit* (Spring Valley, NY: Mercury Press, 1993), 20–24.
22. See Gaynor, *Sounds of Healing*, 138; and Andrews, *The Symphony of Life*.
23. Susumu Ohno and Midori Ohno, "The All Persuasive Principle of Repetitious Recurrences Governs Not Only Coding Sequence Construction but Also Human Endeavour in Musical Composition," *Immunogenetics* 24 (1986): 71–78.
24. Edward Humes, "Waltz of the Genes," *Associated Press*, January 5, 1988. See also www.nslij-genetics.org/dnamusic.
25. George F. Buletza, Ph.D., et al., "Mindquest: 'The Psychic Power of Sound – Part II,'" *Rosicrucian Digest*, January 1977, 17–20.
26. John Lesesne, "Mindquest: 'On the Nature of Vowel Sounds,'" *Rosicrucian Digest*, June 1985, 21–24.
27. Gaynor, *Sounds of Healing*, 136.
28. Ibid., 137.
29. Ibid., 27.
30. Rudolf Steiner, *The Inner Nature of Music and the Experience of Tone* (Hudson, NY: Anthroposophic Press, 1983).
31. Murchie, *Seven Mysteries of Life*, 631.
32. See https://physics.kenyon.edu/EarlyApparatus/Acoustics/Chladni/Chladni.html.
33. Onslow H. Wilson, Ph.D., *Glands: The Mirror of Self* (San Jose, CA: AMORC, 1983), 135.