



# The Breath Which Breathes Us

Carol A. Agneessens, MS., Certified Advanced Rolfer™, Rolf Movement® Instructor, Registered Craniosacral Therapist © 2013

**“Listen – Are you breathing just a little and calling it a life?” – Mary Oliver**

Breathing: life’s most vital function. Countless writings and techniques, from ancient Sanskrit texts and yogic practices to innovative holistic therapies and medical interventions are devoted to the cultivation, understanding and repair of respiratory physiology. Every physical, psychological and emotional problem is to some degree connected to a lack of oxygen and the interruption of full breathing cycles. Yet how many individuals pay attention to their personal respiratory habits? Or notice how respiratory health affects the depth and fullness of their breath and life? What happens to the breathing cycle when stressful events occur?

Too often breathing is taken for granted. Mistakenly, we assume that this function will always be working. Developing a kinesthetic awareness of breath broadens and expands our conscious participation in living. To breathe is to live, and respiratory freedom is a measure of life’s potency. Maternal waves of breath transport the growing embryo from its miniscule genesis at fertilization through the birthing process. The first inhalation ignites a continuum of breaths; the last exhalation dissolves individuality into ‘the eternal mystery’ at life’s end.

At one time or another, you’ve probably experienced the sudden and shocking realization that you’ve been holding your breath during a stressful encounter, high-action thriller, or while waiting or

anticipating news. Once you feel you haven’t been breathing, do you ravenously grab for oxygen? How many reminders have decorated your desktop, refrigerator, bathroom mirror or the dashboard of your car reminding you to ‘breathe’? Recall the clients who describe their breathing as shallow or those who experience limited sensory awareness of the movement of their diaphragm and rib cage. With patience and guided kinesthetic directives, they may quickly begin experiencing greater excursion of their ribs and the impact that easier and fuller breathing effects in their lives. Through anatomical illustrations and directed touch, practitioners ignite a clients’ felt sense of the expanding dimensions of their thorax, the depth and reach of their lungs and the ease beneath their exhalation. We may work with athletes or singers whose beliefs about ‘how to breath’ actually complicate their quest for a fuller inhalation and passive exhalation. Or perhaps it is the child, teenager or adult whose nervous system and breathing patterns carry the fight/flight/freeze imprint of birth trauma or the hyper-vigilant attitude of an early home environment lacking predictability and safety.

The respiratory control center within the brain stem demands oxygen, and respiration is triggered. However, bracing, slumping, accidents, injury, faulty education or long standing beliefs can undermine the on-going and involuntary nature of breathing. As a long time swimmer, I used to think that getting to the end of a 25-meter lap on one inhala-

tion was success. I had no idea the goal was to breathe while swimming and that breathing rhythmically would increase both endurance and speed. Abalone divers know the risk of diving deep without a respirator. The body commands inhalation even when deep beneath the waters. To breathe is to live.

This article weaves together four areas currently igniting my interest in the movement of breath.

- Embryological underpinnings of respiration.
- The interrelationship of perception, vision and breath
- Carl Stough and his innovative work called ‘breathing coordination.’
- An inquiry into the field or breath which is breathing us.
- Somatic explorations on breath.

## The Diaphragm: the Embryological Seed of Life

All mammals emerge from a single fertilized egg cell or ovum. Wholeness is our underlying nature and is the ground of health, adaptability and connectivity to self, other and the environment. The varying physiological systems and densities of our bodies arise from this beginning of ‘one-thing-ness’. Dr. Erich Blechschmidt, embryologist, introduced a novel way of viewing embryonic development. He felt that at every moment of differentiation, the embryo is functioning from a state of wholeness. The embryo is

in relationship to its surrounding uterine environment and the fluid fields metabolizing and directing its growth. All tissues and functions arise from an origin of perfect wholeness. The embryo does not become human, it is human from the very beginning.

**“Embryology does not stop at birth; we have the potential for change all along. In a sense we are embryos through our lifetime.”<sup>2</sup>**

The embryo grows through a process of in-folding and unfolding, rhythmic oscillations, centralizing fulcrums and lengthening midlines.

These expressions of form are shaped and directed by fluid gradients and metabolic forces in which the embryo is embedded. These suctioning, compressing, stretching, separating, dissolving and germinal fluid forces shape both function and structure.

In the embryo, what emerges as the respiratory diaphragm begins development by the third week post-fertilization. Initially, the diaphragm arises as a tissue called the septum transversum. The seeds of the diaphragm are carried by mesenchyme, undifferentiated mesodermal tissue, spreading through the entire embryo. Mesenchyme is embryonic inner tissue derived mainly from mesoderm (which eventually forms connective tissue and blood). The embryonic mesenchyme reaches and merges with the potential coccyx. Take a moment and imagine the fertilized ovum as a sphere of diaphragms breathing in synchrony with each other and responding to the bellow-like pressures of a suctioning field. The action of the suction field is the major metabolic process shaping the fertilized egg. The kinetic motion of the embryonic suction field underlies the bellow-like movements of respiration.

An understanding of metabolic fields, and specifically the suction field, arises out of the extensive and detailed research of embryologist Eric Blechschmidt. Dr. Blechschmidt identified epi-genetic forces which he understood shaped and directed embryonic development. He called this epi-genetic movement: the biodynamic and biokinetic forces of embryonic development.

“Biodynamic refers to the dynamic features of development of the organism

manifested in submicroscopic developmental movements. Biokinetic refers to the kinetic (spatiotemporal) forces acting on the developing organism.”<sup>3</sup>

These metabolic forces of fluid intelligence permeate and direct the development and differentiation of the embryo. An understanding of metabolic fields arises out of a Quantum approach to understanding the interrelationship and penetration of forces of consciousness directing development rather than a Newtonian cause and effect universe holding genetic determinism as the overriding rule.

Suction is one of the primary metabolic movements or fields directing embryonic formation. In the development of the diaphragm, the ascent of the brain and the descent of the viscera ignite two-directional lengthening. The rapidly enlarging brain demands nourishment (oxygen and nutrition) which are carried through the emerging blood vessels of the aorta and its branches. These arterial branches reach posteriorly and intertwine with the budding spinal nerves tethering the heart in place as the brain continues to grow. The connecting stalk anchors the embryo to the uterine wall at its caudal end.

Emerging between the polarity of a rapidly enlarging brain, lengthening spinal cord and descending viscera is the diaphragm. As the neural tube grows, ascends and begins to fold due to the massive growth of the brain, the future diaphragm becomes folded underneath the developing heart at the level of the cervical vertebrae. Innervation from the adjacent spinal nerves of C3, C4 and C5 are drawn into this moving potential, forming the precursor of the phrenic nerve. You’ve probably heard this sing-song rhyme repeated in anatomy classes: “C-3-4-5 keeps the diaphragm alive.”

“The descent of the viscera is closely coupled to the development of the diaphragm. The diaphragm is attached to the liver posterior (and) to the heart and arches high into the thorax. The inferior end of the diaphragm extends almost to the inferior end of the vertebral column.

“The segment between the growing heart and the enlarging liver becomes compressed and taut, so that here it will be thin and tendon like (central tendon of the diaphragm).”<sup>4</sup>

## ***Somatic Inquiry: The body as a continuing diaphragm***

### Part I

- Sit in a comfortable and upright position with your feet on the floor.
- Ask yourself:
  - Is my breathing supporting me in sitting and exploring?
  - What body-centered information emerges in response to this question?
- Notice your breath...sense the excursion of your thorax on inhalation and the passive release on exhalation
- Imagine your lungs extending beyond your back
- Notice the movement of your whole body in response to breathing.
- For the next few minutes just breathe, sensing the dimensions of your breath without control, effort or intention to change anything.

### Part II

- Sit with your feet on the floor or stand in a comfortable position.
- Inquire: is my breathing supporting the opening of the diaphragm of my feet to the life and breath of the ground?
  - Sense the arches of your feet opening to the living planet and soils of ‘earth’. Allow a softening through your feet, as your awareness of the connection to earth touches the soles of your feet.
  - Become aware of your contact with the breathing, living ground in relationship to your breathing body. Earth’s field does not stop at our feet but rises up around the body.
  - Notice: how far around and through your body space do you sense earth’s field?
  - Inquire: does my breath support this relationship to earth?

With any activity you are engaged in, feel and listen to the support your breath is giving you. The simple question can be repeated: Is my breath supporting me as I work, sit, walk, study...etc.?

## Perception, Vision and Breath

Imagine for a moment walking a mile-long ocean shoreline, hearing the thundering waves and sensing the pull of powerful currents. This meditation has nourished many twilight reveries. Walking barefoot on tide washed sands offers a kinesthetic understanding of both the weight and ground of exhalation and the spacious lift of inhalation. The spectrum of breathing is fortified as visual senses open to include the vast horizon. The expanse of the sea, possessing unobstructed vistas, is nourishment, feeding sensibilities and imagination. The visual continuum of spaciousness births the physiological health of balance, adaptability and gravitational security. Sensing and knowing the horizon is at the root of vestibular acuity. The secret is that you do not have to 'go out' to meet the horizon; the horizon is always there to meet you.

Imagine the horizon is like a diaphragm – extending its horizontal reach in 360° around you. Imagine yourself as the central tendon! Sense the vestibular shifts affecting your movement, rhythm, balance and alignment as neurological intelligence attunes to the expansive environment enwrapping you. For moments at a time, depth perception can shift - the near, far and wide of the surrounding waters and sand embrace the body in motion. A dynamic core of awareness is enlivened. Become aware of the physical shifts within your body as your 'central core' relaxes and you begin to breathe in the openness of this vista.

The horizon touches you as you rest into this awareness. Sea air resuscitates a vital breath; as vision expands, auditory senses become heightened to the language of the waves; balance shifts as the dynamic relationship with gravity alters with every step over the uneven shore. The sensorial memory of our deeply rooted indigenous nature - alive, breathing, vital, and perceptually aware - rejuvenates blood, breath, and body. Sensing the horizon is key to this respiratory rejuvenation.

"He alone (Spinoza) saw that the human mind could never be reconciled with the human body unless intelligence was recognized as an attribute of nature in its entirety...every sensible phenomenon had its own mental aspect; every tangible body within the material world was

also an idea within the vast, encompassing intelligence that was known inwardly (to some) as God and outwardly (to all) as nature."<sup>5</sup>

Whole body sensing of the horizon, whether we are viewing the ocean's distant edge, admiring a mountain top vista or surrounded by the four walls of our office, broadens a kinesthetic vocabulary. Our vestibular system is constantly seeking the horizon whether we are aware of it or not. Yet because of the context, psychologically, emotionally or environmentally, we limit our senses, impeding the expansiveness of our perception as well as becoming more focused in one-pointed attention. In an overly focused state, it is easy to lose touch with the presence of the horizon and the breathing expanse in which we are inescapably embedded.

"Man's awareness since the Reformation has been so narrowed that it has become almost entirely a rational process, an intellectual process associated with the outside, the so-called physical, objective world. The invisible realities are no longer real. This narrowed awareness rejects all sorts of things that make up the totality of the human spirit: intuition, instincts and feelings, all the things to which natural man had access."<sup>6</sup>

Laurens Van der Post, author, and keen observer of the African Bushman, offers these anthropological concepts which have played an important role in our understanding of health and disease in society.

"And when I spoke to (Carl) Jung about it he said this is not an extravagant thought at all. He said every human being has a two-million year-old man within himself. And if he loses contact with that two million year-old self he loses his real roots."<sup>7</sup>

A whole body sense of the horizon was part of the natural evolution of humans achieving upright stature. Cultivating a sensorial perception affords the balance of ground for our exhalation and spacious vastness supporting our inhalation. Even if we cannot see the horizon, the deeply primal nature of our organism's vestibular system senses it as we cultivate its presence as a resource in our lives.

### **Somatic Inquiry: Breath and the Horizon**

- Sitting comfortably upright, notice

your breath; the rhythm and ease of your diaphragmatic movement on inhalation and the ease of exhalation.

- Yield into the support of your chair, and the support of your feet on the floor. Follow your breath through a deeper, longer exhalation – pausing for the automatic triggering of inhalation.
- Place your focus on something in your very near field of vision.
- Let your vision narrowly focus, seeing only this object.
- Notice any changes in your breathing, its ease or excursion.
- Now, imagine the 360° expanse of the horizon around you.
- Let the focus you are holding soften as you sense the walls to either side of you and behind you.
- Does your breathing change?

### **In nature:**

- Repeat the above exploration noticing your breathing ease or tension as you focus on the endpoint or goal (what you are walking or running toward)
- Now, allow the inclusion of a whole body sensing of the horizon, trees and nature around you.
- Does your breathing change as you include the support of the horizon and its impact on your vestibular system?

Breathing changes with whatever activity we are doing. If we are hiking, biking or climbing – breath responds. If we are hurried or confronting a difficult task, our breathing responds to accommodate. Breath is our ally; our breath is always there. Breath is supported by sensing the expansiveness of the horizon and the ground beneath our feet.

"The gilt edged clouds overhead are not plunging westward as the planet rolls beneath them because they themselves are part of the rolling Earth. Creatures of the embracing air, of an invisible but nonetheless material layer of this planet, the clouds accompany the Earth as it turns, their shape-shifting bodies drifting this way and that with the winds. And we, imbibing and strolling through that same air, do not live on the earth but in it. We are enfolded within it, permeated, carnally



immersed in the depths of this breathing planet.”<sup>8</sup>

## Breathing Coordination: the work of Carl Stough

“Life begins and ends with the exhale.”<sup>9</sup> — Carl Stough

A cold stethoscope on the flesh of my rib cage signals, “take a deep breath.” I inhale, noting the effort involved in following this directive as quickly as I can. Breathing on command is never easy.

Over this century, a multitude of breath-related therapies have come to the fore. All of these focus on breath as the primary mover of life - from Carola Spead’s straw technique to soften the exhale; Charlotte Selver’s powerful meditations in sensory awareness; and Buteyko Breathing Therapy (among others). Innovative techniques for resuscitating the breathing cycle have exploded in the alternative health field. However, it is the work of the late Carl Stough and his emphasis on the phrenic nerve and a relaxed and effortless exhalation that piqued my interest.

Carl Stough was a singing teacher; yet because of his gift as a breathing coach in the mid 1960’s, he was given access to the pulmonary ward of a military hospital, working with terminally ill men dying from emphysema. Using a new technique called fluoroscopy, he was able to record the rise and the fall of the diaphragm and the changes to the excursion of the diaphragm through his compassionate and gentle technique called “Breathing Coordination.”<sup>10</sup>

His work at this east coast hospital was the basis for the first major clinical study of diaphragmatic development in history. Together with his wife Reese, he cultivated an approach which restores diaphragmatic action and fullness of breath by skillfully encouraging a fuller and effortless exhalation and consequent toned stretching of the phrenic nerve.

## Refining respiratory understanding

Breath underlies full body awareness, orgasmic sensation and living with conscious presence in this three-dimensional body of flesh and blood. A fundamental knowledge of the physiology of breathing

is part of a body worker’s education. The active and passive nature of the breathing cycle, as well as an understanding of blood chemistry and circulation, is essential.

Our breathing, as well as the quality of air that we are breathing, effects changes in our respiratory rhythm’s depth and activity. During normal breathing, inspiration is an active muscular process. Expiration is passive and relies on the natural elasticity of the tissues to deflate the lung. The most important muscle for inspiration is the diaphragm. The diaphragm is supplied by the phrenic nerve that is formed in the neck from the spinal nerves exiting the cervical vertebrae at C3, C4 and C5. The intercostal muscles are supplied by the segmental intercostal nerves that leave the spinal cord between T1 and T12.

Any disease that affects the efferent or motor pathways from the respiratory center 12 in the brain stem to C3, C4 and C5 and the path of the phrenic nerve to the diaphragm, inflicts difficulty in breathing. Trauma to the cervical cord above C3 is normally fatal.

The diaphragm descends on inhalation and ascends with the passive movement of exhalation. The heart sitting above the diaphragm and the liver below it are intricately woven into the tissues of the diaphragm.

With each inhalation or exhalation, these organs are massaged. From the moving images depicted by cinefluography, it is possible to see the excursion of the diaphragm.<sup>11</sup>

One of the principles Carl and Reese Stough elaborated was that all respiratory problems were the result of high residual volume. Residual volume is the amount of carbon dioxide-laden air left in the lungs at the end of exhalation.<sup>12</sup> With skill and attention, Carl would have his patients count from one to ten repeatedly, increasing the duration of their exhale with each successive out-breath while not engaging any muscular force. Often-times, the emphysema or asthmatic patient would only be able to vocally count to “two.” Yet gradually, with the strengthening of their diaphragm via this exercise, the count would increase. His patients at the military hospital showed improvements including: vocal strength, gaining muscle mass and weight and the ability to lift themselves out of their wheelchairs.

All this was accomplished with an emphasis on the exhalation, vocalization and gentle stretching of the phrenic nerve by gaining a fuller diaphragmatic excursion and the restoration of tonus and strength in this muscle.

Another principle they highlighted is the diaphragm as the main muscle-organ of the body. The heart’s movement is secondary. The heart beats, via its neurological pacemaker, and is carried on the wave of the diaphragmatic movement. By strengthening this muscle, supporting a fuller exhalation and inhalation, there is a boomerang-like action that occurs through these muscular fibers; the tonus of the phrenic nerve is repaired as it stretches with diaphragmatic movement; and effortless breathing emerges.

## Somatic Inquiry:

Breathing Coordination (adapted from the Stough approach to strengthen the diaphragm and responsiveness of the phrenic nerve)

- Lie on your back with a pillow beneath your knees and under your head.
- Realize that breath is an involuntary action and that you do not need to effort while inhaling or exhaling.
- Let your jaw and throat be relaxed.
- As you begin to exhale make an audible sound (ah...) or begin to count 1-2-3-4...
- Allow your exhale to be easy as you count quietly until your inhale becomes a reflex.
- The point is to extend your exhale as long as possible with sound but without effort.
- This should become a relaxing exploration.

“The total person, the total organism is involved in the new air coming in, being welcomed, penetrating, doing its job, and then letting out what has been used. The exhalation is one of the most important things to have...to feel the going out to the very last. And not coming in with the new air but letting it have its way.”<sup>12</sup>

## The Breath which is Breathing Us

In any discussion of breath, we need to acknowledge death. Death is the uninvit-

ed guest shadowing every breath we take. According to some ascetic yogis, we are given an exact number of breaths - no more and no less. How many breaths are we given in a lifetime?

Have you ever lain beside an ill partner, parent, or beloved pet, waiting with vigilant attention to the sound of their breath resuming after a longer than usual pause. Their life continues. We might sigh and relish the moment that their life continues. Death has not taken the one we cherish from us...yet.

Our culture shies away from acknowledging the inevitability of extinction. But as Jim Morrison said "no one gets out alive." And it is the reality, that some day, we too, will die, which is easily yet boldly denied.

Our culture has made dying into a tidy experience. We remove ourselves from Death's smells, sounds, and visuals. A death mask appears on a loved one's face - showing a visage of peace or fear as the 'border crossing' nears. On a breath, they are lifted away from their earthly endeavors, sufferings, and joys, dissolving forever into spacious blue.

We enter on the wings of a life-giving breath, and we are borne from this life on our last breath. During the bedside vigil for my mother, I found my breathing synchronizing with hers. My exhalation lingered in the pause between. My heart beat and her still beating heart became one. I experienced a kind of electro-magnetic field of pulsation, an ancient and archetypal umbilical connection between us. I did not know if this was the gravity of our beating hearts, strengthened through the loving field we shared, or the unfathomable intensity of the weeks of long vigils nearing their end or the state of mind required for sitting quietly in the presence and intimacy of nearing death.

We shared a womb of passage, the timelessness of the in-between pauses, and the beauty of delivery into the mystery beyond. For one last treasured moment, she was here; yet as her exhalation lingered and merged with the vastness of dissolution, I realized she had passed through death's portal and was gone from this physical plane. The slower than slow primordial breath carried her through the sheer membrane between living and this unknown portal of mystery. Silently, peacefully, the cycle was complete.

My mother witnessed my first breath and I witnessed her last. She birthed me through struggle and pain. I became a mid-wife for her dying.

Being immersed in this cycle has deepened my personal inquiry and process, re-orienting my own expansion, curiosities, and creative momentum. The spectrum of life, imprinted with its heart breaking losses finds solace in the many gifts and blessings filtering through the ethers, beyond the earthly breath, showering joy and laughter in the hallows of life.

Throughout these bedside vigils, I began appreciating more fully the gravitational weight of grief suctioning my exhale as well as moments of rising joy within my inhalation. Both ends of this emotional spectrum flowed through my senses. A deeper exhalation supports the spontaneity of a fuller breath. As I fell into the sorrow of loss, sensing-feeling the fathoms beneath these depths, I would just as suddenly be 'spit out' into a state of expansion and light. Breath moves and guides me through a jungle of intertwined emotional, physical, spiritual and other-dimensional realities permeating my living breathing existence.

**"Our life is a faint tracing on the surface of mystery."**<sup>15</sup> — Annie Dillard

### The Breath of Life

William Sutherland is credited with using a term from Genesis, 'The Breath of Life', in describing the primary ignition which sparks the motor of life. He explained this BREATH as something that is not material and that cannot be seen. 14

In applying this scriptural phrase to the study of the cranial system, Sutherland thought beyond current understandings in physics and chemistry and pioneered a novel approach to understanding the cranial sacral system. This phrase underscores the genius of David Bohm and his theory of the Implicate and Explicate order and aligns with Rupert Sheldrake's theory of Morphogenetic Resonance in which fields of information are transmitted through time and space. Sheldrake's holographic understanding of resonant fields, carrying both potential and memory corroborate with the understanding Blechschmidt brought to the fore regarding metabolic fields and rhythms which are shaping the embryo.

Intelligent and dynamic forces breathe shape, and form into all of life.. These biodynamic fields carry the information of development and are undiminished in their movement. They are not energy fields. This is the quantum fabric of wholeness, the implicate movement which Bohm described and even the space-time matrix which Einstein imagined. These therapeutic forces of nature, shaping the embryo, continue to shape and sustain the health, adaptability and wholeness of the adult.

As this portal of understanding reveals the expansive and interconnected intelligence of the natural world, of which we are not only intimately immersed but also whose elements, minerals and molecular bindings make us who we are... then the reality of being moved by an underlying BREATH infuses a whole body somatic knowing of the vital nature infusing life.

"To acknowledge that 'I am this body'...is to affirm the uncanniness of this physical form. It is not to lock up awareness within the density of a closed and bounded object for the boundaries of a living body are open and indeterminate, more like membranes than barriers they define a surface of metamorphosis and exchange. The breathing sensing body draws its sustenance and very substance from the soils plants and elements that surround it; it continually contributes itself in turn to the air, to the composting earth, to the nourishment of insects and oak trees and squirrels, ceaselessly spreading out of itself as well as breathing the world into itself, so that it is very difficult to discern, at any moment precisely where this living body begins and where it ends."<sup>15</sup>

*Written in loving memory of my mother, Dorothy Mary Agneessens, who passed away on May 28, 2012.*

### Footnotes

1. taken from <http://www.goodreads.com/quotes/3241-listen--are-you-breathing-just-a-lit>
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5. Abram, David. *Becoming Animal*. Pg. 109. Pantheon Books. New York. 2010.

6. Abram, David. *The Spell of the Sensuous: Perception and Language in a More-than-Human World*. Pg. 47. New York, NY, Pantheon Books, 1996.

7. Van der Post. Laurens, at 87, transcript of interview in his home in Chelsea, England. (speaking of the African Bushman to Carl Jung), 1994.

8. David Abrams adds the letter ‘i’ to our planet’s name in order to remind us that “air” is entirely a part of the earth, and the ‘i’, the I or self is wholly immersed in that fluid element. (pg. 101. *Becoming Animal*)

9. Stough, Carl. Dr. Breath: The story of breathing coordination. Pg.73-95. 1981. The Stough Institute. New York.

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11. *ibid.*

12. Selver, Charlotte. “Breathing and Full

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14. Sutherland, Wm. DO. *Contributions of Thought*. Pg. 147. The Sutherland Cranial Teaching Foundation, Inc. Fort Worth Texas. 1998. Second edition.

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