The Evolutionary Sequence

A Model for an Integrative Approach to Movement Study

by Kevin Frank and Caryn McHose

Part One
Rationale and Principles Related to Structural

INTRODUCTION

From 1978 to 1984, Caryn McHose taught Experiential Anatomy at Middlebury College, Vermont.[1] The experience of teaching many classes of students confirmed that seeing and feeling specific body and body-to-space relationships transforms peoples' movement and changes their physiology. The classes also demonstrated the breadth of interest for such discoveries since it appealed to dancers, athletes, pre-med and liberal arts students alike. The Evolutionary Sequence, a further development of this curriculum, combines experiential anatomy with the story of evolution to produce a new series of movement experiments which can be a useful tool for group and individual sessions. This material is useful in RSI practice as a method for evaluation and teaching functional capacity.

We believe that certain principles underlie interventions that successfully facilitate qualitiative shifts in movement. These principles are linked to third paradigm bodywork and models of body integration that come from biology. These principles include the perception of the body as self-organizing, the importance of perceptual shifts, context, and palintonus in movement work, and the value of inquiry as a movement tool. Movement study is profoundly relevant to Rolfing® structural integration theory and pracitice; holistic structural interventions and holistic movement interventions are not separate events.

The Evolutionary Sequence offers students and clients a course of study which enlivens and excites bodily perception and provides motivation for sustained periods of movement inquiry. Participants build a base of perceptual skills to gain the capacity to change their body experience and consciousness, using a systematic map of movement possibilities.

PRINCIPLES AND VALUES OF MOVEMENT WORK

Several principles and values underlie the strategies that will be described in this article. They are the answers we give to the questions, "Why do movement work?" and "What are the primary characteristics of human learning such that certain approaches work well?"

THE BODY AS SELF-ORGANIZING

The first premise underlying this approach to movement work is that the body is a self-organizing event that takes place in relation to the earth's gravitational field. The goal of movement work is to assist people in consciously noticing this. The principle of self-organization is coherent with the principle articulated in Rolfing structural integration as *holism*. Holistic intervention is the means by which a practitioner gains access to the self-organizing systems of the body. If the practitioner wants to communicate with the self-organizing intelligence of a body, he/she must be able to think in terms of supplying perceptual and cognitive information, as opposed to the more traditional activities such as positioning, freeing, fixing, etc.

Movement teachers working from the point of view of what Jeffrey Maitland has called Third Paradigm Approach observe that when appropriate cognitive and and perceptual information is supplied to their client, the client makes a shift in movement quality.[2] If a shift occurs, it is accompanied by surprise: a sense, in the client, that the body is behaving more intelligently that he/she is used to in voluntary control. For example, the

experience of feeling the transition from movement that requires a large amount of effort but leads to a small effect, to a movement of small effort with great effect is dependably interesting and often astonishing.

This experience is not only surprising and pleasurable but allows for healing, an improvement of physiology that comes from increased economy (diminished co-contraction, improved reciprocal innervation, e.g.) and from autonomic resolution.

Cognitive information offered in a movement teaching context includes defining the reason the client will find the movement experience important, worth paying attention to. The other part of the information will be necessarily perceptual. As Godard has pointed out, the work of RSI practitioners can be described as reshaping perception.[3] Reshaped perception may lead to a change of shape of the body itself.

PERCEPTUAL SHIFTS ARE PRIMARY IN MOVEMENT WORK

Thus, we arrive at the second principle: To change the quality of a person's movement (and to engage in communication with the body's self-organizational system), the primary intervention is an attempt to shift or enhance perception.

John Cottingham and Maitland have shown that RSI is effective because it is a systematic series of interventions that involve structure and perception.[4] Structural change is not yet scientifically proven, and subjectively a client cannot know for sure that a change is structural. However, a perceptual change is self-confirming and, by teaching a client to track what they notice in body experience, the proof of a perceptual shift is in the person's experience.

The perceptual component of what is referred to as a "structural change"" that is, a lasting change in body shape, may be a small or large part of the intervention. The amount of change that comes exclusively from pushing fascia or bone is, at this point, unknown. It is interesting to consider that deep pressure into the fascia may sometimes be a perceptual intervention as well, in that the value may be derived not from a change in viscosity or texture of the tissue, but rather from waking up deep perception, and the resultant shift in control from the brain.

From a movement point of view, the goal of structural intervention is to change the quality of movement of the client, such that body experience is more pleasurable, more effective. Changing the quality of movement necessitates changing what is perceived. For example, just calling attention to sensations in the body is, for most people, a change in perception. One can also touch or call attention to body locations: the skin, the sitting bones, the base of the skull, the feet, and so on. There are many ways of changing the sensations and focus of body attention. However, changing the perception also includes changing the way one notices the surrounding space.

CONTEXT

How can we best change perception? Emilie Conrad-Da'oud answers this question by saying that in order to change the quality of movement, it is necessary to change the context of the movement.[5] What is a change of context? What is the context of our movement before we change it?

An example may illustrate. I am typing at a computer. I have the goals to create words on the flickering screen; but also to convey meaning to an imagined future reader. My posture and my muscle tone are minimally affected by awareness of my feet, sit bones, and the angle of my neck, because my context consists of an important goal which mobilizes me to type and think, and use my body unconsciously to support the chosen goal.

What if I close my eyes? Now suddenly there is a shift in my posture. Sensations that were formerly unperceived come into awareness. Warmth flows into my shoulders. I have changed the quality of movement by changing the context from my aforementioned goal to one of noticing what typing in darkness is like. I have changed from a goal-directed movement to a curiosity-directed movement with a particular element of context: closing the eyes.

Effective movement teachers can be observed using techniques such as this change in sensory information, as well as breath, imagination, sound, spatial relations, changes in pace and dynamics, changes in relation to gravity, and changes in relation to other participants or the practitioner. Changing these variables is what is being referred to here as a change in context.

This may still seem trivial until one examines the context of our attempts to shift movement through structural means. Most structural bodywork metaphors, including those of RSI, are derived from a biomechanical view. An engineering or biomechanical point of view is a wonderful educational metaphor and the metaphor alone produces a shift in client/student context, for a while. This view allows for systematic conversations in training practitioners, amongst practitioners, and between colleagues of different disciplines. But if structurally trained practitioners intend to change quality of movement, the biomechanical

point of view needs to be acknowledged as only one choice of context.

At some point, these clients or students whose only input is cognitive information in the biomechanical metaphor may start to move stiffly or "preciously." Have you observed this in structural bodywork classes? For those of us in the field of structural integration, our emphasis on "seeing structurally" may limit our perception of movement. The stiff student or client will demonstrate an immediate shift if one gives him or her permission to change context, if different sensory or perceptual information is given. Stiffness may suddenly disappear and be replaced with, for example, energetic, integrated movement, or fluid, graceful softness.

PALINTONUS

Following our trail of logic, we started by defining our goal as helping clients become conscious of their bodies as self-organizing in gravity. The shift in movement quality that underlies this experience follows from a change in perception. Percpetion changes most directly through change of context.

Parallel to the principle of self-organization is the principle of palintonus. Maitland cites Heraclitus as the source of this Greek word.[6] We include it because it has become a useful way of defining an integrated quality of movement in relation to gravity. It makes the link from movement intervention in general, to what Godard and Frank have referred to as the gravity response, which is suggested in and is derived from the writings of Dr. Rolf.[7,8,9]

The palintonic aspect of RSI and holistic movement intervention is fundamental. Graceful, economic, skilled function follows from the capacity to find a felt sense of two directions: a sense of accepting gravity into the body, loading, dropping, or giving weight; and a sense of orientation to the space around one, to sky, inspiration, to the "other" in relationship. All movement that occurs in a gravitational field involves the consideration of these two directions.

In functional terms, palintonic capacity can be seen as, on the one hand, the capacity or lack thereof to load, to give weight, to competently push, and to feel the internal context; and on the other hand the capacity, or lack thereof, to reach, to lengthen up and out, and to feel the outside context. Thus, the reference to these two directions becomes central to the learning of movement, the analysis of movement, and attempts to influence another's perception.

Why is this so? Kevin Frank and Aline Newton have each offered summaries of Godard's explanation[10, 11] Human movement in particular and mammalian movement in general is intimately linked to autonomic reflexes designed to assure balance and upright stability in gravity. These autonomic reflexes employ the most economical pathways of coordinative control. At the same time, the human animal has learned to override, to "inhibit" the proper functioning of this coordinative system.

To access and restore harmony with the functional properties of the reflex system, we must look for the missing elements of perception, the places of inhibited awareness or expression in the palintonic model of perceptual elements. When the RSI practitioner or holistic movement teacher asks the question, "What is the missing palintonic element in my student?" the student is acknowledged to be a self-organizing event looking for information pertinent to gaining palintonic function in gravity (termed "tonic function" by Godard)[12]

Underlying all choices of the movement practitioner to change context, to influence perception, will be a sense of needing to enhance perception of either of two directions, for simplicty, "up" and "down."

NQUIRY

An additional principle that reflects the authors' personal style is the Inquiry Principle. It is the notion that movement education works best when it fosters curiosity. Thus, movement work implies that the teacher doesn't assume to know the experience of the student. The teacher is himself pursuing a path of inquiry supported by genuine curiosity. This allows for the possibility that the student/client will do something new, will innovate: another way of describing the experience of self-organization.

This point of view also demands that movement include generous allowances of time for the student/client to experiment, in the company of the teacher or other students experimenting with them. Without time to playfully explore the permutations of the movement, the potential for self-organization may remain latent and unappreciated.

CHOOSING THE MOVEMENT CURRICULUM

The foregoing principles and ideas are the underpinnings for designing a movment curriculum that will facilitate a person's experience of themselves as a self-organizing body system and to, in fact, self-organize. The overview we offer here incorporates the principles stated and leaves room for flexibility and personal creativity. This curriculum has relevance to all of our biographies

because it is the story of biological evolution from which humankind emerged. The usefulness of such a story is that it refers to something we can see around us in the non-thought-created world, and it gives us attractive models for examining details of movement— animals, birds, fish, and primitive life forms of various sorts.

The ten session RSI series is, and has been, a way of organizing a sequential shift in body percpetion, ultimately allowing a person to experience their daily movement differently. It is a series of contextual inquiries, starting from an exploration of what is breath, what is rib cage, what is the outer boundary of the body, and proceeding to look at support, lateral line, and so on.

The sequence we are presenting here is also linear. It has a beginning, middle, and an end. However, just as one may do some third-hour work of RSI on someone who has had 50 sessions, so too can this menu be used out of sequence as necessary.

The Rolfing series references several graphic models of integration, including the skyhook at the top of the head and the plumb line to the earth, as well as other images derived from engineering. McHose's Evolutionary Sequence references the movement features of various life forms as models of integration. It begins with pre-cellular chaos and then proceeds from cells to more complex creatures: the cell colony, coelenterates, worms, pre-chordates, fish, amphibians and reptiles, and mammals. This organization contains models of integration that are biological in origin and therefore allow many levels of depth in working with individuals of different backgrounds and abilities while never succumbing to an implication that some qualities of movement are beginner and others advanced.

The experience, for example, of the Volume Breath, which is presented with consideration of Cell, can be a simple yet profound initial experience—it can be returned to over and over, however, with a new and deeper appreciation of what having a boundary between self and other means and feels like. Simple aspects of body movement, such as lateral flexion of the trunk, or the re-enactment of the transition from sea to land and the acquisition of sagittal flexion that derives from this shift—these movements and the biological story that accompanies them continue to yield valuable discoveries in successive episodes. They also provide an intellectual framework for understanding the complexities of human movement.

In addition to the values and principles already stated, the Evolutionary Movement Sequence has as its basis these practical and theoretical points:

1. The forms that life has taken create a catalog for forms of movement.
2. This catalog of movement provides opportunities to address perceptual and structural (biomechanical) goals of the Rolfing sequence. These movements have also been found useful in working with trauma by providing resources that help the body work through autonomic resolution.
3. These forms of movement can be easily learned, but then, more importantly, provide a framework for long periods of individual exploration in class/session time and at home.
4. The intellectual content that accompanies discussion of different life forms assists the change of context that allows movement to change rapidly and substantively.
5. The sequence provides a curriculum for examining what can be termed "palintonic perception," which underlies gravity repsonse work and is the basis for evolving the astonishment that often accompanies the transition from one level of integration to another—the experience of self-organization.
6. This work enhances the capacity to deeply appreciate the natural world as an embodied experience.

CONCLUSIONS

The principles presented in this article, and the tools in the following article, are methods that support working from a self-organizing point of view. At the Rolf Institute, movement work, so called, has held the container for giving the body a chance to "talk back," to reveal and ask for what it needs to integrate. This hasn't been excluded in the structural discussion, but structural definitions, primarily from an engineering model, have taken precedence over cybernetic ones. Self-organizational models do exist in biology. Jim Oschman, Godard, and Peter Levine have articulated the biology-model approach and have thus helped to lend scientific credibility to RSI.[13,14,15] The written and verbal record of Dr. Rolf has the principle of self-organization embedded within it. The field of RSI is acquiring concepts and research that more precisely define holistic bodywork, and thus these embedded principles can be articulated.

Cottingham and Maitland's article in the Journal of Orthopedic and Sports

Physical Therapy[16] is groundbreaking in that holism, the third paradigm approach, is defined theoretically and empirically, and is measured through standardized variables of physical structure, and through measures of the autonomic nervous system.

Therefore, holism is no longer an abstract concept; it is an approach that finds those combinations of perceptual and structural interventions that allow the client to gain greater functional capacity, that enhance the self-organization of the body. The practitioner who has felt self-organizing changes in his or her own body will be increasingly motivated to think in self-organizational terms, and to articulate this definition in marketing bodywork.

With the emergence of self-organizational models big enough to embrace the scope of third paradigm practice, the artificial separation between movement work and structural work may now begin to break down. As it does, the work we call structural integration will inevitably be practiced more skilfully and holistically.

As practitioners we supply information to the client/student. In order to supply useful information, we must "track" the client, that is, observe from a perceptual point of view. It therefore becomes interesting to learn to track accurately and intervene perceptually. Those interested in growing their ability to notice perceptual capacity in clients may be motivated to deepen their own range of perception, and may find this self-organizational approach to movement work helpful in that regard. ❑

NOTES

1. The material from these classes constitutes the core of the book *Bodystories, A Guide to Experiential Anatomy*, by Andrea Olson with Caryn McHose, Station Hill Press, Barrytown, NY, 1991.

2. Maitland, Jeffrey, "Rolfing: A Third Paradigm Approach to Body-Structure," *Rolf Lines* , Rolf Institute of Structural Integration, Spring 1992, pp. 42-45.

3. Godard, Hubert, Lectures 1990-95, from class notes of K. Frank.

4. Cottingham, John, and Maitland, Jeffrey. "A Three-Paradigm Treatment Model Using Soft Tissue Mobilization and Guided Movement-Awareness Techniques for a Patient with Chronic Low Back Pain: A Case Study," *Journal of Orthopedic and Sports Physical Therapy*, Vol. 26, No. 3, September 1997.

5. Lectures from Basic Continuum class taught by Emilie Conrad Da'oud and attended by the authors.

6. Maitland, J., "The Palintonic Lines of Rolfing," *Rolf Lines*, Rolf Institute of Structural Integration, Boulder, CO, Jan/Feb 1991, pp 1-2, 43-49.

7. Godard, Hubert, op. cit.

8. Frank, Kevin, "Tonic Function: A Gravity-Based Model for Rolfing Structural and Movement Integration," *Rolf Lines*, Rolf Institute of Structural Integration, Boulder, CO, March 1995, pp. 12-19.

9. Rolf, Ida P., *Rolfing*, Healing Arts Press, Rochester, VT, 1989.

10. Frank, K., op cit.

11. Newton, Aline, "Basic Concepts in the Theory of Hubert Godard," *Rolf Lines*, July 1995, pp. 32-43.

12. From class notes of Kevin Frank. Noticing and awakening missing palintonic elements may also constitute integration of the nervous system. Awakening these places, and referring to them while attending to places in the body that feel deeply uncomfortable brings resource to the experience of distress in what Levine refers to as a titrated manner. See Levine's *Waking the Tiger*.

13. Oschman, James and Nora, *Reading on the Scientific Basis of Bodywork, and The Natural Science of Healing: A Biology of Whole Systems*, Nature's Own Research Association, Dover, NH, 1986, 93,94,95

14. Godard, H., op. cit.

15. Levine, Peter, with Frederick, Ann, *Waking the Tiger: Healing Trauma*, North Atlantic Books, Berkeley, CA, 1997.

16. Cottingham, J., and Maitland, J., op. cit.

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Part Two
Excerpts From An Evolutionary Sequence Movement Curriculum

The evolutionary sequence has been presented in as short a time as one hour. It can be taught in a series of sessions over two weeks or more, and can also be expanded to include a detailed examination of anatomy, as has been done in Myer's Broad Reach of Bodywork classes, which can then be taught over several months. In actual classes, more material is available than can be included here.

The individual exploration of each segment may be used in private practice, in table work or movement work, to provide additional sensory input to the client's body experience.

THE CELL AND VOLUME BREATH

The biological cell, the first form of life, distinguishes inside/self from outside/environment. Cell organization is defined by a selectively semi-permeable membrane, and contains cytoplasm, mitochondria, a nucleus, ribosomes, and a cytoskeleton, or net, within the cytoplasm. The durable cell form has dominated half of the time that life has existed on earth. Although cells exist in many shapes, this exploration emphasizes the spherical. The cell form explores establishing an equanimous sense of volume in the body, and an omnidirectional sense of space.

TO DO IT

Assume a roughly spherical posture: either the deep fold (the child's pose in yoga), or sitting in a chair with the head and shoulders hanging over your legs, your belly resting on your lap.

Let your abdomen relax. Rest into gravity. Notice your breath for a while. Imagine breathing through the entire surface of your skin, over your whole body. Cells breathe in all directions. Breathe into the volume of the body, so you feel expansion of the front and back and sides of the body. Explore the sense of breathing spherically.

The cell is filled with fluid (as is the human body). Imagine you can feel the weight and motion of the fluid within you.

Notice the sense of weight, of internal context, whether the abdomen can be soft.

What is it like to have a boundary—the skin— and within it a fluid matrix?

DISCUSSION OF APPLICATIONS

With the Cell the body is located and felt as contained. Persons dealing with chronic sympathetic activation find calming and safety. The Cell and the Volume Breath are a sanctuary that can be returned to for a felt sense of the whole body, and to appreciate the profundity of simply being.

The Cell is also useful for persons suffering from back pain: hip flexors can slacken; the abdomen can be soft; attention is given to the sensations and movements in the surfce of the back.

PALINTONIC ASPECT: SENSE OF LETTING DOWN

ROLLING AND POURING THE CELL BODY: CONTENTS AND CONTAINER

TO DO IT

Lie supine with your knees flexed and your feet on the floor. Imagine the fluid fullness of the cell body as your liquid ballast. Initiate a roll on to one side, imagining that the ballast is pouring SLOWLY into its lowest point. Play with pouring the contents of the cell body in the head, the trunk, and the pelvis, allowing the

limbs to drop and flop as necessary while the axial part of the body pours.

Roll the weighted, fluid-filled containers of your body, and notice the outside of each container as it contacts the floor. Examine the sensations associated with this contact, SLOWLY rolled. Particularly use different positions to assist the rolling of the skull part of the container. Take the time to explore, in sensation, the curvature of the skull: the top and sides and back of the skull, and the transitions between each of these parts.

Return to rolling the contents and observe how slow pouring has changed, especially in the head. Does the head have the same quality of weight as the other body segments (trunk and pelvis)? Allowing your mouth to open slightly and relaxing the pelvic floor will give more sense of dropped weight for the head.

Discussion of Applications: The pouring contents/container sequence allows the cell to move and feel contact with an external context through the sense of boundary (skin, scalp, clothing). Most persons don't have the learned capacity to notice feeling the surfaces of their body. Noticing skin/scalp immediately amplifies proprioception and gives the brain information as to the shape and position of the body in space.

The sense of pouring and rolling allows people to track the sense of weight as they move. This in turn enables them to notice where the sense of weight may be missing, and to adjust movement so that perception of weight is amplified.

Palintonic Aspect: Sense of down in motion

From this point, the evolutionary movement sequence proceeds to the Cell Colony. The exercise is not included here in full, as it requires a group. In this exercise, cells pour and roll, keeping awareness of their internal context. In proximity, each person explores shifts of perception between internal and external. Relationship between the internal felt sense, and sensing "others" is simplified and amplified. Persons learn about tracking internal felt sense while considering others, and notice shifts in comfort level as they change proximity to another. Exploring the Cell and then the Cell Colony is a useful metaphor to experience the social dilemma. Rolling and pouring offers the possibility of finding proprioceptive support for relationship; amplifying the felt sense of the container and the body contents may allow one to open to the perception of others as a supportive sensory experience.

Can students develop the capacity to use movement, and tracking of internal felt sense, as a resource?

THE VESSEL AND THE VESSEL BREATH

In evolutionary development the Cell Colony is followed by the coelenterates, radially symmetrical creatures planted on the ocean floor—the hydra—or free-floating—the jellyfish. These creatures are basically an invaginated sphere, a sphere that has dimpled and turned partly outside in. We use the descriptive term "vessel" for such creatures. Coelenterates are primarily a Gut Body; they feed by catching particles that float by, using flagella to bring them into the gut part for digestion. Capturing food, digesting it, releasing unwanted portions constitute the major event of the vessel-shaped organisms. The vessel body is also used to represent the original emergence of a gut nervous system, a "neural net" that spans the walls of the hydra. The association of gut tissue, and a neural net within, is a convenient metaphor for the importance of gut perception and gut feelings.[1]

TO DO IT

Look at pictures of the hydra. It is a vessel, like a bowl or a cup, with an opening at the top. The hydra is planted on the ocean floor with flagella, extending beyond its top, waving in the watery currents.

Begin by sitting on the floor, using whatever is needed for support. You can also be on hands and knees, or lie down. Open your mouth gently and begin to make an audible breath, a sound like a soft "haw" from the bottom of the throat. Explore opening the mouth wide like the vessel's opening at its top and appreciate the hollow volume of the mouth and throat cavity, using the sensation of breath to locate perception within them. Use the breath and the previously established sense of breathing, the volume of your body, to imagine a hollow gut within your body that extends from mouth to anus.

Take some time to explore becoming a simple vessel, disappearing spine and limbs. Experiment with amount of curve in throat and neck to find the easiest posture for feeling the neck of the vessel. What is the felt sense of the gut body? Let the effort and intention that has been exerted be given a chance to sink in. How is this feeling similar to or different from the

Cell?

Experiment with moving the hydra, either planted in one spot and moved by the surrounding ocean current, or the sense of jellyfish, floating. Allow simple wave motions to move you on the floor, or feel the subtle internal wave motion.

DISCUSSION OF APPLICATION

The gut body has particular significance in our culture of gut denial. Habitual contraction of the abdominal wall is a common source of strain in bodies. This, coupled with instruction from exercise teachers and body therapists to hold the belly wall tight, has led to an epidemic of flattened lumbar spines and locked pelvises, as well as bottled-up emotions.

The vessel breath and allowing the abdominal contents to be big and hollow is a direct challenge to these patterns and beliefs, deliberately so. It is intended to shift the context from familiar associations of "stomach" or "belly," removing a primary source of strain and inhibition, and initiate exploration into empowering movement.

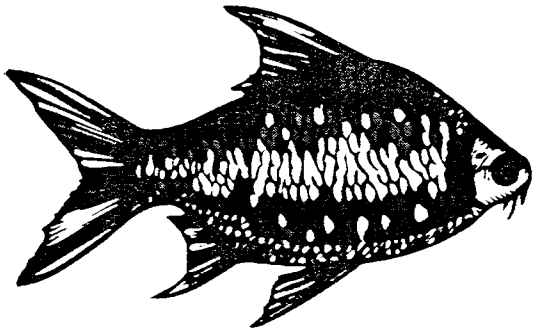
Learning to "let go" of the abdominal muscles is a difficult and frustrating task for many students. The vessel breath and the subsequent vessel movement gives them a tool which allows the body to self-organize around this issue. Opening the mouth wide and making the audible breath is a chance to contradict inihibition in facial expression, specifically in the lips and teeth and tongue.

Gaining and amplifying the felt sense of calm and relaxation in the digestive organs and abdominal tissue is an important resource to modify autonomic imbalance. The digestive organs, being supplied by the autonomic nervous system (ANS), only receive nervous impulses to initiate or inhibit function and cannot "talk back" to the brain.[2] However, the work of Levine, Borg, and Harper, as well as the experience of the authors, suggests that tracking sensations in the digestive tissues of the body and learning to access the felt sense in these regions produces changes in sympathetic and parasympathetic tone.[3,4,5]

The Vessel Breath exercise is a striking example of learning to predictably, if indirectly, control the state of autonomic balance in the body through the use of holistic movement. Experiencing this control is a resource for the client, and can be drawn upon in times of impending overwhelm stemming from activated traumatic material.

Palintonic Aspect: Enriching the felt sense of down, the capacity to feel a relaxed "gut body" as an accompaniment to movement and interaction

THE FISH BODY, LATERAL LINE, AND LATERAL FLEXION



In the Fish, gut body has elongated and opened at the hind end. The entire body shape has become a tube filled with organs, spine and ribs. The Fish strongly defines the sense of head and tail, and because of bilateral symmetry of contents and container, we now have a right/left side and ventral/dorsal definition of the body.

The Fish Body allows us to appreciate the true shape and resolution of the top of the rib cage, without a shoulder girdle, and to move the axial skeleton. Awareness of the ribcage's shape shifts perception, allowing exploration of lateral line and lateral flexion.

TO DO IT

Close your eyes and notice what it would be like to feel through the side of your body. If you are with others, notice relationship through a felt sense of being beside them, sensing the proximity of the person next to you. Move the body slowly and gently in the coronal plane. Slow, small wave motions of the trunk illustrate the act of moving to feel: moving to stimulate the invisible movements of perception.

Compare the sense of lateral awareness to the sense of feeling through the ventral surface of your body, or gut body.

Examine the shape of the ribs, particularly as they near the neck. Use touch to locate ribs 5 through 1 up the lateral line to the neck. The uppermost ribs can almost be palpated from below through the armpit and from above by reaching behind the clavicle. This is the line of the Fish Body; feeling it gives a precise sense of the boundary between shoulder girdle and rib cage through the lateral line. With a partner, explore this space simultaneously from above and below to feel this clear Fish Body line. Enhance this perception by breathing with the mouth open, moving breath into the armpits, and following the breath up to the side of the neck.

Lying prone, roll the rib cage on the floor, letting the shoulder girdle move aside to allow the upper ribs to meet the floor.

Swim freely on the floor, using the head and spine and tail. Wiggle the head and tail, establishing the axis of

the body. Wiggle the sides of the body, finding left and right side. Wiggle the ventral surface of the body against the floor and turn over and wiggle the dorsal surface against the floor.

LATERAL FLEXION

Lying supine, preferably on a slippery floor surface, lengthen one side of the trunk to sidebend. Alternately sidebend, imitating the locomotive strategy of the fish.

Take time to explore lateral line, breathing into the shape of fish body, and lateral flexion. Alternate minutes of rest and internal observation to allow the body to organize around this new information.

DISCUSSION OF APPLICATIONS

Humans typically experience social relationship through a sense of the front (ventral) aspect of the body. Wendy Palmer points out the wisdom of learning to perceive one's body space as circular, surrounding the body around a longitudinal axis.[6] The sense of a stable self becomes more flexible with this circular perception. The Cell exercise awakens the spherical perception of body boundary. The Fish Body, with its focus on lateral line, initiates perceptual awareness through the side of the body, which at first is often easier to feel than spherical perception of space. It becomes a tool of initiating perceptual awareness.

Breathing with a perception of Fish Body enhances movement in the top ribs and allows a sense of movement in the upper lobes of the lungs. Changing one's orientation from a ventral sense of breath to a lateral sense of breath can immediately interrupt clenching in the abdomen, in the neck, or portions of the diaphragm.

Done slowly and conscientiously, this work can dramatically increase conscious awareness in spinal movement and be of assistance in resolving lumbar pain and restriction. It is best to proceed cautiously if there is a history of back pain.

Palintonic Aspect: Fish Body establishes internal sense without limbs. Lateral line enhances sense of outside and other. Lateral flexion occurs with a sense of inside, gut body relaxed, and outside through lateral line.

Can students learn a rhythm and pacing of work which respects and assists their bodies' self-organizational process?

THE AMPHIBIAN AND REPTILE

The movement of life from sea to land provokes several body changes. As the watery environment is partly or wholly replaced with shallow water, mud, and land, fins become webbed limbs, necessary to negotiate solid or semi-solid surfaces. Lateral flexion serves at first to propel these limbs while the body remains fish-like.

As amphibians, and then reptiles, move onto solid ground, gravity becomes a new factor in movement. Limbs must lift the trunk off the ground using sagittal flexion.

TO DO IT

Review the fish movement, laterally flexing in the imagined watery environment of the ocean. Find the limbless trunk by breathing the boundaries of the Fish Body and rolling the surfaces of the rib cage to disappear the sense of limbs.

LIMBNATION (GROWING THE SENSE OF LIMBS)

Photos of the human embryo show the stage when limb buds start to appear. Notice the feeling in your body as you look at small tips where the arms and legs will be. Start to imagine the sense of limb buds. Return to the sense of fullness in the fish rib cage and the axis head to tail to find the energetic foundation for growing these vestigial limbs.

Use the vessel breath and gentle wave motion of the gut to revisit the sense of the primitive gut body. Lying supine, spread the limbs in a starfish arrangement. Let the sense of soft motion in the gut body travel into one side of the ribcage and into the arm, forearm, wrist, and fingers. Follow this pathway, by using micro-movement and wave motion, from fingertips to gut and back again. Do this with both arms and feet, and then the head and tail.

In partners, pull gently on each of the limbs. As your limbs are stimulated in this way, track the path to the center of the body, to grow a tangible sense of being all limbs, and having all limbs connect to the center.

Raising the Body and Using Limbs to Move: With an awareness of limbs sprouted from the ribcage and pelvis, and connected to the center of the body, sweep the limbs back and forth on the floor surface. Quiet the limbs and notice the entire ventral surface of the body resting on the ground. Take time to let the gut body drop fully onto the ground, bonding to the ground, noticing support coming up to meet you. Load into the belly to lift the head and chest slightly, and then rest down again. Repeat the loading

down and lifting up to amplify the sensation that bonding to the ground facilitates raising the head and chest.

Raise the head and chest, and then the belly, off the ground using the upper limbs for support. Notice the weight and sensation in the hand. Just as the belly is learning to notice the support that derives from dropping weight, the hands start to find an enhanced sense of contact with the ground.

The reptile's journey out of water and onto land is arduous. The slow movements, dropping onto the belly, chest, and cheek, and raising those body segments, emphasize the transition to gravity, and the energy and power required to begin locomotion without the ocean's support.

Lateral flexion of the spine and ribcage is still the engine for locomotion, but now the limbs transfer this force against solid ground. Begin to feel the solid ground through fingertips and toe tips. Allow these sensations to feed back into the core of the body until you feel connection into the ground via the periphery of the body.

With a sense of the ground in the periphery and in the ventral surface, begin to push through one foot. Feel that push travel through the side of the body, lengthening it in a convex curve. Now the opposite leg is in flexion and that foot is ready to push. Again, allow the push to travel through the body. Notice that this lateral flexion that is initiated through the push of the foot also brings the upper limb of the same side forward. This is commonly referred to as homolateral movement of the trunk and limbs.

Experimenting with tongue movements out of the mouth, and hissing sounds, furthers the richness of the dramatic metaphor and makes the movements more playful and easier to discover. Whenever the mouth can be engaged in theatrical expression, it appears to relax fixations of the gut body, and contradicts the cultural inhibitions to natural facial expression.

DISCUSSION OF APPLICATIONS

The movement of amphibian and reptile allows an appreciation of relaxing the body's ventral surface of the body ground. This basic activity is infrequently visited after childhood. It can be refreshingly pleasurable to bond with the ground via the belly. When this bonding is experienced, raising the head and trunk proceeds easily and naturally by sequentially dropping weight down the ventral surface to the earth. Simultaneously the crown of the head can reach and the upper limbs can push down.

The hands' push establishes improvement in prone back bending of the trunk, and completes the process of lifting the trunk off the ground. Pushing by the lower and upper extremity is a basic gesture that establishes an internal sense of the body, the appropriate relationship between periphery and spine and expresses two directions.

The transition from fish body to the emergence of tiny aquatic limbs and the more developed limbs of the amphibian delineates an important sense of separation between trunk and girdles. Noticing the trunk with and without limbs allows the limbs, the muscles that keep the limbs active and ready for movement, to deeply rest. Growing the felt sense of limbs out of this resting-place gives a fresh appreciation of hand, arm, leg, and foot. These extremities can be felt in greater detail, allowing students to learn to use limbs as a source of consciously noticed sensory information—a tool for evoking tonic function. The sensory pathways from hands and feet are important for stimulating the cerebellum, improving efficiency and coordinative control. This use of the hands and feet to assist in finding fluid movement in the spine, and lengthening response in the spine, is finding the relationship of core to periphery.

The amphibian and reptile exercises explores lateral flexion as initiated by a push from the foot which travels the length of the body. This allows students to feel the push organize the body, as the opposite foot is brought into position to take the next push. The upper limb also participates in locomotion, exerting its push in concert with the lower limb of the opposite side. Thus, there is a contralateral use of limbs, (upper limb pushing simultaneously with the lower limb of the opposite side), however, in this stage the spine moves homolaterally, in lateral flexion. Sorting out these movement events of spine and limbs, the student may notice shifts in walking in the upright stance.

In a group there is the possibility of theater-play with a group of would-be amphibians or reptiles. There may be natural breakthroughs in expression, with consequential release of diaphragmatic fixation. This is an instance in which stiffness and inhibition can immediately disappear within a playful context.

Palintonic Aspects: Dropped weight in the ventral surface of the body and spinal extension facilitated by the dropping. Reaching with head. Pushing with the foot and the hand. Feeling the push of the foot activate motion from the lower limb through the length of the entire body.

THE QUADRUPED MAMMAL

Mammals possess a larger cortical

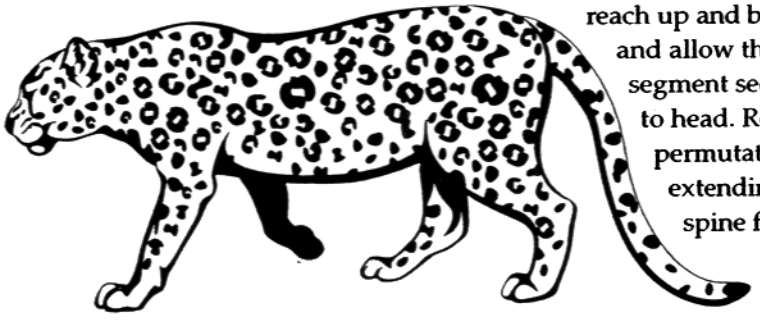
and limbic brain. They give birth to their young and provide them with milk. Mammals express emotion, hesitation, and socialization. The introduction of complex social relationship involves using the body for communication. Mammals illustrate a variety of abilities to reach out and hold, to reach and orient with the head, neck, and trunk. They exhibit a variety of facial expressions, vocalizations, and gestures.

The first mammals were shrew-like; they still laid eggs and did not lactate. A proliferation of mammals soon developed, however, and in our story of evolution we can choose to look at species that suit our purpose and illustrate particular features of movement.

The cat illustrates changes in locomotive strategy and spinal movement that occurred with mammalian development. A primate—a monkey—is used to introduce vocalization and facial expressions.

TO DO IT

THE CAT



In the reptile position, feel the limbs and belly resting on the ground, the limbs flowing out from the center of the body. Allow the head to reach out and up and the belly to pour down. Begin to push the hands and the forearm into the ground to bring the head and chest up, until the extended upper trunk is resting on the elbow, forearm, and hand.

Next, extend the tail back and up, allowing the head and chest to lower, elevating the pelvis and bringing the lower trunk into extension. Slide the upper limbs closer to the knees. Reach out and up with the head, extending the arms to bring the body fully up onto hands and knees, with the belly allowed to hang and the tail free.

In the quadruped posture the weight of the body transfers directly down from the girdles to the limbs beneath them. Laterally flex the trunk and locomote on hands and knees. Notice that the limbs are extending in a push in the same timing as the reptile: front limb of one side pushes at the same time as hind limb of opposite side. The trunk is still primarily in the Fish Body motion—lateral flexion. Spend some time with this.

From this same four-limbed posture, dive the head down forward and back up into the extended upper trunk position. Pushing with the hands, allow the spine to flex sequentially from the top of the neck to the sacrum, bringing the spine into a flexed arc. Dive the head down forward and up again. Now, initiate a reach up and back with the tail, and allow the spine to flex each segment sequentially from tail to head. Repeat the different permutations of sagitally extending and flexing the spine from head to tail and tail to head.

Sagittal flexion and extension is the province of some reptiles (such as dinosaurs) and all mammals (including those that found their home in the sea). This sagittal movement allows one to rear back and balance one's weight on the hindquarters.

Rear back onto your hindquarters. Notice the dimension of movement that can now be negotiated. Feel how the musculature must now develop on the ventral and dorsal surfaces to allow for sagittal spinal movement. Put this musculature into dynamic activity by raising yourself onto the actual quadruped stance with only the hands and feet touching the floor. Gallop forward across the room and notice the burst of energy required.

THE MONKEY AND "HU" (MONKEY) BREATH

The primate can sit up and even stand with the upper girdle free of its weight-bearing duties. She can hold her young and her young can hold onto her. The hands can perform a variety of tasks. Facial expression and vocalization allow the monkey to change its countenance.

Sit comfortably on the floor or a physioball. Breathing through the mouth, make a "hu" sound and a "hee" sound and a "ha" sound. Breathe continuously in and out, moderately quickly, creating a visible pumping of the belly and letting the mouth experiment with different simian expressions. Allow the rhythm of the breath to pulse the body. Play with the movement using the imagined sense of monkey and jungle persona to inspire the shapes of the movement.

Take time to notice the shift from reptile and the reptile quality of expression and strategy of locomo-

tion to the movements of the quadruped mammal. Feel the internal movements stimulated from the Hu breath.

After taking some time with the Hu breath, let it go and play with the transition from quadruped to the semi-upright stance of the monkey. Locomote forward by using the upper and lower pairs of limbs alternately (homologous movement) and gallop sideways, rolling and tumbling with any other monkey movements.

Most mammals when fleeing or in pursuit of prey use sagittal flexion of the spine for high speed locomotion. Humans have a different strategy: contralateral spinal movement, or counter-rotation of the upper and lower girdles (as well as upper and lower parts of the trunk) as described very precisely in The Spinal Engine by Gracovetsky.[7]

The baby human's development illustrates the change in spinal movement that occurs as primates accomplish a truly upright stance. Although the exploration of human infant movement will not given here, a few points are noteworthy.

Human child development approximately recapitulates movement forms of the evolutionary sequence, and points to the uniqueness of human locomotion and posture in the upright stance. The child learns to trust letting her belly on the ground prior to crawling. As the feet find the ground in this posture she starts to push. Pumping forward and backward on her belly in a seesaw oscillation, she reaches with head and tail. This pushing and pumping leads to the moment where the push first sends an impulse through her entire body that moves her forward and sidebends the body (as with the reptile). Later, the child has her knees under her and attains the position described in the quadruped hands and knees posture. The first movements here are like those of quadrupedal lateral flexion.

Then a new event occurs. The baby starts to reach. She reaches toward whatever entices her, whatever inspires curiosity. The reach propels the child into a different kind of spinal pattern and prepares it for the movements and body shaping of the upright human. As the hand and arm extend forward, the spine elongates, extends, and sidebends. The shoulder girdle and the upper trunk rotate forward on the side of the reach. The reflexive flexion of the contralateral lower limb rotates the pelvis and lower trunk forward as well, creating a counter-rotation in the upper trunk. The attraction which prompts the reach provides the goal of the first steps.

Of all the mammals, only the human has attained a truly upright stance for locomotion. Human locomotion involves contralateral movement of the spine. The recapitulation of more primitive forms of locomotion, in creeping and crawling, are preparation for this movement.

DISCUSSION OF APPLICATIONS

Mammal movement starts with the initiation of sagittal flexion. Sagittal extension is an important issue related to the previously mentioned issue of tight abdominal muscles. Extending the sense of the top of the head, allowing the ventral surface of the body to soften and drop, is a vital step in normalizing movement. Using the sense of extending the tail end of the spine disorients the familiarity of the movement and teaches the sense of having two directions in spinal extension. These moves lend themselves to partner work, where the function of one or two partners offers perceptual information to the mover about where the body can find homogeneous ventral softening.

The use of monkey movement and HU breath contradicts inhibition of expression in the face and mouth. This breath is one of many that can be referenced to help broaden perception of the tongue, lips, and jaw tissue. In a group, mutual exploration of the monkey movement is a chance to make large fast movements and generate rapid accelerations. Fast, large movements are one way of allowing a charged or activated system to organize. This change of pace and dynamic is an important part of the menu of movement choices; some individuals will demonstrate a strong hunger to balance out their system in this way. The keys to having these movements leading to appropriate discharge, as opposed to reactivation, include conscious body awareness and enjoyment.

Exploring human baby movement relates to many upper girdle difficulties. Reaching, like pushing, is a fundamental body movement, relating to the psychological issues surrounding successes and failures in reaching for things or persons, to being over- or under-extended in one's life. Rather than delve into the emotional and psychological underpinnings of these issues, the authors' sequence is intended to help students find qualities of the learning environment as well as tactile resources that will allow them to experiment with these movements.

Palintonic Aspects: Reaching and Pushing are considered in the context of finding two directions in the body. The work of extending and reaching is supported by an internal felt sense of fullness.

CONCLUSION

These movement exercises are designed to provoke the following

questions: Can students develop the capacity to use movement, and tracking of internal felt sense, as a resource? Can students learn a rhythm and pacing of work which respects and assists their bodies' self-organizational process? Can students start to notice the map of self-organization so they acquire confidence in the intelligent response-ability of their bodies? Having touched on material with psychological impact, this approach may allow the body to innovate without protracted consideration of the cognitive and emotional implications.

Experiencing embodiment of primitive life forms re-connects students with the primal issues of boundary, wholeness, breath. Limbnation, reaching, and pushing can help improve people's ability to keep their limbs supported and connected to the core in functional tasks. Core here refers to the internal felt sense of any of the following: space, volume, motility in the abdomen and thorax, wave motion in the spine, a sense of two directions in the spine, and fullness or wholeness of self, or emptiness of self. Motility refers to the felt sense of intelligent involuntary movements and micro-movements within the fluids and tissues of the body.

Discovering the movements underlying human locomotion provides a chance to reconnect with foundational movements: lateral and sagittal flexion, reaching and pushing. Connected reaching and pushing function to enhance the previously referred-to phenomenon that Godard has termed Tonic Function. ❑

NOTES

1. Gut perception and "gut feelings" have recently gained some measure of legitimacy in the scientific community. See Sandra Blakeslee's "Complex and Hidden Brain in the Gut Makes Cramps, Butterflies, and Valium," in the *New York Times*, Tuesday, Jan. 23, 1996, pp. C-1, C-3.

2. Levine's work with guided fantasy suggests that there is, in effect, a "virtual afferent branch of the ANS" and that guided perception gives the body feedback that can unlock ANS patterns. Movement experiments that use the imagination and involve tracking the internal felt sense also seem to access the "virtual afferent" system of the ANS.

3. Levine, Peter, with Frederick, Ann, *Waking the Tiger: Healing Trauma*, North Atlantic Books, Berkeley, CA 1997.

4. Susan Gallagher Borg has written three books: *The Migraine Puzzle* and *Sing Your Body* (both 1993), and *The RK Training Manual* (1996), which accompanies the Resonant Kinesiology Training Course, co-developed with McHose and Nesson. All three books are published by Resonant Kinesiology Media Productions, Burlington, VT.

5. Susan Harper is co-creator of Emilie Conrad Da'oud's Continuum work, and has developed her own Emotions and Sensations class.

6. Palmer, Wendy, *The Intuitive Body: Aikido as a Clairsentient Practice*, North Atlantic Books, Berkeley, CA, 1994, pp. 87-96.

7. Gracovetsky, Serge, *The Spinal Engine*, Springer-Verlag, Wien and New York, 1988.