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The Art and Science of Somatics: Theory, History and Scientific Foundations

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***The Art and Science of Somatics:
Theory, History and Scientific Foundations***

by

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Thesis

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*The Art and Science of Somatics:
Theory, History and Scientific Foundations*

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Abstract.

What is Somatics? Somatics is the name given to the field of western mind-body methods, encompassing ways of working with the body that are therapeutic, educational, artistic, and physically expressive. This study analyzes philosophies of somatic movement education and therapy methods to observe what scientific principles and processes ground somatic work. An extensive study of relevant literature explores somatic theory and investigates historical pioneers of somatic methods in order to provide a comprehensible understanding of this field of work. Qualitative analysis studies from mind-body medicine and the somatics field are also compared. Using an interdisciplinary theoretical approach I attempted to consolidate ideas in a syncretic manner, exploring the philosophical and scientific foundation of somatics as a field by focusing on the principles behind somatic educational methods. In this qualitative study I am looking for information that supports the hypothesis that somatic work is a human science attempting to expand and enlighten human beings knowledge of their existence. And while methods are growing and ever changing, there is at least two hundred years of traceable educational lineages that demonstrates common principles shared amongst a wide variety of techniques.

Section One Somatic Theory: Foundational Concepts of Somatics

What is somatics?

Is somatics a science or an art? Or both? Somatics is the name given to the field of western mind-body disciplines, encompassing ways of working with the body that are therapeutic, educational, artistic, and physically expressive. This work encourages our capacity to use inner resources when faced with injuries, illness, or the desire to increase our personal potential. Somatics historically developed out of creative investigations into the body's transformative capabilities and natural healing potential. What is the scientific foundation on which the art of somatics stands? The field of somatics has been growing as an artful science for over two hundred years with roots originating in Europe, the United States, and Australia. Somatics has ties to Eastern mind-body traditions within India, China, and Japan, and is presently practiced around the globe (*Eddy Somatic Practices and Dance: Global Influences*), yet the earliest methods emerged out of western culture. Founders and pioneers of somatic disciplines have included scientists, physicists, doctors, philosophers, psychologists, athletes and performing artists.

The principles of somatics have developed out of multi-disciplinary theories emerging from direct experiential explorations of the body, breath, and states of being. Somatic disciplines are forms of complementary medicine often referred to as body therapies, or even as the 'intuitive restoration of self'. There are many somatic disciplines and innovators in the somatic field and it is not the purpose of this paper to enumerate them, nor to analyze the specific application of each discipline. Through this thesis somatic theory and principles behind somatic disciplines will be explored, along with the historical journey of a few pioneers that led to the creation of the somatic field. In

addition, a basic understanding for the scientific basis of somatic work will be provided. The aim of this paper is to support somatic work as a human science informed by a physiological understanding of body-mind functioning yet applied in a manner that is creative and intuitive.

Somatic disciplines are also called practices, techniques or methods, all meaning to define the singular specific application of exercises derived from a certain educational lineage. Some well-known disciplines are Alexander Technique, Aston-Patterning®, Authentic Movement, Bartenieff Fundamentals, Body-Mind Centering®, Continuum, Eutony, Feldenkrais Method®, Hanna Somatic Education®, Ideokinesis, Integrated Movement, Kinetic Awareness, Pilates, ROM Dance, Sensory Awareness, Skinner Releasing Technique, Soma Neuromuscular Integration, Rosen Method, Tragerwork®, and Topf Technique (Allison 1999, Knaster 1996).

For the purpose of this thesis I will use the term somatic work to denote the field of somatic disciplines. I will mainly focus on disciplines that include functional movement. In her book *Discovering the Body's Wisdom* Mirka Knaster categorized somatic work alongside other mind-body disciplines. She divided a variety of disciplines into; western traditional massage, structural approaches (such as posture work or the deep body work methods), somatic functional disciplines, eastern energy systems which recognize *chi*, *ki*, and *kundalini*, eastern movement arts such as yoga and T'ai Chi Chuan, western movement arts associated with the dance world, and contemporary convergence systems. Knaster called mind-body disciplines "body ways". However, she also stated that there are many names for somatic work and it is ultimately up to the practitioner to define how he/she wants to label their practice (28). Martha Eddy, movement scientist, scholar, and

founder of Dynamic Embodiment Somatic Movement Therapy Training states:

Somatic work is often referred to as bodywork, body therapies, hands-on work, body mind integration, body-mind disciplines, movement therapy, somatic therapy, movement awareness, movement education (Eddy, 1991-92), and or somatic education (Questal 2000). Most currently those somatic disciplines that involve movement as a keystone of the learning process are now identified as part of the field of somatic movement education and therapy (International Somatic Movement Education and Therapy Association 2002). (*Global Influences* 47)

Furthermore Eddy clarified that somatic movement education is linked to “mind-body medicine and philosophies of the East but is different in that it emerged from the West and often has either creative arts or bodily sciences as an integrated part of the underlying philosophy” (personal communication 2012).

Understanding where somatic work as an art and science meet falls at the heart of this investigation. Heuristic methodology is growing as a research vehicle relying on the intuitive knowledge of the researcher to organize qualitative data from which to establish research ideas. Qualitative research in the human sciences is oriented towards theory building, establishing ideas through inductive reasoning and data analysis. Data for this thesis is gathered through a broad review of literature, historical research, and related clinical trials. In Section Three I will draw correlations between quantitative clinical research studies from mind-body medicine and qualitative research within the field of somatics to further establish scientific concepts behind somatic practices. My aim overall is to survey relevant literature in order to determine what is known or not known about somatics as an art and science. My research aims to create a ‘meta-view’ of somatic theory, its main pioneers, and basis as a human science.

Students of somatics are being encouraged to build research for the field that is now formally known as Somatic Movement Education and Therapy. Somatic movement

education employs a combination of experiential movement awareness activities, verbal guidance, and guided touch (Eddy personal email communication 2012). Clients may be verbally led through experiential exercises, or guided by touch to become aware of physical behaviors that are restrictive and counterproductive. Martha Eddy makes the distinction between MindBody and BodyMind experience based on whether awareness is directed by the cortex, or whether awareness emerges from the body and is noticed by the cortex. The body-mind connection occurs when we listen to signals from the body and use this awareness to improve upon our physical functioning. In a bidirectional manner, the body informs the mind just as much as the mind is attentive to the body thereby developing knowledge of one's own functioning.

Somatic work is informed by the first person experience of the body, and the idea that by developing greater body awareness changes in our overall health may be possible. Psychoneuroimmunology studies have presented evidence that supports our ability to generate real physical change using the neuroplasticity of our brain (see Section Three). Section Three will investigate why somatic theory, training, and practices have existed as equal to, but separate from, the lineage of the similar field of mind-body medicine.

Somatic work uses the felt sense as a way of developing personal consciousness. When needed pain or physical malfunctioning signals our body as warning signs meant to inhibit action. In order to figure out why our body might be malfunctioning, somatic awareness activities allow the individual to access feelings or sensations from the body to develop a sense of personal movement habits and behavior. The alteration of bodily habits re-patterns messages the brain sends the body via the nervous system. In a process of self discovery it is possible to learn how to sense limiting habits, and therefore changes in action potential and alterations in behavior can be made possible, enabling more

efficient physical functioning such as greater range of motion, or movement without pain. Inefficient movement habits, muscle tension, and postural imbalances are energetically draining to the body. Somatic work supports the liberation of personal resources, because when our body systems are working in harmony, vital energy fills our being.

Somatic educators serve as guides to holistic learning processes helping people become aware of how our brain and body work together, connected as a dynamic system, to maintain balance and well being. According to Leena Rouhiainen, the “term somatics is now generally used to describe a plethora of different bodily practices that attend to the body through first-person perspective, are interested in the tacit-knowledge that it encompasses, and regard the process of becoming aware of the body as a path towards change, enhanced bodily functioning, and self understanding” (*The Evolvement of the Pilates Method and its Relation to the Somatic Field* 58).

Again, while there are numerous somatic methods and different educational and therapeutic approaches, this thesis aims to synthesize and connect principles from within somatic work in order to explore somatic theory as a unified realm of thought. In so doing, I in no way aim to be completely definitive but rather hope to give a basic and reasonable representation of common principles and ideas from the somatic field.

Defining the Somatic Field: Theorists Hanna and Johnson

Two philosophers in the 1970's, Thomas Hanna and Don Hanlon Johnson helped to define somatic work. They focused their scholarship on the methods of founding somatic educators, initially inspired by their own philosophical studies and later by personal experiences and their own practical experiences as somatic practitioners. Thomas Hanna

(1928-1990) coined the term ‘Somatics’ as the first attempt to represent a common vision for the field of somatic work overall, having synthesized and integrated ideas from philosophy, biology, neurology, and decades of foundational experiential work of somatic pioneers, most especially the work of Moshe Feldenkrais (see Section Two). In his own work exploring the somatic field Don Hanlon Johnson wrote “The late Thomas Hanna, like myself a recovering philosopher, succeeded in gaining broad acceptance for a name and theoretical umbrella to the many particular schools: he called the field ‘Somatics’, inspired by [the founder of phenomenology] Husserl's vision of a ‘somatology’, a science that would unite a methodical knowledge of the body derived from experiential studies with the biological sciences” (*Body Practices and Human Inquiry: Disciplined Experiencing, Fresh Thinking, Vigorous Language* 271). Hanna’s insights were developed over a period of many years, drawing upon his education as a philosopher, and from 1970 until his death in 1990 he continued to investigate academically and practically what ‘Somatics’ might entail.

Hanna connected new ways of thinking about bodily experience and healing to create a working theory of somatics. He found somatic work included the organization of sensory motor information. For example, in 1980 Hanna commented on the work of early somatic pioneers saying that without knowledge of neurophysiology they made discoveries about sensory-motor functioning while experimenting with movement manipulation. In guiding clients through motor patterns to enable the input of new sensory information they discovered that thereafter the client was able to integrate new motor patterns on a voluntary level (*Body of Life* 159). Hanna theorized that somatic work included sensory over motor skill acquisition rather than the idea of physical

change being a result of ‘mind over matter’. Directing attention and focusing awareness on bodily sensation activates brain mechanisms and the modification of sensory-motor functions is made possible. Somatics involves experiencing the mechanics of movement and “cybernetics of coordination”. That is, through educated experience the body learns as a system how to improve upon its own movement patterns.

As an educated phenomenologist and theologian at the University of Chicago Divinity School Hanna wrote his dissertation on existentialism, which was later published as *The Lyrical Existentialists* (1962). Hanna wrote his next book as a professor of philosophy at the University of Florida exploring what he called ‘somatic scientists’ (Darwin, Freud, Lorenz, Piaget, Reich) and ‘somatic philosophers’ (Kant, Kierkegaard, Marx, Cassirer, Camus, Merleau-Ponty, Nietzsche). In this book, *Bodies in Revolt: A Primer in Somatic Thinking* (1970), Hanna explored the idea of a ‘somatic culture’, “a culture which encourages sensing; it encourages the kind of sensory perception that is not primarily environmentally oriented, but a sensory perception that is proprioceptive- self-sensing of the ‘body’ by the ‘mind’” (Mintz interview). Self-sensing is a form of disciplined awareness in which external stimuli are disregarded and the inner sensations of the body are focused on. Hanna emphasized that the word Somatics comes from *soma*, it “does not mean ‘body’; it means ‘Me, the bodily being’... Somas are a kind of living, organic being which you are at *this* moment, in *this* place where you are. Soma is everything that is you” (*Bodies in Revolt* 35). In a later essay *What is Somatics?* Hanna clarified, “Somatics is the field which studies the *soma*: namely the body as perceived from within by first-person perception” (qtd. in *Bone, Breath and Gesture*, Johnson 341).

Hanna expanded upon the Greek word ‘soma’ as had been utilized by the founder of phenomenology Edward Husserl. According to the Stanford Encyclopedia of Philosophy, “Phenomenology is the study of structures of consciousness as experienced from the first-person point of view.” The first person point of view known from within is that of the soma. The word ‘*soma*’ derives from the ancient Greek description of a living body known to the self, and signifies the ‘whole person’. Primary to its definition is the focus on *living*, once deceased the soma no longer exists and the body itself remains. It is the living body that knows itself (Eddy Lecture 2008). In this way the idea of the soma is tied to personal consciousness and one’s own entire being. The soma is not static but as dynamic as life itself.

Don Hanlon Johnson wrote that the word *soma* was also discussed in the New Testament where St. Paul used it to “designate the luminous body transformed by faith” (*Bone, Breath and Gesture* xv). From a somatic viewpoint, having faith in the body means not abandoning the self to an outside authority. It is a faith in the body’s ability *to learn and transform* as it gains awareness of itself. Somatic philosophy sees the body as a system in which the individual alone can feel and know. Faith in the body’s processes and in its capacity for change is integral to somatic work. Through inner sensing the individual discovers what is needed for its own healing, aided by the guided touch or insight of a practitioner.

It is worthy of note that Hanna initially explored somatic thought through the theories of scientists and philosophers, and it was only later that he came to witness actual practitioners who were doing physical and sensory explorations which he then coined ‘Somatics’. In fact, Johnson wrote of how Hanna visited Esalen Institute in

California in the early 1970's where he saw "non-academic artisans actually doing existentialism and phenomenology in the flesh, without knowing much about the philosophical, historical, and cultural significance of what they were doing" (*On the Edge of the Future* 10). Inspired by this experiential work, in 1975 he co-founded along with Eleanor Criswell Hanna (a leader in Humanistic Psychology) the Novato Institute for Somatic Research and Training where he practiced and developed his somatic method (integrating Feldenkrais work) over the next 15 years. His work was created in collaboration with Eleanor who has continued the program since his death. In 1976 Hanna founded the *Somatics Magazine-Journal* to explore the work of somatic practitioners through "popular articles, theoretical studies, poetry, book reviews and research papers" (somaticsed.com), and by 1988 had written the book *Somatics* to further articulate his theories and practices.

Johnson explains how a somatic practitioner helps a patient:

Healing takes place insofar as the spirit of inquiry is communicated through the hands, eyes, and language of the practitioner to the point where the patient awakens to his or her own learning/healing capacities. It is so enlivening to be touched in this sensitively inquisitive way. For example, as the practitioner respectfully explores with fingers educated by long training a previously unsensed articulation between a rib and a vertebral process, I have found my mind expanding and deepening. Or in doing the disorienting idiosyncratic Feldenkrais exercises in which one is taught to disrupt reactive automatic movement responses between, for example, head and arm movements, I become aware of new possibilities of freeing myself from old habits of reacting to anger. Muscular rigidities reflecting fear of the unknown and comfort in present assumptions loosen to permit the entry of something new. (*Sensitive inquiry: A sane mind in a savvy body* 34).

Johnson was a former student of phenomenology at Yale and a Jesuit priest for 14 years before he happened to take a theology course at Esalen Institute where he met innovators in the somatic field. His Jesuit community was close to Esalen and he too,

like Hanna, witnessed transformative body-mind work and met teachers who inspired his own immersion into exploring forms of bodily education. Johnson consolidated somatic theory alongside Hanna by elucidating the work of pioneers who created seemingly different body-mind methods, pointing out the similar transformative results from their work. His pursuits included founding the first somatics graduate program in the United States at the California Institute of Integral Studies in 1983 (shaped in collaboration with other educators). Johnson wrote numerous scholarly articles for Hanna's *Somatics Journal*, among others, in which he focused on the common principles that connected rather than differentiated and separated the variety of available techniques.

Johnson left the Jesuits to become a student of the somatic pioneer Ida Rolf from 1970-1978 and a practitioner of her Rolfing method (a form of deep tissue bodywork). Johnson found in his own experiences being 'Rolfed' that physical changes in his body resulted in a new sense of self. As a prolific writer Johnson was the author of the first book on Rolfing, and an editor of two books that brought together writings and interviews (some never before published, others revived) with somatic pioneers and their protégés, *Bone, Breath and Gesture: Practices of Embodiment* (1995), and *Groundworks, Narratives of Embodiment* (1997). These seminal books were the first to compile a history of pioneering somatic methods and describe their actual application in practice, and built on the work of Michael Murphy (co-founder of Esalen Institute who wrote about somatic pioneers in *The Future of the Body: explorations into the further evolution of human nature* 1992). Some of the earliest somatic work Johnson traces to the early 1900's. In *Bone, Breath, and Gesture* he explores the work of Elsa Gindler, Charlotte Selver, Carola Speads, Marion Rosen, Ilse Middendorf, F.M. Alexander, Moshe

Feldenkrais, Ida Rolf, Bonnie Bainbridge Cohen, Judith Aston, Irmgard Bartenieff, Mary Whitehouse, Gerda Alexander, Emilie Conrad, Elizabeth Behnke, Thomas Hanna, and Deane Juhan.

As an advocate for somatic work between 1970-1990 at the Esalen Institute in California, Johnson organized ‘meetings of the minds’ between somatic innovators and “biomedical researchers, social scientists, philosophers, and spiritual teachers to explore how these bodyworks might affect mainstream thinking, and how in turn discourse about these works might become less ideological, self-centered, and grounded in serious research” (ciis.edu). Their discussions aimed to advance somatic work within the realm of science and brought a “focus on the practical and theoretical approaches to embodiment” (donhanlonjohnson.com).

Johnson wrote about Hanna saying he, “envisioned a somatology, a science that would bring together empirical studies of the body (3rd-person science) with direct experiential studies (1st & 2nd-person science)”(dhj.com). However, a dilemma exists because medical science, in contrast to somatics, historically has not integrated the subjective experience of the individual in its clinical research. Research studies within the medical field are built around the third person perspective of the body, with external impersonal observers using reductionist methods to gather quantifiable data able to be reproduced time and time again. In contrast, somatic methods are seen by some to be unquantifiable based on the fact that they are experiential and therefore subjective. In reductionist science objectivity and truth can only be found by third person studies of data; clinical research does not allow for the felt experience of the individual to have any meaning or bearing on the results of studies. The subjective, first person experience is

therefore viewed as being unverifiable. (Petitmengin 229-69). Hanna wrote about the exclusion of somatics from reductionistic science as a whole:

truth and science became synonymous and that truth could be arrived at only through third-person observation by individuals or by instruments observed by individuals. This is astonishing when we reflect that a million individuals could clearly demonstrate within themselves identical experiences that were replicative and predictable, and yet these millions of experiences could not be “true,” because they were somatic and subjective, rather than extrasomatic and objective. For science, nothing in human experience was true, nor was it capable of being true. (*Somatics* 14).

In addition, somatic work has been excluded from reductionistic science in a large part because it evolved outside of traditional educational institutions in distinct contrast to health practices developed within the medical world. Johnson explored the progression of somatic work in the article *Ways of the Flesh, a Brief History of the Somatics Movement*:

Somatics developed from the "bottom up", from a wide range of experimental methods of manipulation, movement, and awareness outside universities and clinics. These unconventional methods were typically developed in response to critical health problems that were unresponsive to existing medical and psychological treatments... Because it can be applied to a wide range of conditions, Somatics is sometimes confused with other practices such as behavioral medicine, conventional physical therapy, chiropractic and massage. These other systems exhibit a different attitude and approach to health, however. Behavioral medicine, for example, employs a terminology which includes ideas such as controlling the disease processes of the body by visualizations, affirmation, biofeedback devices, and changes in attitude and other states of mind. Such an approach differs greatly from the context typical of Somatics practitioners in which people are encouraged to "listen" to the messages of their flesh; to "embrace" their breathing patterns; to "follow" their styles of moving; and to pay attention to the insights which emerge within the movement itself. (2).

The quality of developing an inner authority by listening to the ‘voice’ of one’s own body is central to somatic theory. In many ways, by simply choosing to remain present ‘in the now’ focusing on the breath is a somatic practice, as a form of phenomenological study of subjective experience. Somatic work also develops movement awareness from the

tinest subtle inner sensations to larger motor movement of the limbs so that new patterns can emerge and innate learning/healing potential may be stimulated.

In addition to somatic work being a form of bodily education, it also can be beneficial for emotional wellbeing. Some practices have been integrated into psychotherapeutic work. Johnson explored the benefits of somatic therapy in treating victims of trauma and shock as a co-editor for *Body in Psychotherapy: inquiries in somatic psychology* (1998). Indeed, from somatic work emerged the later development of the field of somatic psychology and body psychotherapy. Body-oriented psychotherapeutic methods include that of: Wilhelm Reich (Vegetotherapy, Alexander Lowen and John Pierrakis (Bioenergetics), Stanley Keleman (Formative Psychology®), Ron Kurtz (Hakomi), Peter Levine (Somatic Experiencing®) and Ilana Rubenfeld (Rubenfeld Synergy Method®) according to the United States Association for Body Psychotherapy. Other systems include: Bodydynamic Analysis (Lisbeth Marcher, Psychomotor Therapy (Albert Pessa and Diane Boydon Pessa), Focusing (Eugene Gendlin), Gestalt (Fritz and Laura Perls) and Biosynthesis (David Boadella (Allison 1999, Macnaughton 2004). Exploring these systems is beyond the scope of this thesis, yet I mention them to make the reader aware of the wide influence somatic work has had.

Goals and Benefits of Somatic Work

How is somatic work related by a common purpose? The International Somatic Movement Education and Therapy Association (ISMETA) founded in 1988 states that the purpose of somatic movement education and therapy is to enhance human processes of psychophysical awareness and functioning through movement learning. According to

the ISMETA website somatic practices provide the learning conditions to:

- Focus on the body both as an objective physical process and as a subjective process of lived consciousness;
- Refine perceptual, kinesthetic, proprioceptive, and interoceptive sensitivity that supports homeostasis and self-regulation;
- Recognize habitual patterns of perceptual, postural and movement interaction with one's environment;
- Improve movement coordination that supports structural, functional and expressive integration;
- Experience an embodied sense of vitality and extended capacities for living.

In comparison, Michael Murphy (co-founder of the Esalen Institute), argued that somatic methods promote “sensory and kinesthetic awareness, control of autonomic processes, efficient modulation of sensory input, sensorimotor coordination, the articulation of and coordination of particular muscular groups, grace and efficiency of posture, carriage, and movement, new patterns of movement, recuperation from stress, flexibility of facial and gestural expression, general relaxation, vitality, awareness, control of emotions and mental processes, and sensory, kinesthetic, emotional, and intellectual pleasure” (*Future of the Body* 414).

The overall goal of somatic education is “self-management, the engagement in the process of conscious organization, and the integration of a new somatic shape from self-improvement efforts”, according to Stanley Keleman (who developed the somatic influenced method Formative Psychology, which deals with how the body shapes itself and changes over time) (centerpress.com).

In *Discovering the Body's Wisdom* (1996), Mirka Knaster similarly credits somatic education for; reducing the stress response, relief from pain, improved posture and functioning, better balance and coordination, greater sensory awareness, “groundedness, centeredness, expanded capacity for work and creativity, actualization of potential,

replacement of old negative patterns with new positive patterns, more lucid thinking, enlivened consciousness, an embodied spiritual life, self-acceptance-recognition of one's uniqueness, better self image and a new sense of physical self' (6). Goals of somatic work are multi-dimensional and yet overall each discipline aims to provide the opportunity for greater health, a fulfilled sense of life, and the motivation to be the best version of ourselves possible.

Knaster advised those new to trying somatic work to explore different methods, investigate a practitioner's professional certification, find a style that meets individual needs, and be wary of any teacher or "practitioner saviors" who claim to be an absolute authority with a cure-all method. After all, somatic education is meant to help us learn how to be in touch with our own self-regulatory mechanisms. Yet, they are not meant to replace treatment for serious medical issues that require the knowledge of a trained doctor. They can however help in the process of recovery from surgery, illness or debilitating circumstances. Don Hanlon Johnson stressed that overall "somatic disciplines do not promise medical therapy [but] share the assumption that transformation of bodily experience can increase one's self-healing capacities and facilitate symptom reduction (qtd in *Future of the Body* 387). Somatic work is not medical therapy and yet, in working with a knowledgeable teacher guiding an individual's ability to sense what is needed from one's own body- that in itself becomes an avenue for healing and transformation. Blind faith in the capacity of others as higher authorities to take care of our health takes away from the individual being involved in one's own wellness in an empowered manner. Knaster encouraged clients to have a proactive voice within somatic work, as "No parent, no physician, no teacher, and certainly no writer is the last word on your own

body. Don't let any body-way become yet another standard with power over you... [this is] an invitation to become your own authority" (29). Somatic work occurs in alliance with the client so that "your concerns, not his or her needs, are the focus of the work" (5). In the process, self-confidence and personal empowerment grows as the individual becomes more connected with their innate healing mechanisms.

Transformative Experience and Practical Work

Through somatic education transformation of self becomes possible as new perceptions open up the potential for a better quality of life. In her research study *The Human Science of Somatics and Transcendental Phenomenology* (2008), Elizabeth Behnke wrote about the aims of somatic work. She stated that while "it does include a theoretical component, somatics is above all a *practical* discipline, including many kinds of hands-on "body work" approaches [...] as well as many "body awareness approaches" and ultimately "somatic practice is *transformative* in so far as it can produce "deep change" in our habitual style of embodiment (and thereby in our corporeal and intercorporeal life as a whole)" (1). She explained that overall "somatic practice can indeed be employed as therapy when things go wrong, but it can also be used by people who are healthy in order to enhance their skills and their quality of life- ..." (1). In her research Behnke turned to the "Husserlian notion of a *living kinaesthetic consciousness* as the founding dimension of experience to be addressed by the discipline of somatics in general and by somatic practice in particular" (7). In kinaesthetic consciousness there is an emphasis on an a priori capability of motility that exists within all of us, allowing for greater perception of self not currently actualized but yet always at our disposal (8). The ability to change exists within us all. Behnke posits "if somatic practices changes how a

kinesthetic system functions, then the correlative field of lived experience will be altered as well” (8).

Michael Murphy pointed to the shared assumption within the somatic field that “therapy or healing derives from fundamental transformations of experience and the cultivation of new capacities” (*Future of the Body* 386). Murphy argued, “today we have strong evidence that any aspect of bodily functioning, once brought to awareness, can deliberately be altered to some extent for healing or the development of new abilities” (88). Bringing unconscious behaviors under conscious control can develop new capacities. Some motor activities become automatic and habitual such as walking with a limp far after an ankle injury has healed, leading to imbalance in the body. By paying attention to how we apply our body weight evenly through both sides of the body as we walk will slowly generate a better movement pattern. We can purposefully exert conscious control and cultivate new intentional motor activities monitored by awareness in order to stop bad habits. Ultimately in learning to consciously ‘listen’ to the various physical states of the body, we can use this knowledge for self-management.

Deane Juhan, Trager Approach bodyworker and acclaimed author of the essential text *Job’s Body: A Handbook for Body Work* (1987), felt that we are continually “finishing ourselves” and our lives are always a work in progress. Juhan stressed that “*meanings* of the world we encounter must be *made* by each of us” and “insights must be *sought*, and this seeking will always require active observation and engagement” (351). Juhan wrote:

A successful life is the continual sorting out of: 1) inborn traits, genetic characteristics, 2) the events and situations I have experienced (some of the most important which occur very early in life), 3) the personal beliefs and behaviors that have resulted from the interactions between my genetic capacities and my experiences, and 4) the exertion of my will to directly engage in actions that can generate positive adjustments in blueprints, habits, beliefs, and behaviors. (350).

Somatic theorist Thomas Hanna spoke of how the “art and science” of somatic education was developed essentially to serve as “brief event whereby one teaches another person how to be self-teaching [...] to develop sensory awareness-which is proprioceptive awareness- as self-awareness” (Mintz interview). Hanna, Behnke, Murphy, and Juhan all support the idea that somatic work focuses on what is going on *inside* so that we may learn how be more in tune with ourselves. We have the capacity to learn how to manage and regulate our own wellbeing through conscious effort. People suffer from the inability to use sensorial information to understand states of being. In learning to respond to signals from the body we greatly increase our capacity for internal change and transformation of experience. Somatic exercises encouraging internal bodily awareness can bring about an external presence that is energized and vitally well.

Somatics as an Art and a Science

Somatics as a field lies somewhere between a creative art and a science informed by neurophysiology (see Section Three). Somatic education involves experimentation and awakening the creative process. Many somatic pioneers created their work out of necessity, developing their own self- awareness as a matter of personal healing (see Section Two). They had their own physical ailments that medical doctors were not able to correct and therefore worked on themselves, or they observed in other human bodies maladaptive postures and habits and felt the immense desire to discover how to help others transform their bodily experience. Somatic pioneers were individuals who admired the art and science of movement, studying extensively in schools ranging from physical culture programs to medical institutions. In helping themselves or in finding applications

to help others over time, somatic pioneers refined their methods and approaches and developed what later became known as somatic work. Martha Eddy wrote that:

What emerged from these profoundly creative and investigative somatic pioneers, especially as they taught their practices to psychologists (e.g. Fromm, Perls, Watts), educators (Dewey, Myers), and scholars (Fraleigh, Hanna, Johnson), became a canon inclusive of exercises, philosophies, methods, and systems of inquiry. By delving into personal bodily experiences, new meanings about being human and potentialities for health and life were codified into educational programs in diverse parts of the world (*a brief history of somatic practices and dance* 7).

Ninoska Gomez (developmental psychologist, Body Mind Centering practitioner and creator of the Somarythms Method) believes the field of somatics is both an art and a science in that it is a process of discovery, “one starts with systematic ways to delve into life processes without eliminating the possibility of finding that which we did not expect to find” (11). Gomez holds the view that somatic practitioners combine knowledge of the body grounded in science with aesthetic responses and “intuitive aspects difficult to formulate into words” (11).

Richard Strozzi Heckler (clinical psychologist and co-founder of the Lomi School of somatic work), stated that within the “art and science of somatics [...] a primary goal in working with someone therapeutically, artistically, or educationally is to bring them into contact with their energy, that is, into the experience of their lived body” (*Anatomy of Change* 59). Likewise, somatic educator Yvon Joly wrote about somatic disciplines in his article *The Experience of Being Embodied: Qualitative Research and Somatic Education:*

This discipline is interested in the living body’s subjectively experienced capacity for self-education. The field it covers lies at the intersection of arts and sciences focusing on the living body, and is of relevance for many different spheres: health care (rehabilitation, psychology, physical activity), sports performance (training and competitive achievements), the creative arts (interpretation and creation), philosophy (embodiment of mind, “constructivism”), education and teaching in general (concrete physical and experiential foundations of learning); and also more specialized fields such as phenomenology, bio-mechanics, meditation, biology,

and ‘systemics’, cognitive sciences and movement sciences. [...] The qualitative perspective characteristic of somatic education is founded on a state of absorption in sensory-motor and kinesthetic experience. The major part of what happens in experience belongs to the pre-verbal realm where somatic education offers opportunities for the most interesting and most difficult research. (5)

What happens in the pre-verbal realm? Much of our life experiences inform our mental and physical attitudes giving us our own personality and body language. How our body moves is a reflection of who we are. Our body communicates non-verbally, such as when we are sad the chest might crumple inwards, head bows low, and shoulders slump over. These affects, while not entirely measurable, are quite evident. Somatic educators focus on the body, reading body language and analyzing movement patterns in order to awaken the client to their own perception of self from which different physical choices may be made and more positive experiences evolve.

Somatic educators also draw from their own personal experiences and their empathetic capacity. The art of somatic work abides within “the practitioner’s capacity to sense her/his own self in movement; and also on the ability to perceive- by way of observation, touch, and imaginative projection- what is going on in the other person’s subjective experience” (Joly 5). Somatic work relies on an intuitive sense, “thinking without words in that pre-verbal universe of the sensory-motor realm, in the intimate awareness of embodied life” (5). Gomez furthered this idea about empathetic connection and elusive movement principles, saying that the observation of movement takes into account “the body tonus of the mover; the explicit and implicit intentions; the pattern of organization of movement; the effectiveness of action; the movement qualities or ‘mind’ states; and the rhythm, or the fluctuations of effort through time” (55). Somatic

practitioners intuitively analyze a client's biomechanics in order to read how they 'embody' themselves.

What does it mean to live an embodied life? "Embodiment is the term used to describe the process of bringing unconscious somatic sensations to awareness. Thus, by learning to direct our awareness, unconscious sensorial information can be brought to consciousness to be reorganized" clarified Gomez (39). Stanley Keleman, one of the founders of somatic psychology, wrote that the body itself is a "living, creative process" and we are destined to live an embodied life "to be able to serve others, to be able to be connected to others, and to feel that you can trust the life in you" (*The Body We Are*, centerpress.com). When we are disembodied we lack a sense of an integrated self, and in addition may lose a sense of connection with others. Somatic work aspires to "not only provide a means to receive help from a qualified practitioner. It also teaches students how to help themselves through developing embodied awareness. Embodied awareness involves including our bodily based, or somatic, sensations in awareness as one acts in and makes sense of the world" (Cheever 3).

In turn, somatic practitioners use embodied awareness while observing a client's movement to discover limits in functioning. Through imagining and sensing limitations, practitioners use their embodiment skills to guide movement potential to allow for enhanced human expression. Olivia Cheever, a somatic practitioner (who trained with the somatic pioneer Dr. Moshe Feldenkrais) and Harvard educated psychotherapist, wrote about this process in *Connected Knowing and 'Somatic Empathy'* (2000). Cheever explained how somatic practitioners "demonstrate a kind of empathetic connected knowing that allows them, through mindful and sensitive touch, to know how to help

their ‘students’ or ‘clients’ learn, with or without verbalization while guiding their movement” (2). For example, Thomas Hanna described watching somatic pioneer Moshe Feldenkrais apply his Functional Integration techniques in working with the uncoordinated and contorted body of a cerebral palsy client. The client’s breathing was spasmodic and arrhythmic. Feldenkrais had the man lie down on a table and he proceeded to apply gentle pressure through his hands, pressing, holding, and releasing in different directions on the man’s ribcage, and abdominal muscles. He did this for over twenty minutes until the man’s breath grew into a slower rhythmic pattern free from strain. (*Body of Life* 179). Feldenkrais said he helped teach the man to breath normally, it was a ‘lesson’. He described his approach as following the “principles of mechanics, kinesiology, and neurophysiology” (187), informed by “training one’s ability to sense the raw, nonverbal expressions of life” in order to interpret another person’s behavior (182). Feldenkrais combined science with perception to intuitively help another person. His patient was astonished, after fifty years he finally had a sense of breathing normally. Hanna recalled having tears run down his face as he was equally astonished and in awe of this work. He vowed to train with Feldenkrais. Within one session it was possible for Feldenkrais to readjust this mans dysfunction. Coordination includes parts of the body learning to move as a synthesized whole. Most often these lessons have to be repeated numerous times and practiced until the body becomes programmed to not return to its previous malfunctioning physical pattern. It takes time to for the body to learn.

Mirka Knaster commented on the idea of change instigated by somatic practices stating; “While they are all different ways of working with the body, the healing process remains the same: What was static or blocked gets moving again; where there was

separation or fragmentation, there is now unity and wholeness” (93). She stressed that somatic work encourages embodiment and articulated the many reasons why we become ‘disembodied’ or separated from the body including; “abuse and violence, dissociation, the perception of seeing the body as shameful, powerlessness, physical and emotional reactions to stress, trauma from accidents/war/death/loss, or any manner in which someone might become alienated from their own body losing contact with themselves as a whole” (28). Somatic work aims to bring an individual from disembodied living towards an embodied experience of life.

How do we know if methods somatic work? Ninoska Gomez reasoned “the validity of somatic intervention is first measured by the improved overall enhancement and well-being experienced [...] as well as the personal empowering gained when we acquire knowledge that is body-based” (12). Gomez also emphasized that somatic educators use their training in movement observation in order to ascertain “sensory-motor conflicts that are preventing optimal physical and psychological functioning” (53). In guiding clients towards a higher level of functioning “somatic educators have elucidated, in their own terms, universal principles of human mobility which translate the elusive aspects of the body’s inner workings, revealed by the functioning whole” (53). In a search for wholeness and wellbeing “somatic educators have shown that attending to the sensations inherent within our body-mind environment can become a valuable survival skill that helps us resolve both motor and psychological problems. As well, movement and body-mind explorations can be a source of inspiration and creative expression” (6).

Dance students and actors have long used bodily experiential exercises to increase not only their expressive capacity but also to generate a greater self-awareness to use in

their performance work. In my own personal experience, body-mind exploration experiences from dance school established my interest in somatic education. While a dance student at Les Ateliers de Danse Moderne (LADMMI) in Montreal (now known as the École de danse contemporaine de Montréal, one of the leading contemporary dance schools in Canada), my teachers included somatic experience as part of technique and choreography classes. Lessons included verbally guiding awareness of our biomechanics while dancing, such as “Now bring your attention to the alignment of your head with your spine, lifting tall through the center of your skull towards the ceiling as if your head was floating like a balloon”. With these directives our movement quality became altered, leading to a lighter sense of the body in space. This is just one example of numerous daily suggestions to explore somatic experience as a way of finding authentic movement, whole-body sensation, and personal dance expression. We were encouraged to dance from within to create fully enlivened movement, rather than simply rely on empty dance technique. Somatic experiences enabled effortless movement and ease of motion.

As a 1991 graduate of LADMMI, I worked as a professional dancer and acrobatic movement theater artist with the Québécois company DynamO Théâtre in Montreal, Canada, for ten years performing in over 20 countries. I experienced somatic approaches to creativity not only through dance school but also within movement exploration for the choreography of shows with DynamO. I describe our creative process in a 2002 interview for the book *DynamO Théâtre, Théâtre de mouvement acrobatique*; “L’approche de jeu, dans tout les spectacles de *DynamO Théâtre* auxquels j’ai participé , est similaire... Les personnages sont d’abord construits physiquement... jusqu’à ce que quelque chose émerge at se développe, qui est inattendu at qui ne relève pas de la pensée rationnelle, mais du

mouvement pur” (169). In translation- ‘The creative approach, in all of the shows of DynamO in which I participated, is similar...The characters that were developed (for the shows narrative) came from physical explorations until something emerged and developed that was unexpected- coming not from a place of rational thought but from pure movement’. Our creative process involved starting from an empty slate, that is, movement ideas emerged from within our own bodies in the process of exploration and improvisation in the studio. Movement exploration drew from our training in dance, physical theater (Jacques Lecoq and Etienne Decroux), acrobatics and circus arts. Characters, relationships, and choreography grew out of non-verbal explorations, and in time through rehearsals and refinement, character interactions were designed to make the movement mean something. Once character relationships communicated understandable nonverbal situations through movement, the director and writers would weave a narrative into the choreography using the most powerful creative moments from our studio work.

Theoretically, somatic work can be incorporated into many learning contexts ranging from the subtle to the more complex, such as improving upon inefficient bodily functioning to explorations in the creative process. Martha Eddy (2009) expressed that ultimately through “being engaged in attentive dialogue with one’s bodily self we, as humans, can learn newly, become pain free, move more easily, do our life work more efficiently, and perform with greater vitality and expressiveness” (6). Regardless of the discipline that is utilized, what emerges from somatic work is unique and comes from within the body, developing what was previously unknown into personal potential.

Section Two Mapping the History of Somatic Pioneers

History in the Making, Recent Scholarship on Somatic History

It has been only in the last forty years that scholars like Hanna and Johnson have tried to synthesize an understanding of the somatic field. Their work, and that of others, built on decades of prior development by somatic pioneers. Johnson found that researching the early history of Somatics was “similar to that confronting feminist historians: We depend on oral history, fragments mentioned by the way in exercise books, a passing reference to a teacher, or a footnote in a history of dance” (*Ways of the Flesh* 27). Recent scholars including: Martha Eddy, Ninoska Gomez, Robin Veder, Sondra Fraleigh, Jill Green, Sylvie Fortin, Martha Myers, Michelle Mangione, and Yvon Joly among others, have added to an understanding of the somatic field with dissertations on somatic work and articles published in academic journals ranging from dance and sports history to medical and philosophical journals. Somatic theory has been explored by many, yet somatic history and the particular work of the earliest somatic pioneers has been researched by a few select authors, and mostly as separate biographical entities.

Johnson stated that the roots of somatic work dates back more than a hundred years and is related to the Physical Culture or Gymnastic movement of Central and Northern Europe as well as the Eastern United States. Johnson explained how, with the advent of World War I, “the early interdisciplinary Somatics community” was broken up and World War II “further dispersed pioneers, forcing many to put aside the more visionary aspects of their work and to eke out a living as refugees, marketing their work under the more acceptable forms of physical rehabilitation or psychotherapy” (*Ways of the Flesh* 27). The dispersal of practitioners around the world divided different approaches, techniques, and schools of thought. As a result synthesizing the complex history of

somatic work as a way of sharing with a wider community of like minds has been difficult (26-30).

Scholars have gathered early writings of pioneers, and interviewed their protégés. Bits and pieces of somatic history have been brought together to create a picture of the somatic field. Martha Eddy wrote poetically “the field of somatics is barely a field. If necessarily seen as one, I liken it to a field of wildflowers with unique roots popping up across wide expanses... [leading] numerous men and women, separately but in a common period of time, to discover the potency of listening deeply to the body” (*a brief history* 6). Although the somatic field is vast, there are certain individuals who are noted as being ‘precursors’ to somatic work (François Delsarte, Steele Mackaye, Genevieve Stebbins and Hade Kallmeyer) (Ruyter 1999). Other scholars recognize the earliest pioneers as being Elsa Gindler, Bess Mensendieck, F.M. Alexander, Moshe Feldenkrais, and Ida Rolf (Eddy 2009, Johnson 1995, Murphy 1992, Dragon 2008). These pioneers are in some way shape or form connected to a precursor or to the tradition of physical culture. The claim could be made that Somatics has maintained many of the same principles and practices from within physical culture, and in a way it was only the name for the ‘field of work’ that changed. The term ‘Somatics’ was after all, coined by Thomas Hanna for physical and expressive practices that had originated decades before he took notice of them. It seems that somatic scholars have not yet thoroughly investigated physical culture in relation to the later advent of somatic work. While I briefly note the connection in the next section, it remains to be an area of future research that I recommend to be investigated in greater detail.

Somatic Origins: Physical Culture

Don Hanlon Johnson mentioned that somatic work emerged out of the physical culture movement in 19th century Europe and America in his introduction to *Bone, Breath and Gesture*, however he doesn't provide further details. Many of the somatic practitioners interviewed in his book mention that they either took physical culture classes, or that they were initially trained as physical culture educators. It is often said that there was some radical departure from physical culture to somatic work, but this is a questionable proposition. The historical term 'physical culture' represents a collective incorporation of bodily education practices from a variety of educational lineages beginning in the early 1800's. Physical culture was a term that was later replaced with 'physical education', although the broad range of available practices were much more varied within physical culture, including individual whole body range of movement exercises practiced in groups, therapeutic methods and even breath work. Sports later came to replace many physical culture systems by the 1920's-30's. Physical culture is a relatively new area of historic study. Scholars such as Fred Leonard, Jan Todd, Martha Verbrugge, Roberta Parks, Nancy Lee Chalfa Ruyter, Karl Toepfer, Gertrud Pfister, and Patricia Vertinsky have contributed greatly to bringing this complicated and diverse realm covering a span of a hundred years back to our attention, much in the same way that somatic theorists are attempting to do with somatic work. In brief, I will attempt to define physical culture in order to provide a basic understanding of its aims.

Physical culture systems were arranged in four branches based on Ancient Greek categories: Military, Medical, Pedagogical and Aesthetic Gymnastics. Military systems were for the physical training of men, medical systems utilized therapeutic manners of

working with the body, pedagogical systems trained men, women and children in whole body range of motion exercises to maintain health, and aesthetic systems included exercises to encourage physical, artistic, and emotional expression. Overall, European physical culture practices were designed to develop individual wellbeing by either: increasing vitality and strength, generating greater mobility, agility, greater range of motion and enhanced capabilities for physical and emotional expression.

Physical culture re-introduced the Ancient Greek term ‘gymnastics’ which was an all-inclusive word used for many different systematic or exploratory physical exercises. While physical culture is related to the later growth of modern gymnastics as we know it today, the word was used during the 19th century simply to denote a form of purposive exercise. For example, ‘vocal gymnastics’ included vocal and breathing exercises used in the field of elocution, oratory, and theater for training or even as a way of developing personal awareness of habits and behavior.

From the realm of physical culture there are a few names that have been associated with the later advent of Somatics. The work of Pehr Ling and François Delsarte were synthesized into a physical culture system by the American Delsartist Genevieve Stebbins. Her students are connected to the advent of Somatics (Ruyter 1999).

Pehr Ling (1766-1839) was the founder of Swedish gymnastics who notably created a medical, military, pedagogical and aesthetic gymnastics system. He established his own educational institute in Stockholm, Sweden in 1813 and within the next hundred years institutes modeled on his own could be found all over the world (Berqvist). After his death, his school was maintained according to principles he developed by his son Hjalmar and his trusted directors. Medical gymnastics were designed for the ill or the weak or for

those with nervous disorders or structural alignment problems. Methods included subtle movement exercises aided by the guided touch of a practitioner and massage techniques used to nourish diseased parts of the body, and as a result, came to be known as the ‘movement cure’. The movement cure shares many similarities with somatic work including the idea that movements need to be practiced at a slow pace to allow time for the body to assimilate new information as a process of learning.

Swedish pedagogical gymnastics have been connected to the evolution of modern yoga asana. Ling’s pedagogical gymnastics did not require the “costly apparatus and purpose-built gymnasia” of German Jahn Gymnastics (from which one can trace our modern gymnastics form) and as a result Ling gymnastics (apparatus free) became quite popular, spreading across Europe to the U.S. and from Britain on to India “via an anglicized schooling system and military service” (Singleton 84). In the pedagogical gymnastic system, individual whole body range of motion exercises were practiced as a group (much as modern yoga is done today).

Ling’s work was also replicated in America, some by those who had actually trained at his institute or in other programs founded by his graduates. Elizabeth Blackwell trained in London somewhere between 1849-1851 with Augustus Georgii (Todd 1998), Dr. George Taylor studied in Sweden in 1858 and Dr. Charles Taylor trained with Dr. Roth in London around 1860 (Leonard 1915). Dio Lewis created the Normal Institute for Physical Training in Boston in 1861. Physical culture historian Jan Todd noted that his school was modeled on that of a Swedish gymnastics institute he visited in Paris, and “following his trip, Lewis resolved to adapt Ling’s therapeutic exercises to a general exercise program that would benefit men and women, boys and girls” (218). Note that

Lewis *adapted* the work, but was not trained in the methods as it took years to get an official diploma. Todd wrote that his school was the first in the United States dedicated to teacher training of both male and female students (226). Lewis strongly encouraged both sexes to participate in physical exercise as a source of preventive medicine. In an article for *The Atlantic* in 1862 Lewis argued that exercise of the muscles invigorates the thoracic and abdominal viscera which in turn supports the nervous system and the development of lung power (atlantic.com). He also advocated reform dress exercise clothes for women who at that time were still solely wearing skirts and restrictive corsets. In the gym women were allowed to wear looser fitting garments for exercise, some inspired from the garb of Ancient Greeks.

Physical culture systems spread from Europe to America, such as German Jahn gymnastics, and Swedish Ling gymnastics. Some gymnastic systems had a militaristic, ideological and nationalist perspective that led to a “zeal for physical fitness [which was] economically as well as patriotically motivated: to survive and earn a livelihood in the new industrial world one could not afford a weak constitution” noted Professor Mark Singleton in his research on yoga and its relation to the physical culture movement (83). Many nations during the 19th century encouraged able-bodied citizens. To be fit meant that one was not only capable of supporting a growing nation militaristically if need be, but also a healthy person who was well enough to fight off the many illnesses of the day. In 2011 author Robin Veder explored the realm of ‘body cultures’ (using the term of Karl Toepfer, historian of German body culture, instead of the historical term “physical culture”) explaining:

At the turn of the 20th Century, an extended community of American and European actors, dancers, and physical culture teachers created a spectrum of “body cultures”

that responded and contributed to social modernity and artistic modernism. Body cultures are theories about how bodies should look, feel, work, move, and physical practices for training and presenting oneself accordingly. Such combination of somatic theory and practice are culturally and historically specific, determined by the needs, interests, and places of their making. In this period, they occurred within multiple contexts, including theater, dance, fashion, medicine, labor, sport, and ‘physical culture’... the body culture that is most obviously associated with artistic expressive modernism valued holistic fluidity and the search for archaic, primitive, and authentic somatic experience. (*Seeing Your Way to Health: The Visual Pedagogy of Bess Mensendiecks’s Physical culture System* 819-20).

In essence, at this time actors, dancers, athletes, and those interested in human health were searching for ways of working with the body as a physically expressive instrument. Dance scholar Lenna Rouhiaien explored physical culture and exercise forms known as ‘Gymnastik’ in the late 19th Century Germany, explaining that “there was a cultural movement focusing on physical education and strong bodies” and an “overall ideology aiming for psychological self-control through regulation of the physical body” (*The Evolvement of the Pilates Method* 61). The physical culture movement also “permeated other things; the arts, education, sports, philosophy and the sciences of the time. Within it there were pioneering therapeutic movement and bodywork practitioners who explored sensory and expressive embodiment” (51). The realm of physical culture is vast and expansive and while only briefly noted here it is an area that deserves much further study in order to clarify how the evolution of these movement practices influenced Somatics.

The lineage of François Delsarte

From the mid 19th century the physical culture movement planted the landscape from which somatic work blossomed. Notable contributors to the foundation of the somatic field include the French theorist, orator and educator François Delsarte (1811-1871). Delsarte is recognized within an educational lineage of somatic pioneers (Johnson

1993; Ruyter 1973/1999; Eddy 2009; Veder 2011; Schiphorst 2011; Dragon 2008). There is only one English book length study of American Delsartism to date written by dance historian Nancy Lee Chalfa Ruyter (Diller, 2000), called *The Cultivation of Body and Mind in Nineteenth Century American Delsartism* (1999). In it, Ruyter differentiates the work of Delsarte in France with that of the American system. It is the text that scholars should refer to when investigating the realm of American Delsartism as Ruyter took pains to map a vast landscape and clarify many previous conceptions about leaders in the field.

Ruyter observed that Delsarte's work was influenced by artistic, cultural and social change across the late nineteenth century Western world that was moving away from formalistic to "expressive" approaches in art. Ruyter explained how this new cultural and social exploration of "'expression' included physical culture, pantomime, dramatics [...] as well as professional training for public speaking" (*American Delsartism: Precursor of an American Art* 422). Just as the physical culture movement involved new ways of working with the body, Delsarte helped to explore the body as an expressive instrument.

Delsarte was a reputable voice teacher who taught non-verbal communication and a system of oratory that included diaphragmatic breathing. Delsarte meticulously studied everyday movement, attitudes, and expressions of people in all walks of life to analyze human behavior and gestures. His aim was to develop a scientific system of expression for aesthetic use by orators and artists of all kinds. Delsarte was part of the French movement of Realism in art, theater and philosophy, that posited truth and reality could be discovered by the individual through the senses. Artistic aims included finding authentic sources to emotion and realistic depictions of human life.

Delsarte developed a physical system of actions designed to help students explore how to embody different emotional and mental states, and to focus attention on the “human body as an expressive instrument” (425). He “spent years studying the movements, gestures, and vocal behavior of people in all kinds of situations to develop what he hoped was a complete, scientifically based system of dramatic expression” based on emotional attitudes (422). The Americanized Delsarte system, as developed by his descendents, later spread across Europe, Russia, and the United States and was employed by preachers, lawyers, politicians, dancers and actors in their hopes of finding greater expression in their work (425). Their work greatly expanded his theories into practice.

The sole American, actor James Steele Mackaye (1842-1894) studied directly with Delsarte in France for seven months. He brought his work to America in 1870 one year before Delsarte’s death. Delsarte never taught in America or outside of France. Delsarte also did not publish any of his theories. Mackaye integrated Delsartian aesthetics with his own innovations, and he began to lecture and teach ‘Delsarte’ as a new naturalistic form of oratory and acting in Boston and New York. In 1877, Mackaye created a short-lived ‘School of Expression’ in New York (offering courses in movement training for actors, relaxation exercises, posture work, breathing exercises, and training in Delsartian ‘attitudes of expression’). He was then invited to Boston University School of Oratory in late 1876 or early 1877 to create a program of study. Students from this program /later founded their own schools in New York and Boston founded on the concept of harmonizing “the education of the mind with the education of the body; to co-ordinate the power of thinking and the power of feeling”, emphasizing self-study, individualized attention, and the discovery of an authentic self (curry.edu).

After Delsarte's death in 1871 his work decreased in popularity in Europe, and by the 1880's in America it had "diverged from its paternal origin and application [and] evolved into eclectic forms of "aesthetic," "rhythmic", "harmonic", or "society gymnastics" that combined the French system of theatrical expression with contemporary concerns about energy and health" (Veder 822). 'Harmonic gymnastics' was a popular term used to describe physical exercise systems used primarily by women. By the late 1880's Mackaye was not as focused on Delsarte work and instead was dedicated to theater innovations and being a playwright. He did not publish any work on Delsartism, nor did he commit to teacher training or working as an educator other than short time periods.

According to Helen Thomas (based on Ruyters research), between 1890-1900 Delsartism was at the height of its popularity in the United States and became "principally a women's movement in terms of both its teachers and students (*Dance Modernity and Culture* 50). With Mackaye's death in 1894, his pupils continued to teach Delsartian aesthetics encouraging an expressive body in combination with physical exercise for women "taught in the curriculum of new emerging physical education schools along with Swedish Ling Gymnastics (52). Some twenty years after his death, Delsarte's work became integrated into other physical culture systems. In the early 1900's there were more than 400 teachers across the United States and Canada carrying on and evolving his work (Ruyter, *The Delsarte Heritage* 66-71). Delsarte's philosophies introduced ways of exploring the body as an expressive instrument in a systematic manner. His aesthetic concepts were preserved due to the scholarship and educational leadership of Genevieve Stebbins, as she published the first American book on Delsartism, *The Delsarte System of Expression* (1885). Stebbins taught Delsarte

aesthetics in her New York School of Expression along with courses in dramatic literature, elocution, physiology, and Swedish gymnastics in order to hone and refine individual skills so that students could move on to be master teachers or performers.

Genevieve Stebbins, Progenitor of Somatic work and Modern Dance



GENEVIEVE LEE STEBBINS.

The most famous student of the Delsartian tradition, Genevieve Stebbins (1857-1934), is recognized as being a “Delsartian revisionist”, having “developed a feminine mode of physical expression patterned on the body semiotics of Delsarte” (Veder 823). As a young, yet established acting student who had studied under the famous Rose Etying, Stebbins went to study with Mackaye from 1876-78 at the Boston University School of Oratory. She became his teaching assistant and then took over teaching duties upon his departure until 1879 (Ruyter 1999). She later moved on to create her own physical culture system introducing “several new elements drawn from an international sampling of health regimes and concerns, including Swedish Ling Gymnastics, Eastern

Yoga, and anti-corset dress reform leading to a new focus on conscientious breathing exercises” (Veder 823). Although it is important to note that her incorporation of yoga was solely of a few breathing exercises introduced alongside numerous other breathing techniques Stebbins already had in her repertory as an elocutionist, and not that of asana practices. Ruyter asserted that Stebbins brought the Delsarte system “not only to dance but to the healing arts, incorporating such things as yoga in her teaching” (*The Cultivation of Body and Mind in Nineteenth-Century American Delsartism* 94-95).

Stebbins trained with a Hindu at Oxford during her European travels where she learned yogic breathing exercises that she integrated into the ‘dynamic breathing’ aspect of her physical culture system, although ‘yoga’ was not central. As an actress and elocutionist she also was quite familiar with a variety of breathing methods from her training in voice culture, many which are rooted in ancient Western oratorical practices. The differences between the numerous breathing exercises Stebbins utilized are worth further research.

Stebbins appears to have been the first American to have published books on her own mind-body system, which Ruyter claimed could have been called the Delsarte-Mackeye-Stebbins system as she not only incorporated their work but expanded beyond it with her own contributions. Ruyter credited Stebbins with using much more movement in her total exercise program (than Mackaye), thus providing the roots not only for early somatic movement education, but in addition the creation of expressive modern dance (*The Delsarte Heritage* 70). Stebbins was a not only a teacher of embodied movement but also a performer of ‘expressive’ dance. Stebbins had regular shows at Madison Square Theater in New York City between 1880-1893 and was noted for moving fluidly between Delsartian ‘emotional poses’, otherwise known as ‘attitudes of expression’.

Stebbins was fond of performing in long flowing Grecian style robes to allow for free range of movement. Stebbins is known for having inspired the modern dance pioneers, Ruth St. Denis (who wrote about being in awe seeing Stebbins perform), and Isadora Duncan (*American Delsartism* 72).

The historian Robin Veder felt that American Delsartism “provided the basis for early twentieth-century modern dance choreography, the *sine qua non* of expressive embodied modernism” (*American Delsartism and Mersenneck Body Culture* 835). Former dancer, and somatic educator Professor Thecla Schiphorst of Simon Fraser University, pinpointed Delsarte as the historical source not only of somatics but also of modern dance:

The body-based practices of somatics have a long and interconnected history with modern dance. Their concurrent and intertwined emergence was born from the same historical source: the Delsarte Method was the precursor to both modern dance and the emerging body practices that became somatics (52). In her book *Heilkraft durch Bewegung*, (translated as: *Healing Through Movement*), Hede Kallmeyer, one of the early forerunners of the discipline, attributes Delsarte’s originating work with inciting “the dawn of body consciousness” (37). Her reference identifies a historical moment when the subjective experience of the body could be reclaimed in what would become a growing secular development of ‘body-based disciplines’ (*Varieties of User Experience*, 2008 dissertation, 66).

However, in truth Delsarte’s relation to body-based disciplines including somatics and dance is indirect. He did not develop a physical culture practice nor work with dance, rather it was Stebbins who synthesized concepts from his aesthetic philosophies with the aesthetic gymnastics of Mackaye and ultimately created her own physical culture system. And while Kallmeyer praised Delsarte, she gave credit to Stebbins by naming her work in Germany the Stebbins-Kallmeyer method. It is hard to extricate Delsarte’s name from Stebbins work but that is what Nancy Ruyter accomplishes with her scholarship.

In an article for the *Dance Chronicle*, Ruyter stated that “Stebbins was the first in a long line of American women who thought deeply about expressive movement as an art”,

and while “the foundation of her work was initially based on the study of the Delsarte system” later in her life Stebbins wrote that she by no means accepted all of the Delsartian system and “even became critical of Mackaye” (*The Intellectual World of Genevieve Stebbins* 390). Ruyter described Stebbins as being a reformer and visionary in her own right. She stressed that Stebbins learned from many others aside from Mackaye, being an avid investigator and researcher of the latest thought of the day who “sought and achieved a broad and deep knowledge in a lifelong investigation of questions pertaining to physical culture and expression” (387).

Stebbins read extensively to provide a theoretical basis for her explorations. She not only read work published by other Delsartians but also the latest scientific inquiries of the day. She paid attention to developments in medicine, consulted with voice specialists, read the latest work of philosophers and transcendentalists, absorbed theater literature, gave credit to the Swedish Ling system of gymnastics as a foundation for her work, and was familiar with the metaphysical aspects of Hinduism, Buddhism, Islam and Christianity (387-88). Stebbins traveled extensively and helped revolutionize physical culture in America through lectures, demonstrations and teaching.

Stebbins established her own school in 1893, The New York School of Expression, located at Carnegie Music Hall in New York City. Designed to be a school of elocution and physical culture, Stebbins wrote in the school brochure that “Life is too short and Art too long to strive for the unattainable. Valuable time will not be wasted [...] in the attainment of beautiful sentimental nothings. All tendencies in the pupil to affectation, either vocal or physical, will be severely criticized, for the greatest charm in a teacher consists in being natural. *It is a practical school for real work in the various branches of*

Expression, which command an immediate market value for the possessor” (7). Her students were expected to move on to be master teachers of expression, magnetic performers, or vibrant public speakers. Stebbins’ teachings became foundational for the somatic field, focusing on self-improvement, genuine personal expression, relaxation and restoration, graceful deportment, and the stimulation of natural abilities in the pupil. Some of her students moved on to develop their own somatic methods as a product of the “physical culture system, which consumed, encapsulated and contributed to the late nineteenth and early twentieth century transatlantic culture”, taking “participants back to the fundamentals of movement and perception” (Veder, *Seeing Your Way*: 1348).

In her 1892 book Stebbins described her practice as: “a completely rounded system for the development of body, brain and soul; a system of training which shall bring this grand trinity of the human microcosm into one continuous, interacting unison” (*Dynamic Breathing and Harmonic Gymnastics: a complete system of psychical, aesthetic and physical culture*). She presented her techniques as part of the traditions of “religious training”, relating expressive movement to “the sacred dance of the Orient and the art of ancient Greece” (*American Delsartism* 429). In her book *Delsarte System of Expression* (1902) she wrote about harmonic poise, and the aim of developing life energy. For Stebbins the concept of harmonic poise included the overall physical presence of a person, how in motion or even in stillness the body communicates nonverbal attitudes. Stebbins developed ‘harmonial’ gymnastics movement exercises in order to teach synthesized, graceful motion and encourage harmony and balance within the body.

Mark Singleton’s radical re-examination of the origins of hatha yoga, namely the postural system of asanas (2010, *Yoga Body, the origin of modern posture practice*),

claims that Stebbins was one of the first to incorporate gymnastics, physical exercises and yogic breathing techniques. He described Stebbins system as including “a combination of callisthenic movement, deep respiration exercises, relaxation, posture work, Delsartian “harmonic poise,” with “exercises for freedom of joints and spine” (146). Singleton wrote: “In terms of the new forms of hatha yoga, one of the most important branches of such practical religion applied to the body is a subtradition I will refer to as “harmonial gymnastics,” which is exemplified by the work of two American women: Genevieve Stebbins and [later] Cajzoran Ali. Both were extremely influential in forging esoteric systems of “harmonial” movement associated with yoga that directly prefigure (and enable) the “spiritual stretching,” breathing, and relaxation regimes in the popular practice of yoga today (143). Singleton recognized that Stebbins’ training regime closely coincides with the modern “elements of a standard postural yoga class” including:

dance- like flows and transitions between poses that are perhaps prototypical of the kind of “flow yoga” classes popular especially in the United States today. Certain of her deep breathing techniques are, however, directly connected to pranayama, in particular “concentrated-will breathing” or “Yoga Breathing” — ‘so called because it is used by the Brahmins and Yogis of India’ (Stebbins 1892). Although I am concerned principally here with posture, mystical breathing techniques are often inseparable from callisthenic exercise in the “harmonial gymnastics” model. It is therefore worth noting briefly (perhaps as a bookmark for future work) that Stebbins’s popular system of “rhythmic breathing” is an important site of exchange for American harmonial beliefs and hatha yoga pranayama. (146).

Stebbins was a key figure in developing body-mind work in America. Yoga philosophy is thousands of years old, however, the physical practice of yoga developed as a result of “a hybridized product of colonial India’s dialogical encounter with the worldwide physical culture movement” (Singleton 32). A year after Stebbins wrote her first book detailing her somatic movement method, the first Indian intellectual to ever visit America, Swami Vivekananda, came to lecture at the 1893 Parliament of World

Religions in Chicago where Stebbins served on the Advisory Council of Physical Culture (and where she also demonstrated her work). Swami Vivekananda is noted for bringing Vedantic philosophy to the American public through a national speaking tour, encouraging the concept of developing the 'self', through mind-body integration in order to understand the ultimate nature of reality (Brahman).

Vivekananda studied at both the "Harvard" and "Yale" of Calcutta, which at the time was not only the intellectual center of India but also Britain's Administrative capitol. According to scholar and yoga teacher Eric Shaw, when Vivekananda came to Boston he devised classes on ancient Indian wisdom, and William James, the Harvard philosopher, called him the "paragon of Vedantists." Shaw wrote, "Vivekanda brought yoga philosophy to America when 'fitness was all the rage and he was surrounded by these Bostonians-many of whom became his benefactors-who were doing something called 'Harmonial Gymnastics'-blending New Thought and Mind-Cure with exercise programs to help people. His ideas were taken up by them, and some, like William Walker Atkinson- started to call their Harmonial Gymnastics "yoga"-while Genevieve Stebbins did yoga-influenced stuff and called it Harmonial Gymnastics!" (prasanayoga.com). Professor Mark Singleton's recent scholarship claims that western physical culture systems of gymnastics eventually merged with Indian philosophy to create the practice of modern postural methods within the mind-body practice of yoga. Singleton credits the Delsarte descendant Genevieve Stebbins for contributing to the physical evolution of postural practices within yoga. Although it must be stated that his claim remains to be fully investigated, as it is not known what students of Stebbins might have brought her work to India, or how and in what way she has any direct connections with any modern

postural yoga innovator. It has been mentioned by a Dutch historian that Stebbins died in India (Ruyter 1999), however that is false, Stebbins died in California in 1934. What is known is that while Stebbins had many students, there are two who brought her work to Germany where her work came to influence the advent of Somatics.

Any serious student of Stebbins should read her publications: *The Delsarte System of Expression* (1885), *Society Gymnastics and Voice Culture: Adapted from the Delsarte System* (1888), *Dynamic Breathing and harmonic gymnastics: A complete system of psychological, aesthetic, and physical culture* (1892), *The Genevieve Stebbins System of Physical Training* (1891, 1893).

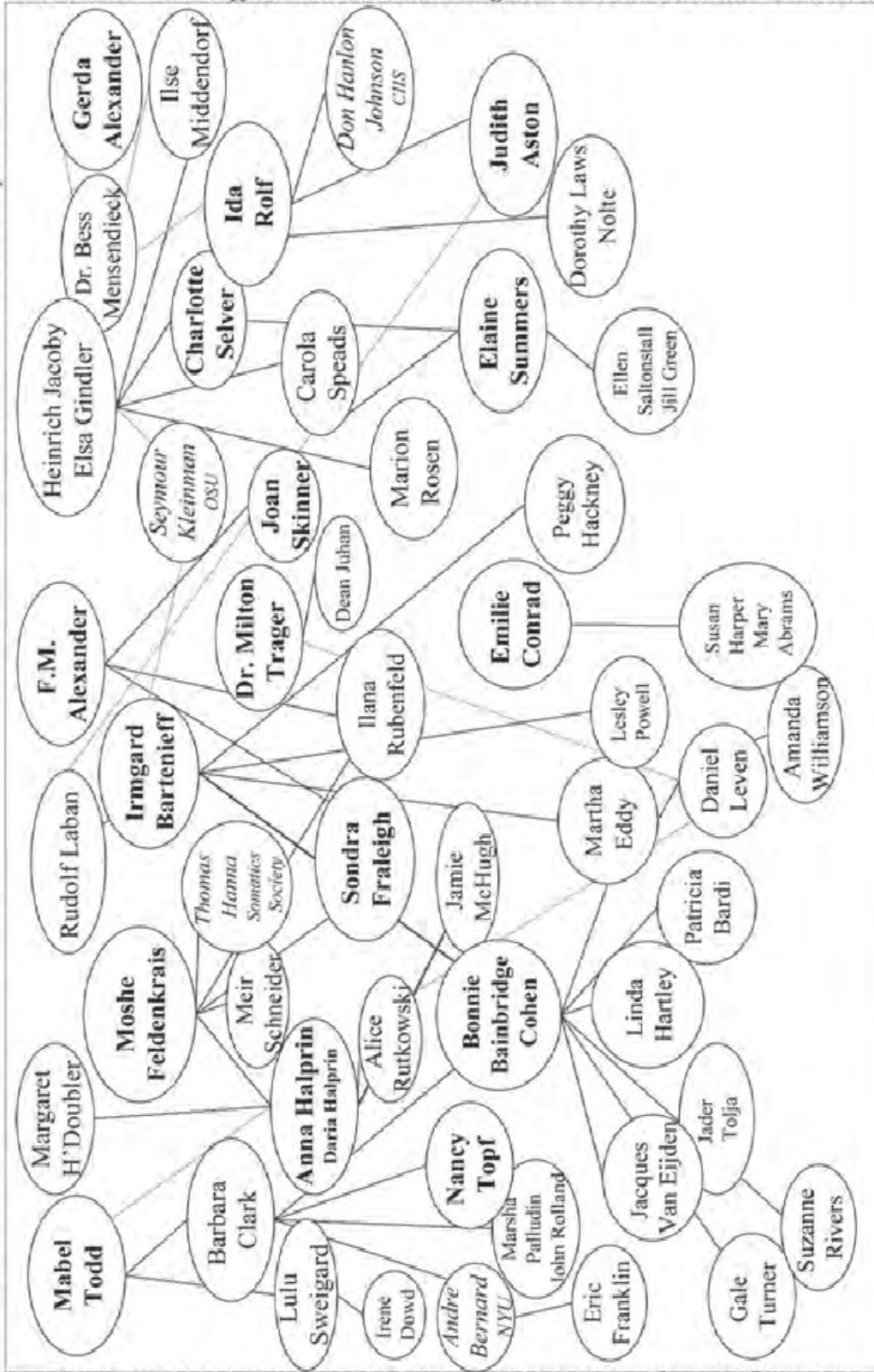
Stebbins is the progenitor of one particular lineage within somatic history, and there are many innovators- and many names I haven't included in this thesis. However I find that her work has been under researched and underestimated, even though she is directly associated within somatic education lineage to main pioneers. Her students Bess Mensendieck and Hade Kallmeyer brought her work to Germany where their numerous students spread her work, the most obvious being Elsa Gindler who is often cited as being 'the' somatic pioneer. While there is a vast historical tree with roots and shoots and numerous branches, it is still informative to study specific educational lineages.

To view the entire complex web of theorists, practitioners and students across several continents, somatic scholar Donna Dragon argued, "A true chronological progression would require a three dimensional depiction to allow for overlapping, intersecting, and interdependence of theories, practices and personal relationships" (*Towards an Embodied Education, 1850's-2007*: 152). To get an idea of the interweaving of somatic pioneers and those they influenced please refer to the map on the next page from Martha Eddy's *a*

brief history of dance and somatic practices, reprinted with permission in this dissertation
but not for reproduction in other publications.

Butoh **Judo** **Sufism** **Modern Dance** **Gymnastik** **Chi Kung** **Yoga** **Aikido**

Hans Selye Genevieve Stebbins Hede Kallmeyer Mary Wigram Alexander Lowen Fritz Perls Joseph Pilates



One View: Founders of Somatic Movement Trainings and Their Influences (dotted lines and border content)

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Bess Mensendieck (1864-1958)

Initially a student of Stebbins, American born Mensendieck created the Mensendieck System of Functional Exercises while living in Germany. Historian Robin Veder explored the work of Mensendieck in her 2011 article *The Expressive Efficiencies of American Delsarte and Mensendieck Body Culture*, stating that, unlike Stebbins, her approach was “physiological not psychological, not spiritual, not emotional” (828). Mensendieck came to disapprove of the expressive gymnastics of Stebbins, with its “metaphysical additions, which she called ‘loads of blooming rubbish’” (828), and in so doing quite unkindly dismissed Stebbins work. Mensendieck however still added to the physiological aspects of Stebbins work, yet cut out the more profound psychological, spiritual and emotional aspects, thereby making it simply a mechanical system. After studying with Stebbins in New York, Mensendieck moved to Paris to study art before transferring to medical school. She noticed the models in her sculpture class had poor posture and were quite unlike the healthy Greek figures she admired in classical art. She decided to work with the human body and became a student at the Medical College in Paris before finishing her degree at the University of Zurich (829).

Mensendieck studied with medical researchers who were exploring the physiology of emotional expression and mechanics of motion by electrically stimulating muscles in the body. According to Veder she connected ideas from Delsarte’s ‘aesthetic of expression’ with the science of kinesiology, and by 1895 she developed a system of functional body education augmenting it with her knowledge of Swedish Ling gymnastics and her medical research. It is important to note that Stebbins work already had Ling integrated into her system. Mensendieck’s focused on movements designed for everyday life, to

develop an awareness of how we unconsciously use our body in daily activities. Her system “advocated training the body and mind to work together to make self-conscious muscle placement and movement through space into learned and automatic habit” (Veder 831). Veder found that “Mensendieck developed her understanding of the relationship of muscular, skeletal, and neurological systems and began to focus on the relationships between these systems and proprioception, which is the body’s internal sense of movement through space, a key component of kinaesthetics” (830). As a result of her training system “with proper breathing, posture, and movements, the muscles could be re-educated so that the relationship between nervous system, bone structure, and musculature worked together” (831).

Veder pointed out that Mensendieck, as a feminist health reformer, designed her system for the bulging bellies of adult women in Germany after the corset was beginning to go out of style and women were unaccustomed to engaging muscles to support their own posture (*Seeing Your Way to Health* 1338). She found that women needed their own exercise regime that was different than the gymnastics traditionally given to men. Her system included movements designed for full-body maintenance and was both “corrective and preventive” to improve the body’s structural and functional integrity” (Knaster 230). Historian Karl Toepfer wrote that Mensendieck departed from the tradition of gymnastics by “linking the cultivation of a woman's personality to the efficient and beautiful performance of ordinary, practical actions. [...] She urged women to think scientifically about their bodies as "machines" of liberation; the expressive power of the body as a whole depended on the strengthening of different parts of the body, from head to toe, in ways that were specific to their functions (*Empire of Ecstasy* 40).

As the first woman to publish her work in Germany on physical culture (1906/1908), Mensendieck “articulated concepts and terminology that are still currently utilized in dance; for example, mastery of the total scope of movement (full range of movement), space awareness, execution of line...” (Ruyter qtd. in *Dragon Towards Embodied Education*). Between 1905-1924 Mensendieck established schools in Germany, Austria, Holland, Denmark, Czechoslovakia and New York City. She also established the Mensendieck-Bund, followed by the creation of the International Mensendieck League. In the 1930’s she taught in New York City at the New School for Social Research and her system was employed at Yale. Mirka Knaster noted that her work continues to be popular in Denmark, Norway, Sweden and the Netherlands (230).

As a trained medical doctor Mensendieck was able to analyze the human body as a biodynamic entity capable of correcting structural dysfunction that would lead to system wide change and more harmonious movement patterns. Her work grounded somatic theory in science and experiential methodologies designed to train the body to find its own optimum physical efficiency.

Hade Kallmeyer, Elsa Gindler and “Sensory Awareness”

Around 1910, Hade Kallmeyer (1881-1976) opened a school of harmonic gymnastics, “Seminar für Harmonische Gymnastik”, for girls in Berlin. In 1911, the somatic pioneer Elsa Gindler became a student after reading and becoming inspired by Kallmeyer’s book *Healing Through Movement* (Geuter, Heller and Weaver 2010). However that title was for the second addition of her book after Gindlers death, so what she might have read was *Künstlerische Gymnastik; harmonische Körperkultur nach*

Amerikanischen Systems Stebbins-Kallmeyer published in 1910. Numerous scholars credit Elsa Gindler (1885-1961) for being the earliest originator of somatics (Eddy 2009, Geuter, Heller & Weaver 2010, Hanna 1979, Johnson 1995, Murphy 1992).

Gindler was a student of harmonic gymnastics, and according to Gindler's long time assistant Carola Speads, harmonic gymnastics was a kind of bodywork and physical re-education introduced in Germany, originally developed for women by the "two great proponents" Hade Kallmeyer and Bess Mensendieck (*Bone, Breath* 26). Both women trained with Genevieve Stebbins, the leading innovator of harmonic gymnastics.

Speads shared that Kallmeyer trained with Stebbins in New York before returning to teach the Stebbins-Kallmeyer system in Germany (26). Kallmeyer had also studied with Mensendieck in Germany, becoming her successor (Karina & Kant 2004, Ruyter 1999). In his 2010 article *The Early Roots of Sensory Awareness*, Richard Lowe wrote about Kallmeyer, saying "Unfortunately not much seems to be known about her, probably due in part to the destruction wrought by the Second World War" (8). Lowe investigated her book *Künstlerische Gymnastik* claiming that in her physical education system it appears that "Kallmeyer modified the Stebbins method to accommodate some ideas of Bess Mensendieck, herself a student of Stebbins" (8). Three scholars with doctorates in body psychology, Ulfried Geuter, Michael Heller and Judyth Weaver, researched the work of Kallmeyer and Gindler and the new "Reform" gymnastics movement. Their methods

proposed a different approach where the voice of the teacher and external bio-mechanical reasoning was replaced by developing an awareness of the student's inner rhythms and of the requirements of his organism. These were gymnastic teachers who "abandoned the traditional approach to teaching movement that included apparatus and uniform execution of movement. Instead they allowed their students a wider range of freedom to individually explore their experiences and to develop their somatic behavior" (*Elsa Gindler and her influence on William Reich and Body Psychotherapy* 59-73).

Gindler began teaching in 1912 and by 1917 Gindler had opened her own “school for harmonizing body formation” and later became the president of the German Association of *Gymnastik* teachers. By 1925 after the biggest German film company came out with a film on *Gymnastik* “everyone knew about this new form of physical education” (*Bone, Breath, 26*).

While little may be known about Kallmeyer, Gindler’s work has been passed down through the generations by her students. There was no book on Gindler’s approach published during her lifetime, as a result of the loss of 40 years of her writings when her studio was bombed in Berlin in World War II. There is one German book on Gindler (2002). While Gindler lived out the war in Germany, two of her students, Carola Speads and Charlotte Selver emigrated to America and continued to advance her work abroad. What we know of her pedagogical approach is mainly through them. Gindler has one surviving article published by the *Gymnastik Bund* (Federation), and otherwise her work and history is told through translated letters and shared stories of students and friends. Gindler’s approach is now seen as a form of “intuitive restoration” of the bodily ‘self’. Her student Charlotte Selver called her training ‘Sensory Awareness’ as it came to be known in the United States (Murphy 406). Johnson wrote that her approach might be most accurately described as “embodied inquiry [...] It is an inquiry into experience simply as it is given, without interpretation [...] The only goal is to become increasingly awake” (*Sensitive inquiry: 1*). Thomas Hanna wrote that Gindler “took seriously a phenomenon with which human beings have always been familiar: that directing one’s attention to some part of one’s body is an action that immediately affects that bodily part [...] if Elsa Gindler discovered that greater sensory awareness leads to a more efficient

muscular control, she was recognizing the importance of certain neurophysiological facts that no one had thought to take advantage of” (*The Body of Life* 159). Gindler refused Nazi demands to systemize what she taught; instead she said her work was about personal exploration. In her article, “*Gymnastics for the working person*” (1926), Gindler stated that: “the purpose of my work is not to learn certain movements but to reach concentration” (qtd. in *Bone, Breath* 5).

It is thought that Gindler came to develop her approach to “embodied inquiry” after healing herself of illness. Johnson explained how Gindler “was told by her doctors that she would never regain the use of one lobe of her lungs. She spent several months devoting herself for hours daily to learning how to inhabit her breathing, and eventually she regained full use of the collapsed lung” (*Ways of the flesh* 4). Johnson (1995) claimed that there is an unbroken lineage from the breath teacher Leo Kofler to Gindler and a handful of European and American contemporaries and a large number of somatic educators practicing today throughout the world (*Bone, Breath, and Gesture* xi). However, this is not entirely true. There are few direct links between Kofler and later somatic educators. Gindler did not study with Kofler (although this claim has been made by contemporary scholars).

Leo Kofler was a voice teacher who also taught breathing exercises, similar to many contemporaries in his day. He wrote that he developed his breathing method after losing three sisters, his Grandfather, two uncles and an aunt to consumption (tuberculosis). In his 1887 book, *The Art of Breathing*, Kofler wrote about his own repeated lung problems and ill health after which he decided to heal himself of his lung troubles, writing “I did not wish to die, and I fully made up my mind to fight death” (13).

He wrote that he developed his breathing method by studying articles on the re-education of the voice and synthesizing available anatomical knowledge from medical books on anatomy and physiology. By experimenting with intensive inner training Kofler was able to modulate his breathing patterns and work his way to a stronger constitution (13-19). Kofler taught his ‘voice science’ approach to two German students, Clara Schlaffhorst and Hedwig Andersen, who brought his ideas back to Germany establishing the Rotenburg Breathing School in 1916. It is said that the somatic pioneer Elsa Gindler studied here as a child (Newman 450), yet she was an adult by that date who had already been teaching for four years on her own. Gindler actually both taught and took classes at the Rotenburg School (Boutan-Laroze). Some claim that Kofler’s book was translated into German in 1903 and it is thought that Gindler might have been familiar with his work as a result (Veder 1340), yet the school website says that the book was translated in 1897 (cjd-schlaffhorst-andersen.de). It is a matter of conjecture whether Gindler read this book and was inspired by it. Somatic pioneer Bess Mensendieck scoffed at the idea of students learning Kofler’s breathing methods from reading popular books, believing that information could be misunderstood and ultimately in-person instruction was much more powerful and effective (Veder 1340). Mirka Knaster wrote that while Elsa Gindler practiced exercises from “a book on breathing” however “she soon abandoned the book and worked on her own recovery process until regaining her health (227). I would contend that although Gindler explored breath work with two of Kofler’s students she was already experienced in similar techniques through the Stebbins-Kallmeyer system, and by no means did she exclusively use his approach.

Regardless, Gindler came to her own realizations as a result of her training and

personal experiences as do most students of Somatics. Geuter, Heller and Weaver stated that in the process of her healing Gindler made some personal discoveries:

In order to discover the possibilities for regeneration and health, she gave her complete attention to what was happening within herself at every moment, in every activity, during the entire day. Devoted student, colleague and friend Elfriede Hengstenberg explained, “She found that in this practice she came into a state where she was no longer disturbed by her own thoughts and worries. And she came to experience – consciously experience – that calm in the physical field (Gelassenheit) is equivalent to trust in the psychic field. This was her discovery, and it became basic to all subsequent research” (Hengstenberg, 1985).

In her classes, she did not teach “techniques”. She helped pupils to discover ways of practicing which fitted best his or her particular set of issues. Students should create their own movement experiments and make their personal experiences (“erfahrbereit werden”) (Franzen, 1995). The natural activities of everyday life were the material for her classes. Gindler’s focus was “tasten”; in English we would say, “*sensing our way,*” or “*feeling what happens inside movements,*” or “*exploring what impressions are activated by movement.*” This implied working on how movement and consciousness could resonate with each other. It seems what Elsa Gindler was looking for was to use movement that could help a person to improve the coordination between mind, breathing, relaxations, gesture, posture and muscular tone (*Elsa Gindler and her influence*, Judythweaver.com)



Gindler’s work was also referred to by others as work on human beings (“Arbeit am Menschen”) emphasizing self-observation and understanding of one’s individual physicality and the condition of that physicality” (*RMIJ*, 1). Carola Speads spoke of

Gindler as “one of the most outstanding teachers in the field of physical reeducation” and “it was Gindler who raised the standard of breathing work. She applied to it the highly original ideas she had developed in her movement: body awareness as the basis, and experimenting as the procedure, instead of the mechanical approach that was generally followed” (*Ways to Better Breathing* xxi). Speads continued by saying, “It was an ongoing research experience in one’s own bodily functioning in the course of which one learned how to improve one’s movement abilities” (*Bone, Breath* 29).

Gindler’s student, Charlotte Selver, named her work Sensory Awareness. She called Gindler a “natural scientist” in her article *Sensory Awareness and Total Functioning*:

I would call Elsa Gindler a natural scientist of extraordinary quality. She has made it her life's work to explore to what degree we human beings cooperate with the forces of nature, for instance: with spontaneous development of energy within a given activity, with the processes of life and regeneration as they happen through us, with the dynamics of rest and activity, how we respond to gravity, and so on. She has found out that in the process of this exploration one can discover through sensing, how hindering tendencies come about. As the individual becomes more sensitized and learns to befriend himself with the potentials he gradually uncovers, the way slowly opens to a fuller experiencing and deeper relating to himself and all activities of daily living. Actually, her work is bio-social in nature. (444-45).

Gindler was a product of the physical culture movement, a gymnastik leader, and a descendent of Stebbins. Gindler was also a long time collaborator with Heinrich Jacoby. Her students brought her approaches back to the United States, and around the world. Of the hundreds of Gindlers students include; Carola Speads, Clare Fenichel, Alice Aginski, Dr. Lily Ehrenfried, Sophie Ludwig, Lotte Kristeller, Johanna Kulbach, Goralewski, E Henstenburg and Charlotte Selver, Hanna Salomon, Marei Holscher, Else Henschke Durham, Ruth Norenberg, Lily Pincus (Boutan-Laroze, Charlotte Selver Foundation Bulletin).

F.M. Alexander (1869-1955)



Many somatic pioneers developed their methods out of experimentation with their own bodies. Australian Frederick Matthais Alexander applied the principle that if attention is drawn inwards, consciousness arises on a subtle level in the body, making it possible to direct and influence physiological change. Alexander suffered from periodic voice loss while performing as a Shakespearean actor. Medical doctors were unable to help him with his problem, and Alexander decided to observe himself and investigate what was causing the problem. He found that he had an unconscious habit of postural misuse in that he stiffened his neck and pulled his head back causing unnecessary strain on his larynx. Through subtle and conscious effort with this new awareness, he was able to practice re-aligning his head and neck into a better movement pattern, which allowed for a voice free from strain. He realized that even though his previous pattern felt ‘right’, in a sense he was unaware of how his habits were harming him, and it became necessary to train slowly to absorb the new, more efficient movement pattern. He called this process of learning the ‘means-whereby’ in contrast to ‘end-gaining’, which is the striving for

immediate and quick results. Alexander found that habits are built up over time and programmed into the nervous system. The process of developing new habits, or patterns, takes time and concentration to reprogram the sensory motor loop before it becomes the new automatic way of moving. Alexander developed basic movement techniques and began working with actors on elocution. He was encouraged by a medical doctor to bring his work to London from Australia in 1904, where he continued to develop his work with such famous Shakespearean actors as Sir John Irving. (Gelb, *Body Learning* 9-19).

By 1909 Alexander had developed a form of “kinesthetic re-education”, including vocal exercises “much as did the standard contemporaneous elocution, singing and breathing literature” within Europe and America (Staring). However, Staring claims that increasingly Alexander began to “advertise that he was able to help his clients remove old and unwanted habits and at the same time install new and wanted habits. In that sense, he can be seen to move away from teaching voice or breathing to the general process of changing all motor habits” (8). Furthermore, Staring stated that Alexander seemed to borrow ideas from his contemporaries, integrating them into the development of his own technique:

Alexander’s 1909 *inhibition* has a great deal in common with Alphonse Loissette’s 1896 *pre-cognitive* psychology concept that “Attention” has a “Directory” function as well as an “Inhibitory” function. Since his interaction with Loissette in 1895, it appears that Alexander began studying books on Delsarte physical exercises by Steele MacKaye’s followers. Analysis of his texts shows that he seems to have been influenced by Genevieve Stebbins, Moses True Brown, Stebbins’s student Dr Bess Mensendieck, [...] Rather than inventing new exercises, Alexander adopted various physical procedures from other disciplines (8).

Like his contemporaries, Alexander discovered that postural and behavioral attitudes could be changed through practice. The Alexander Technique utilizes an open-minded awareness to allow for an alteration of reactions to stimulus over time thereby developing

new sensory experiences. Jennifer Tarr wrote that the Alexander Technique works as an “embodied practice” that is transmitted through the hands of the Alexander teacher, “whose manual adjustments of the pupil convey the sense of the work and how the body/self is to be aligned. Conscious control is an important part of this: the pupil is asked to inhibit, or to ‘not react’ to a particular stimulus” (*Educating with the hands: working on the body/self in Alexander Technique* 5). Activities make “pupils aware that they suffer from ‘faulty sensory awareness’ to enable them to differentiate aspects of their movement and thereby develop more precise awareness of their bodily use” (3).

Alexander published several books about his approach. Three of his books included a foreword by the educational reformer John Dewey, then a Professor of Philosophy at Columbia, who was also one of his clients. Dewey was a graduate of Johns Hopkins University, the first research university in the United States modeled after German medical research institutions, after which it became *the* U.S. model. Dewey became a strong advocate of Alexander’s approach to physical intelligence, finding it to be as valid as an academic education. The Chair of Physiology at Oxford and Nobel prize winning neurophysiologist Charles Sherrington was also a proponent of the Alexander technique stating that; "Mr Alexander has done a service to the subject [of the study of reflex and voluntary movement] by insistently treating each act as involving the whole integrated individual, the whole psychophysical man. To take a step is an affair, not of this or that limb solely, but of the total neuromuscular activity of the moment, not least of the head and neck" (stat.org.uk). At one time Alexander won a court case that challenged the scientific validity of his work with Sherrington testifying on his behalf. Sherrington won the Nobel prize for discovering reflex patterns and the integrative nature of the nervous

system, in which all parts affect the whole, laying down the physiological basis of the central nervous system.

Sherrington saw reflex actions as being reciprocal, with one muscle contracting and inhibiting movement alongside excitation of the corresponding opposite muscle. The message for both actions travels through the same motor nerve within the spinal cord. Expanding beyond his term 'reflex arc' action, Sherrington introduced the idea of proprioception in which motor neurons located in the muscle tendons communicate back to the brain, giving us a sense of ourselves in space. Motor neurons and sensory neurons are in continuous communication with the brain as the proprioceptive system provides a cyclical connection of mind and body, brain and movement.

The proprioceptive system is integral to body awareness. Proprioceptive abilities are developed with two other concepts introduced by Sherrington: *exteroception*- information which comes in from the sensorial pathways through the skin, ears, eyes, nose and mouth from stimulus outside of body, and *interoception*- sensorial information coming from the interior of the body. Sherrington also further defined coordination in which reflex actions over time can be conditioned interiorally to a higher level of integrated movement, thus increasing kinesthetic intelligence within the proprioceptive system through the practice of acquiring new motor skills. Increasing kinesthetic intelligence is central to many somatic practices such as the Alexander technique. The proprioceptive system uses sensory information from the body in order for the brain to signal constant commands to our muscles and joints and achieve movement and balance. Most of this process occurs at an unconscious level and is signaled in a rapid-fire manner.

For example, my fingers can type these words on the paper without me having to

focus on each finger and try to command each step and every minute motion needed to enable me to type. My brain and body are able to figure out a spatial sense of the keyboard so that I can type quickly and efficiently. However, when I was first learning to type this was not the case. I often had to look at my fingers, look at the keys and consciously exert effort to slowly learn where to put my fingers as I developed a new movement skill. As my typing abilities increased, proprioception took over and I can now work quickly and without much thought. The process of learning initially includes conscious efforts. In *BRAIN: A Journal of Neurology*, Robert E. Burke wrote that Sherrington concluded “reflex arcs are controllable by mechanisms to whose activity consciousness is adjunct”. He points to this as the mechanism by which we acquire new motor skills” (386). Once new skills are learned the brain continuously utilizes sensory input in order for our proprioceptive sense to command bodily actions in an unconscious manner without us having to think about every single movement needed.

Through his scientific understanding of ‘motor units’ activity, Sherrington recognized the Alexander Technique as a method of acquiring new motor skills. In the process of learning, somatic education includes acquiring new motor skills that lead to advanced proprioceptive awareness. Alexander technique includes basic postural analysis by the practitioner who observes movement patterns of the client from sitting to standing, or while walking. Through verbal or hands on means the client is led to sense how they habitually use their bodies in everyday tasks in order to find efficiency of movement.

Moshe Feldenkrais (1904-1984)



Moshe Feldenkrais was a physicist for twenty years before developing his somatic methods Functional Integration (a one-on-one manipulation) and Awareness Through Movement (a group practice). As a young man Feldenkrais left his Jewish family in Russia to help in the building of Palestine. He then moved to Paris to study at the Sorbonne and later participated in pioneering nuclear research with Joliot-Curie. While a physicist, he was also an athlete, becoming the first Western Judo master trained by Kano, the originator of Judo, who helped him set up the first judo club outside of Japan. Feldenkrais was at the top of his field in science during the Second World War. During the war he was brought by the British Government (along with other world class

scientists) to Scotland for counter espionage work. He smuggled with him technical information on nuclear fission experiments. In their spare time, the scientists gave each other lectures on their personal interests. The somatic lectures of Feldenkrais were the basis for his first book *Body and Mature Behavior (Embodied Wisdom 2)*.

Feldenkrais developed his somatic theories as a result of personal research and experimentation when trying to heal from injury. After repeated knee strain, Feldenkrais studied “anatomy, physiology, and psychology in order to rehabilitate himself without surgery, and in doing so he developed both a philosophy of life and his educational method” (Murphy 393). His methods maintain that movement is the basis for awareness. Feldenkrais wrote that “to learn we need time, attention, discrimination; to discriminate we must sense. This means that in order to learn we must sharpen our powers of sensing” (*Awareness through Movement* 58).

Returning to Israel in 1949, Feldenkrais continued to conduct research in physics and began to teach classes, developing his somatic theories, exercises, and clinical applications of his work. He created his own clinic in the 1950’s encouraged by the first president of Israel. Initially a one-on-one practice, Feldenkrais developed his group practice to service the large numbers of clients flocking to him for help. Feldenkrais exercises use minimal effort, “reducing muscular effort, kinesthetic-sensory acuity is improved and it becomes possible for a person to make fine distinctions about what they are doing and to become aware of unconscious or unknown aspects of their physical organization, movement, and action” (*Embodied Wisdom 2*). With greater kinesthetic-sensory acuity, the entire mind-body system integrates a new embodied comprehension of physical and mental achievement. The patient/student then assembles a more complete

image of movement, mostly at a subcortical level, which can be translated into new achievements” (feldenkraisinstitute.org).

Thomas Hanna claimed Feldenkrais was “one of the world’s leading authorities on human sensorimotor functions” (*Body of Life* 177), explaining Feldenkrais exercises as encouraging awareness of “unconscious patterns of habitual behavior” in order to integrate new sensorimotor patterns into our central nervous system (178). Feldenkrais applied an understanding that “the human soma is a neurally organized cybernetic system that is self-adjusting, self-correcting, and self-improving- *if* that system is given new information with which to interact and *if* that system is allowed to become *sensorily aware* that there are other options than the way it habitually acts” (186-187).

After reading Feldenkrais’ book, *The Body and Mature Behavior*, Thomas Hanna not only asked to become a student but set up the first training program in the United States for others to do so as well, bringing Feldenkrais over from Israel in 1975. Hanna was astounded to witness him apply his method of Functional Integration on a patient where through his educated touch within a half hour the man appeared to physically change before his eyes. (*Body of Life* 178-181). In the Feldenkrais method, movement learning and guided touch sensed by the body reprograms the brain. His work provides in-depth scientific analysis for the “biological and functional unity of the mind and body” (*Embodied Wisdom* 1).

With the advent of his method, Feldenkrais significantly challenged the “dominant scientific and academic model of the brain” and demonstrated the concept of neuroplasticity before the term even existed (1). Fifty years later, the scientific validation of neuroplasticity confirms his ideas about movement learning. Feldenkrais was able to

demonstrate “that throughout our entire lifespan, our brain has the capacity to modify its organization and responses through experience and learning” (1). The neurophysiologist Karl Pinbram of Stanford University was a collaborator and supporter of Feldenkrais and later became president of the Feldenkrais Foundation. Pinbram felt Feldenkrais work taught the body how to reprogram the brain in an interactive process that ultimately transforms human behavior (Richard Leviton 43). Feldenkrais saw his work as relating to system wide functioning, integrating somatic, mental, motor and emotive elements.

Authors Buchanan and Ulrich compared dynamic system theory to the work of Feldenkrais. They stated that “humans are self-organizing systems [and] nested within the principle of self-organization is the concept that behavior is dynamic and, therefore plastic” (*The Feldenkrais Method; A Dynamic Approach to Changing Motor Behavior* 317). Behavior is changeable and ‘plastic’ as a result of the improved ability to perceive sensory information and change sensorimotor functions (316). The International Association for Dance Medicine and Science reiterated the premise of Buchanan and Ulrich, stating that “Today, the Feldenkrais work is best substantiated by tenets from Dynamic Systems Theory in which behavior is seen as dynamic and changeable through providing a proprioceptively-rich environment of movement exploration and variation. Movement habits can change through introducing gentle sensory “perturbations” (nudges) that shake up the old order and allow for the experience of new movement potential to emerge” (Bateson *Somatic Studies and Dance* 3).

In 2010, the Australian Feldenkrais Guild compiled a 28-page document, including over a hundred scientific studies, on the benefits of the Feldenkrais method. (feldenkrais.org.au). His work grounds somatic theory within scientific thought.

Movement Potential, Dance and Somatics

Alongside the evolution of the work of Genevieve Stebbins, Bess Mensendieck, Else Gindler, F. M. Alexander, and Moshe Feldenkrais innovative somatic practices appeared within the field of dance. In her article *a brief history of dance and somatic practices*, Martha Eddy wrote, “Dance settings have been especially potent for the teaching of ‘somatics’ inclusive of somatic research methods. These classrooms value experiential learning- learning by doing, being in the body” (20). She continued, “Dancers use somatic education to strengthen technical capacity, expand expressiveness, and reduce incidents of injury, as well as for self-development” (21). Somatic work used within the dance field includes the methods of Joseph Pilates, Mabel Todd, Lulu Sweigard, Rudolph Laban, Irmgard Bartenieff, Mary Whitehouse, Elaine Summers, Bonnie Bainbridge Cohen, and Irene Dowd. Detailing their work in depth is beyond the scope of this paper, and summaries of their contributions to somatic theory and practice are based upon the 2008 dissertation of Donna Dragon: *Towards an Embodied Education 1850’s-2007: Historical, Cultural, Theoretical and Methodological Perspectives Impacting Somatic Education in United States Higher Education Dance*.

- **Joseph Pilates (1880-1967)**. Pilates left Germany in 1926 after the German Kaiser invited him to train the secret police, choosing instead to train dancers in NYC and the Jacob’s Pillow dance program from 1926-1951. The Pilates method ‘Contrology’ was used by dancers in recovery from injuries and also as a concentrated form of conditioning which integrated breath and conscious movement exercises. Devotees included famous dancers and choreographers Martha Graham, Jerome Robbins, and George Balanchine. (185-187)
- **Mabel Todd (1880-1956)**. A student of movement and voice at a school of expression in Boston, which included Delsarte training, Todd later became a teacher of ‘posture’ integrating the use of imagery and touch to help clients sense proper bodily alignment. She became a student and lecturer at Columbia and published work that became central to the development of ideokinesis, a body therapy method further developed by her student Lulu Sweigard. (187-188)

- **Lulu Sweigard (1895-1974).** Sweigard studied with Todd at Columbia earning a Masters degree in physical education, before teaching there and beginning her doctorate degree. Her teaching methods included “neuromuscular reeducation” which used tactile expertise she called “educated hands”. Juilliard School invited Sweigard to teach within their dance program between 1950-1960, where she refined her curriculum specifically to educate dancers on human anatomy and movement functioning. Her book *Human Movement Potential: Its Ideokinetic Facilitation* (1974) introduced the term “ideokinesis” defined as physical movement supported by ideas and the concept of movement. (193-196). Todd and Sweigard developed movement work which encouraged visualization of anatomy in order to “release inefficient and habitual physical patterns” (222).
- **Rudolph Laban (1879-1958).** Hungarian born German immigrant Laban developed a comprehensive notation system called Laban Movement Analysis (LMA). His notation system was so intricate it was later used in the revival of dance pieces. Beyond dance his system analyzed movement qualities in varied capacities. In 1941 Laban left Germany for Britain. His effort-shape analysis theories helped in redesigning physically efficient ways of working. His methods were expanded upon by his student, Irmgard Bartenieff. Both Laban and Bartenieff studied with Mensendieck, and Laban was familiar with the work of Delsarte. (205-207)
- **Irmgard Bartenieff (1900-1981).** After Hitler closed her schools in Germany, Bartenieff came to NYC, earned a degree as a physical therapist, and introduced Laban’s notation system to dancers. Recognizing limitations of physical therapy techniques Bartenieff developed movement sequences she called “Correctives”, later known as Bartenieff Fundamentals. Her work examined the complete movement profile of the individual. In 1962 she worked as a dance therapist at the Albert Einstein College of Medicine and by 1978 had created the Laban/Bartenieff Institute of Movement Studies in NYC. She was a founding member of the American Dance Therapy Association. (197-198)
- **Mary Wigman, (1866-1973).** Wigman was a modern dance pioneer of Weimar Germany. As an assistant to Laban, Wigman helped him develop his theories in dance, although she ultimately found him to be a volatile and restrictive teacher and split from him in 1920 to create her own dance gymnastics system. Wigman’s American student **Mary Whitehouse (1911-1979)** found that Wigman’s work valued the creative process and allowed the body to explore space and discover new movement potential. Whitehouse returned to the U.S and became a dance therapy pioneer developing “Authentic Movement” which includes movement improvisation and the integration of inner awareness. (213-215).
- **Elaine Summers (1925-).** Former student at Juilliard and dancer with Martha Graham, Merce Cunningham, and Trisha Brown, Summers developed early osteoarthritis leading her to investigate painless movement methods. Summers

studied with Elsa Gindler's students Charlotte Selver and Carola Speads. She combined elements from her learning experiences to develop Kinetic Awareness, a method encouraging sensation and awakened awareness of muscular tension while laying down on small rubber balls for support. The goal is to "release each part of the body into gravity more fully, and most importantly to respond to the balls mobility with movement responses" (Eddy, 2009,16).

- **Bonnie Bainbridge Cohen (1941-)**. Cohen earned a degree in occupational therapy at Ohio State before studying neuromuscular education in England. Returning to NYC, Cohen worked in hospitals and dance studios, teaching at the Eric Hawkins School of Dance and Hunter College. She was influenced by yoga and martial arts. While in Japan establishing a school for physical therapists, she studied aikido and Katsugen Undo. Back in NYC Cohen studied under Bartenieff before becoming a certified movement analyst. In addition she trained in CranioSacral therapy, Visceral Manipulation and became certified as a Kestenberg Movement Profiler. In 1973, Cohn established her own school, The School for Body-Mind Centering to train others in her somatic method (BMC). BMC utilizes movement awareness practices focusing on a specific body part, or on various bodily systems such as the skeletal, or circulatory, which she calls "being in the mind" of the body. (395-398). Cohen aims to aid others in developing action based on perception stating that "movement is perception... movement helps to establish the process of how we perceive; and that how we perceive movement becomes an integral part of how we perceive through other senses" (*Bone, Breath, Gesture* 195).
- **Irene Dowd (1946-)**. Dowd studied ideokinesis with Lulu Sweigard at the Julliard School Dance Division. She later became her assistant for six years and a member of the faculty. Dowd studied human anatomy and neuroanatomy before starting her own neuromuscular training private practice, teaching at many colleges and dance programs for thirty years. Her book *Taking Root to Fly: Articles on Functional Anatomy* became a text in higher education dance classes, encouraging the use of visualization to increase movement potential. Dowd wrote that one of the main principles of ideokinesis included the idea that "all postural alignment patterns, all muscle use and development, all human body movement is directed and coordinated by the activity of our nervous system, in other words, our thinking" (*Taking Root* 1).

Human Potential Movement

It is worth noting that while somatic work continued in America from the early 1900's within the modern dance field, somatics had a resurgence in the 1960's, especially around such germinal places as the Esalen Institute in Big Sur, California. Esalen Institute, founded in 1962, was devoted to the exploration of what Aldous Huxley called the "human potential, the world of unrealized human capacities that lies beyond the imagination" (esalen.org). The 2002 newsletter celebrating the 40th anniversary of Esalen shared that "experiential teachers such as Fritz Perls (Gestalt Awareness Training), Will Schultz (Open Encounter), Charlotte Selver (Sensory Awareness), Moshe Feldenkrais (Awareness through Movement), and Ida Rolf (Structural Integration) became known throughout the world largely through their residencies at Esalen" (esalen.org).

Don Hanlon Johnson wrote "in the 1960's, the Esalen Institute and a growing counter-culture exploring different states of consciousness provided an opportunity for a revival of the Somatics vision. Some of the old pioneers traveled westward from Tel Aviv, London, Berlin, and New York, gathered together large numbers of students, returned to the eastern seaboard, established new schools, and eventually brought their work back to Europe" (*Ways of the Flesh* 47). Author Donald Bakal wrote about the connection of somatic work and the human potential movement:

The 1960's initiated a shift in theorizing about the body ... The human potentialities movement received its theoretical impetus from existential and humanistic philosophers who argued that human consciousness had potentials exceeding levels experienced in daily life. They recognized body experience as a key component of experiential growth and enlightenment." (*Minding the Body Clinical Uses of Somatic Awareness* 11).

Section Three

Scientific Foundations of Somatic Theory

Common Function of Body Awareness

A qualitative analysis *Body Awareness: a phenomenological inquiry into the common ground of mind-body therapies* by Mehling et al, published in 2011, explored the function of body awareness in mind-body approaches (2). Conducted by the University of California Osher Center of Integrative Medicine, this analysis explored senior somatic and mind-body teachers with over ten years of practical experience holding national and international teaching credentials of the following methods: Feldenkrais, Alexander Method, Breath Therapy (Middendorf), Yoga, Tai Chi, Somatic Experiencing (Levine), Hakomi Body-Oriented Psychotherapy (Kurtz), Yoga Therapy, Mindfulness-Based Stress Reduction (Kabat-Zinn), and Somatic Therapy (Hanna). Internal sensation known as “*interoception*” was of key relevance to the study; thus stimuli from the external environment and exteroceptive channels were excluded in the analysis (2).

While the investigators clarified that body awareness may not be the main objective for all of these approaches, they found it to be a key element in providing health benefits (1). Their research defined body awareness as involving “the subjective, phenomenological aspect of proprioception (sense of the body in space) and interoception (sense of one’s own body) that enters conscious awareness, and is modifiable by mental processes including attention, interpretation, appraisal, beliefs, memories, conditioning, attitudes, and effect” (1). Researchers Mehling et al differentiated between the dominant

medical perspective in which body awareness is associated with a patient magnifying or negatively ruminating over bodily sensations known as somatization, compared to the positive cognitive approach within mind-body work, which incorporates subtle sensations and internal cues from the body in order to manage physical conditions and health (2).

Similarities found in the mind-body/somatic approaches studied included integrating the use of breath, “training and repetition, noticing body sensations, discerning and differentiating changes in the body, thoughts and/or emotions, and body-mind integration as the therapeutic goal” (5). Mind-body practitioners shared the theoretical concern that learning to have embodied experiences and an integrated sense of self is an important part of the educational process (4). They found somatic learning involved “a shift in awareness of body sensations as part of the process of engaging in the practice”, which led to changes in “how the patients responded and related to the sensations” (8). Learning to differentiate and discern sensory cues develops the skill of self-regulation. Through self-regulation adaptations to movement and behavior in relation to pain and bothersome symptoms is made possible (9). Overall, their findings were consistent with prior published studies on mind-body approaches, providing a “growing body of evidence that body awareness enhancing therapies may provide psychological and pain-related benefits for patients suffering from a variety of conditions” (11).

One example of a body awareness enhancing therapy included in the study is that of Peter Levine’s Somatic Experiencing. In his book Levine writes about a therapy session with a client. The client was suffering from intense pain in his shoulder, which was frozen into place. Doctors recommended surgery and his physical therapist referred the client to Levine as there seemed to be no apparent physical injury and perhaps there was

a body/mind dysfunction taking place. Levine had the client show him how much movement range he had in his shoulder, asking him to work in slow motion and to focus his full attention on his movement. Working slowly the client was able to find more range of motion each time he raised his arm. Soon the client's hand started to tremble and shake and Levine asked him to maintain his focus on the arm and let the muscles release the tension and energy from its frozen holding pattern. Slow, mindful movements can stimulate "involuntary functions of the nervous system" (193). Levine asked the client to stay focused on sensations from the body and allow movements of the arm to continue to be explored once the trembling stopped. Soon the client had a much greater range of motion and was surprised that he was able to move pain free. During his movement explorations the client became aware of why his shoulder had become locked in the first place. The week before he had tried to save a woman in a car wreck, and while reaching across the steering wheel he saw her son who was killed next to her. In a moment his body recoiled in horror while at the same time he was trying to reach out to help. The conflicting emotional impulses within this traumatic situation created two opposing muscular demands of reaching and retreating, which froze his shoulder into an immobile state. The demands of the moment were too intense for him to handle and his body froze. Through body awareness therapy with Levine he was able to self-regulate his own movement while focusing on sensation in his shoulder and liberated himself from pain. He did not require shoulder surgery. (*In an Unspoken Voice, How the Body Releases Trauma and Restores Goodness* 193-197). Our bodies neuromuscular responses are designed to be protective, yet with intense emotional or physical strain our body can get stuck. Body awareness therapies are designed to restore freedom in the body from

inhibiting and limiting physical conditions. Liberating the physical self will also at times release emotions and memories, clearing the way to not being bound by them so that people can more fully experience the present moment without being tied down by the past. Cultivating body awareness is a way to tap into living in the “now” and breed a higher sensitivity to our own needs. By establishing a healthy relationship to our own inner self it becomes more possible to encounter the external world in a positive manner.

Movement Awareness, Basis for Somatic Work

Developing body awareness is integral within somatic education so that people may learn to move and experience the body in new ways. In a 2009 article for the International Association for Dance Medicine and Science, author Glenna Batson divided somatic practices into two “main avenues”, one being “receptive” and the other “more active” (*Somatics Studies and Dance* 1). The more active avenue calls “for the conscious cooperation of the person through movement awareness or imagination as catalysts for changing motor/movement behavior (*e.g.* Ideokinesis, Alexander Technique, Feldenkrais Method®)”, and Body Mind Centering® (1). Movement awareness has been “the stimulus that spawned an array of somatic practices, with over 100 contemporary ‘body-mind’ practices in existence today (above and beyond ancient practices, such as yoga, tai chi, and chi gong” (1). As a trained Alexander teacher and professor of physical therapy specializing in neuroscience and functional anatomy, Batson presented key concepts of somatic pedagogy in her research article including developing kinesthetic awareness and increasing the capacity to self-organize movement internally through sensory awareness or ‘sensory refinement’ (2).

For example, a basic exercise in movement awareness used in dance classes may include finding the ‘leading leg’, or the leg that we prefer the most to initiate movement in our everyday use such as walking, standing up, or climbing the stairs. Homework includes trying to notice throughout the day what leg leads first when starting to walk, or taking the stairs. We often have a dominant leg that pushes. If we tend to habitually favor one side and always lead with our right leg we will gradually develop a weaker left side and in the long run potentially develop a pelvic misalignment. By paying attention and discovering what our ‘leading leg’ is will allow us to switch it up a bit, practice leading with our weaker side and make sure we maintain balance throughout the body. Sensory awareness focuses attention on internal bodily sensations and awareness of habitual actions to allow for the correction of “maladaptive postural and movement habits” (2).

Originator of Body Mind Centering®, Bonnie Bainbridge Cohen expressed the idea that most people come to body-mind work because of inhibitory problems, and inefficiency in functioning (*Bone, Breath* 187). She stressed, “Sensing is the more mechanical aspect, involving the stimulation of sensory receptors and sensory nerves. *Perceiving* is about one’s personal relationship to the oncoming information” (195). Sensing informs movement awareness [kinesthesia] so that “our motivation is action *based on* perception (186). Depending upon our motivation we can then choose to act on our awareness. The most advanced movers, dancers, martial artists, and athletes are those who have heightened skills in movement awareness, otherwise known as kinesthetic intelligence. Developing sensory awareness is a key component of somatic work as it is a building block from which greater movement capacities will grow.

The 'Sensation Channel'- Where Body and Mind Unite

Body awareness can also be called somatic awareness. In his article *Minding the Body, Clinical Uses of Somatic Awareness*, Professor Donald Bakal defined somatic awareness as “the ability to perceive, interpret, and act on the basis of internal sensation”

(1). Bakal described the physiological basis for somatic awareness:

Internally, somatic sensations have their origins primarily in proprioceptive information coming from the muscles, tendons, and joints. Proprioceptive messages from skeletal and smooth muscle are carried through the dorsal-column medical-lemniscus system to the primary and secondary somatosensory cortex. This internal information is less specific than information coming from the external skin receptors involved with touch. But it is still capable of providing valuable information regarding bodily activity. The proprioceptive information coming from these muscles contributes to somatic awareness, thereby making somatic awareness to a large extent a *muscle sense*. (15).

While somatic awareness is primarily a muscle sense, perception of our movements is made possible by sensations throughout the body in what Peter Levine, called the ‘sensation channel’ (*In an Unspoken Voice* 139). Medical biophysicist and originator of the somatic method Somatic Experiencing, Levine defined four subsystems which “make up the sensation channel in order of increasing depth: the kinesthetic, the proprioceptive, the vestibular and the visceral receptors” (140). The kinesthetic and proprioceptive sense work together telling us where our bodies are in space, ‘reading’ the position of our joints and relative muscular tension in order to create movement coordination. Our vestibular sense within the inner ear gives us a “sense of gravity, reads changes of velocity in movement, and inform us of our head’s orientation in space, not the body’s” (Criswell, *Psychophysiology of Yoga* 138). These subsystems make up our core neurophysiology giving us a sense of who we are physically. An understanding of these systems is foundational to comprehending the science behind somatic work.

In addition to our kinesthetic and proprioceptive sense, our brain is fed sensorial information from visceral receptors and sensory neurons within our organs and blood vessels. The vagus nerve, second in size to our spinal column, relays visceral sensations “*from our guts upwards to our brains*” (Levine 141) Ascending the upper brain stem, bodily sensations are transferred to various regions of the brain, “registering most notably in the “medial prefrontal cortex (particularly the insular cingulated cortex)” (323). Science writer Sandra Blakeslee wrote in fact, the “right frontal insula is where conscious physical sensation and conscious emotional awareness co-emerge”, and it is “here that mind and body unite” (*The Body Has a Mind of its Own* 4). As the “command center for homeostatic self-regulation” the insular cingulated cortex integrates somatic sensation, emotions, literal and ‘physic’ pain, and modifies behavior accordingly (4-5). In order to understand the value of somatic work it is important to understand what scientific explanations exist to explore how somatic educations and therapies work within the body. Channels exist within the body and mind connecting our physical and emotional behavior. It is by connecting to and modifying sensations within the body that somatic work is able to communicate to the brain and redefine what we are feeling. Through somatic work the body responds to releasing holding patterns and muscular pain and tension. Emotions in turn can become altered as a result of physical release moving from feelings of discomfort and irritation to that of pleasure, relief, and satisfaction.

Physical discomforts can be a result of psychic pain, accidental injury, or everyday wear and tear of the body. Somatic work aims to focus on the body as a key to gaining greater levels of psychophysiological activity. It is the body that communicates to the brain and influences the mind. Our bodies are programmed and designed to read and

decipher actions in our surrounding environment in order to protect us and ensure our survival. Survival instinct programs us for action, continual adaptation, unconscious and automatic responses so that we can actually *act* before we think. Most of our everyday actions take place without much thought. For our protection, in split second timing, our nervous system evaluates our environment to determine relative risk and/or safety (called '*neuroception*' by Stephen Porges) (98).

Neuroception is innate and necessary for simply making sense of what is going on around us on a daily basis. However, at times our system can get overloaded with stimulation by our environment as a result of excessive stress, out of the ordinary experiences, and unexpected upsets to our daily routines. The body has a way of shutting down as a result of over stimulation leading to physical tension, distress, and even illness. Within the brain the medial prefrontal cortex is recognized for being able to communicate to the "limbic or the emotional brain-particularly the amygdala which is responsible for intense survival emotions" (Levine 323). Somatic work is of great importance to help restore balance in the body by taking the time to slow down and tune in to internal sensations as a way of integrating experiences and finding a sense of self. Sometimes in the flurry of activity within our lives, stress builds and leads to distress.

In a complicated chain of physical and emotional reactions, survival responses activate the brain's amygdala located in the limbic system, known as the center of emotions in the brain (Selhub Lecture). There are specific and innate bodily responses organized in the brain which ready us for action in response to stress, fear, threat, or worry. In certain situations extended stress can establish chronic nervous system patterns "signaling the continued presence of danger and threat" (Levine 183). Chronic stress

influences bodily sensations and action potentials- physical reactions that inform our emotional experience (183). Many traumatized individuals become frightened and overwhelmed by extreme feelings and sensations from their body and move between feeling shutdown and dissociated “to a kind of ‘hyper-sensation’ of nervous system arousal” (113). Somatic work aims to guide individuals into a state of playful curiosity in which emerging bodily sensations or even the vacancy of feeling can be explored in a safe environment in a process of ‘titration’ (gradual access) to create new, balanced, body-oriented associations and consciousness (152-158). Levine wrote while the nervous system operates under the principle of automatic responses, “the psyche operates under the emergent properties of *creative self-regulation*” (130). Creative self-regulation involves consciousness and choice as new responses to bodily sensations emerge. Somatic awareness influences our emotional brain, the ‘limbic system’, and in turn our entire body through the modification of automatic responses.

An example of modifying automatic responses includes exercises in stillness and constructive rest in order to calm nervous system arousal. A somatic practitioner can guide a client to lie down in a comfortable position with knees raised and gently resting against each other. With support and attentiveness a somatic practitioner may instruct the client to relax their breath and tune in to their internal awareness. An atmosphere of trusting presence and devotion to the moment is created as the practitioner fully focuses on the care of the client. Making contact through touch is an integral part of developing body awareness. Touch of the self through self massage or that of the touch of a somatic practitioner can greatly increase sensation in parts of the body we desire to focus on. A caring “cellular” touch can be very soothing to the nervous system and while we can

practice it on our own, it is often quite nice to have another person share a sense of care and concern through the manner in which they touch you. Somatic practitioners are trained extensively in the quality of touch. Cellular touch is a form of embodied awareness in which the practitioner tunes in to their own inner awareness to sense areas of the body that the client might need to be touched. With gentle yet subtly energized hands the practitioner will lay their hands on the clients body to an area she/he feels drawn to make contact. While both the client and practitioner focus their awareness on the areas of contact, the muscles, tissues, and even the very cells of the body will start to awaken within the client in response to touch. While the body is being touched it is important for the client to let go of any preconceived ideas of what is supposed to happen, or any desire to do anything other than ‘listen’ and ‘mind’ sensations arising from within the body. Within the simplicity of the moment a kind of cellular awareness emerges from within the tissues themselves and while ‘listening’ the body will communicate through sensation as we wait and allow awareness to focus on the moment by moment experience of being touched. This is a simple way of nurturing the body, discovering sensations, and perhaps coming to personal insights as a result. (*Wisdom of the Body Moving* 127-128). This kind of session is a more passive experience while other somatic work sessions may include guided or improvisational movement explorations according to the particular somatic method being utilized. These exercises in creative self-regulation awaken consciousness to sensation, are calming to the nervous system and are often restorative for the whole body.

Sensing and Moving- Getting the Feel of It!

Somatic theorist Thomas Hanna wrote that the brain and body are inextricably intertwined through the “wonderful neurological fact that increasing bodily awareness means increasing neurological sensory awareness” (*Somatics* 25). Awareness goes “hand in hand with voluntary motor control of the muscles” as a result of the sensory-motor “feedback loop” (25). “In other words, if you cannot sense it, you cannot move it, the more you move it, the more you sense it” Hanna continued by stating that “this is a rule of the sensory-motor system, one solid part of the neurophysiological foundation of somatic education (25).

Somatic practitioner Deane Juhan clarified that conscious movement does not mean thinking our way through sequences of action and trying to direct muscular actions in an analytical manner. Rather, through sensory imagination and physical practice, the body “gets the feel for it”. In Juhan’s words, “Feeling states, the clear sensory memories of *doing* are the things that accurately guide our muscular actions, not analysis and conscious sequencing of steps” (290). Through the experiential process of *doing* and *learning*, somatic education occurs. Our capacity for developing more efficient movement habits is a result of paying attention to sensations from the body and consciously making the effort to reprogram our sensory motor system until we get a feel for it. “Attention is a primary ingredient of embodiment”, wrote somatic educator Richard Strozzi Heckler, and in order to learn to embody “it is necessary to shift our attention from analyzing and remembering to feeling and sensing” (*The Anatomy of Change* 60). Moving, feeling and sensing are made possible through our sensory-motor system:

In contemporary neurophysiological science, the ongoing interplay of sensory information and motor guidance is referred to as a “feedback system” operating in “loops”: The sensory nerves “feedback” information to the motor nerves, whose response “loops back” with movement commands along the motor nerves. As the movement takes place, the motor nerves “feedback” new information to the sensory nerves. (*Somatics 7*). The sensory motor loop functions as a “closed-loop feedback system” within the soma. We cannot sense without acting, and we cannot act without sensing. (Hanna, *Clinical Somatic Education*, somatics.org).

Deane Juhan confirmed this idea stating that “There can be no movement, neither free nor limited, without muscular activity; there can be no muscular activity without neural stimulation...” (*Bone, Breath 362*). Neuropsychiatrist Jeffrey M. Schwartz and science writer Sharon Begley explained that communication between the mind and the brain occurs bidirectionally: “Conscious, volitional decisions and changes in behavior alter the brain” (*The Mind and the Brain: Neuroplasticity and the Power of Mental Force 95*). After all, “the only thing the brain can know and register” is the neural activity of experience (108). When focused attention is directed to bodily experience, muscular activity and neural activity are altered. Hanna asserted that the “activity of awareness is a most useful way of exercising voluntary control over one’s repertoire of sensory-motor skills” (*Bone, Breath 348*). Somatic awareness is the “experiential equivalent of an integrated psychobiological state” (Bakal, *Minding the Body 14*). As a human science, somatic work attempts to expand and enlighten the human being’s knowledge of their own movement repertoire and increase sensory acuity.

Sensory Motor Amnesia and Somatic Education

Mirka Knaster spoke of the development of somatic perception as being vital to human beings: “If we can’t judge how our physical habits influence our well-being, then we’re doomed to suffer the breakdowns, physical and psychological, that result from not

changing our lifestyle” (54). These breakdowns are the result of the loss of somatic awareness. Hanna developed the term *sensory motor amnesia* (SMA), to describe how involuntary and unconscious habits become physiologically ingrained in the sensory-motor system over time, leading to such things as stiff and limited movements, fatigue, and chronic pain. Deane Juhan added that “these stiffenings, shortenings, and thickenings” of musculature and connective tissues can be a result of surgery or any other trauma, including; a wide array of overuse, disuse, spasm, injury, illness, fatigue, aging, poor habits, or the innumerable physical strains that various occupations demand of us” (*Bone, Breath* 361). By not paying attention to the health of the body it can break down.

Repeatedly triggered instinctual muscular reflexes and reactions to daily stresses create habitual muscular contractions, chronic tension and bodily pains. Stress or emotional strains can trigger the trauma reflex, a “reaction of the sensory-motor system” in which muscles flinch and repeatedly cringe into ‘stuck’ positions leading to postural disorders (*Somatics* 81). Gerda Alexander created the somatic method Eutony based on muscular tension, stating that reflexive habits are a result of “tonus adaptation” related to certain emotional states. People can have low muscular tonus in depressive states or high tonus in anxious states. (*Bone, Breath* 260). Mental states create muscular reactions in what Deane Juhan described as a kind of “silent ‘body language’”, showing personal tendencies manifested in habit and behavior (232). Somatic practitioners are trained to read body language and use information gleaned from their observations to aid a clients capacity in becoming aware of their own habits and expand beyond limitations to a more expansive repertoire of movement choices.

Even though habits become ingrained in our body in a reflexive, unconscious manner, “because SMA is a learned adaptive response, it can be unlearned” (Hanna *Somatics* xiii). Reflexive actions occur at a level of unconscious awareness within our central nervous system, however “somatic exercises change your muscular system by changing your central nervous system” through movement learning (95). Moshe Feldenkrais observed that while it is “extremely difficult to correct a faulty habit of posture or movement even if it has been clearly recognized”, habits can be changed by “conscious mental effort until the adjusted position ceases to feel abnormal and becomes a new habit” (*Awareness Through Movement* 60). Somatic work is therefore a form of education in which a client becomes able to consciously alter their own experience as a result of increased awareness.

Eleanor Criswell Hanna, director of the Novato Institute for Somatic Research and Training, explained that regulating physiological functions occurs “in a passive way, through allowing or enabling oneself to make the change” (*Introduction to Biofeedback and Somatics* 14). Somatic exercises are not a form of sports conditioning. Feldenkrais stressed that exercises are practiced at a slow pace “for in order to recognize small changes in effort, the effort itself must be reduced” (*Awareness* 59). Physical therapist and Alexander teacher Glenna Batson concluded that conscious changes in effort are necessary in order to reprogram movement habits. She contends that in addition to slow and precise movement exercise, practice and augmented rest are key concepts in somatic studies (2) - “practice (repetition for reinforcement) is a powerful training tool [and] somatic studies commonly embed resting intervals between phases of physical activity” (6). This “high rest-to-activity ratio allows the nervous system time for processing and

integration and physiological systems time to recover” (2). Rest periods were found to “consolidate memory (you’ll remember what you learned) and improve motor recall (you’ll more readily call it forth when you need it), as well as actual performance (you’ll do it better next time)” (2).

Deane Juhan observed that more coordinated actions are acquired over time. In the beginning performance may be awkward, “but as the action is repeated current sensory feedback further clarifies the finer details of the desired movement, with the result that becomes smoother and more faithful to the original intent” (*Job’s Body* 283). For example, when a child first learns to walk movements can be rigid, erratic, sloppy, and cautious. Yet over time as a child becomes more confident with the sense of balance and movement coordination needed to walk, slowly their gate becomes more smooth, and their walk develops a flow of its own.

Exploring the mind-body connection in Mind Body Medicine

Somatic movement education developed over the last hundred years inside the clinics and studios of somatic pioneers and outside of most academic research institutions and the medical establishment. As a result, the field of somatic education has had less academic support in the form of clinical research studies than the similar field of mind-body medicine. Within the academic world, major scientific discoveries from experimental physiologists such as Walter Cannon and Hans Seyle laid the groundwork for mind-body medicine, in which methods of “treatment” are designed to “enlist the mind in improving emotional well-being and physical health” including regulating responses to stress (Goleman, *Mind Body Medicine* 17).

One aspect of the physiological basis for the mind-body relationship began to be more clearly understood with the discovery of the stress response, otherwise known as “fight or flight” by Cannon at Harvard. Cannon later developed the idea of “homeostasis” for the body’s process of dynamic regulation, in which ongoing adjustments are made in response to stressors from daily experiences. His discoveries were built upon by Hans Selye who linked the affect of stress, emotions, and the onset of disease (*The Cure Within: A History of Mind-Body Medicine* 148-151). Selye stated that “the secret of health and happiness lies in successful adjustment to ever-changing conditions on this globe; the penalties for failure in this great process of adaptation are disease and unhappiness” (qtd. in *Somatics* 45). Hanna wrote the “extraordinary significance of Selye’s research is that it introduced into medicine what we have termed a “somatic” dimension:

namely, the viewpoint that psychological events are as important as physiological events in determining human health or illness. The somatic viewpoint encompasses how we individually view ourselves from inside looking out and how, from that viewpoint, the distinction between mind and body disappears. From inside ourselves we are not aware of the “body” itself but rather of the feelings and active processes of that “body” (*Somatics* 45).

Since the 1970’s, the Benson-Henry Mind Body Institute (affiliated with Harvard Medical School and Massachusetts General Hospital) has researched the application of mind body medicine in the treatment of a variety of physiological and mental disorders such as heart disease, depression, lung disease, osteoarthritis, fibromyalgia, chronic pain, irritable bowel syndrome, TMJ, the management of cancer symptoms, surgical outcomes, insomnia, and menopause. Part of the research mission of the Mind Body Institute is to determine how to optimize stress-decreasing, resiliency-enhancing mind-body interventions for medical symptom reduction through the teaching of self-care strategies.

Herbert Benson, who has been with Harvard Medical School for almost 50 years, stated that between 60-90% of healthcare visits are related to mind-body stress-induced conditions. The institute's research has found chronic stress to be the single most important factor in contributing to vulnerable immune systems and physical tension in the body. Under normal conditions of temporary stress the nervous system helps to maintain the body's homeostasis (inner equilibrium also known as allostasis), yet with chronic stress, the body no longer adapts as well, leading to imbalance. (Benson Lecture 2009).

Benson discovered the physiological basis for the “relaxation response”, our built-in mechanism for countering the effects of extreme stress. The relaxation response includes reduced reactivity in the sympathetic nervous system, a positive parasympathetic state, reduced heart rate, lower muscular tension, and relaxed breathing -essentially, physiological responses that bring about physical calm and wellbeing. The relaxation response can be *self-induced* by focusing and sustaining mental attention applied to a wide range of mind body methods such as “breathing exercises, meditation, visualization work, yoga, tai chi, qi jong, mindful running or exercise, repetitive mantras or prayer, and ***methods which develop awareness through the body***”. Somatic movement education methods develop body awareness and are able to induce the relaxation response, yet somatic work is not included or even mentioned as having value. Their research even found that mind body methods regulate gene expression (known as epigenetics) without altering the underlying genetic code. Benson et al found that while our body may be genetically programmed for certain diseases, depending upon how we manage our lives will influence whether or not our body ‘expresses’ that illness. While the effects of the relaxation response (RR) are “well-established” clinically, the “mechanisms underlying

RR have not yet been identified” (*Genomic Counter-Stress Changes Induced by the Relaxation Response* 1). In a similar manner, while the positive effects of somatic work may be observable, the complex and intertwined manner in which our body heals itself in a holistic manner makes it difficult to pinpoint all of the contributing factors.

Anne Harrington, Professor of History of Science at Harvard, wrote that Benson was initially inspired in his work through his observations of methods that evoke the relaxation response within meditation practices of the Eastern world. In continuation of his studies he found the relaxation response could be triggered by “virtually every known religious tradition, without being the sole possession of any of them. In other words, one did not need to be Buddhist or Hindu or even have to be religious, because the relaxation response works “regardless of faith or belief system” (*The Cure Within* 219). Through his research Benson secularized and medicalized an understanding of various forms of meditation and prayer by observing common physiological reactions that result, such as an overall calming of the body due to practices that require sustained mental attention, a steady internal focus, and some form of repetition (220). There is a commonality between somatic methods, mind body medicine, meditation, and even prayer. They all help to create a sense of calm, wellbeing, and share the process of “paying attention to your own inner experience” (Gazella, *Bringing Mindfulness to Medicine* 1).

To be clear, while somatic awareness is similar to the contemplative art of meditation or mindfulness, they are not identical in purpose. In somatic awareness the body receives attention, in contrast to mindfulness in which awareness is not necessarily tied to sensation, thought, or feelings (Bakal, *Minding the Body* 13). Somatic movement methods provide exercises for awakening attention to emerging sensations from the body,

and “consciousness develops from somatic awareness” (Levine 135). An example of a quick mindfulness exercise included in Benson’s “mini” relaxation exercises is to take five minutes to relax the rate of breathing, and while breathing in think “I am” and on the out breath think “at peace”. Repeat this until the body feels more calm.

In contrast, an example of a somatic movement exercise designed to activate and balance the endocrine system includes lying on the back with knees up and feet placed on the floor. Slowly press the lower back into the floor and curl the tailbone up towards the ceiling (in shape of a canoe). Push through the feet until the hips lift one inch off of the ground. Then gently roll back down vertebra by vertebra to the floor and rotate the tailbone until the back lightly arches. Repeat for a few minutes curling and arching the spine. This exercise can also be done while on the knees on all fours curling and alternately arching the back, similar to how a cat stretches. In a soft and gentle manner as the spine moves the intestines, ovaries or gonads, and adrenals are massaged by the movement of the body. As the body flows gently in the movement, subtle sensation is awakened within the internal cavity of the pelvis. The body itself becomes aware of itself.

Dr. Kabat-Zinn contends that awareness, or mindfulness, involves consciousness and “since consciousness comes out of biology, the question is, what is the relationship of consciousness to biology? What influence do our thoughts and emotions have, and how does all of this activity happen in the complex nervous system, which includes perhaps 10 trillion neurons and countless other cells?” (Gazella 1). As a molecular biologist Kabat-Zinn created the mind-body method mindfulness-based stress-reduction (MBSR) in order to explore these questions. In the field of ‘investigating awareness’, Kabat-Zinn pointed to “the late Francisco Varela, Co-Founder of the Mind and Life Institute, a group

that conducts periodic dialogues between Western scientists and the DaLi Lama and other contemplatives on the nature of reality, mind, life, and so forth. Francisco emphasized the key importance of mindfulness or mindful awareness within the discipline he called neuro-phenomenology, within the framework of cognitive neuroscience” (1).

In a conversation with Martha Eddy, creator of Dynamic Embodiment- Somatic Movement Therapy, she clarified that “while methods of mind-body medicine, mindfulness, and pain reduction techniques and somatic methods all access a unified experience, mind-body methods do so first through paying attention to the mind to help the body, while somatics methods use movement and educated touch as an inroad to the body”. She added that “movement has been prevalent in Asian medicines, which are very holistic, while it wasn’t part of our tradition allopathically” (2012).

Neuroscience and the Felt Experience

Science writer Sandra Blakeslee explained how Arthur Craig, neuroscientist and leading researcher in interoception processes, interprets subjective states through neuro-imaging brain scans, otherwise known as functional magnetic resonance imaging (fmri). Blakeslee wrote that according to Craig, “the subjective awareness of our emotional state is based on how our brain represents our physiological state” and “if there is any way to objectively measure a subjective state, this is it” (*Flesh Made Soul* 28). With modern technology and fmri’s the first-person experience has now become a necessary part of objective science processes, seeing as data resulting from neuro-imaging techniques cannot be properly analyzed “without a description of the subjective experience of the subject whose activity is recorded.” (Petitmegin 230). What a person *feels* is becoming scientific. Craig described “feelings” according to his brain scan studies in his article

Interoception: the sense of the physiological condition of the body: “findings signify the cortical representation of feelings from the body as the likely basis for human awareness of the physical self as a feeling entity. This association provides a fundamental framework for the involvement of these feelings with emotion, mood, motivation and consciousness” (655).

Craig’s idea of the physical self as a feeling entity is similar to ideas within the philosophy of Body Mind Centering. In the 2011 anthology *Exploring Body-Mind Centering* editors Gill Wright Miller, Pat Eldridge, and Kate Tarlow Morgan wrote “In our work to reconcile the physical world with human consciousness, or reality with awareness, the phenomenological experience of one’s human body is tied to physical existence and the sensation of experiencing that existence” (15). They added, “There is conscious experience in our soma, which we witness as consisting of live, present-tense bodily experience, revealed through movement expressions” (15). Somatic work awakens the individual to the physical self and a sense of being a feeling entity through the pathways of neuroception, interoception, proprioception, and kinesthetic awareness.

The Whole is Greater than the Sum of its Parts

Mind-body methods are being validated by the world of academia through research utilizing cutting edge science, reductionistic scientific methodology, double blind controlled studies, neuroimaging (fMRIs), and advanced genetic technology exploring the relationship between mind-body interventions and biology. Mind-body medicine and clinical science seek to find causation through reductionist means, analyzing small parts in order to understand the whole picture. Research from these fields are required to

follow strict scientific protocols. Yet, Herbert Benson lamented that in the process of working in the reductionist manner, a paradox presents itself when “extremely complex mind body interactions cannot be completely measured in reductionistic terms” (*Relaxation Revolution* 212). Benson used scientifically approved methodology to discover the relaxation response, yet in time he began to find that reductionism was “proving to be a woefully inadequate approach for analyzing this incredibly dynamic system of biology” -the human body (214). He pointed to systems biology and the principle of *emergence*, which finds the whole biological system to be greater than its parts. In addition the *synergistic* principle sees distinct parts of the system interacting together with greater effect within time, space and context, ever adaptable to conditions that present themselves within our environment (219). Benson’s difficulties have been the same as that within the somatic field, where extremely complex mind-body interactions become difficult to measure with scientific reductionist methods. Therefore, it becomes difficult to ‘prove’ how and why it works. Authors Ahn et al claim “The fundamental disconnect that exists between clinical medicine and systems biology largely stems from their disparate worldviews- one focuses on the parts and the other on the systems” (0713).

When the human body is viewed as a collection of components, the natural inclination of medicine is to isolate the single factor most responsible for... that isolatable abnormality... implicit in this practice is the deeply rooted belief that each disease has a potential singular target for medical treatment... While the success of this approach is undeniable, it leaves little room for contextual information. The disease and not the person affected by it, becomes the central focus. (*The Limits of Reductionism in Medicine: Could Systems Biology Offer an Alternative?*, 0709).

Furthermore Ahn et al argued that “Reductionism becomes less effective when the act of dividing a problem into its parts leads to a loss of important information about the whole”

(*The Clinical Applications of Systems Approach*, 0956). Benson even called reductionistic treatment “a trap” in which particular symptoms are focused on instead of the overall wellbeing of the person. Sometimes treating one part does not heal the whole. However, in combination with prescribed care or to augment recovery from surgery, Benson found that mind-body treatments “perform particular, reductionistic functions on specific health complaints *and at the same time* tends to the health of the *entire* biological system” (*Relaxation Revolution* 216). Mind-body methods do not, of course, replace diagnosable needs for surgery or medications but add to a health regime. Benson stressed the importance of self-care, describing it as one of three elements integral to health along with the potential use of pharmaceuticals, or surgery. The self-care skills he recommended were mind-body practices. It is not simply a matter of what can be done for a patient, but also a matter of what patients can learn to do for themselves. Mind-body methods require self-care and personal responsibility in tending to health. In teaching a mind-body method, the patient thereafter has tools and exercises to practice on their own.

For example, an exercise in ‘centering’ can be taught to a client to practice at home. Start by sitting down comfortably on a chair or on the floor cross legged if possible. Bring both hands to rest on the lower belly. Take a moment to lift and expand the body with a feeling of lightness in all directions, heart and skull lightly lifts to ceiling, shoulders relax and bring a sense of ease to the body through relaxed breath. Close your eyes and try to align the spine with an effortless feeling from center of skull to tailbone. Take a moment to scan the body for sensations, releasing muscular tension through deep thoracic breath in which the ribs expand in all directions. Allow the belly to be soft and focus internal awareness on centering the body simply by allowing energy to move from

the hands to the center of the body. With each inhale and exhale center the body through intention and sensation and the idea that the center of the belly is a source of power. Once learned, this exercise can be practiced and enjoyed at home. The Benson-Henry Institute for Mind-Body Medicine also includes many lessons a client can practice at home. Teaching self-care methods is integral to the success of their work. Motion, mobility, and mindfulness promote wellness.

With over thirty years of study in mind-body medicine at Harvard, Benson has found it to be disappointing that “even as virtually every single health problem and disease can be improved with a mind-body approach... even as the conditions treatable by mind-body healing expand, many physicians and scientists persist in ignoring the research evidence that has clearly established the power of mind-body medicine” (16). Craig Hassed concurred, stating that mind-body medicine “has enormous scope and clinical potential but has been relatively slow to make its way into mainstream medical education and practice. This lack of general awareness may be the product of many things, including a lack of access to information, bias against what does not fit current scientific paradigms, and lack of funding for things which are of lesser commercial potential. (*Mind-Body Medicine 2*).

A 2005 study *Effectiveness of a Mind-Body Skills Training Program for Healthcare Professionals* found that mind-body therapies are beginning to be taught in 82 out of 125 medical schools in the United States in a minimal manner. Julie K. Staples and James Gordon wrote, “The increased use, benefits, and cost effectiveness of mind-body therapies, taken together, substantiate the need for educating healthcare professionals in this area” (36). The purpose of their study was to determine whether a one week course in

mind-body skills would result in teaching these skills into their medical practice, or whether referrals to mind-body practitioners by health care professionals would increase. The study found that referrals significantly decreased- after only 42 hours of training in mind-body skills, and that incorporating guidance in mind-body work increased. It is disappointing that participating healthcare professionals felt that they had enough expertise after only one week of training to stop referring patients to mind-body practitioners. I appreciate healthcare professionals education in medical treatment and that is why I go to see a doctor when I am in need, however I would never go to a doctor for mind-body work especially with only one week of mind-body training.

Training for somatic educators registered as members of the International Association of Somatic Movement and Therapy require a minimum of 500 hours training and 150 hours of practical experience in the field. Feldenkrais training requires 800 hours. Somatic educator Yvon Joly confirmed that within somatic education certification, students will have “undergone extensive training aimed at acquiring “objective” knowledge of the moving body as perceived in *third person mode* (anatomy of movement, physiology, biomechanics, bodily functions) (2) Yet, most importantly, unique to the professional practice of somatic work, students also directly experience a “rigorous process of subjective movement exploration in *first person mode*” (2). Students learn by *doing*, in order to rely on their own experience through “actual experimentation” (*The Experience of Being Embodied: 2*). There is no demand within medical training to have actual movement experiences that are a part of practices within the somatic field. It is important to see a certified somatic practitioner if you are interested in learning about somatic methods. It makes perfect sense to visit a highly trained somatic practitioner

when I feel that medical assistance is not what I need. Healthcare professionals should respect the skills of somatic practitioners and refer patients to them when necessary just as they do with any other sort of area of specialization that they are not trained to take care of.

Don Hanlon Johnson argued in the introduction of his book on the work of somatic pioneers that the “widespread failure to grasp the full meaning of [somatic] practices is similar to misunderstandings encountered by teachers of ancient systems of meditation...martial arts, Tai chi chuan, acupuncture, hatha yoga, and vipassana, for example, are ancient *complex systems of educating many aspects of the whole person*” (*Bone, Breath*, xii). In order for the healthcare field to truly value the work of mind-body practitioners, referrals should be made to somatic practitioners who are highly trained. Future research will continue to verify and validate somatic movement and therapy methods and hopefully a wider public will take advantage of this kind of work.

Conclusion, Ghost in the Machine

In concluding my research I find myself back at the beginning, with more questions than when I started. I set out to teach myself about somatic education and practices in order to clarify many unanswered questions I had. But at a certain point questions often become paradoxical. What is Somatics? Where is the mind in the body? Where is the body in the mind? In paradoxical thinking the answer gets further away the closer one tries to get. In my exploration of the art and science of somatics, while I have been able to provide basic concepts of the “how and why” of somatic work, each question leads to deeper explorations and more possibilities for research.

Einstein theorized that in the process of chasing measurements to the smallest components, we alter the whole through our observations, in what he called “spukhafte Fernwirkung” or “spooky actions at a distance” (Mermin 2). In the process of analyzing and investigating somatics, levels of organization need to be broken down simply to be able to explain basic concepts at work. Yet paradoxically, in somatics the whole body operates as a living system, the mind and body working in unison. Somatics is an active human science. Oxford philosopher Gilbert Ryle developed the phrase “Ghost in the machine” for the categorical mistake of viewing the mind as ‘disembodied,’ or distinct from the body. He rejected Descartes’ dualistic theory that saw the mind as independent of the body (philosophypages.com). The somatic viewpoint sees the workings of the mind as inseparable from the actions of the body. It is quite difficult to explain the integral whole, yet this is what science attempts to do every day to allow us to make sense of our world. Postulated theories and isolatable functions are models that permit us to comprehend reality in all of its complexity. Because certain questions may be difficult to answer does not mean that we do not try. As neuroscientist Jean-Pierre Changeux argued, “A model always remains partial, but it points the way to progress in knowledge”. In response, phenomenologist Paul Ricouer stated, “These models don’t claim to exhaust the world’s reality!” (*What Makes Us Think, A Neuroscientist and a Philosopher Argue About Ethics, Human Nature, and the Brain* 73-74).

Our sense of movement is programmed in the brain as organizing factors that in and of themselves cannot be materially pinpointed: “They are among the ghosts in the machine, the direct observation of which has so far been denied us, but whose practical effects are everywhere evident” (Juhan *Job’s Body* 268). While somatic work is based on

science, it is also an elusive and creative art. In sensing, we create “feeling states” in what Juhan wrote “is closely allied to Benson’s Relaxation Response. It is a state in which the organism can much more easily access self-awareness, self-regulation, and repair of all kinds” (378). It seems evident that somatic methods can enhance our capacity for healing and greater wellbeing by contributing to better movement coordination, neuromuscular re-patterning, expressive abilities, and a return to homeostasis or “dynamic embodiment” (Eddy, 2012). At the most fundamental level, the aim of mind-body exercises and somatic work is the desire to find or return to a balanced yet dynamic state of living life.

Afterword: My Personal Journey

As a former dancer, physical theater artist and yoga teacher I brought much embodied knowledge to the process of this research project. In addition to my practical physical experiences learning first hand a wide variety of movement practices, after my ‘retirement’ as a performer I also took academic courses as a manner of more fully understanding the science behind my experiences. In 2008 I attended a conference at Boston University on *Learning and the Brain, Using Emotions Research to Enhance Learning*, which explored the potential of applying brain research to the improvement of learning and behavior. This conference increased my interest in learning about the neurobiology behind experience and behavior. From this conference, I did a research project on stress physiology. In the process, I discovered evidence that through increasing bodily awareness and in practicing restorative movement learning processes we have the capacity to learn how to self-regulate.

In 2009, I participated in the program *Clinical Training in Mind/Body Medicine* at the Benson Henry Institute of Harvard Medical School. I wondered why somatic methods were not included alongside yoga as recommended methods used to elicit the relaxation response, which is known to reduce the physiological effects of stress. I am of firm belief at the end of this study that somatic work deserves rightful recognition alongside mind body medicine due to its restorative movement practices.

Presently I am in Phase Two (of four) of Dynamic Embodiment Somatic Movement Therapy Training (DE-SMTT) with Dr. Martha Eddy, former director of the International Somatic Movement Education and Therapy Association. My SMTT training has encouraged me to look deeper into the ‘how and why’ of somatic movement education. Phase One of Dynamic Embodiment Somatic Movement Therapy Training, (DE-SMTT) covered theories of somatic education, embodied anatomy, kinesiology and experiential physiology, non-verbal expression: body counseling, perceptual-motor development, and dynamics of touch. Designed by movement scientist and somatic movement therapist (Eddy 1991) these seminar topics draw from her foundation in the neuro-maturational development theories from the two major systems of movement analysis; Laban/ (LMA) Bartenieff Movement Analysis, and Body-Mind Centering (BMC), developed by occupational therapist Bonnie Bainbridge Cohen. The first is an in depth system of movement analysis incorporating anatomy and kinesiology. The latter also integrates physiological phenomena into its pioneering somatic practices. Phase Two of her training incorporated this thesis project.

The personal (phenomenological) experience I brought to this exploration of somatic movement education began initially through my early dance training. I trained in ballet

for eight years until 1989 when I had my first introduction in somatic movement while at Les Ateliers de Danse Moderne (LADMMI), the leading contemporary dance professional school in Montreal, Canada. My teachers from LADMMI connected me to a lineage of pioneers within somatic education. Co-founders Linda Rabin and Candace Loubert included somatic experience as part of technique and choreography classes. Linda Rabin is a Juilliard graduate from the late 1960's, having studied with Jose Limon, and Anna Sokolow (from Martha Graham), learned ideokinesis with the creator Lulu Sweigard, kinetic awareness with Elaine Summers, and studied pilates and Alexander technique. She choreographed extensively across Canada and was a rehearsal director for the Ballet Rambert in England, bringing decades of movement experience to her students at LADMMI. She is presently a Body Mind Centering and Continuum somatic educator. She encouraged the use of imagery in experiential anatomy exercises and dance technique, guiding us to develop our awareness of internal sensations in order to discover better alignment and more dynamic movement. Candace Loubert, a former dancer with La Groupe Nouvelle Aire and Les Grands Ballet Canadiennes, taught creative visualization through mask work that led to movement explorations meant to inspire and expand our creative potential as dance artists and choreographers.

As a 1991 graduate of LADMMI, I worked as a professional dancer, and acrobatic movement theater artist with Dynamo Theater until 2003, performing in over 20 countries. After hundreds of performances and some debilitating injuries I retired as a performer, and moved from Montreal to Boston to teach theater, dance, and yoga at a private high school. Many people discover somatic practitioners after suffering from an injury or illness that the medical field is not able to completely diagnose and/or fix. As a

former dancer, I suffered two major 3rd degree ankle sprains, in which most of the tissues in my ankle tore apart. After doing physical therapy, hobbling to and fro on my crutches, I was frustrated by my slow recovery. I needed to get back on my feet and back to my performance schedule. Living in the dance community means having lots of word-of-mouth connections to ‘body workers’ skilled at recuperative care, including advanced forms of massage therapy, such as Rolfing and scar tissue massage. I went to see a therapist who massaged directly into my scar tissue, breaking it up under her fingers. She was able to move scar tissue through touch, greatly speeding up the healing process. A similar therapeutic experience with tissue resetting happened while traveling in the Philippines and in Venezuela. By experiencing the power of work done on the body through educated touch I became interested in somatic work. Soon after my injuries I went through a divorce and suffered stress-induced illnesses. Thereafter, I became interested in stress physiology and illness and how somatic methods speak to the body to ease both physical and mental distress.

During the process of this thesis I had my first child, researched while breastfeeding and raising her, and immediately went into early menopause at the age of 38. My body and mind were all over the place and it was quite difficult to focus with an early Mommy ‘baby brain’. Yet, even with waking up two or three times a night I did my research through nap times and in the evening. I also started working again full-time. My schedule was tight and my head foggy. I know there are many details I missed in this project and hope to continue researching the many questions I am left with.

This work is dedicated to my best friend, my ‘dancing soul sister’

Jenna Katherine Morrison (1973-2011) who I lost while writing this thesis. In a weird way this project helped me keep my head on straight as it gave me something to focus on instead of the chaotic pain and loss I felt as a result of her death. My grief has been so immense. We went to dance school together and shared a dance floor nearly every weekend in Montreal out in the house music clubs getting lost in the magic of motion. I have five blood sisters and she was my chosen sixth (she even asked my mom if she could officially be another sister). I am forever at a loss. Jenna was a dancer, a yoga teacher, a Thai massage therapist, a Mother, a lover, and a moon goddess. I end with her daily prayer as she lit a candle on her personal alter:

I am created by Divine Light.

I am sustained by Divine Light.

I am protected by Diving Light.

I am surrounded by Divine Light.

I am ever growing into Divine Light.

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