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THE KINESTHETIC SENSE:  
EXPLORING SENSATION, SELF-EMERGENCE,  
AWARENESS AND STRESS NEGOTIATION  
THROUGH SOMATIC PRACTICE  

DISSERTATION  

Presented in Partial Fulfillment of the Requirements for  
the Degree Doctor of Philosophy in the Graduate  
School of The Ohio State University  

By  

Theresa Silow  

*****  

The Ohio State University  

2002  

Dissertation Committee:  

Dr. Seymour Kleinman, Advisor  

Dr. Thomas P. Kasulis  

Dr. William Taylor  

Dr. Fiona Travis  

Approved by  

Advisor  

College of Education
ABSTRACT

Western perspectives have long regarded body and mind/soul as separate, assigning primacy of mind over body and regarding the "kinesthetic sense" as the forgotten sixth sense. This study elaborates on the development and use of the term kinesthetic sense and presents a working definition based on functional and neurophysiological (somatosensory receptor mechanisms) criteria and in relation to proprioception.

The study explores the kinesthetic sense, its meaning, breadth and potential for cultivation. The following research questions are addressed: (1) What is the link between kinesthetic experience and the experience of self? (2) What are the possibilities of cultivating kinesthetic awareness through somatic practice? (3) What is the relationship between kinesthetic awareness and stress negotiation?

Qualitative methods including the constructivist/interpretivist paradigm, participatory action and heuristic approaches – constitute the paradigm for this introspective exploration. A somatics course, utilizing several embodiment practices, comprises the vehicle for the investigation. Individual data stories and general descriptions about emerging themes constitute the self-reported data.
In alignment with psychological developmental theories and Eastern spiritual conceptions, the data indicates that: (1) kinesthetic experience presents a basis for the development of self; and (2) sensory awareness and contemplation facilitate the relinquishment of self and the experience of no-self or body/mind unity. Hence, the study indicates that kinesthesia is fundamental in human experience.

During the short-term course, somatic practice (awareness, breathing and movement explorations) fostered sensory cultivation and body consciousness. The cultivation benefits are somewhat temporary, particularly when sensory amnesia is severe.

In this investigation, traumatic and stressful experiences are discussed as contributors to diminished sensory functioning. Continued experience of stressful situations brings forth prolonged bodily contraction, diminished movement and sensory amnesia, while heightened body awareness allows for a partial disengagement from stress-causing situations and precipitates grounding within the body during challenging moments. Consequently, a link between kinesthetic awareness and the ability to manage and negotiate stress is established.
To My Husband Alan and My Son Adam

Who have loved and supported me throughout this process
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VITA

March 22, 1956................................. Born – Schongau, Germany

1974 - 1978................................. Dipl. Soz. Paed.,
Stiftungsfachhochschule Munich, Germany

1978 - 1979................................. Fullbright Scholarship
Studies at The Ohio State University

1999 – Present............................. The Ohio State University,
Columbus, Ohio

TEACHING EXPERIENCE

2001 Co-Instructor, The Ohio State University, Columbus, Ohio

1999 – 2000 Graduate Assistant, The Ohio State University, Columbus, Ohio

1998 – 1999 Adjunct Faculty, Southwestern College, Santa Fe, New Mexico

1994 – 1999 Somatic Educator, private practice, Santa Fe, New Mexico
FIELDS OF STUDY

Major Field: Education

Studies in Movement Arts, Movement Theories, Philosophy and Body Concepts
   Professor Seymour Kleinman

Studies in Spirituality and Somatics
   Professor William Taylor

Studies in the Contemplative Body
   Professor Thomas P. Kasulis

Studies in Neuropsychology
   Professor Gary Berntson

Studies in Qualitative Research Methodologies
   Professor Antoinette Errante
   Professor Patricia Lather
   Professor Laurel Richardson

Studies in Dalcroze Eurhythmics
   Professor R. J. David Frego

Studies in Continuum
   Emilie Conrad

Studies in Body-Mind Centering
   Bonnie Bainbridge Cohen

Studies in The Halprin Life/Art Process
   Anna Halprin
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CHAPTER 1

INTRODUCTION

Background of the Study

Today few qualitative researchers presume that the picture of the other can be painted from “nowhere” (Fine, 1994). Any description of the other has to include self-reflexiveness so the reader may understand how the position of the researcher shapes the way the subject is seen and described. Our central standpoint is colored by the way we live in our bodies, how we experience our personal history, and by the culture we encounter. Collectively these experiences become the framing context for our worldview and determine our “meaning” of life (Schwandt, 1994). Self-construction is thus as much a part of a social inquiry method as theory construction. I therefore will present a sketch of the development of my interest in somatics.

This journey began a long time ago. I have always loved to dance and move. Even as a small child it seemed to be my way “out” as well as “in.” Movement was my escape from the demands and chores of an often overly-serious German rural environment. My mother looked askance at my dancing with the dish-towel in the kitchen, asking me to leave rather than complete my job of drying the dishes. For years movement and dance was also an avenue toward self-discovery and awareness of my
inner experience. Frequently I was “entranced” for hours by the beat of rock-n-roll or percussion music. I was able to tap into my own “flow” and experience my aliveness.

Though the environment I grew up in did not encourage my interest in the moving process, my passion for it never quite subsided. After I completed my formal education in social work, which was the beginning of my interest in human behavior, I looked for environments that supported my interest in movement and the body. I studied with Anna Halprin, Emilie Conrad and Bonnie Bainbridge Cohen, three pioneers in the field of somatics and movement education. I also sought out an Indian spiritual master, Osho, who presented meditation in tandem with expressive therapies and movement approaches. All of it provided deeper ways of exploring movement and strengthened my body awareness. These practices gave me the opportunity to explore various dimensions of experience, i.e. the physical, emotional and spiritual, and pursue an integrated awareness thereof.

Becoming acquainted with my body has been an incredibly rewarding, although sometimes challenging venture. It required the willingness to embrace both the “wonderful” and the “terrible.” I began to develop the capacity to be aware of profound and gratifying, as well as challenging and painful, sensations and emotions. Such expanded awareness of my body has brought a great sense of connection and inner referencing to my life. It has opened doors of consciousness about my soma and continues to do so.

1 The term “soma” is derived from the Greek language and means “bodily being.” It does not describe an object but a process. “Soma is living: it is expanding and contracting, accommodating and assimilating, drawing in energy and expelling energy” (Hanna, 1970, p. 35). Soma addresses the alive body holistically.
The focus of this study is a direct outflow of my experience, my movement practices, my interest in the human body and my questions about human consciousness. Investigating the kinesthetic sense is on one hand an attempt to more fully integrate and understand my own experiences, while pursuing deeper insight into the cultivation of body-consciousness in terms of a larger population, and its links to the experience of self. This research project is also fueled by my interest in comprehending the origin and workings of the dualistic body mind viewpoint while seeking to find an avenue to holism.

Classical and modern Western perspectives have seen body and mind as separate and have generally considered the mind as superior to the body (Descartes, 1993; Plato, 1981). As a result, a general neglect of the inner and subjective experience has been commonplace. While the special senses and cognitive levels of functioning have become the focus of education and cultivation, the inner sense or kinesthetic sense has been relegated to the unconscious and become the forgotten sixth sense. Abandonment of sensation, one of the primary symptoms of the body mind split can be observed in many fitness studios, as for example people work out on exercise machines while watching TV. The mind is occupied with an external event while the body goes through its motions. These activities get the body in shape but do not promote awareness about the experience itself. Neglecting the inner experience brings with it psychological alienation, as well as physiological dysfunction and illnesses (Hanna, 1988; Johnson, 1983). Many somatic practices have developed in response to this type of fragmentation.

---

2 For a more detailed historical presentation of Western classical and modern body mind concepts see the chapter by S. Kleinman (1972): The classic philosophies and their metaphysical positions.
Experiences of disconnection from one's body became the very impetus to cultivate new ways of being aware of our bodies. The ground for the field of somatics was laid by the works of early practitioners including F. Matthias Alexander, Elsa Gindler, Ilse Mittendorf, Moshe Feldenkrais, Ida Rolf, and Rudolf von Laban. Somatics became an umbrella term for various techniques, approaches, and practices that focus on the individual cultivating or regaining consciousness of body and self through kinesthetic inquiry. Somatics as a field also engages in theorizing the body-mind conundrum. Various writers in this field contemplated the fundamental reorientation required to overcome the dichotomy of body and mind.

Thomas Hanna (1994) talked about the “experience from within” as the essential element in somatic work. He contended that first-person human experience needs to be regarded equal with the scientific and medical third person view, the view from the outside. This describes a shift from the expert third-person perspective, through which our bodies are measured, diagnosed, treated and acted upon, to telling our stories through our own eyes and senses. When we veer from seeing our bodies in the mirror or through the eyes of others and sense our somas from within, we become a first-person narrator in our own novel. Likewise, Johnson (1983) argued for a shift from alienation toward authenticity to recover our own inner guidance and reclaim the authority of our sensual experiences. Hence somatics embraces theory and practice. It is concerned with the

---

3 Body-mind and bodymind: These terms have been used in the somatic literature to indicate various aspects of non-duality between body and mind. There is no general consensus about their application and definition. In this study “body-mind” refers to the understanding that body and mind constitute discernible aspects of the human experience while forming one whole. The term bodymind refers to a non-ordinary state of awareness, cultivated through practice, that presents an experience of unity of body and mind. The term mind is not to be confused with solely cognitive functions, but rather taken as an expression of a larger consciousness which embraces cognitive functions as well as an awareness of self and soul.
body-mind unity and moves our attention from the objective to the subjective. It is interested in initiating and cultivating an inner process rather than simply seeking to reach a specific goal.

My individual story as well as the collective dilemma of alienation propelled me toward investigating the meaning and dynamic of the inner experience, in particular our sensate experience.

**Statement of the Problem**

This study, a result of my personal experiences and professional quest, investigates the kinesthetic sense as a fundamental aspect of human experience.

(1) It makes inquiry into the assertion that kinesthetic experience provides a basis for the experience of self, whether it be a self conditioned through the history of the individual or a self as a non-conditioned presence. The study determines whether the subjects experienced and recognized such a link between self and sensation.

(2) The study further explores the hypothesis that the kinesthetic sense can be cultivated through somatic practice and education, such as awareness exercises, relaxation exercises, breathing exercises, stretching, and movement explorations. It seeks to interpret the experiences of participants of a somatics course in relationship to kinesthetic awareness and determines whether the participants regarded somatic practices and body-mind techniques as fostering body awareness.

(3) The study additionally examines the link between kinesthetic awareness and the experience of stress. It seeks to interpret the subjects’ reports about body awareness in light of their ability to negotiate stressful situations.
Purpose of the Study

The intention of this exploratory study is to first and foremost inquire into the kinesthetic sense as a fundamental dimension of human experience. A prevailing dualistic viewpoint about body and mind brings with it a value system that privileges the mind over the body. The body is treated as a “vehicle” which needs to be kept in good condition to function properly so that it does not interfere with the functioning of the mind. Yet little interest and attention is given to the experience of the body. This neglect appears to go hand in hand with an undifferentiated awareness of the kinesthetic experience in which sensate experience becomes almost totally unconscious. Its elemental impact on experiencing and functioning is disregarded. This results in a grave sense of alienation (Hanna, 1970, 1988; Johnson, 1983). Hence it is essential to move this domain of human experience into the forefront of awareness, discussion and dialogue.

The term “kinesthetic sense” is a pivotal term used throughout the study. Yet, its use in the current literature is very ambiguous (Hopkins, 1972). The study therefore presents at the outset a sketch of the development of the term and offers a working definition based on various sensory stimuli. In concert, different sensory information contributes to the experience from within, the major focus of somatic work (Hanna, 1994). This in-depth presentation about the dynamic, the development and the definition of the kinesthetic sense may provide a basis for further discussion and clarification in the field of somatics and other related areas.

The kinesthetic realm in this report is considered essential in human experience, therefore implying that it presents a basis for other aspects of human life. To substantiate
this hypothesis, kinesthetic experience is explored with regards to the concept of self. The concept of self represents a remarkably large span within psychology, philosophy and spirituality (Almaas, 1996; Kleinman, 1977; Polkinghorne, 2001; Yuasa, 1987). It ranges from a conditioned or historical self to an authentic self, to a non-conceptual experience of no-self. The kinesthetic sensations are thus related to several theories along this spectrum. Two theories about the development of self will be offered to establish such connection: Margaret Mahler’s individuation and separation process (Mahler, Pine & Bergman, 1975), the emergence of psychological independence based on physiological and emotional development; and Jean Piaget’s depiction of the development of the cognizing self based on sensorimotor development (Fogel, 1997; Piaget, 1976, 1982). Two Eastern concepts by Nishida and Dogen, as described by Yuasa (1987), are offered as an argument to substantiate the theory that the process of spiritual attainment and the experience of no-self is deeply rooted in the body. Only total surrender to the internal bodily experience can bring forth an awareness of body and mind as unity. These psychological and spiritual concepts collectively allow us to look at kinesthetic sensation as a basic dimension in human development, from the emergence of self to the realization of human potential in the form of expanded consciousness. Hence, the notion of self arises out of the kinesthetic experience.

A body scheme described by Yuasa (1987) is applied to differentiate various domains of the kinesthetic experience, to provide a theoretical framework that links neurophysiological concepts to the subjective experience and provides a foundation for tracking and differentiating this largely unexplored realm of the kinesthetic experience. It distinguishes between external sensory, internal sensory and instinctual
emotional experience. Additionally it includes an experiential circuit that does not relate to anatomical and physiological structures and functions known to Western medicine and physiology, the circuit of the “unconscious quasi-body” (Nagatomo, 1992). This circuit portrays a phenomenon of subtle sensing that is represented primarily by Eastern spiritual traditions and described in terms such as Chi, Ki, Prana, lifeforce, and others. A conscious experience of this phenomenon requires cultivation of the body senses and refinement of awareness. According to Yuasa’s understanding, this study employs the concept of the quasi-body as a mechanism to understand and interrelate kinesthetic experience and subtle sensations as a means to bridging the gap between physiological, emotional and spiritual experiences.

Since the kinesthetic experience is paramount in human experience, it is of utmost importance to understand the current predicament of alienation from the body (Hanna, 1970; Johnson, 1983). Hanna’s theory (1988) about the condition of sensory-motor amnesia, presented here to provide insight, portrays the experiential dynamic of being out of touch with one’s body. Hanna describes the direct connection between one’s range of movement and one’s ability to sense. Any habitual muscle contractions constitute a limited range of motion. These habits, he contends, interrupt the on-going feedback mechanisms between sensory and motor nerves and create a break in the sensory-motor feedback loop. Diminished movement goes hand-in-hand with a diminished sensing of the body. If we don’t sense ourselves, we are unaware of what is happening internally and become estranged from our bodies. Thus, sensory-motor amnesia is a fundamental contributor to the experience of alienation and outer-directed functioning. Prolonged experiences of stress is presented as a major contributor to this condition. These include...
basic stress reflexes (Thomas Hanna, 1988); the trauma reflex (Peter Levine, Levine & Frederick, 1997); and non-specific stress response (Hans Selye, 1984).

The experience of sensory-motor amnesia and alienation from the body go hand-in-hand. To pursue possibilities for reversal of this condition, the study looks at the feasibility of cultivating kinesthetic awareness. The term ‘cultivation’ in this report is applied similarly to the understanding in Eastern practices of spiritual cultivation.

Cultivation occurs through practical training with the aim of developing body sensitivity and enhancing the experience of self (Yuasa, 1987). The term cultivation in a spiritual context is generally applied to a long-term engagement in a particular practice. Although this study does not describe a long-term somatic engagement, the intention is essentially similar, thus the use of the term here. In this study cultivation has the specific focus of increasing the range of movement⁴ and thus refining awareness of the inner experience.

In alignment with the quest for sensory cultivation, I designed a somatics course that introduced the theory and practice of various body-mind approaches. Each class began with a thematic introduction regarding the kinesthetic sense and related issues. The participants were then exposed to various somatic practices (meditation, relaxation and breathing exercises, stretching, movement explorations, etc.)⁵. At the end of each somatic session, the participants were asked to bring attention to their internal sense.

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⁴ The term movement in this context includes extrinsic movement, observable from the outside, as well as intrinsic movements and micromovements, “tiny pulsations that are felt, but barely seen.” (Conrad & Harper, 2001, p. 4)

⁵ A vast array of somatic approaches are currently being practiced. Some are specific systems that have been developed by their originators and are trademarked or registered (i.e. Authentic Movement, Body-Mind Centering, Continuum, etc.). Others have developed out of a long lineage of particular practices, i.e. Yoga, Tai Chi, Qi Gong, etc. There are also more generic techniques, which are used in many approaches, including relaxation, centering exercises and others. For this reason, if I refer to a global approach or method rather than a specific system, I will use small letters. If I refer to a specific somatic system, I will present it with an initial capital letter.
experiences and express these in the form of reflective drawings and journal writing. The purpose of this course was to present ample opportunities for participants to enter into and more deeply engage in somatic cultivation. The course was also developed as a research mechanism to track inner events and generate data about the kinesthetic experience.

**Significance of the Study**

Although there exists research in the fields of somatics, psychology/neuropsychology, philosophy and spirituality, this study addresses a missing link between those fields. While several studies have been conducted to investigate the importance of the kinesthetic sense in learning and as an aspect of intelligence, few draw on all these areas simultaneously to address the cultivation of the kinesthetic sense through somatic practices and relate it to the experience of self and the ability of self-regulation. There may be informal understanding of how these fields connect and interact, as demonstrated by a growing interest in body-mind issues, somatic and expressive practices and meditation. However, formal inquiry into the relationship between these fields of study is rare and the purpose of this study is to address such neglect.

Most investigations look at human functioning from an objective viewpoint. This study makes a significant contribution to understanding the largely unexplored

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6 Both methods of data collection are aspects of phenomenologically guided research of lived experience. See Kleinman (1991) and Van Manen (1990).

subjective kinesthetic experience as a phenomena of inner somatic experience. The goal of this study is to develop a broader understanding about the human inner experience by portraying the inner landscape and giving voice to the first person viewpoint. This focus very much guided the choice for the mode of inquiry. Qualitative research with its intent to understand the complex world of living experience (Guba & Lincoln, 1994) was therefore the umbrella research paradigm. It presented a viable avenue to give voice to the inner, kinesthetic experience of the subjects and to analyze that experience in light of the main assumption about the fundamental role of kinesthetic experience and related questions.

I believe it would be valuable to design in the future a qualitative and quantitative mixed method study that would continue to bring to the forefront the strength of qualitative inquiry - voicing and representing the inner living somatic experience of the subjects - and combine it with quantitative measures to deepen knowledge about the kinesthetic sense. A mixed methods approach will move a study automatically back into the realm of objectifying living experience through statistical measures. I thus find it imperative to first look at the kinesthetic experience with “qualitative” eyes, in order to establish a foundation for understanding and theorizing through the first person viewpoint.

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8 The term subjectivity does not express an intent to continue to support the dualistic viewpoint, separating objectivity and subjectivity. Rather, it is employed in order to present an alternative perspective by focusing on inner awareness, a dimension which has been largely neglected in scientific research. Subjectivity here refers to the realm of inner somatic experience and self observation, the first person experience, in alignment with Thomas Hanna’s understanding (1994). It presents a different type of data than objective data, yet, not a less correct data. Due to my dual role as a somatic educator and researcher I was a subjective participant in this study. My own subjectivity was evident in presentation of personal reflections, perspectives and theoretical standpoints. Thus, the researched and the researcher were both subjects in this inquiry.
In addition to presenting a subjective view and interdisciplinary understanding, the study investigates the possibility of cultivating the kinesthetic sense and body awareness. It examines the possibility of reversing the lack of awareness about the somatic experience and the phenomenon of sensory-motor amnesia. It describes the major elements of a somatics course which provides an experiential opportunity for participants to explore their bodies, understand functional elements and discover natural movement through the process of sensing, feeling and moving. It thus not only describes and theorizes an existing problem, it also presents a pro-active approach to finding answers. This moves the study from basic research into the realm of applied research (Ary, Cheser Jacobs, & Razavieh, 1996). In light of society’s increasing fragmentation and estrangement (Hanna, 1970, 1988; Johnson, 1983) this study is presented as a contribution to generating potential solutions to a collective societal problem.

Procedure

The focus on the kinesthetic sense was rooted in my personal experiences and my encounters as a somatic educator. The engagement in somatic practices provided me with profound experiences of reconnecting with myself. Awareness of my inner life increased my sense of presence and presented important reference points of inner impulses, sensations, hunches and feelings, which became increasingly the guiding force for responding to life situations. This continues to be a process of personal discovery, as I reconnect with places inside that have been hidden from my awareness in a state of amnesia. Professionally, while teaching somatic courses, I observed that the inner experience very often is relegated to the realm of the unconscious. It is not unusual that
course participants, captured in a state of numbness, are not able to recognize or report their sensate experiences and feelings. I thus felt compelled to inquire into the dynamic of the kinesthetic experience more deeply and to understand the physiological, psychological and cognitive habits that need to be challenged to foster an increase in body awareness.

This study embraced practice and interdisciplinary theory. My practical investigation is based on an in-depth involvement in several somatic approaches for the last twenty years. In particular I studied and engaged in Continuum Movement, Body-Mind Centering, the Halprin Life/Art Process. I also participated in many workshops and programs of Eastern as well as Western somatic systems: Osho Meditations, Yoga, Gurdjieff Movements, Eurhythmics, Alexander Technique, Capoeira, Tai Chi, Aikido, and Gabrielle Roth’s Cycles of Movement. Further, I made an informal study of the theoretical underpinnings and the conceptual background of the field of somatics. Through formal graduate education I inquired into movement theories, Western and Eastern body concepts and philosophies, and psychological developmental theories. I also sought to gain insight into the function and structure of the human organism as major elements in human behavior and attentional processes by attending courses in anatomy, embryology and neuropsychology. Accumulated knowledge about the various movement and awareness processes and study of body-mind theoretical issues was fundamental in developing the somatics course this study utilizes.

The study conceptually began during winter quarter 2001, while I was teaching a four week introductory somatics course at The Ohio State University Wellness Connection, a facility promoting health and well-being for faculty and staff of the
university (Wellness Connection). The feedback and reports gathered from the participants validated the importance of the current study. In fall of 2000 I launched a formal pilot program, again in conjunction with the Wellness Connection. In preparation for the pilot course, I began to develop the essential elements which became the foundation for the course described in this study, entitled “Cultivating the Kinesthetic Through Somatic Practice.” This eight-week course was taught during the winter quarter of 2002. It emphasized the experiential exploration through various somatic practices (breathing exercises, stretching, movement explorations, meditation) and presented elements of somatic theory. Initially there were twenty-nine course participants, thirteen of whom volunteered to fully participate in the research. Nine of the course participants partook only in a limited number of the research activities. Not all the participants were present during all the course sessions. An average of 19 people were present at every class.

Due to the qualitative nature of the inquiry, the methods of data collection for the project were questionnaires, journals, drawings, individual and group interviews, field observations and a reflexive researcher journal. A questionnaire was administered at the beginning and end of the course. Participants drew sketches about their experiences and engaged in reflective journal writing after each class. Class introductions and group discussions were audio-taped and transcribed. Teacher/researcher’s observations during and after class constituted field notes. After completion of the program, each research participant completed a final questionnaire and was interviewed about the process and his/her experience.
I evaluated the questionnaires, narrative reports and observations in terms of the research focus: Kinesthetic awareness, the experience and regulation of self. I analyzed the collective data and presented a theoretical discussion. In addition, the narrative data of three individuals is presented in the form of individual portraits or data stories (Van Maanen, 1988). The respective individuals were selected as representatives of a particular theme or theory. A summary provides an overview about the insights generated by this research and suggestions for further investigations.

Limitations

This study seeks to develop a broader understanding about kinesthetic experience and to relate it to self-experience and self-regulation. It intentionally focuses on the experiential aspect and searches for ways to enhance kinesthetic awareness. The primary focus is to present a subjective “thick description” (Gertz, 1967). Although general assumptions are presented, they do not represent statistically significant generalizations. Nevertheless, the emerging themes may aid in further development of theories about this relatively unexplored area.

The somatic practices presented in the project do not represent all modalities and approaches currently applied. The range of modalities has grown to such an extent that it would be impossible to include all of them in any one course. Yet, many somatic modalities share a variety of principles, including emphasis on the first person authority, pursuit of awareness, the body regarded as the holistic process of the soma, and others (Greene, 1997-98), which are represented even though a limited number of methods is

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applied. While I attempted to present a variety of somatic methods, the choice of exercises was primarily based on personal repertoire and experience.

The majority of the course participants had limited experience with somatic practices. Three of the thirteen subjects had previously participated in one of my somatic education courses. Additionally, three participants have been engaged in other somatic practices for some time. It was not obvious whether and how the depth of their participation and kinesthetic awareness has been colored by such earlier experience.

Somatic cultivation usually requires a long-term engagement, since it seeks to release physiological and/or psychological habits. Yet, it has been my observation as a somatic educator that it takes time for individuals to develop such a commitment. A more varied group of individuals, in terms of background and range of experiences, is usually more willing to participate in a short-term course. I sacrificed the prolonged exposure component to take advantage of a willing and varied participant population. The descriptions of changes noted should be viewed as short-term impact. Any long lasting development would need validation through long-term follow up, for which the resources were not available.

This study was limited by its emphasis on the subjective inner experience. It was not designed to focus on issues of race, gender and age. Even though the personal experience is never quite separable from its social and cultural context, it did not appear useful to include these issues here, as they have been discussed in other investigations at length.
Outline of Chapters

The documentation of the outlined investigation is in the form of six chapters, including this one. The five following chapters present the respective headings and contents:

Chapter 2 - An Emerging Somatic Theory. It presents a theoretical framework through a review of appropriate literature and discusses several bodies of literature as they present the foundation for this study. I will refer to this literature throughout the investigation. The complexity of the respective theories is presented, as well as the places of intersection between different theories and places of diversion between the various theories. The somatic literature addressed includes the following topics: working definition of the kinesthetic sense; sensory and motor development; concepts of self based on sensory experience; sensory experience and spiritual dimensions; sensory-motor amnesia; concepts of stress in relationship to kinesthetic experience; cultivation of sensory awareness and sensitivities; and body-mind integration.

Chapter 3 - Methodology. It addresses the methodological research design and provides a methodological background for the study. It presents my personal theoretical standpoint as well as methodological perspectives, both guiding the research process. The chapter describes the process from pilot study to the actual study. It further presents the methods of data collection, data analysis and data write-up and elaborates on issues of validity and trustworthiness.

Chapter 4 - The Course: Cultivating the Kinesthetic through Somatic Practice. This chapter presents the major elements of the course and discusses some of its practices and their intent. The course was designed to create an educational setting and
environment that allowed the participants to experience various somatic practices and track their individual experiences through these practices. Simultaneously the course provided a research setting.

Chapter 5 – Analysis: General Themes and Individual Data Stories. It presents various themes as they emerged from the collected data. Three individual narrative stories are offered to illustrate these themes. Each narrative tells the partial story of a participant in the study. The accounts are followed by a discussion of the emerging themes and are then more broadly applied to the experiences of all the participants. Confirming and disconfirming data is provided to support and challenge the emergence of the various themes.

Chapter 6 – Findings and Conclusions. This chapter summarizes the findings of the investigation and discusses new issues brought forward through the study. It notes suggestions for future investigations as well as theoretical and practical implications.
CHAPTER 2

AN EMERGING SOMATIC THEORY

The Kinesthetic Sense

_We have five senses in which we glory_
_and which we recognize and celebrate,_
_senses that constitute the sensible world for us._
_But there are other senses – secret senses, sixth senses,_
_if you will – equally vital, but unrecognized,_
_and unlauded ... unconscious, automatic._

(Oliver Sacks quoted in Knaster, 1996, p. 57)

Sensation is the silent language of the body. Yet it is not widely known and often
speaks faintly in the realm of the unconscious. My eight-year old son is learning about
the five senses in school. I tell him that we have a sixth sense, the kinesthetic sense.

“What do you mean by that Mommy?” he says in disbelief. “Close your eyes” I tell him,
“move your arm and tell me where it is. That, which tells you where your arm is, is your
sixth sense, your kinesthetic sense. Your sixth sense tells you how your tummy feels, it
helps you remember the movement of your fingers when you play the piano, it tells you
how your body wants to move when you are dancing.”

This study explores the primary assumption that the kinesthetic sense is
fundamental in human experience, in that it tells us about the experience from within
(Hanna, 1994). The kinesthetic sense has been explored experientially through many somatic approaches and has been alluded to in various physiological, psychological and spiritual theories. Since the terms kinesthesia or kinesthetic sense are used in various areas, although in a very ambiguous fashion, this chapter will at the outset describe the development of the terms and present a working definition.

To substantiate the above assumption, various somatic, psychological and spiritual theories about human development will be presented and brought into relationship with the kinesthetic experience. The development of sensory abilities will be described as an early aspect in human development. Concepts of “self” will be discussed as a basic notion of human experience and development. These concepts of self will include a wide range of theories, from a historically conditioned self to an unconditioned self or no-self. The theories presented substantiate the kinesthetic experience as an essential element in human experience and as a guiding force in the process of actualizing the human potential.

Even though fundamental in human experience, the kinesthetic experience is generally quite unconscious. Several stress response theories are discussed to develop understanding about the prevailing diminished sensory awareness and sensory neglect. In response to these conditions, a discussion about cultivation of sensory experience and consciousness through somatic practice is presented. Movement, breathing and awareness practices, particular elements of somatic practices, are explored and described. Somatic cultivation is thus regarded as a major path toward resolving this overall dilemma of “out of touchness” with one’s body and toward an experience of a bodymind unity.
Development of the Term Kinesthesis

The term “kinesthesis” originates from the Greek language. *Kinein* means “to move.” Kinesthesia in Webster is defined as the “sensation of movement or strain in muscles, tendons, and joints.” The meaning of the term kinesthesia or the kinesthetic sense at first glance seems straightforward. However, in taking a closer look at the definition and the use of the term, it appears to be as ambiguous as the general awareness of what it describes. The 19th-century anatomist Charles Bell described it as the “lost Sixth Sense” (Wright & Bouchard, 1998/99). While the external senses of sight, sound, taste and smell are well defined and often described in detail, the kinesthetic sense remains largely unknown and not very well understood. In an attempt to understand and clarify the definition of the “kinesthetic sense” I am presenting a brief sketch of the term’s historical development.

The word kinesthesis surfaced sometime during the latter part of the 19th-century (Hopkins, 1972). Until then there was simply talk about the “sixth sense” or “muscle sense.” Insight into the kinesthetic sense was obtained primarily through introspective research. Its meaning was quite ambiguous. The definitions ranged from “sensation of innervation.” describing efferent phenomena, to sensation being an “afferent event” (p.433).

By the middle of the 20th-century, due to empirically based research, afferent sensations began to be objectively described in neurological and physiological terms. This led to the introduction of the new classification “proprioception” meaning “own reception” (Webster). Although the introduction of the new scientific term was based on a more differentiated physiological knowledge, its inception did not clarify the
discussion. It sometimes was applied to sensory information from the muscular and joint systems, other times to sensory stimuli deep from within the field of the body and now and then included the vestibular afferent systems (Hopkins, 1972). Currently, the actual use and definition of the terms proprioception and kinesthetic sense are still vague and almost as varied as in the early years. Therefore the following questions need to be clarified: Are the two terms – kinesthesis and proprioception - synonymous? Which sensory stimuli do they include? Do the terms describe conscious sensory experience?

**Working Definition**

Since this study arises out of the field of somatics, it is my intent to develop a definition applicable to the somatic context. Much of the somatic literature talks about sensation in general, and is influenced by various hands-on, movement, meditation and somatic education approaches. I will use the term “kinesthetic sense” for the umbrella term “sensation.” since that is the focus of any somatic exploration and practice. In an attempt to more deeply understand this experience and to begin to embrace its vastness as well as its nuances. I will include the following differentiation and relevant sensory receptor mechanisms¹:

- Information received from the surface of the skin and beneath, such as pressure, indentation, vibration, hair movement or stretch on the skin, which tells us about our body contours and disposition of our boundaries (primarily through touch receptors) (Kolb & Whishaw, 2000).

¹ For a more detailed description of the sensory function of the nervous system, as an important backdrop towards understanding the sensation and movement, see Appendix A.

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Information about muscular movement through feedback about the length of the muscle and the speed with which that length is changing (muscle spindles, receptor mechanisms within the muscle fibers) (Willis, 1998).

Information about the amount of pull and stretch exerted by the muscles on the bone to which they attach (golgi tendon organs, receptor mechanisms located within the tendons) (Netter, 1996).

Information about the relative relationship between body segments and limb position and movement of limbs (joint receptors). Different receptors respond to different information — positioning of the joints, including extreme positions such as extreme flexion, hyperextension, rapid and slow movement (Willis, 1998).

Information about temperature and change of temperature on the surface and inside the body (temperature receptors) (Kolb & Whishaw, 2000).

Information about sharp or bright pain. Pain receptors are generally activated to report changes within body tissue (mechanical, thermal or chemical) which are potentially harmful (nociceptors or pain receptors) (Kolb & Whishaw, 2000).

Information from the internal organs and circulatory system about nutritional and general internal constitution (i.e. fatigue) and states relevant to homeostasis and well-being (a combination of several of the above receptors and others).

Information about balance and relationship to gravity, movement of the body and movement of the environment (vestibular receptor system located in the inner ear) (Kolb & Whishaw, 2000).

Based on the above differentiation, I am proposing that all somatosensory information (see Appendix A) together with the vestibular information make up the kinesthetic.

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experience, which provides an interoceptive or internal view of the body. The stimuli from the muscles, skin, viscera as well as balance together inform us about the experience from within (Hanna, 1994).

Kinesthesia is generally understood as describing the experience of motion and movement. The above, expanded definition still adheres to this understanding. All stimuli, whether initiated through stretching of the muscles, via pressure on the skin, or torques in the organs, are produced through some kind of movement. Movement is understood here in a very broad sense. Its range spans from extrinsic movements of the limbs, caused by muscular contraction, to the shifting of the organs and contracting of the blood vessels, to movement initiated by the currents of the fluids or the pulsations caused by the metabolic processes of the cells. This fits with current understanding within the field of somatics, as somatic approaches are investigating and attending to movement at all these different levels. In contrast, I am adapting the somewhat widespread understanding that proprioception covers the more limited range of muscle and joint receptors. “[I]t provides information about the position of body segments relative to one another and the position of the body in space” (Kolb & Whishaw, 2000, p. 113). The term proprioception thus describes a more static picture in form of a series of snapshots.

It is commonly accepted that somatic work strives to awaken and cultivate our conscious sensory capacities (Gindler, 1995; Greene, 1995, 1997/98; Hanna, 1988, 1994; Johnson, 1983, 1995; Knaster 1996; Mittendorf, 1995; Selver, 1995). My attempt is thus to construct a working definition which holds this premise in the foreground. In light of this I consider it appropriate to employ the term “kinesthetic sense” to describe consciously experienced sensations. Somatosensory information (see Appendix A),
information from all the body senses is being relayed continuously to different parts of the brain. Yet, not all of these stimuli reach our conscious awareness. Obviously, here we are venturing into a very challenging and ambiguous discussion. What is consciousness and awareness from a neurological point of view? Are there particular locations for this phenomenon? Currently there are no clear answers to these questions (Crick & Koch, 1998). Yet, higher faculties, such as attention or awareness, are assumed to be processed via the cerebral cortex (Horacek, 1998). Conscious sensory experiences are therefore associated with the somatosensory cortex, a band of cell bodies located across the top of the cortex and associated areas.

The working definition of the kinesthetic sense presented here includes the input through the somatosenses with its various somatosensory receptors (muscle spindles, golgi tendons, joint receptors, touch receptors, temperature receptors and nociceptors, etc.) and the information of balance through the vestibular system. In an attempt to look at the experience from within, this presents a more inclusive definition than is generally offered. It nevertheless still adheres to the understanding that kinesthesia describes the experience of movement, given that the understanding of movement in this study ranges from large expressive to minute intrinsic movements. Kinesthetic experience in this definition calls for awareness about it and thus differs from the ongoing somatosensory stimuli within the body, which do not necessarily reach consciousness.

Information received by the kinesthetic sense makes up the language of sensation. These stimuli travel up through different somatosensory pathways (see Appendix A) in the spinal cord and become recognized as very distinct or more diffuse kinesthetic stimuli. The variety of these impulses and the combination of the stimuli make up the
nuances of our sensing: Movement of the arm, warmth in the heart, fluttering in the
diaphragm, tension in the neck, heaviness in the shoulder, smoothness on the skin,
nervousness in the stomach. These silent words are continuously spoken.

To date at least 20 different somatosensory receptors have been identified (Kolb
& Whishaw, 2000). Most likely many more will be discovered in the future. Bonnie
Bainbridge Cohen, exploring cellular awareness, speculates that every cell functions as a
sensory receptor (Orlock, 1996). Although this understanding has not been verified by
experimental data, reflecting on it as a possibility gives us a sense of how vast, intricate
and subtle our potential abilities for sensing might be. Kinesthesia is an involved process
of integrating the information from the variety of these known and other still unknown
sources.

The term kinesthesis was coined at a time when research was based on
introspective rather than experimental procedures. Today, even after enormous advances
in neuroscience, I still regard introspection as the major source for insight into the inner
experience. No technology can actually relay the experience itself. There is immense
knowledge to be gained by simply listening to the subtleties of the body, regardless of
any quantifiable measure or statistical significance. Kinesthesia in my understanding
thus implies value for the “holistic” experience and a holistic mode of inquiry.

Any organism consists of multiple levels of organization or systems. Each level
of organization has its own properties in addition to having the properties of its lower-
level components (Michel & Moore, 1999). Hence, older systems become important
components of newer levels of functioning. In the human organism it means human
physiology is the ground for psychology and cognition. Having presented a discussion
and working definition for the kinesthetic sense, I would like to offer several theories that substantiate the primary assumption of this study, that the kinesthetic sense is an essential aspect of human experience. All theories presented address a particular dimension of human development or growth toward actualizing the human potential.

**Kinesthesia and Human Development**

*I am body entirely  
And nothing beside*

(Nietzsche, Thus Spoke Zarathustra  
(quoted in Kinsbourne, 1998, p. 205)

Human development is a continuum from a single celled organism to the very complex human individual. To begin looking at the fundamental role of sensation in human development I will first address development of sensory capacities and the notion of the immediate coupling of moving and sensing.

Sensory abilities don't develop in a vacuum. Sensory and movement abilities emerge in tandem. This coupling begins in the womb during embryo-genesis and continues through the intra-uterine and extra-uterine life. The activation of sensory fibers requires the proximity of muscle fibers. Movement of muscle fibers stimulates the ability to conduct sensory stimuli and sensory differentiation. A functioning muscle becomes the appropriate environment for a sensory nerve to be born (Blechschmidt, 1982). This embryonic linkage of movement and sensation establishes the perimeters for later sensory cultivation. Movement must happen for sensation to occur. I reiterate that there is a wide
Development of Movement and Sensation

Movement is the predecessor or cohort of sensing. Movement development, the visible aspect of sensory development, is more readily available to observation. The sequence of movement development hence informs us about and presents insight into the development of sensory functioning. Bonnie Bainbridge Cohen (1993), based upon her extensive movement work with infants, describes the development of movement in detail. She distinguishes between pre-vertebral and vertebral patterns (Orlock, 1996; Hartley, 1995; Bainbridge Cohen, 1993).

Pre/Vertebral Patterns – Bainbridge Cohen

Pre-vertebral patterns develop primarily in the womb (Orlock, 1996). The first one is called cellular breathing. It is the fundamental movement of cellular and metabolic processes. The phylogenetic form of this pattern is the amoeba, a single-celled organism, which includes and expels substances from and to its environment through expansion and contraction, through opening and closing the membrane. The second pre-vertebral pattern is naval radiation. The six extremities (head, tail, two hands, and two feet) have functionally not differentiated yet. Thus movement ripples outward from the naval center, similar to the movement of the starfish or the tentacles of an octopus. Through the mouthing pattern, the third pre-vertebral pattern, the fetus seeks to investigate and reach more purposefully with the mouth. The fourth one, the pre-spinal movements are soft undulations and sequential movements, motions of the digestive tract, the spinal cord
and the brain. The quality of these pre-vertebral movements is flowing and watery and initiates sensory experience through the soft tissue and autonomic processes.

Further development and activation of the extremities results in movements that Bainbridge Cohen calls the vertebral patterns (Orlock, 1996). They emerge in the womb in rudimentary fashion and become fully developed after birth. The development of the bones in response to gravity makes these patterns possible. The first one, the spinal movement, is somewhat reminiscent of the movement of the fish, guided by the head and propelled by the tail. The homologous or amphibious movement unfolds with the differentiation of the upper and lower extremities. Upper or lower extremities move simultaneously, similar to the movement of the frog. The reptilian phase emerges and marks the differentiation of the two sides of the body in the form of homolateral movements. This is most closely seen in movement of the lizard. It moves each side in unison, in opposition to the other side. With the increased complexity of the nervous system and the brain, contralateral movement characteristic for mammals, emerges. This movement sequences diagonally through the body and signifies the hemispheric connections. The developmental process culminates in the human infant drastically changing his/her relationship to gravity by moving into a vertical orientation and mastering walking, the locomotion of the biped human. The sensory pathways activated through the vertebral patterns represent somatic sensations, sensory experiences relayed via the somatic or voluntary aspect of the nervous system. The pre-vertebral and vertebral movement sequences in concert, activate and stimulate the respective sensory pathways. Later in this chapter I will return to the differentiation between somatic and autonomic sensations.
The description of the sequence of movement development tells us that sensory development moves from non-directional and diffuse global sensations, initiated by cellular motions, to distinct sensations initiated by movement of the skeletal muscles, in particular the extremities. Movement development thus initiates autonomic sensations earlier than somatic sensations. Through the course of this movement/sensory development, the core and periphery of the nervous system expand, connect and integrate. By the time the toddler is standing on both feet and moving through space, the sensory system of the body has become enormously complex. It continues to differentiate in subtlety and complexity into adult life through the never-ending cycle of movement awakening sensation and sensation evoking movement.

The sequence of movement development not only provides understanding about the succession and intricacy of sensory development. Furthermore it presents a valuable framework in the attempt to cultivate the kinesthetic sense in later years and to gain access to forgotten places that are no longer available to conscious experience (I will discuss this issue later in depth). The developmental sequence provides insight into which movement and sensory qualities and pathways have been fully integrated or which ones may need to be re-initiated through somatic practice.

As our moving and sensory capacities develop, a sense of self begins to emerge. The following paragraphs will look at how sensory and movement experience is considered by many psychologists, philosophers and somatic practitioners, to be the foundation of an identity or an experience of self. Gardner (1983) speaks of the body as a vessel of the individual's sense of self, and as a major aspect of his/her intelligence. Alexander Lowen (1967) describes the self as a mountain whose base, shrouded in
clouds, rests in the body and its sensations. Feldenkrais (1985) takes the autonomic nervous system and reflexes as the primary processes of self with the higher functions forming with prolonged use of muscles and special senses. Kestenberg (1979) considers the body’s internal rhythms as determining the interplay between self and environment. Merleau-Ponty (1966), in his interest in the nature of consciousness, equates consciousness with perception. Before venturing into specific theories that address this connection between sensation and self, I will present some general thoughts on the concept of self.

**Emergence of the Conditioned Self**

The concept of self was important during the early period of psychology. Dewey and James for instance regarded the self or soul as a necessary notion to grasp human functioning (Polkinghorne, 2001). With the advent of behaviorism in the 1920s, the concept of self was abandoned. Current academic psychology does not include the notion of self. It is concerned with executive functions, focusing on changing behavior through changing environmental stimuli or altering thoughts. Humanistic orientations have re-introduced the concept of self in order to more deeply understand people’s lives (Polkinghorne, 2001). They distinguish between a concept people have about themselves, as a more superficial reality, and the actual self as an authentic experience. I will begin with a general discussion about the concept of self and two specific theories describing its emergence.

A striking range of theories about the concept of self exists in psychology. These theories include self as ego, personality, traits, an agent for cognition, etc. Most of these self concepts are thought to develop through interactions with significant people and
experiences within particular physical, social and cultural contexts during the early years of one’s life. Thus we are looking at a self concept developing out of the history of the individual. For the purpose of clarification I will refer to this type of self as the conditioned self without further differentiating particular aspects (interactive self, cognitive self, etc.).

The conditioned self develops with the psychological development of the child. At the beginning of our lives we are not aware of ourselves as separate or distinct from the world. There is no differentiation, or as Piaget (quoted in Bermudez, Eilan & Marcel, 1998) expressed it, we experience “profound adualism.” Gradually our selves begin to emerge as we become aware of body boundaries and of the surrounding environment. Our identity or self begins to establish as a persistent object (Bermudez et al., 1998). I will present two widely recognized theories describing the development of the conditioned self: The separation and individuation process described by Margaret Mahler (Mahler, Pine, & Bergman, 1975) and the development of cognition as specified by Jean Piaget (1972, 1982). The emergence of self in both theories is either implicitly or explicitly founded in sensory and perceptual processes.

**Individuation and Separation Process - Mahler**

Margaret Mahler (Mahler, Pine, & Bergman, 1975) a developmental psychologist, describes the development of object constancy, self and independent functioning through the individuation and separation process. This process delineates an observable course, which a child goes through in relationship to its primary care giver, in most cases the mother. Although the theory largely looks at emotional separation, it presents a motor
and perceptual development as the basis for this process. It thus implies the interrelatedness between psychic structures and bodily experience.

Mahler (Mahler, Pine, & Bergman, 1975) describes the first month after birth as the autistic phase. It is the time when the infant is completely taken with the task of establishing homeostasis within the extra-uterine world. The environment encountered after birth is quite different from the watery world of the womb. The infant needs to adjust to a vast array of unfamiliar sensory stimuli and experiences. The gravitational field outside the womb and the experience of air and food intake are two of the major changes it has to cope with.

During the following symbiotic phase (2-4 months) the infant begins to develop awareness of the need-gratifying object, in many cases the mother. The infant’s perception opens up to include mother into the infant’s universe. She becomes the main reference point. Yet, mother is not experienced as separate but as merged and part of an omnipotent infant-mother system. This does not mean that mother did not exist before, rather that her presence contributed to an array of undifferentiated somatosensory stimuli. With the expansion from primary sensing to visual perception, mother’s presence becomes recognized.

The infant more distinctly begins to differentiate between mother and itself, between mother’s body and its own body during the separation phase (5-8 months). Mother is still home base, but the child experiments with moving away from her as it begins to locomote through space on all fours. It is the time when stranger anxiety develops. The child keeps in touch with home base by visually checking back.
During **practicing phase** (9-12 months) the infant is practicing its ability to move further away from mother. Mother is still the center of the universe, but the infant at times enjoys her from a greater distance. This goes hand-in-hand with the beginning of upright locomotion, the demarcation of a quantum leap in human individuation. Balance needs to be negotiated anew and the plane of vision changes totally. The toddler exhibits a sense of exhilaration with its new found faculties.

During the **rapprochement phase** (12-24 month) the toddler’s locomotive movements become refined, with fine motor skills more sophisticated and perceptive abilities more detailed. The toddler’s elation with locomotion and other new found abilities begins to fade. Simultaneously, it becomes aware of mother’s increased separateness. This brings forth an intense crisis. Thus the toddler needs to experiment with finding an optimal distance at which it can best function.

The main task of the following **consolidation phase** is the achievement of individuation and the attainment of a certain degree of object constancy, the gradual internalization of a constant inner image of the mother. Object constancy permits the child to function independently as an autonomous self. This phase begins at about 3 years of age and is open-ended.

With the description of these developmental stages Mahler (Mahler, Pine, & Bergman, 1975) substantiates her claim that physiological and psychological birth do not happen simultaneously. Enormous movement, sensory, perceptual, and emotional development precedes the birth of the self. The process moves from physiological dependence to psychological independence. Mahler et al. (1975) describes the development of a two-layered body ego in this process. The inner core of the body ego is
established predominantly through kinesthetic and interoceptive stimuli, sensations received from inside the body. It starts to form the core of the self, around which a sense of identity will become established. The second layer gets shaped through perceptive stimuli, information received from outside the body, particularly through the visual sense. Visual perceptions allow for the recognition that there is a world other than the infant herself. Both internal sensing (interoception) and outer perceiving (exteroception) become the foundation for the differentiation between self and other.

**Development of the Cognitive Self - Piaget**

The second theory of importance is Jean Piaget's (1896-1980) development of the cognitive self. Piaget saw the roots of the cognizing self in biological processes. Trained as a biologist before he studied human development, he considered the human organism a product of evolutionary processes and selection. He regarded human intelligence as a form of adaptation to the environment (Hanna, 1970).

Piaget searched for signs of intelligence in human infants. He recognized that "even small infants can act in intelligent ways, not by thinking but through their physical actions on the environment to meet their own goals" (Fogel, 1997, p. 39). An infant who is touching an object is developing an intelligent way of "knowing" the object. Knowledge here is not a static accumulation of information but an active process of engagement between the knower and what is to be known. All complex forms of knowing according to Piaget evolve out of these simpler actions, such as sucking, chewing, touching, and crawling in infants (Fogel, 1997).

The first two years of life Piaget refers to as the sensorimotor stage. This stage is characterized by a growing awareness of the child's effect on the environment (Piaget, 1954).
1976, 1982). In his theory this stage contains the seeds for the development of thought, language, social skills, and morality. His description of the unfolding of sensorimotor intelligence illuminates this evolution. The individual progresses from the simplest reflexes – such as those involved in sucking and swallowing – to behavioral acts that increasingly control or impact the environment in pursuit of the individual’s goal - like grasping for and investigating an object. The child goes on to develop interiorized actions or mental operations. These are actions that can actually be performed, but are only executed in the private realm of thinking and imagery. Information about an object like a ball no longer needs to be obtained through sensory investigation, but has become interiorized through the concept “ball.” These newly emerging capacities become the basis for language. The final stage is the ability for formal operations, the capacity to think in a logical fashion about the world by contemplating the implications arising from a set of related problems (Gardner. 1983).

Through this process Piaget demonstrates how newly awakening schema (like the schema of sucking, the schema of swallowing, the schema of touching) simultaneously bring forward new organizational structures and thus new ways of adapting to the world (Hanna. 1970). Piaget’s working terms are adaptation, in the form of accommodation and assimilation. The early infant adapts to its environment through its sensorimotor abilities and intelligence. If possible, it assimilates those aspects of the environment that match or are suited to his or her needs and capacities. If an object for instance is found in the path of its movement or gaze, the infant will simply grasp the obstacle and assimilate it into its investigation. If assimilation does not happen, the infant accommodates by altering existing abilities to better fit the requirements of the situation (Fogel, 1997). So
will an infant accommodate new sucking behavior if all of a sudden mother's breast is replaced with a plastic nipple of a bottle.

Piaget notes that intelligence is an innate ability in all living organism. In human infants, adaptation becomes the impetus for complex sensory, conceptual and verbal intelligence. Higher functions are founded on bodily experience and become the model for higher level experiences. Thus, the self, the agent of intelligence, arises out of this process of organismic and sensory capacities. Thought and cognition, activities of the self, are not disembodied actions, but are based in the body itself.

In both theories the body is considered an experiential matrix, which gives rise to abstract levels of functioning. Although not explicit, Mahler describes the psychological development based on the movement and perceptual advances of the infant in relationship to the mother. The infant or toddler learns to recognize his interior world through sensing or interoception and the exterior world through perceiving or exteroception. The distinction between self and other emerges. Piaget's theory is most concerned with responses to the environment at large. He describes a self that, based on its biological reflexes and abilities, acts upon the environment and develops language and thought as a consequence of this experience. For both theories, body sensations are not the only stimuli that nourish the development of an internal entity or self. The self emerges out of the sum of all sensations and perceptions. Yet, somatosensory experiences, the vast and widespread interoception, develops earliest, and therefore should be considered fundamental in the internal experience.

There are other theories that share the understanding of self and sensing as inseparable. Kinsbourne (1998), a neurologist and psychologist, describes the connection
in the following words: “The background ‘buzz’ of somatosensory input may indicate his body to the child. ... a decontextualized construct of a self as ‘mental’ and distinct from the body [is] a later emerging abstraction” (Kinsbourne, 1998, p. 217). For the infant, as well as later for the adult, familiar sensory experience of the body constitutes the backdrop to all actions, feelings, and thoughts. “Thus the self has no specific location but rather is coextensive with the field of bodily sensations” (Kinsbourne, 1998, p. 218).

Kinsbourne regards this constant background of sensate experience as the basis for the continuity of the experience self. The philosopher Bill Brewer (1998) puts it similarly: “[T]he self, which is the object ... identified in thought by the use of ‘I’, is not merely a conscious thinking thing but the very thing that ... is either hot or cold, with legs crossed or uncrossed, sitting or standing, and so on, from whose mouth the judgment may or may not be expressed: a material, bodily thing” (Brewer, 1998, p. 295).

The background experience of our body senses is so familiar and constant, that is hard to comprehend how thoroughly the kinesthetic experiences saturates our sense of self. We can begin to imagine the extent of it when we hear reports of deafferent patients, people who have lost their capacity for inner sensing. The neurologist Oliver Sacks (1985) relays the case of Christina, a woman who, due to a disastrous inflammation of the sensory nerves, almost completely lost her kinesthetic experience from head to toe. She describes her sensory darkness and despair as follows:

“If only I could feel” she cries. ... “But I can’t identify with that graceful girl any more! She’s gone. I can’t remember her, I can’t even imagine her. It is like something’s been scooped right out of me, right at the centre ... that’s what they do with frogs, isn’t it? They scoop out the centre, the spinal cord, they pith them ... That’s what I am, pithed, like a frog ... Step up, come and see Chris, the first pithed human being. She’s no proprioception, no sense of herself - disembodied Chris, the pithed girl!” (Sacks, 1985, p. 50)
Christina paints a vivid picture of what it is like to not be able to sense one's body. She felt unreal. Christina lost her fundamental identity and lived in a state of "nothingness." Her report demonstrates how kinesthetic stimuli not only feed the organism right from the beginning, they also become the foundation of the continued experience of self. The experience of the self arises out of the body, the body constitutes the manifestation of the self in the world. The experience of the body through sensation is hence crucial to the individual's self-identification.

The self-concept or conditioned self, as discussed above, in the context of traditional psychology is assumed to develop over the course of the individual history — the self with a small "s" (Borysenko. 1987). As noted earlier, humanistic psychology, a psychology of being (Maslow. 1999; Polkinghorne. 2001) and Eastern spiritual traditions distinguish between this historic or conditioned self, and an actual self or what I will call here the unconditioned self — the self with a big "S" (Borysenko. 1987). The unconditioned self is generally understood as awareness of one's being, as the witness, the unconditioned mind, unlimited potential. Again, before venturing into a discussion about the unconditioned self and sensation, I will offer some general thoughts about the notion of an actual self.

Transformation toward the Unconditioned Self

Humanistic psychology considers the unconditioned or actual self as an agent of change, an essential and dynamic pattern, a force which moves us toward full and mature development (Polkinghorne. 2001). Self here is a becoming, not a static or unchanging structure. Similarly, Kleinman (1977), borrowing from Kierkegaard, sees the unconditioned self as a process of becoming: "Becoming a self involves a 'coming into
existence' kind of change (kinesis) which "is not a change in essence but in being and is a transition from not existing to existing." (Kleinman, 1977, pp. 154-155). This process of becoming involves the establishment of a dialectical relationship between the finite and the infinite. Almaas (1996), a contemporary spiritual teacher, expresses it thusly:

Our experience of ourselves can be transformed from identifying with our mental self-images to having awareness of less contingent, more fundamentally real aspects of the self. It is possible to arrive at a place where we can experience ourselves as the actual phenomenon, the actual ontological presence that we are, rather than as ideas and feelings about ourselves. The more we are able to contact the actual presence that we are, the less we are alienated in a superficial or externally defined identity. (pp. 7-8)

Psychologists, philosophers and spiritual teachers note and discuss a tension between the conditioned self and the unconditioned self. The conditioned self is the self of the "immediate man ... it has only an illusory appearance of possessing in it something eternal" (Kierkegaard quoted in Kleinman, 1977, p. 149-150). Thus, most of us are identified with the concepts of the conditioned self, which curtails our experience of ourselves, others and the world. "Who we take ourselves to be, as determined by the sets of ideas and images that define us, is very far from the unconditioned reality that deeply realized human beings have come to recognize as our true nature, who we truly are" (Almaas, 1996, p. 7).

Identification with the conceptual schemes of the conditioned self may drown out the unconditioned self almost completely. Yet, if the conditioned self is open enough, the unconditioned self can be felt and the human potential can manifest itself. Thus, softening or deconstructing the structures of the conditioned self, freeing the soul from false identities, allows movement toward spontaneity of experience. Movement away from identifying with self concepts, ideas and images that define us, toward exploration...
and experience of the actual self begins to develop awareness of more fundamentally real aspects of self and leads to a revelation of the nature of the human self as being (Almaas, 1996).

Many humanistic psychologists believe that we have an innate and natural tendency to manifest the fullness of our individual personhood (Polkinghorne, 2001). Others state that movement toward being, becoming the unconditioned self, moving from possibility to actuality is not a necessity, it comes out of a free choice to move towards it (Kleinman, 1977). Humanistic psychology as well as many spiritual traditions motivate and cultivate moving beyond the limitations of the conditioned self, so that an expanded consciousness, the unconditioned self, can be recognized. This process of recognition of the unconditioned self or no-self is referred to as self-actualization or self-realization. When one is self-realized, one is consciously aware of the real nature of the self. “When doubt and fear are dismantled, a person can become aware of an inner wellspring of security, compassion, peace and joy ... that allows him to realize or to actualize the potential that dwells within” (Borysenko. 1987. p. 103). As self-realization becomes more established, the experience of the soul, less structured through images and concepts in the mind, is propelled by the inherent dynamic unfoldment of being (Almaas, 1996).

Thus man is in a state of becoming as his/her awareness moves from the conditioned self to the unconditioned self. The realization of the unconditioned self, according to Kierkegaard, requires living the dialectic relationship between essence and existence, between mediate and immediate, between the finite and infinite (Kleinman, 1977). It is a movement from possibility to actuality. “Man is born with the potential to become a self. But it is only through motion of this nature that the self may be realized.
It is through kinesis that self may become a self” (Kleinman, 1977, p. 148). Kierkegaard here uses the word “kinesis” to point toward an existential change in the mode of being. He introduces a force that is not identical with the finite or the infinite, with the conditioned or the unconditioned or with the body or soul. This force establishes the relationship between unconditioned self and conditioned self.

Although Kleinman (1977) points out that the term “kinesis” as applied here, cannot be taken as synonymous with physical motion, movement of the body or any of its parts, the use of the term is still very telling. The term “kinesis” is a close relative of the term “kinesthesi a,” the main focus of this study. Interestingly enough, a relationship between the finite and the infinite is reportedly being established in moments of “authentic kinetic change.” an experience sometimes available through physical activities. “[S]ports … may serve as a catalyst for encouraging this change in being or self-actualization” (p. 151). Although “kinesis” is not to be mistaken with physical movement, it may be brought about through physical movement. Physical movement, extraordinary moments in sport, may bring forward “deeply religious feeling[s] not easily or often found” (p. 151).

Kleinman is not alone in his understanding that physical activities have the potential to provide opportunities for heightened experiences. Others see the potential of gaining an experience of oneness, where the self is experienced as a totality, not as parts (Gerber, 1979; Privette, 2001). Extraordinary experiences, “the perfect moment when mind, muscle, and movement come together” (Privette, 2001, p. 161) are moments of “peak performance,” characterized by a clear focus, a sense that everything important
came together and everything extraneous faded away. These are experiences of absorption, or “creative incident[s] of tunnel vision” (Privette, 2001, p. 164).

Experiences of oneness are not only available through heightened physical activity. Various contemplative practices can bring “peak experiences” to the forefront of our awareness. They are reported as experiences of intense joy or ecstasy and clearly stand out among other everyday modes of perception. Such peak experiences are characterized by an increased intensity of perception, depth of feeling, and a sense of deep significance.

That there are dimensions to human experience other than those of conventional reality is universally known. Most of us have had profound experiences involving religious insight, deep self-awareness, or some other opening into a realm of Being not generally seen. ... Love and wonder, a sense of light and grace, and peak experiences of oneness in nature are all insights into deeper dimensions of reality. (Almaas, 1996, p. 11)

These moments present a strong contrast to everyday experiences and are marked by a sense of fulfillment, significance and spirituality (Privette, 2001). Experiences beyond words become turning points and catalytic events in a person’s life (Polkinghorne, 2001).

Although Kierkegaard did not use the term “kinesis” synonymously with physical movement, a fundamental authentic shift toward self-realization and the experience of the unconditioned self does coincide with physical movement in moments of “peak performance” in sports. “Peak experiences” may arise out of non-doing, through contemplation. Thus, experiences of the unconditioned self are considered strongly linked with the body by many Eastern traditions. Following I will describe concepts presented by the Japanese philosopher, Yuasa Yuaso (1987). As a Professor of Comparative Thought, Yuasa explores body-mind theories underlying Buddhism,

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Kundalini yoga, acupuncture and Western physiology. He examines the interwoven existence of body and mind and its significance in the process of spiritual cultivation.

Dual Layered Consciousness - Nishida (1870-1945)

Yuasa describes the concept of a dual layered consciousness, based on the theory of the philosopher and Zen Buddhist, Nishida Kitaro. Nishida distinguished between the bright and dark consciousness. The bright consciousness is an objectifying consciousness, aware of self and objects. It is often called the ego-consciousness. This consciousness is active when we focus our attention on a particular thing, entity or aspect of life. The bright consciousness has the ability to concentrate on something sharply, usually by excluding other things. The bright consciousness makes up the mode of our everyday consciousness and provides us with the ability to be aware of ourselves, to think and to articulate.

In contrast to it is the dark consciousness, a unifying force functioning at the bottom of the bright consciousness. It is an effortless natural consciousness of unorganized, undifferentiated and flowing events. It constitutes surrender to the flow of things, without fragmenting, changing or resisting it. It requires letting things be. Through the dark consciousness man is able to grasp the true meaning of being. The dark consciousness is deeply linked to the body and its sensations. Yet, this type of consciousness is ordinarily not accessible to our awareness.

The dark consciousness rather than the bright and analytical consciousness becomes the doorway to transformation. As the dark consciousness is concealed in the body, it can only be accessed through the body. Immersion into the body is required to tap into it. While functioning out of bright consciousness, ordinary consciousness, the
body is experienced as separate from the mind. Through continued practice of meditation
the self-consciousness of the bright consciousness becomes extinguished. The
objectifying mind no longer opposes the body as a subject, but becomes completely one
with the body. The body is no longer a thing we have, but an experience we are.

As the self overcomes such a bright ego-consciousness and illumines the layer of
the dark consciousness buried in the body, the body loses its heaviness and
becomes unopposed to the mind’s functioning. The body qua object is gradually
made, as it were, subjective. ... [The mind] enters into the state of selfless
sāmaññha or what may be called “the self without being a self.” (Yuasa, 1987, p.
72)

Similar to the above conditioned and unconditioned self, we find a dual layered mode of
existence and consciousness here. Nishida very explicitly considers the bottom layer, the
dark consciousness, as deeply linked with the body. Transformation means the
experience of the unconditioned self through the temporary extinction of the active ego-
consciousness or conditioned self. Many Buddhist traditions consider all aspects of self
as conditioned (Yuasa, 1987), they thus refer to this state as the “self without being a
self” or the experience of no-self. This pure and ecstatic experience, cultivated through
spiritual practice and meditation, “Samadhi,” is the experience of the non-ordinary state
of bodymind unity.

Many Eastern traditions have developed cultivation practices to bring the dark
consciousness to the foreground. The practices (i.e. sitting) are imposed by the bright
consciousness on the body-mind and create a container for the dark consciousness to
come forward and act spontaneously, creatively and in a spiritually significant manner.
Yuasa (1987) here presents the ideas of Dogen, a distinguished Japanese monk, who
founded one of the Japanese Zen traditions. Like other Zen traditions, he emphasizes
seated meditation as the fundamental technique for personal cultivation. Dogen accentuates the importance of the body in this process of transformation more than many other traditions.

**Body over Mind - Dogen (1200-1253)**

Yuasa describes how Dogen conceived the spirit/body relationship in a very unique way: “Ordinarily, we tend to think that the spirit is more fundamental and important than the body, but it is the opposite with Dogen” (Tamaki in Yuasa, 1987, p. 118). It is assumed that the body dominates the spirit, rather than the other way around. Let us look at an example where ordinary consciousness, the mind, dominates the body. For instance, I am thinking now, then I move my finger to type. I am controlling my fingers according to my thoughts. In this mode the spirit dominates the body. Yet, Dogen proclaims that ultimately it is the body that must dominate the spirit or mind. Accordingly, in sitting meditation one suspends all action: The eyes are shut, the auditory input is minimal in a quiet place, the mind has less excuse to wander to the external world. Simultaneously, one attempts to suspend all judgment. Thus the everyday experience is being abolished. Complete attention is turned toward the inner world. “When this change occurs, the spirit can no longer dominate the body. Rather, the self is confined to the reversal of the everyday mode of being, and the body dominates the spirit” (Yuasa, 1987, p. 121).

As the body begins to dominate the spirit, the dark consciousness and its meaning for the human being is being unlocked. This allows for the recognition that the body, as well as the dark consciousness, does not belong to a rational consciousness. Thus “[m]editation regulates and dominates the mind while complying with the body” (Yuasa,
Putting the body ahead of the mind, practicing compliance with the body, and awakening the dark consciousness by allowing the “body/mind molting and falling off,” results in an extraordinary experience:

In *satori*, there is no distinction between the body of oneself and others, between the body of a person and the Buddha. The body is changed into, as it were, a metaphysical body, and it loses all its objective characteristics found in the everyday dimension. (Yuasa, 1987, p. 156)

Dogen, with his claim that the body ultimately must dominate the mind, is contrary to most Western and even some Eastern concepts and presents a radical departure from the usual thinking of “mind over matter.” It means the reversal of the pursuit to transcend the body for the purpose of enlightenment or expanded consciousness. Dogen here presents the notion of “transdecendence” (Kasulis, 2001), which implies a complete decent into and surrender to the body and its processes for the purpose of transformation. More than most philosophers he puts the body not only in an ideal way but in a very practical way in the forefront of personal cultivation.

Dogen’s orientation presents a revolutionary turn toward the body in the process of becoming aware of deeper dimensions of one’s existence. A movement that Kierkegaard called “kinesis” is here very literally taken as needing to occur through deep immersion into the body and surrender to the processes of the body, experienced through the kinesthetic sense. Surrender to and awareness of ongoing bodily sensations become the connecting thread and guidance in the process of becoming, from the conditioned to the unconditioned, from the finite to the infinite, from self to no-self. The kinesthetic experience, the experience of the body’s sensations, becomes the umbilical cord to the experience of being.
To bring this relationship between the finite and the infinite into a coherent understanding, Yuasa developed a model of the experiential circuits of the body which provides a framework that integrates bright and dark consciousness. He presents a body scheme that differentiates between the ordinary and non-ordinary sensory experience within a physiologically based concept. His body scheme contains four different circuits of interrelated information systems within the human organism (Nagatomo, 1992).

**Body-Scheme - Yuasa**

Yuasa describes the first circuit, the *external sensory-motor circuit*, as the pathway of the special senses. Information is received from the external environment, via exteroceptors, the special senses, relayed to the cortex and processed in the form of motor responses. This circuit describes an experience such as seeing a flower and moving towards it. The function of this circuit is primarily conscious, which is why Yuasa relates it to the bright consciousness.

The second circuit is the *circuit of coenesthesia*. It receives internal body sensations through interoception. Yuasa recognizes a division between the *circuit of kinesthesia*¹ (somatic circuit - voluntary movements) and the *circuit of somestheses* (autonomic circuit - non-voluntary movements). He expresses the distinction between the autonomic and somatic nervous system, and their respective sensory feed-back information. The kinesthetic circuit, which receives discrete sensory stimuli, supports the

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¹ Please note here that Yuasa applies the term kinesthesia in a much narrower way than the definition presented earlier in this study. Yuasa's term relates to the movement of voluntary muscles only. This maybe somewhat confusing to the reader, which is why I have included my definition of these circuits in parenthesis.

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first circuit of the special senses from below and is mainly attributable to bright consciousness. The stimuli of the somesthetic circuit are of diffuse nature and mostly unconscious, thus part of the dark consciousness.

The third circuit, the emotion-instinct circuit, regulates instinctual responses, affect and desires. Although the circuit appears to be very intricately connected with the somesthetic or autonomic circuit, Yuasa, out of his knowledge of depth psychology, found it important to establish this circuit in its own right. It appears that with this circuit he is not focusing on actual sensory information, but referring to the dynamic of how this autonomic information is processed in the brain. It is experienced in the form of instinctual affective responses processed mainly through the limbic system. This circuit does not necessarily reach the cortex and is therefore largely unconscious. It thus relates to the dark consciousness.

The fourth circuit is the quasi-body with its subtle energy channels (nadis or meridians) and centers (chakras). “Quasi” means that the body at this level does not conform to either the subject-body as experienced by ordinary consciousness, nor to the idea of an object-body as determined by science (Nagatomo, 1992). In alignment with many of the above theories, Yuasa considers the fourth circuit to be an invisible circuit, recognized only in states of non-ordinary consciousness. As in many Chinese and Indian traditions, the quasi-body is seen as operating at the base of the physiological body as a field of energy, representing the soul’s progression from the physical to the metaphysical dimension. The quasi-body becomes the mediator between the first and the third circuit, between light and dark consciousness. Awareness of the quasi-body appears to describe an experience where the known reference points of the body and the conditioned self are
no longer relevant. The hidden aspects and subtle qualities of the body move to the
forefront of awareness as the initiate fine tunes her/his sensitivities through prolonged
practice. The quasi-body, not known through ordinary consciousness, appears to cover a
range of experiences, from awareness about invisible energy circuits, to awareness of
being and ultimately, awareness of no-self, a non-conceptual reality.

Yuasa’s discussion and his body scheme present a bridge toward integrating the
bright and dark consciousness through the body, toward integrating body and self/mind.
The discussion about bright and dark consciousness and Dogen’s approach of body over
mind describes a spectrum ranging from ordinary to non-ordinary consciousness. It is via
ordinary consciousness that we can distinguish between body and mind, between sensing
and self. It is through non-ordinary consciousness that the unity of both is experienced.
Even though body and self are conceptually distinguishable, they can never be segregated
from each other (Kasulis in Yuasa. 1987). To overcome the distinction, matter has to
overcome the resistance of the mind and mind has to dissolve into the oneness. Yuasa’s
body scheme presents a model for integrating ordinary and non-ordinary consciousness.
Yuasa’s model also presents an integration of ordinary and subtle sensations. Even
though the understanding about subtle sensations is still very rudimentary, it is a
important primary contribution in light of the body-mind issue.

Regarding the earlier presented working definition of the kinesthetic sense, I do
not consider the kinesthetic sense as necessarily encompassing subtle sensations, though
the demarcation between the two is fluid. Sensations of the circuit of somesthesia,
induced by metabolic movements, take us to a very refined dimension of our experience.
It is futile to try to determine where autonomic sensations end and subtle sensations
Kinesthetic awareness, though not the same as awareness of subtle sensations, can lead us to awareness of subtle experiences.

The subtle body or quasi-body has not been confirmed by current physiological and medical understanding (Nagatomo, 1992). Whether this means the subtle energies do not exist on the ordinary physiological level, or whether our instrumentation simply has not become refined enough, remains a question at this point in time. I personally suspect the latter to be true. In any case, the concept might serve to prepare the ground for subtle experiences and subtle sense organs to be recognized in terms of medical and physiological concepts, thus promoting new research avenues.

I would like to address the notion of the “hara,” the experience available in the lower abdomen and referred to by several Eastern traditions (Duerckheim, 1999) as a place of concentrated energy and power, while simultaneously being the center of gravity of the human body. It appears that the “hara” might coincide with the enteric nervous system, which has only recently received recognition as a fairly independent entity within the nervous system (Gershon, 1998). Although the “hara” can be included in the circuit of somesthesis, it seems significant enough to address it separately.

The previous paragraphs present theories which support the main assumption of this study, the kinesthetic sense being essential and fundamental in human experience. It provides the basis for psychological, cognitive and spiritual development. Yet, as mentioned in the beginning of this chapter, awareness about it is generally quite vague or even unconscious. How is it that such an elemental experiential realm is given so little attention, individually and collectively? How does such unawareness come about?
Certainly there are a host of contributing factors. The prevailing devaluation of the body through a dualistic worldview appears to be a very significant contributor to this dilemma (see Chapter 1). In the following I will present another dynamic that appears to significantly interfere with the sensory development and sensory experience. Prolonged experience of stress contributes to the condition of sensory-motor amnesia, a prevailing sensory muteness, as described by Thomas Hanna (1988).

**Kinesthesia and Sensory-Motor Amnesia**

*Few of us have lost our minds.*  
*but most of us*  
*have long ago lost*  
*our bodies.*

(Ken Wilber quoted in Knaster, 1996. p. 23)

Hanna (1988) portrays the condition of sensory-motor amnesia as a “habituated state of forgetfulness ... a memory loss of how certain muscle groups feel and how to control them” (p. xiii). The term is an attempt to succinctly articulate a widely spread predicament of being out of touch with one’s body. Understanding the underpinnings of this state will allow us to also comprehend its vast and challenging consequences. I will begin to describe its dynamic by re-introducing the connection between sensation and movement.

**Sensory-Motor Feedback System**

The nervous system has a sensory or centripetal division and a motor or centrifugal division. Most of what we sense about the world outside our bodies (exteroception) and most of what we sense inside our bodies (interoception) comes into
the spinal cord and/or brain by way of the sensory nerves. Most of what we do, the
movements we make, flow out from our brain and/or the spinal cord through the motor
nerves, affecting skeletal muscles, smooth muscles of the viscera and cardiac muscle.
The sensory nerves feed our perceptions of the world and of ourselves. The motor nerves
initiate our movements within ourselves and in relationship to the world around us.

The centrifugal and the centripetal division of the nervous system (except spinal
reflexes) reach upward into the brain. The sensory nerve impulses, that will become
conscious, are relayed to the somatosensory cortex. Voluntary motor nerve impulses
originate from the primary motor cortex (see Appendix A). Motor activity generates
changes in the sensory cells located in the muscles and in other parts of the body.

"[S]ensory and motor functions are two sides of the same coin. In the spine we see the
division of the two systems, but in the brain we see their integration" (Hanna, 1988, p. 6).
The brain receives the sensory information and integrates it in the form of motor
commands, as it computes what to do and how to do it. This ongoing integration of the
sensory and motor functions is so fundamental and so familiar that, "like the fish that
does not notice the water, we do not notice their ceaseless operation" (p. 6). For instance,
in typing these words, I rely on precise sensory information about where my fingers are
and where the keys of my keyboard are. Because of a constant stream of sensory
information about the location, direction, and speed of my finger movement in
relationship to the keyboard, I am able to put the right finger down at the right key at the
right time. The sensory data allows me to perform the movements.

This ongoing interplay of sensory stimuli and motor guidance is called a
"feedback system." It operates in an ongoing loop, as the sensory nerves "feed back"
information to the motor nerves, which "loop back" the information in the form of movement impulses, which in turn generate new sensory stimuli, and so forth. A continuous sensorimotor correlation occurs. Without consciousness, we constantly depend on this ongoing circulation of information within our bodies in order to function. If this process is interrupted or diminished, it impacts our overall behavior. Our motions become limited and inefficient, and our sensory experience becomes dull or sometimes virtually non-existent. How does this continuous flow of information become diminished or interrupted?

Stress and Trauma Responses

Hanna (1988) saw the cause of the deterioration of this ongoing loop to a large degree in chronic muscular tension resulting from the experience of prolonged stress and the responding reflexes. Muscles are designed to contract or grow shorter. Contraction happens when the muscle receives an electrochemical impulse to do so. When the impulse stops, the contraction ceases, and the muscle softens and returns to its original length. The interplay between contraction and relaxation gets interrupted through continued stress or traumatic experiences. Although everyone has a very personal adaptation to stress, there are some basic neuromuscular reflexes to stressful situations. I will present four of these responses. Three are very evident survival mechanisms in the animal kingdom and still reverberate strongly through our human behavior. The first one is a passive adaptation through withdrawal or flight. The second one is an action or fight response. The third is the trauma or freeze reflex. A fourth response described here is a non-specific stress response.
Hanna (1988) calls the flight reflex the red light reflex. It is a primitive reflex of survival, where the animal is trying to avoid a threat. In a startle or escape response, the body is attempting to evade danger by flexing and crouching into a fetus-like posture. Its intent is to protect the body from harm. "This cascade of neural impulses begins in the face, then goes down to the neck, then to the arms and trunk, and, finally, to the legs and toes" (p. 51). The result of this reflex is a stooped posture with shallow breathing caused by contraction of the abdominal muscles. This depresses the rib cage and the entire contents of the abdominal cavity and creates pressure on the viscera, which carries a host of autonomic irregularities in its wake.

The second, the fight reflex. Hanna (1988) calls the green light reflex. It is activated when the animal feels called upon to act, to fight in the face of danger or in the case of an opportunity for prey. This reflex entails moving towards something and requires the extensor muscles of the back to tighten. Back pain is one of the results of operating constantly under the green light reflex. The muscles, which underlie this reflex, get developed during the first year of life. Extension of the back allows the infant to move through space. If the back is continuously extended, the back muscles, in particular the lumbar muscles, are constantly contracted. Contraction of the lumbar muscles is accompanied by synergistic tension of muscles of neck, shoulder, buttocks, and thighs.

Generally the red light reflex contracts the anterior flexor muscles, curling the body forward; the green light reflex contracts the posterior extensor muscles, arching the back (Hanna, 1988). The former is available earlier in the life of the human organism than the latter. Body flexion develops before extension. Together they protect us from
danger and move us toward opportunities, as they pull us in different directions. Either one of them always affects the whole musculature. Constant activation of these reflexes creates a habit for either a stooped or forward thrusted posture. The diminishing effect of either habit may become exaggerated as the other reflex becomes layered on top of it. Thus, one is pulling back, the other one pushing forward. "The body’s two major muscle groups are opposing one another involuntarily in a static, isometric contraction – a Dark Vise" (p. 74).

When neither one of these reflexes ensures survival, the animal has to fall back to another line of defense, the trauma reflex. Although Hanna mentions this trauma reflex as a third stress reflex, it is Peter Levine (Levine & Frederick, 1997) who thoroughly explored this particular behavior. I, therefore, will include his cogent understanding in this area. The trauma reflex constitutes the body becoming totally immobile, its movement frozen in its tracks. The organism appears stiff and dead. "The object is to stay alive until the danger is past and deal with the consequences later" (Levine & Frederick, 1997, p. 96). Levine sees several reasons for the behavior of freezing being the last resort: Many predatory animals will not kill immobile animals unless they are very hungry; immobility imitates death which misleads the predator into sensing that the meat may be rotten; a non-moving prey is more difficult to detect; one frozen animal might be sacrificed for the rest of the herd; a frozen state minimizes pain in the event of death.

Although grave danger conjures up immobility, the freeze is certainly not a quiet state. "As [the organism] constricts, the energy that would have been discharged by executing the fight or flight strategies is amplified and bound up in the nervous system"
Once the animal considers the danger to have passed, it starts to move and shake. "This process begins with a very slight twitching or vibration in the upper part of the neck around the ears and spreads down into the chest, shoulders, and then finally down into the abdomen, pelvis, and hind legs" (pp. 97-98). This completes the survival reflex, as it allows the pent up energy to move. "[T]rauma occurs as a result of the initiation of an instinctual cycle that is not allowed to finish" (pp. 100-101). It means that freezing happens, but the subsequent shaking does not.

What is true for the trauma reflex, is also true for the flight and fight reflex. The reflex cycle will not be completed if the exposure to stress is prolonged and the contraction becomes habitual. The relaxation and letting go never happens.

These reflexes, repeatedly triggered, create habitual muscular contractions, which we cannot — voluntarily — relax. These muscular contractions have become so deeply involuntary and unconscious that, eventually, we no longer remember how to move about freely. The result is stiffness, soreness, and a restricted range of movement. (Hanna, 1988, pp. xii-xiii)

The reflexes sidetrack the cerebral cortex and its normal control of the sensory-motor system and call forth more elemental reflexes. The lower and more primitive regions of the brain, the limbic system and the brainstem (see Appendix A) take over. The organism regresses to involuntary reaction. "[The] striking features about sensory-motor amnesia is that we are unconscious of muscle contraction while it is going on. It is a startling experience to discover that we are actively doing something without knowing it" (Hanna, 1988, p. 26). In this way we may contract certain muscles daily, without being aware of it. This state may continue for weeks, months, years, and even for a whole lifetime.
Continual contraction means a reduction in movement. Diminished movement creates a decreased activity in the sensory-motor feedback loop, whether it is directly through the lack of stimulus to the muscle spindles or the joint receptors, or whether it is indirectly through reduced stimulation of the other somatosensory receptors. Diminished somatosenses cause sensory deficiency. Over time we become “habituated” (Kolb and Whishaw, 2000) to this experience. Sensory deficiency is taken by the organism as the normal state of affairs.

This “habituated state of forgetfulness” Thomas Hanna calls “sensory-motor amnesia.” In his understanding it constitutes a memory loss of how our muscles feel and how we can control them. I find Hanna’s concept very insightful and extremely useful. Nevertheless, I would like to present a point of discussion here. Hanna’s use of the term amnesia might be somewhat misleading. Amnesia, according to Webster is the partial or complete loss of memory. Memory is considered to be connected to functions in the neocortex (Kolb & Whishaw, 2000), the somatosensory cortex in this particular issue. Amnesia, strictly speaking, would mean a lack of recognition of sensory stimuli due to lesions or changes in the brain (Carlson, 2001). Yet, I suspect that we have, at least in most cases, a normally functioning somatosensory cortex. The brain simply doesn’t get enough stimulus from the periphery to work with. Obviously if the condition of reduced sensory input remains for a long time, the capability of the somatosensory cortex will diminish too, as the brain adapts to this condition. Although the condition looks like and develops into amnesia, at least initially it seems to be a reduced flow of sensory information. This distinction is particularly important when searching for ways to reverse this condition, which I will discuss below.
Hanna’s theory of sensory-motor amnesia provides important insight into a diminished sensory experience. To put it simply, less movement generates less sensation. His theory is mostly concerned with movement caused by voluntary striated muscles. Yet, stress responses do not only include muscular contraction. Autonomic functions and with it subtle intrinsic movements most always are impacted by stress as well. I thus find it useful here to put Hanna’s theory in perspective by introducing some points made by Hans Seyle (1984), a biologist who had researched responses to stress very thoroughly. Seyle (1984) offers the distinction between specific and non-specific stress responses. Tissue directly involved in the stress reflex exhibits a localized response, like the muscular contractions caused by activities of the nervous system. On the other hand, hormones transported via the blood stream are less selective and localized and have a non-specific effect all over the body (like changes in adrenal production or in blood pressure), thus impacting autonomic movement and sensation.

According to Selye both responses are closely related and active in any stress situation. Thus either contraction of the muscular system, a specific response, or an overly agitated biological system, a non-specific response, might be the primary and most observable stress response. Whichever type of response, the localized or the general one are most noticeable, the other one is always present as well. Thus contraction of the anterior flexor muscles, or the posterior extensor muscles might be the most visible element of the stress response, limiting the movement range of these particular muscle groups. Yet, through the non-specific stress response, the whole organism, including the
subtle and intrinsic movements, is being curtailed and diminished. Prolonged exposure to stress thus decreases the overall range of motion in the body, from extrinsic movements to intrinsic motions.

The specific and the non-specific stress response brings us back to the second circuit of Yuasa’s body scheme, the circuit of coenesthesis and its subdivision into the somatic (circuit of kinesthesis) and the autonomic aspect (circuit of somesthesis). The specific muscular contractions are closely represented by the somatic circuit (circuit of kinesthesis) and the non-specific autonomic responses refer to the autonomic circuit (circuit of somesthesis). The somatic circuit is most related to the bright consciousness, thus more available to our conscious awareness. The autonomic circuit is most related to the dark consciousness, thus less accessible to our consciousness. In an attempt to combat the habituated stress responses, it will become important to take these into consideration. I will return to these aspects in the next section.

Being that Hanna considered stress the major cause of sensory-motor amnesia, it consequently means that when stress increases, sensory-motor amnesia increases. It needs to be noted here that different individuals have different stress and trauma thresholds. Being left alone, when little, by mother for a short time or having to handle two different tasks at the same time as an adult, can be overwhelming to someone and thus stressful. For someone else, the experience of stress or trauma is related to more grave incidents like losing a loved one or being in a car accident. In general, the level of stress has increased tremendously in the last few decades. In fact, I would say it has skyrocketed. In my opinion this is clearly exemplified by the fact that anti-anxiety drugs and antidepressants are now routinely advertised on television. The signs don’t have to
become any clearer. The society at large is “stressed out.” The source is a body, which feels constantly “attacked” by the demands of the environment. In light of the above, it seems to be safe to conclude that sensory-motor amnesia is a prevailing condition of vast proportions. I do want to note here that I do not envision a life without stress. I consider this impossible and possibly also undesirable. The question is, is there “stress without distress?” (Selye, 1974)

Thomas Hanna (1988, 1994) considered sensory-motor amnesia to be a learned condition. It therefore can be unlearned. Unlearning a pattern of contraction requires the cultivation of the kinesthetic sense. The following section presents the notion of sensory cultivation and various aspects of this process. It might not only present a path to reversing sensory-motor amnesia but also function as a preventative measure for sensory-motor amnesia.

Access to Forgotten Areas through Sensory Cultivation

Be strong and enter into your own body;
For there your foothold is firm.
Consider it well, o my heart!
Go no elsewhere.
Put all imaginations away
And stand fast in that which you are!

- Kabir (publication unknown)

The term cultivation in this study is used similarly in Eastern spiritual traditions, namely, as a physical practice in the pursuit of cultivating body and self. “[C]ultivation is practical training aimed at the development and enhancement of one’s spirit or
personality” (Yuasa, 1987, p. 85). Insight is gained through regular and continuous
discipline of physical and inward directed practices, thus awareness is attained through
this very body (Yuasa 1987; Chan & Taylor, 2000). Cultivation in this study is
particularly examined as a path to reverse the condition of sensory-motor amnesia, refine
kinesthetic experience and enhance awareness of self.

Cultivation in the context of sensory-motor amnesia needs to be seen as
establishing access to “forgotten” or abandoned areas of the body. For a long time the
predominant conception was that the nervous system, after its initial development, has
very limited growth and possibility for change. This would mean the “habit” of sensory-
motor amnesia is irreversible. Yet, lifelong learning and continued plasticity within the
nervous system are now considered possible (Carlson, 2001). “The plastic splendor of
the nervous system does not lie in its production of ‘engrams’ ... rather, it lies in its
continuous transformation” (Maturana, & Varela, 1998, p. 170). The structure of the
nervous system changes with the conditions within which the organism functions. The
reversal of sensory-motor amnesia, a learned condition, does not require treatment in the
traditional sense, but education, to change these conditions. “Curing and treating are
what is done to a passive patient. Sensory-motor remembering is an educational
procedure, done by an active person” (Hanna, 1988, p. 36).

Movement Initiates Sensation

Due to sensory-motor amnesia, areas of the body are “forgotten” or “abandoned.”
They are no longer available to conscious experience. Prolonged exposure to stress has
generated continued muscular contractions and diminished the range of movement,
resulting in a lack of neural innervation. These dormant areas of the body need to be
reawakened. Information about the embryonic development describes the conditions for generating sensory stimuli. Sensory capacity develops when a sensory nerve is in the vicinity of a functioning motor nerve and muscle fiber. Movement ignites sensory experience. This is confirmed by the notion of the sensory-motor feedback loop. Movement needs to be re-introduced into abandoned places. This is probably one of the most important somatic principles when trying to gain access to “forgotten” body areas and re-activating sensory channels. As in embryonic development, it is movement that will begin to stimulate the capacity for sensing and initiate a feedback loop between moving and sensing.

Movement, whether self-initiated or by someone else’s hands, calls forth a broad array of sensations. Novel and varied sensations counteract the habituation, which has settled within the nervous system. “Elaborating our ‘felt sense’ of sensation is a rich resource for healing and self-emergence” (Conrad & Harper, 2001, p. 4). Varied movements begin to newly stimulate the kinesthetic awareness. The brain begins to recognize new sensations and the repertoire of responses expands. Forgotten areas in the body become newly accessed as movement begins to stimulate the sensory or afferent aspect of the nervous system. This new stimulation in turn allows for new movement to occur, initiating a spiral of awakening within the body. This process will allow us to move beyond patterns and contractions, as new movement and novel sensations are continuously being born.

A broad variety of approaches are being practiced within the field of somatics today (Knaster, 1996). Movement in its broadest understanding, is an essential element in most of these practices, as they increase sensory sensitivity. I will outline a few
characteristics of the various movement practices engaged through somatic practice. Some practices focus on a specific and codified form of movement. The movements taught have particular meaning and purpose, according to the underlying philosophy and concept of the body. These structured movements, like in the practice of Chi Gong (Cohen, 1997), provide the practitioner with a template for experiencing unfamiliar motions, and present the opportunity to expand his/her movement range and quality via adherence to these patterns. Through continued practice and in the pursuit of perfecting the given form, the individual surrenders his/her habitual motions. In contrast to these formal practices, other somatic approaches provide space for inner impulses to be discovered and expressed. For instance a container for internal inquiry is created through the structure of the class or session, as in Authentic Movement (Whitehouse, 1995) or via loosely structured movement explorations such as in the Continuum practice (Conrad & Harper, 2001).

Mary Whitehouse (1995) distinguishes between movement which is intentionally initiated by self “I am moving,” and movement which simply happens, without any conscious intent of the mover. “something moves me.” There are those individuals who cannot imagine movement that they do not consciously initiate. They welcome performing patterns and forms. If given the freedom to move, they are intimidated and don’t know what they are supposed to do. On the other end of the spectrum are those who are most at ease when they can freely improvise. They do not like an exercise where they have to be exact. Structured and prescribed movements provide new sensory experiences through letting go of old habits, unstructured movements allow for a minute sensory exploration as the sensations become the guiding impulses for movement.
expression. "[T]he coming together of myself moving and myself being moved" presents the ideal moment of being fed via both approaches (Whitehouse, 1995, p. 248).

Spatially, movement generally ranges from linear or direct movement to non-linear or indirect movement. "Movement in which spatial attention consists of overlapping shifts in the body among a number of foci, we call indirect [emphasis omitted]. Movement in which spatial attention in the body is pinpointed, channeled [sic], single focused, we call direct [emphasis omitted]" (Dell, 1970, p. 29). Linear movement in its extreme is moving within the confines of work-out equipment. The machine prescribes a precise route of movement. Linear movement engages very specific muscles. Examples are many exercises of the Pilates work (Knaster, 1996). The mover pays very focused attention to a particular group of muscles and thus improves healing of injuries or weaknesses and sensory awakening through concentration and intentionality.

On the other end of the spatial spectrum are non-linear or indirect movements with a wavelike and unpredictable path. These meander through space and engage very complex set of muscles. Emilie Conrad (Conrad & Harper, 2001), the founder of Continuum, understands that non-linear and non-patterned movements stimulate neural growth and sensory vibrancy in a very complex and pronounced fashion.

Certainly, both spatial orientations - direct and indirect movements - belong to the overall movement repertoire and enhance cultivation of sensory capacities. Yet, in alignment with Conrad’s understanding, I would like to point out that our modern lifestyles tend to be overly structured, with overloaded schedules, placing a high value on goal orientedness, and marked by long periods of time of sitting on chairs or in vehicles. The effect is not only a diminished range of motion, but also a strong preference for
functional and linear movement. Non-linear movements, which nourish the fluid nature or our organisms, and provide for complex sensory innervations, are being neglected. I therefore consider it essential to offer our bodies sufficient opportunity to explore the non-linear and non-directional way of moving and living to create balance and stimulate our kinesthetic experience.

Usually when we talk about movement, we talk about extrinsic movement, visible on the outside. Intrinsic movements or micromovements are often not mentioned, as they are almost imperceptible from the outside. These movements arise from deep within our tissue. They are not primarily initiated through contraction of the skeletal muscles, rather via metabolic processes and movement of the bodily fluids. “Micromovements are neural messengers felt as tiny pulsations. They bring electrical conductivity and complex stimulation to atrophied and healthy tissue. Micromovements invigorate and nourish nerve fiber and contribute to the development of new neural pathways” (Conrad & Harper, 2001, p. 4). They represent very early stages of our movement development, similar to the pre-vertebral movement patterns (see Movement and Sensory Development). Especially when trying to reverse sensory-motor amnesia, these minute movements and cellular pulsations very profoundly stimulate the sensate experience. According to Conrad (Conrad & Harper, 2001) they enliven nerve fibers and connective tissue and present a primary healing force by bringing sensation to places which have become barren or atrophied.

Contraction in the muscular system is always represented in the way we breathe. Many of the somatic education practices have brought attention and focus to the process of breathing as a particular form of movement (Mittendorf, 1995; Speads, 1995). The art
of breathing is essential for our overall well-being with conscious breathing continually
initiating a stream of sensory responses. “Sensations related to breathing can be felt in
areas close to the lungs, such as the nose, mouth, chest, and abdomen, or farther away, in
the arms or legs” (Speads, 1995, p. 45). The movement of the breath can ripple through
the whole organism on its multitude of dimensions. “Movement is related to the mobility
of breath. Variations in breath disrupt habitual patterns. Our resiliency and adaptability
connect directly to versatility of breath” (Conrad & Harper, 2001, p. 4). As the breath
begins to move more freely, the body and its movements soften and relax and bring forth
a myriad of sensations. Hence, breathing has the capacity to move us beyond habits and
patterns.

I consider it important to mention stretching within the range of movement and in
this discussion of reversing sensory-motor amnesia. Stretching not only increases
flexibility, it is also a powerful way to re-initiate awareness for sensation, particularly if a
strong case of sensory-motor amnesia has developed. As I have pointed out earlier, there
are many somatosensory receptors within the joints and muscles, registering stretch and
the force of the pull. Stretching stimulates very immediate and strong sensory feedback
and is thus an excellent way to begin to notice bodily sensations. It is crucial though, to
bring mindfulness to the stretching. This will ensure that the stretch is not taken too far
and that it supports the process of awareness rather than solely focusing on the degree of
flexibility. Yoga asanas (Budilovsky & Adamson, 1998; Mehta, Mehta, & Mehta, 2001),
present an excellent opportunity for such mindful stretching. Similar to stretching is the
use of weights attached to ankles or wrists, or different orientations to gravity, as used in
the Jungle Gym exercises of Continuum (Conrad & Harper, 2001) to increase the
mover’s sensory experience. The change in force is registered very clearly by the many stretch receptors and the sensory experience becomes more pronounced.

Of course, there are many movement characteristics that I have not mentioned here. Some approaches emphasize rhythm, coordination, endurance, balance, strength, force, use of sound, etc. Additionally all the hands-on or one-on-one practices, although not explicitly movement practices, stimulate the sensory experience through some type of movement. Any and all of these provide new sensory input to the organism and begin to counteract the deterioration of the sensory-motor feedback loop. When done mindfully, they will support the intention of re-educating the sensory and motor system. Depending on the severity of sensory-motor amnesia and the personality and temperament of the individual, one will be more appropriate than another.

Any of these movements will stimulate our sensory experience. Some will have a more pronounced effect on our somatic circuit (circuit of kinesthesia), others will predominantly touch our autonomic circuit (circuit of somesthesia) (Yuasa, 1987). In general, structured, direct and extrinsic movements will initially impact our somatic circuit. Intrinsic movements will gain us more immediate access to the autonomic circuit. Yet, as Hans Seyle (1984) points out that there is always a specific and a non-specific response present. Both circuits are always being initiated through any type of movement, the dominance of both varies. Hence, some movements touch one or the other circuit of experience more directly. Depending on the individual’s personality, one or the other focus will present a greater opening into the kinesthetic experience. Eventually, to create a higher degree of integration, both circuits need to be addressed.
Awareness and Attention

If sensory-motor amnesia has settled in a certain area of the body, it creates a blank in our sensory awareness. Though movement is a necessary component in breaking this cycle of sensory numbness and reversing the condition of sensory-motor amnesia, without our willingness to pay attention to what these neural invitations call forth, not much can happen.

The kinaesthetic sense can be awakened and developed in using any and all kinds of movement, but I believe it becomes conscious only when the inner, that is, the subjective connection is found, the sensation of what it feels like to the individual, whether it is swinging, stretching, bending, turning, twisting, or whatever. People can learn movement in a variety of ways; they are not necessarily enabled to feel it when they do so — it is the concrete, specific awareness of one’s own act of moving which is so satisfying. (Whitehouse, 1995, p. 247)

Somatic learning requires attention to and awareness of our inner experience. It means orienting attention to the inner experience while moving or in stillness and developing awareness for the whole spectrum of movement. Thus we need to listen to our body and notice what is happening inside. Some thoughts are offered here to help to begin to differentiate certain characteristics of awareness and attention.

To clarify the terms awareness and attention, awareness here describes a receptive mode of perceiving sensory input. Attention, in contrast, reaches or stretches toward something. It constitutes an active mode of attending to an event (Austin, 2001). Crick and Koch (1998) distinguish two types of attention: “bottom up, caused by the sensory input: and top-down, produced by the planning parts of the brain” (Crick & Koch, 1998, p. 99). In a bottom up direction, awareness receives sensation from the experiential ground. Veering our attention volitionally toward sensations represents the top down manner of attention.
Our attention or awareness is customarily toward a particular field, for instance either toward the outside or the inside (Austin, 2001). In a cultural domain, like the Western culture, where much value is given to the external realms, attention is habitually most often oriented toward the outside, information received through the special senses. To shift one’s attention under these circumstances more predominantly to the inside presents a radical change. It requires substantial practice and commitment. Awareness for the inner world of sensations thus has to be developed over time and with patience.

Attention can either be wide and defocused, similarly to a wide-angle lens through which one captures a large field of events at one time. We can include larger areas of the body within our field of attention at one time or even sense the body as a whole. In contrast, attention can also be concentrated or contracted toward a particular areas or events (Austin, 2001). This mode is similar to that of a zoom lens. It allows us to inspect something in depth and detail. Sensory impulses can thus be attended to very deeply and intensely.

Awareness and attention are constantly moving and flowing, from the inside to the outside, from the shoulder to the belly, from a thought to a sensation (Austin, 2001). This process of shifting can be voluntary or involuntary. Attention can also be focused and held on a particular area for a longer period of time. Some meditative practices cultivate such focused awareness, i.e. for the “hara” or the “third eye,” others simply follow the flow of the breath or allow awareness to be unencumbered and free-flowing.

There is usually a pattern to what one attends to. What type of information is noticed and what is not is ordinarily connected to one’s process of meaning. The stimulus we select is determined by our history of motivations. Rush (1970) sees it
rooted in our phylogenetic and ontogenetic history of survival. Only those “chunks” of information that spell “danger” are primarily noticed and coded as important. Other information is abandoned or filtered out as not relevant. Thus, Rush, considered kinesthetic information predominantly important for survival in early years. Later on it becomes overlaid by information generated through higher levels of functioning.

Once the organism is somewhat free from the survival concern, or has matured sufficiently to exist on its own, it can turn back upon itself and begin to “re-code” as a reflective act (Rush, 1970, p. 58). This reflective act becomes an essential aspect in the reversal of sensory-motor amnesia. The activation of the sensory experience has to be met by a willingness to attend to the kinesthetic experience, which was earlier in life deemed unimportant. The art of listening to one’s body thus has to be cultivated, as it means listening to information previously considered irrelevant.

Throughout the process of re-coding the importance of information, various contents will compete for center stage in our awareness. We learn to become receptive toward whatever processes are occurring in the body-mind in the present moment. Awareness at this stage is “the sensory-motor perceptual ability to receive and integrate sensation, thought, or other stimuli” (Greene, 1995, p. 148). With practice the very awareness about the body shifts our attention from the realm of thought, ideas, habits, inner dialogues, from dwelling in the past or future and begins to ground us in the present.

If you keep your attention in the body as much as possible, you will be anchored in the Now. You won’t lose yourself in the external world, and you won’t lose yourself in your mind. Thoughts and emotions, fears and desires, may still be there to some extent, but they won’t take you over. (Tolle, 1999, p. 97)
When we begin to carefully listen to the internal landscape of our body, we are in a mode of open attention. "Our deepest wisdom lies in our unstructured sensitive attending which allows us to perceive what is truly new" (Conrad & Harper, 1995/96, p. 5). We veer from light consciousness toward dark consciousness into the here and now.

The brain when first awakened to new stimuli, acts sluggish. There must be sufficient amount of stimuli so that we can attend to it (Austin, 2001). If the movement is too subtle and the sensory experience too faint, uncultivated awareness will not be able to recognize it. Over time sensitivity to detect fainter stimuli develops. Conversely, if the stimulus, input or "noise" is too much, the individual tends to tune down the responsiveness. If a movement activity such as high impact movement is initiating too much neural stimuli, the sensory noise is simply too loud and the mover notices less than s/he would while engaging in slow movement. The type of movement being engaged in needs to be appropriate for the sensory sensitivity of the individual.

The development of awareness moves from regular awareness for a general range of stimuli, to heightened awareness, to hyperawareness or absorption (Austin, 2001). The term absorption, describes an extraordinary mode of attention. Through attention the practitioner descends into the body and develops the ability to be responsive to and "comply with" (Dogen in Yuasa, 1987) bodily sensation. Attention to the kinesthetic experience becomes the gateway for going beyond the ordinary consciousness when attention involuntarily transforms itself into the state or experience of "absorption." "Absorptions tend to occur after emotional or devotional aspects have come in to pressure and color an already heightened mode of ongoing attention. Absorptions convey the sense of being held, transfixed, and riveted. It is a process during which extra,
concentrated energy involuntarily infuses the act of attention” (Austin, 2001, p. 71).

Austin calls this a dropping out of self. In the context of kinesthetic awareness I would call it a dropping into the body and the unconditioned self. Descendence into the body or embodiment thus becomes transdecendence (Kasulis, 2001). Through entering deeply into the body, the distinction between body, mind, self and the world disappears. Initially we might be only aware of gross anatomical aspects of our body or large and expressive movements. With refined sensitivities we begin to notice the subtle movements within. We may be able to notice energy as it courses within. Our body becomes an ongoing event and brings forth the awareness of being and the emergence of an expanded consciousness.

In your natural state of connectedness with Being, this deeper reality can be felt every moment as the invisible inner body, the animating presence within you. So to ‘inhabit the body’ is to feel the body from within, to feel the life inside the body and thereby come to know that you are beyond the outer form. (Tolle, 1999. p.92)

Thus somatic practice brings us to the transpersonal realm and automatically connects us to the world of the formless. The body becomes a link to the experience of being as we deeply investigate the experience from within. The invisible and ineffable (Kleinman. 1999) emerges.

Cultivation through movement and awareness begins to reverse sensory-motor amnesia. Yet, this does not mean that we can control or make this process happen.

Somatic cultivation can only be an invitation for the organism to unravel the contractions and original causes (Rolf, 1995). The process itself, like any organic process, has to unfold in its own rhythm and dynamic. One of the generally agreed upon assumptions within the Somatic community comes into play here. The body is considered to have
innate wisdom (Greene, 1995, 1997/98). Through the body a deeper source of intelligence, the dark consciousness, becomes the guiding force to untwine old habits.

The road to cultivate the kinesthetic requires patience, trust and courage. It takes time for awareness to develop and at times it seems as if we are back in old modes of functioning, cut off from our inner sources. Other times it feels that that which surfaces is not what we had hoped for, as it is challenging to face certain experiences and beliefs about ourselves. We need to fully embrace our bodies, the places of freedom, spaciousness, movement, as well as the places of tension, discomfort, holding, and pain. Only then can the current organization of our body relax into something new. With persistence, this unfoldment will reveal deep insight into and experience of ourselves, a process which John Dewey (1969) calls “bodying forth the soul.”

Somatic Theory and Narrative

In light of my earlier discussion about bright and dark consciousness I am prompted to mention the need for constructing a holistic embodiment narrative to aid somatic cultivation. It is narrative and somatic practice in concert, which can bring about change toward wholeness. Theoretical information rationalizing change becomes a crucial motivator. It sets up a certain understanding as well as expectation. “Expectation is not only a prediction of the future, it also directly contributes to making it happen” (Hanna, 1988, p. 85). Narrative allows for the bright consciousness to begin to grasp the potentials of the dark consciousness. Only then will the bright consciousness become a supportive force in investigating the inner life. An “informed” mind in this scenario can become a curious and supportive force in the process, rather than acting as a sabotaging and reluctant element. Hence, mind and body can move in tandem through this process.
Somatic narrative for instance needs to shed light on mind body dualism, inform about integrative approaches and theories and discuss biological, somatic and psychological dynamics. Newly constructed somatic narrative particularly needs to tackle the old saying “you are not your body,” which has been accepted for eons. It led to the denial and escape from the body. It is time to reverse this saying into “you are your body,” not as seen or judged from the outside, but as experienced from the inside. In the same vein, I consider it elemental to begin developing a language about the inner experience. In cultivating the body’s language, “sensation,” we need to concurrently cultivate the mind’s language about the bodily experience.

Summary

The terms “kinesthesia” or “kinesthetic sense” have been in use for more than 150 years. To date its definition is still ambiguous. This study includes in its definition all of the interoceptive information (touch receptors, muscle spindles, golgi tendon organs, joint receptors, temperature receptors, pain receptors and the information through the vestibular system). It considers kinesthesia as describing conscious experience of movement and sensation.

Throughout this section we have looked at human development. The development of sensory abilities begins in the womb and continues in the extrauterine life (Bainbridge Cohen, 1995). A non-differentiated primitive adualism gives way to the formation of self as an internal abstraction of ongoing sensory, feeling and perceptive processes. Sensory experience becomes the fertile ground for the emergence of a historical or conditioned self. This representation of self develops gradually over the
early years of an individual's life. Humanistic psychologists and philosophers describe another stage in the human continuum, where the conditioned self dissolves through inner cultivation thereby allowing an awareness of essential inner processes to arise. The conditioned self gives way to the unconditioned self or body/mind unity as known reference points of ordinary experience are being extinguished. Sensing is fundamental in all these dimensions of experience. Sensing not only feeds the self as a psychological dynamic, but also the self as a spiritual phenomena. The self arises out of the body and its sensations and must be relinquished back into the body through kinesthetic awareness. Kinesthetic experience thus is a fundamental thread through early human development and as such becomes the umbilical cord to awareness of being.

Though sensory experience is fundamental and basic to our human experience, it is often forgotten. Prolonged experience of stress and trauma is discussed as one major contributor to this sensory unawareness. Four stress responses, the flight response, the fight response, the trauma reflex, and the non-specific stress response are presented as contributing to an overall sensory numbness, the condition of sensory-motor amnesia.

Sensory cultivation through somatic practices is described as a pathway to reverse this condition and foster increased body awareness. Movement explorations, awareness practices and somatic narrative and theory are included in such practices. Movement explorations present a wide range, structured or non-linear movements, extrinsic and intrinsic movements, breathing and stretching. Engagement into any of these activities promotes kinesthetic awareness. Somatic cultivation, by increasing body awareness, fosters a coherent sense of self, grounded in experience. Cultivation becomes the avenue for realizing our human potential for expanded consciousness.
CHAPTER 3

METHODOLOGY

Some set great value on method, while others pride themselves on dispensing with method. To be without method is deplorable, but to depend on method entirely is worse. You must first learn to observe the rules faithfully; afterwards, modify them according to your intelligence and capacity. The end of all method is to have no method.

(Lu Ch’ai in Janesick. 2000, p. 380).

Any study is always closely linked to the issue of method. Hence I find the above quote very inspiring. Scientific methods of inquiry have changed over time and vary with different disciplines. Within the qualitative research paradigm, methodology chapters and study reports vary from being tightly organized to clearly display all the elements of the research methods, to narrative reports in the form of researcher’s diaries or even poetry. At this point in my academic development, I consider a fairly traditionally-designed methodology chapter beneficial in that it allows me to become grounded in the principles of reliable research. Thus, the following chapter presents the what, why, and how of this study: A summary of the research purpose and questions, a description of the paradigmatic background, a presentation of the research design, including methods of data collection, and general research issues.
Research Focus and Context

The focus of this study, on kinesthetic sense, is an outflow of my personal somatic exploration and my professional teaching experiences. Somatic research presents its own specific challenges. The major issues of this particular inquiry will be discussed in the following paragraphs.

Purpose

The purpose of this study is to seek understanding about a largely unexplored area of human experience, the kinesthetic sense. Body sensations are examined as fundamental elements of the human living. The kinesthetic sense is explored in connection with the emergence of self (Mahler, Pine, & Bergman, 1975; Piaget, 1976, 1982) and the dissolution of self through spiritual practices (Yuasa, 1987). Of crucial importance, the kinesthetic sense nevertheless often remains a "lost" capacity, functioning in the unconscious. This study makes inquiry into a condition called sensory-motor amnesia (Hanna, 1988), a state of reduced kinesthetic awareness. Theories about stress responses as possible contributing factors to this condition are included in the discussion (Hanna, 1988; Levine & Frederick, 1997; Seyle, 1974, 1984). Finally, the study explores the possibilities of reversing the condition of sensory-motor amnesia through somatic cultivation. Attending to all these issues, this investigation constitutes an interdisciplinary study, embracing the disciplines of somatics, psychology/neuropsychology, philosophy and spirituality.
Research Question

The major assumption of this study is that the kinesthetic experience constitutes a fundamental aspect of human experience. To support this assumption, the following questions were addressed:

1. What is the link between the kinesthetic experience and the experience of self?
2. To what extent can kinesthetic awareness be cultivated through somatic practice and education?
3. What is the connection between kinesthetic awareness and stress negotiation?

To gather information about the kinesthetic experience it was not only enriching but also crucial to explore the experience from within, as relevant data about this internal phenomenon can only be gathered through introspection. A somatics course constituted the major vehicle for the investigation. Self-reported data became the pivotal information for the exploration.

Somatic Research

The first-person viewpoint is primary in somatics since it emphasizes and ascribes meaning to the inner experience (Hanna, 1994). It highlights the kinesthetic experience as a fundamental element of the inner experience. The body, and its sensate language, is seen as a deep source of wisdom and intelligence, rather than simply viewed as a container that holds the ever more important mind (Johnson, 1995, 1983). Through the shift from language to sensation, inner experiences such as sensory impulses, felt vibrations, movement, and tension, all become messengers about what is occurring. They present an authority of a different kind as they tell us about our innermost responses.
Sensations in somatics constitute a rich source of data. Somatically-focused research is thus concerned with the continuous non-verbal sensate experience.

"Experience is a continual, tumbling state of being, and humans do not stand still ... [they are] always in flux and in dialogue" (Kleinman, 1991, p.34). The particular challenge of somatic research is to capture the moment of ongoing bodily processes. Researching “lived experience” (Van Manen, 1988) requires a descriptive account of the lifeworld of movement (Kleinman, 1991). Naturally, anything being brought from the felt level into the realm of visual, verbal or textual data is merely a representation and abstraction of the experience per se. Text or visual documents in this study are an extension of the moving process and present a “kinesthetic phenomenology” (Kleinman, 1991). The specific challenges and conditions of somatic research call forth a particular theoretical and methodological framework and color the research process, details of which will be discussed in later paragraphs.

Emergent Research Process

The questions asked through this investigation arose from my life experiences. The topic for this study intimately meshed with my deepest personal and professional commitments. Yet, the questions, the design, the writing and the process of conceptualizing changed and shifted as my preparation and field experience expanded and I probed deeper into the literature. My experience, thoughts and analysis uncovered new directions. “[A] petrified model may be regarded only as a useful fiction. Heisenberg’s principle of uncertainty suggested this in the 1920s but only recently are the implications coming to be realized” (Kleinman, 1991, p. 35). Thus an awareness of the
theme of "emergence" was an ongoing thread through this project. A flexible approach became the primary strength (Patton, 1990; Marshall & Rossman, 1995; Richardson, 2000) allowing and supporting discovery and creativity.

**Researcher’s Paradigmatic Standpoint and Role**

Deciding on methodology for a research project requires more than simply making choices about what data to collect, how to collect it and how to analyze it. Methodology deeply involves the researcher and his worldview, as both influence the inquiry process (Lincoln & Guba, 2000).

The objective of this study is to understand and interpret somatically-based experiences and processes, rather than measure or quantify particular outcomes. Qualitative inquiry presents the appropriate epistemology and methodology for such a research aim. Qualitative research attempts to understand the complex world of lived experience and the process of making meaning from the point of view of those who live it. It gives voice to the subjective experience (Guba & Lincoln, 1994). Qualitative inquiry embraces a broad range of paradigms and methods.

My particular worldview as a researcher developed over time as I wrestled with the meaning of various qualitative research paradigms. Each seemed to present an aspect of what I was interested in. I ultimately embraced the postmodernist doubt that any method or theory has a universal claim as the "right" or the privileged form of authoritative knowledge (Richardson, 2000). I chose to include several different sub-paradigms to collectively function as a backdrop for situating this study. Following are
the specific perspectives which contributed to the theoretical/methodological framework of this study. They include the Constructivist/Interpretivist paradigm, Participatory Action Research and Heuristic Research.

**Constructivism/Interpretivism**

Based on my background and knowledge of somatics, it is my understanding that we are all situated within our bodies. We cannot move without our bodies, we cannot breathe, eat or think without our bodies. Our bodily experience, whether it is kinesthetically very refined or substantially diminished, creates the unique foundation for our experience. Our body constitutes our very personal environment out of which we function and make meaning. There is a dialectical relationship between our bodies, our experience and our way of conceptualizing. "[H]umans reshape cognitive structures to accommodate unique aspects of what they perceive in new contexts" (Kincheloe & McLaren, 1994, p. 152). Our body saturates our consciousness as our consciousness imbues our body. We construct a view about the world outside and a picture of our world inside. Yet, we take this process for granted and rarely question such worldviews.

Constructivist/Interpretivist perspectives view interpretation as the very condition of human functioning (Lincoln & Guba, 2000). They investigate the process of interpreting by asking how it is that people construct meaning; that is, how is it we come to "understand" our experience. Perception and sensation are considered the bases of this process of "Verstehen" (Schwandt, 1994, 2000). There is no unique "real world." Mind does something with our experience; at the very least it forms abstractions or concepts. What we take to be objective knowledge and truth is the result of perspective. We therefore don't discover knowledge, but subjectively construct it (Richardson, 1997).
This study seeks to understand the meaning arising out of kinesthetic experiences. It is thus first and foremost exploring the data from a constructivist/interpretivist perspective.

Relative to constructivist views, I recognize that my research work is driven by my ideological imperatives and my personal motivations and beliefs, which I have discussed in this chapter and also chapter 1. However, awareness about construction of meaning should go beyond the ideological bias and the researcher’s conscious motivations. It must include awareness of nuances of the researcher’s subjectivity and self, including observational preferences, inter-relational responses and modes of conceptualizing. "Self" implies being aware of how feelings and perceptions, as well as actions, are heavily influenced by our unique biographies" (Roberts & McGinty, 1995, p. 119). Over the course of the study I noticed which movement qualities I was most receptive to in my observations, how course participants’ responses impacted me and how my theoretical framework was arising partly out of my need to bring meaning to my own experiences. My awareness for nuances of my subjectivity increased, including particular sensitivities, observations, avoidance patterns, responses and ways of conceptualizing. This substantiated my understanding of how deeply my own subjectivity and world construction influences my choices.

In the attempt to create an "openly ideological research" (Lather, 1991), I find it important to make clear not only my body-based view of the world, but also my spiritual orientation and current understanding. Profound life experiences have given me the inclination to believe there is an all-encompassing presence in life, a presence beyond form and function. I do not anticipate this presence to be fully knowable from the individual standpoint. It is “imperfectly apprehendable because of basically flawed
human intellectual mechanisms and the fundamentally intractable nature of phenomena” (Guba & Lincoln, 1994, p. 110). Nevertheless, I recognize a human potential that can transcend a localized, individual consciousness and concede an all encompassing presence. This is a challenging notion to put into words. Yet, Almaas (1995) puts it very simply:

_The day breaks through me._
_I am a window in the universe_
_For the nameless reality._


This notion of presence impacts my actions, thoughts and perceptions greatly. It creates a silent background for my somatic work, much as the dark night sky creates the backdrop for the stars.

Though the constructivist/interpretivist perspective is the overarching paradigm for this study, I realized over the course of the project that I was not only interested in understanding subjective experience and the process of meaning making; I also wanted to bring about change. Somatically oriented research not only tries to bring to the forefront the living experience; it, being steeped in sensory cultivation, also intervenes with the status quo in a very personal way. Any somatic exploration will have an effect on those who practice it. Through this particular study I wanted to provide sensory cultivation opportunities for the participating subjects. My constructivist/interpretivist paradigm thus had to expand to embrace the intentions of Participatory Action Research, as it includes active engagement of the participants in a change promoting activity.
Participatory Action Research

Lincoln and Guba (2000) consider Participatory Action Research as the most dramatic and interesting shift from constructivist modes, since it ventures beyond interpretation and understanding toward action. Research under this paradigm does not simply seek understanding and insight into a particular situation, it seeks to change the status quo (McTaggart, 1997). Consequently, Participatory Action Research highlights a relationship between research and practice and emphasizes the dual role of the researcher as practitioner. “[R]esearch conducted within – not just on – practice can yield evidence and insights that can and do assist in the critical transformation of practice” (Kemmis & McTaggart, 2000, p. 593). Participatory Action Research is emancipatory and supports individuals in releasing themselves from the limitations of social structures that stifle their self-development and self-determination (McTaggart, 1997). It is defined not by a particular array of research tools but by its aspiration to transform theory and practice.

Participatory Action Research is most interested in social change (Lincoln & Guba, 2000). This study focuses on individual sensory experiences. Nevertheless, these cannot be seen separate from society. Diminished sensory awareness is at least in part, a manifestation of cultural circumstances (Hanna, 1970). In particular, the culturally held dualistic and hierarchical viewpoint about body and mind becomes internalized within the body in the form of general bodily neglect and sensory unawareness. Emancipation from habitual movement patterns, gestures and bodily responses thus carries a cultural element with it. Thus, the inclusion of the Participatory Action Research Paradigm is warranted. By participating in the somatics course, the subjects engaged in liberatory practices, one of the main elements of Participatory Action Research. This brought about
minor and major transformations and thus intervened with the status quo individually and, at least indirectly, collectively. I will return to this issue later in this report.

To summarize: My orientation toward the constructivist/interactivist paradigm represents my understanding that there is no absolute truth. All knowledge is constructed. In the study, I espoused the notion of active and liberatory practices and the paradigm of Participatory Action Research resulting in participants' bodily habits being challenged through participation in kinesthetic cultivation practices. Clearly however, participation in a somatics course can only be of benefit if the participant engages in these practices in an introspective manner. Only when we turn our awareness towards our body, can bodily change occur. Therefore, it was necessary for course participants to function as co-researchers, inquiring into the issues at hand through introspection. Out of introspective awareness, participants were able to reflect on what they experienced and report on it in their reflective drawings and writings. Honoring this dimension led me to the paradigm of Heuristic Research.

**Heuristic Research**

"Heuristics is a passionate and discerning personal involvement in problem solving, an effort to know the essence of some aspect of life through the internal pathways of the self" (Douglass & Moustakas, 1985, p. 35). Heuristic research refers to a process of internal investigation through which one discovers the nature and meaning of a particular human experience. Heuristic researchers emphasize the connection and relationship between the subject and the subject matter being researched (Moustakas, 2001). Kinesthetic experience is inseparable from the one who experiences it. Additionally, "[h]euristic research draws explicitly on the intense personal experiences of
the researcher ... [and c]o-researchers who have experienced the phenomenon intensely (Patton, 1990, p. 171). Research in the realm of the soma is only possible through active internal engagement of the subjects. To shed light on the somatic and sensate experience, participants of this somatic research study were required to be not just active subjects but also introspective co-researchers. To honor and document such individual engagement, parts of this study are presented in the form of case studies. Case studies, in alignment with values of Heuristic Research, relay rich, individualized context and prevent the findings from being lost in generalizations. I will later discuss the specific characteristics of the case studies in depth.

Constructivist/Interpretivist paradigm, Participatory Action Research and Heuristic Research collectively create the background for this study. The distinctions between the aims of the above paradigms are not clear-cut, but interwoven. In combination, their goals and methods supported me in exploring kinesthetic experience. I was interested in viewing the data from a specific and a general viewpoint. I was confronted with the competition between general themes and individual experience (Stake, 2000). Building on the theoretical framework of the noted paradigms, I chose to employ data collection methods as well as analysis and write-up modes that would embrace both, the general and the specific. The methods of data collection included questionnaires, observations, documents, group interviews, individual interviews and a reflexive researcher journal. In concert, these methods allowed me to pursue a broad range goal. The details of the methods will be discussed later. Data analysis and write-up also was two-fold, looking for and presenting individual cases and general patterns.
The inclusion of Participatory Action Research and the Heuristic Research Paradigm points toward the complexity of my role in this project. I was a researcher who not only researched on, but with the subjects. As well, I was the teacher of the somatics course. To allow the reader to more clearly understand my particular function I present the following discussion.

**Researcher’s Role as Insider and Participant Observer**

The somatics course, the main vehicle for this study, developed out of my long-term interest in the kinesthetic experience and was based on my personal somatic practice. Accordingly, teaching/facilitating the program required the particular skills and understanding that I have developed over time. I thus considered myself not only the most suitable person available to teach the somatics classes, but an essential element of the study. My role became two-fold, that of the researcher and that of the teacher/facilitator.

Denzin (in Green, 1993, p. 72) classifies four observer categories. The first one, the “complete participant” participates fully, but his identity as such is not known, he “goes native.” A second one is the “participant as observer,” who is known to be an investigator. He attempts to form relationships with the subjects as informants, yet he does not engage in the activity of the subjects. Thirdly, the “observer as participant” generally restricts data collection to one visit or interview. Finally, the “complete observer” is entirely removed from any interaction with the subjects.

My role therefore can most closely be described as a participant observer. My role as a researcher was known to the subjects. I related to the class members, yet did not necessarily participate in their activities. Being the teacher/facilitator of the classes made
me an integral part of the somatics program. It was not necessary to "go native" or enter the subjects world from the outside. My role as the teacher/facilitator situated me in a world well known to me. This called for an expansion of my role into what Green (1993) calls an "insider, participant observer." This type of status occurs often in qualitative research. Researchers investigate into situations and settings, which they are part of. I observed the participants and myself in an environment that was created by myself as educator. Both of these roles were known to the participants.

Being in the dual role of researcher and teacher/facilitator turned out to be not only a necessary element for the study itself, but also became an invaluable asset given my personal nature. In my view, research tends to ask more of the subjects than it offers them. Hence, I am generally inclined to over-accommodate, as a compensation for my uneasiness about such imbalance. Due to the added role as teacher I felt there was reciprocity in the situation. This created a healthy balance and allowed me to act more spontaneously, to rely on my judgment and personal research temperament more readily. It increased my trust in my own subjectivity. In later pages I will describe some of the strategies used to fulfill both functions appropriately.

**Project Description**

The form of the study took some turns and changes from its conception to completion. The following paragraphs document the final form of the study. Some of the major changes within the research design are pointed out as they occurred during the process of the study.
Pilot Description

The study began with a somatics pilot course in the fall of 2001. The pilot was organized in conjunction with The Ohio State University Wellness Connection ("Wellness Connection"), a facility for faculty and staff of The Ohio State University ("OSU"). I developed and taught a seven-week somatics course. It was held in a conference room of the Office of Environmental Health and Safety of OSU. Eight women participated in the weekly two-hour classes. The pilot program was comparable in content to the somatics course for this study; it included awareness exercises, breathing practices, stretching and movement explorations. The participants engaged in reflective drawing and writing at the end of each class. All participants filled out a questionnaire before and after the course. After the course was completed, I conducted interviews with four of the eight women. Due to scheduling difficulties I did not interview the remaining participants. The pilot course allowed me to not only develop but also fine-tune the somatics program for the study, the question at hand and the various data collection methods.

Description of Study

The somatics course entitled “Cultivating the Kinesthetic Sense Through Somatic Practice” was the main vehicle for this investigation. The curriculum for every class session contained four components: (1) introduction to somatic theory; (2) meditation and awareness practices; (3) breathing exercises; and (4) stretching and movement explorations. All of these were intended to offer movement experiences of various kinds and cultivate kinesthetic awareness. At the end of each class all the course members participating in the research made a drawing about their experience and engaged in
reflective journal writing. During most of the sessions there was some group sharing about the experiences or related issues, either at the beginning or end of class. Every class was concluded with each individual giving a personal "weather report" in form of a sentence or a summarizing word.

The course consisted of eight consecutive sessions beginning the second week of winter quarter of 2002. The two-hour classes were taught in weekly intervals, every Monday, except for the third week when the class was taught on Wednesday, due to Monday being a public holiday. The classes were held in Pomerene Hall at OSU., in room 205. a large dance studio with wooden floors and two large mirrors on the walls. The classes were scheduled at the end of the workday, from 5:00 p.m. to 7:00 p.m., to allow OSU staff members to participate.

Access to the subjects was primarily made possible through the Wellness Connection's regular channels of announcement. The program was announced through "Netwell" Winter 2002, the quarterly publication of The Ohio State University Managed Health Care Systems, the Wellness Connection and the Office of Human Resources (see Appendix B) in November 2001. Approximately three-quarters of the initial 29 participants registered in response to the "Netwell" announcement. Three of the course participants took part in either one of my previous somatics classes or the pilot project in fall of 2001 and learned about the study through personal e-mail conversations with me. Two class members learned of the course during a graduate course I attended with them during fall of 2001. Two course members heard about the study from friends who participated in my earlier courses.
All individuals registered for the somatics course were subsequently sent a "recruitment letter" (see Appendix C). This letter contained information about content, schedule and format of the course. The letter simultaneously introduced the research aspect and the purpose of the study. It described the research activities (questionnaires, body map, participation in classes, journal writing, group and individual interviews) and explicitly mentioned that participation in the class was not dependent on participation in research activities. The letter also noted that the group discussions were to be audio-taped and addressed the issue of confidentiality. All registered individuals were e-mailed an initial questionnaire (see Appendix F) before the first class with the request to bring the completed survey to the first session if they chose to participate in the research.

At the beginning of the first class session, after a verbal introduction about participation in the research, participants were asked to sign a letter of consent (see Appendix E), granting permission to use the obtained information for my dissertation and possible future publications. Participants were additionally asked by the staff of the Wellness Connection to sign a release of liability (see Appendix D). Those individuals who chose to participate in the research were given a body map to mark places of challenging and comforting sensations (see Appendix H). Reflective drawings and journal writings were collected at the end of each session. At the last class meeting the research participants received a final questionnaire (see Appendix G) with some repeating questions from the initial questionnaire and some new ones. They also were given another body map to color areas of challenge and areas of comfort. Both of these
were completed sometime after the last class and before the individual interviews.

Interviews were scheduled during the last class for three different days within the following week.

Selection of Subjects

Data emerging from a study is always significantly determined by the subjects selected for the study. The approach to sampling and subject selection in a qualitative study differs greatly from that in the quantitative approach (Patton, 1990). Rather than looking for a random sampling which permits generalization, the pursuit is to investigate “information-rich” cases which inform the central purpose of the research (Patton, 1990, p. 169). Participant selection in qualitative inquiry is hence based on the multiple purposes of illuminating, interpreting, and understanding – and on the researcher’s imagination and judgment (Glesne, 1999).

Participation in the research aspect of the course was voluntary. The course was announced as a regular somatics wellness program with a research component. Participants thus were able to participate in the course without participating in the research (see recruitment letter, Appendix C). This procedure was intended to insure a conscious decision about the research participation, rather than considering it as a type of “pay” for being permitted to partake in the class. As clarified in my discussion of research paradigms, I include heuristic research as an aspect of my personal research paradigm. Heuristic research draws on the personal experience of the researcher and the co-researchers (Moustakas, 2001). Participation in the research activities required a curiosity about the process of somatic awareness. Given that most of the data can only be

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elicited with the subjects' full involvement in such inquiry, self-selection became the pivotal point in sampling selection. The self-selected subjects thus constitute purposeful sampling (Patton, 1990).

The major motivating factor for participation in the somatics course was the individual's interest in engaging in somatic practice. The participants' answers to the initial questionnaire demonstrated such interest. The specific motivating reasons were to partake in somatic practices, health and wellness activities or to explore activities similar to yoga or meditation. The course thus brought together people with similar interests. This constitutes a homogenous sampling selection. The sample describes a particular subgroup – pre-existing interest in somatic practice - in depth (Patton, 1990). In addition to this class-wide interest, two class members were looking to receive university credit for participation in the program as a pass/fail course.

Since there are no particular rules about the required number of subjects in qualitative research (Patton, 1990), sample size varies greatly. "Sample size depends on what you want to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available time and resources" (Patton, 1990, p. 184). My intention on the one hand was to investigate several individual cases. The group of subjects therefore needed to be small enough for the collected data to be manageable and to allow for detailed analysis. On the other hand I was also interested in looking at general themes to understand the larger context. Sample selection thus needed to be large enough to provide some indications of arising patterns, even though these may not be statistically significant. To strike a balance between both, I envisioned a sample group of about 15 individuals. I was informed by staff of the
Wellness Connection that the attrition rate of previous somatics courses was about 50%.

In light of this information and the expectation that not all course participants would choose to engage in the research, the course was initially open to 35 participants. Thirty-three individuals registered. Out of those, 29 individuals participated in the first class. The average number of participants over the course was 19 per session. Thirteen individuals fully participated in the research activities, including both questionnaires and body maps, individual interviews and several reflective drawings and writings, but only 6 of those participants were present during every class. Nine additional individuals partially participated in the research and completed at least the initial questionnaire and one reflective drawing and writing exercise.

The self-selected group of subjects consisted of a wide age range of individuals, predominantly female. There were only two male participants, one of whom only came to three classes. Only one course participant was African American, the remainder appeared to be of Caucasian background. When looking at gender and race of the participants, both categories were represented in a very uneven distribution. Though interesting, I am nonetheless not addressing the issue of gender or race in this context. Please note my remarks about these categories in the later paragraphs on limitations of this study. The age of the subjects ranged from 23 years to 73 years of age, although the majority of the individuals participating in the research activities were in their 40's and 50's.

**Methods of Data Collection**

There are a variety of qualitative data collection strategies practiced today. To achieve maximum results, I employed a combination of several of these methods. Data
was collected throughout the duration of the study, beginning with an initial questionnaire about the subjects' motivation and somatic experiences. A variety of techniques were used during the somatics group session (observations, drawings, journal writing, group discussions). A final questionnaire and individual interviews concluded the collection of data.

**Questionnaires**

Questionnaires are the most rigid form of interviewing, since there is distance between the researcher and the respondent (Fetterman, 1989). They are thus of little value for examining complex social relationships or intricate patterns of interaction (Marshall & Rossman, 1995). On the other hand, because of the distance between researcher and respondent, questionnaires provide the respondent with the opportunity to report without being greatly impacted by interactions with the researcher and its attendant dynamic. The survey is a self-report, which relies on honesty and accuracy of responses (Marshall & Rossman, 1995). An initial questionnaire was administered before the course began and a final one after completion of the program. Both surveys together were intended to elicit a 'before' and 'after' snapshot of the participants' experience and awareness.

The questionnaires evolved as a hybrid between grounded survey (Strauss & Corbin, 1994) and theory-based survey. Every questionnaire, to some extent, is a product of the ethnographer’s knowledge about the system (Fetterman, 1989). Thus the questionnaires were partially constructed out of my a-priori theory about the kinesthetic sense, its link to the experience of self, and its relevance in the issues of stress and stress negotiation. Simultaneously, the questions developed out of my experiences through the
pilot study in that they represented emergent themes and issues, such as feelings and attitudes towards the body, issues about body image, health issues, etc. The questionnaires were designed to collect data relevant to the participants’ experience in relation to their kinesthetic awareness in the broadest sense. They were also intended to verify or deny the theories presented in chapter 2. Additionally, they also investigated general issues of somatic education and body/mind concerns. The information sought through the surveys did not look for quantification but for descriptive information. The majority of the questions were open-ended. Both questionnaires contained a body map for subjects to indicate areas where they tended to experience challenging and painful sensations and areas of comforting and enjoyable sensations (see Appendix H).

The initial questionnaire was mailed via e-mail to everyone registered for the somatics course. The first body map was filled out at the beginning of the first session. Three participants filled out their questionnaire after their first class experience. Each research participant received a copy of the final questionnaire, slightly differing from the initial questionnaire (see Appendix G). According to my request, all of the thirteen interviewees filled out the questionnaire before the scheduled individual interview and returned it to me via e-mail or during the interview. These surveys were thus not colored by the interview experience.

Observations

Observation is a fundamental method in qualitative inquiry. It is applied in order to recognize complex interactions and dynamics. “In the early stages of qualitative inquiry, the researcher typically enters the setting with broad areas of interest but without predetermined categories or strict observational checklists” (Marshall & Rossman, 1995, 97)
Although my observations were influenced by my experience as a somatic
educator and the a-priori theory I brought to the study (see chapter 2), I initially did not
look at particular aspects of participants' behavior; rather I was interested in seeing if
particular behavioral patterns became evident. About mid-way through the program I
developed observational guidelines (see Appendix 1). These allowed for a more focused
observation for the remainder of the course. As an “insider” and “participant observer”
(Green, 1993) I focused my observations on non-verbal behavior and feeling states as the
central issue of this study. In alignment with Yuasa’ body scheme (1987) I was looking
for expressions of autonomic and somatic sensory experiences in the form of intrinsic and
extrinsic movements. My observations were designed to gain insight into subjects’
current range of kinesthetic experiences and awareness. I was also looking for
expressions of emotional behavior. It is important to reiterate here, however, that pure
observation is limited in this context. Somatic experiences are inherently internal
processes and cannot always be detected through outward behavior (Marshall &
Rossman, 1995). Observations also included verbal interactions amongst the participants
and between participants and myself as the teacher and researcher.

Audio-taping was used at the beginning of the class, during somatic introductions
and sharing, and sometimes at the end of a session. This provided the opportunity to
fully bring my attention towards my role as a teacher and participant during the course of
the class. It also allowed me to review parts of the sessions without having to solely rely
on memory. I reviewed the audio-tapes after each class session and was able to partially
re-experience each class, as I “revisited” the event “vicariously” (Erickson, 1986, p. 148).

Field notes were taken after each session and during and after each review of the audio tapes.

**Documents**

“Documents ... are prepared for personal rather than official reasons and include diaries, memos, letters, field notes, and so on” (Hodder, 2000, p. 703). Personal documents such as drawings and journal entries were an important data source throughout this research.

At the end of each somatics session participants were invited to allow an image to arise out of their unconscious as part of a “psychokinetic visualization process” (Halprin, 1995, p. 65). The image was expressed through a drawing, as a symbol of the experience. Each participant gave his/her drawing a title. These documents thus represented the inner somatic experience more immediately, directly, and personally than other forms of data. “Many areas of experience are hidden from language, particularly subordinate experience” (Hodder, 2000, p. 705). Thus visual texts create another language and offer a different access to the lived experience (Van Manen, 1990). These visual expressions were important research data as they allowed multiple and conflicting voices to come to the foreground. They created a “visual narrative” (Hodder, 2000) and contributed to the understanding of the inner process.

After the participants had completed the drawings, they were asked to make a journal entry and describe sensory experiences, feelings, reactions, changes, observations, or anything else they thought relevant to their somatic inquiry. “The writing down of words often allows language and meanings to be controlled more effectively, and to be
linked to strategies of ... codification” (Hodder, 2000, p. 704). Writing became another method of inquiry (Richardson, 2000), allowing participants to find out about themselves. “Writing ... provides a research practice through which we can investigate how we construct the world, ourselves, and others” (Richardson, 2000, p. 924). The content of the journal entries covered the experiences and sometimes individual belief systems about body and self.

The journals and drawings presented a look at the participants’ perceptions and experiences immediately after somatic practice. They provided insight into kinesthetic awareness, sensory impulses and the process awakening sensation from the perspective of those who experience it.

Group Interviews

Group discussions about individual experiences are customarily part of somatics classes (Green, 1993) and were intended to be held at the beginning and end of each class. These constituted informal group interviews, conducted in a conversational style (Fontana & Frey, 2000). Participants were hesitant at the beginning of the course to share their observations, feelings and experiences during such times of discussion. Hence, group discussions initially were rather brief. As participants felt more comfortable and engaged into the discussions more openly, it became a natural venue for data collection with information brought forward about students’ experiences and their belief systems about themselves and body/mind issues. At the end of class, due to the subjects’ predominant internal orientation, group discussions were rather brief. They became brief “weather reports” with each participant expressing her/his experience through of a single word or sentence.
Individual interviews

Individual interviews, “conversations with purpose” (Kahn & Cannell in Marshall & Rossman, 1995, p. 80), are commonly methods of data collection in qualitative research, since they help to uncover the participant’s viewpoint of the issue of interest. One 30-50 minute individual interview was conducted with each of the 13 subjects fully participating in the research. The interviews were held within a week after completion of the somatics course and the final questionnaire. During the interview, questions about the participants’ experiences during the somatics course, their current body awareness and their relationship to their bodies were addressed. Participants were also asked if they recognized any relationship between their body awareness and their overall experience of themselves and whether participation in the course influenced their ability to negotiate stressful situations.

Due to the somatic nature of this project, semi-structured interviews were used (Fontana & Frey, 2000). Each interview was conducted as a conversation to provide the opportunity to create rapport. The content as well as the medium of a somatic process requires sensitivity, closeness, and flexibility on the part of the researcher. Inflexible and standardized questions do not appropriately reflect the somatic process and the qualitative approach, particularly when openness and flexibility are major concerns (Green, 1993). The interview questions (see Appendix J) were guidelines rather than verbatim instructions and allowed for emergence of patterns. This combination of flexibility and control supported my interest in generating grounded theory. The interviews were audio recorded and transcribed. Coding of the interviews occurred after transcription.
Reflexive Researcher Journal

Heuristic research draws from the personal experiences of the researcher (Patton, 1990). My own experiences and thoughts concerning the research process, my experience while teaching the somatics program, as well as thoughts or memories that surfaced during the research process were incorporated as data. Throughout the study I documented my personal experiences in the form of a reflexive researcher journal. I repeatedly asked myself “what am I not seeing or not hearing and what am I not noticing, based on who I am and my preferences and perceptions?” The data collection methods in conjunction with the reflexive journal allowed me to continuously clarify the “use of self” (Roberts & McGinty, 1995). My self-reflexivity also included questions on how I contributed to “dominance” in spite of my “liberatory intentions” (Lather, 1991). I reflected on what I was doing in the research process, such as my attending behaviors, nonverbal and verbal communication. While I was accustomed to being an observer as well as a teacher, each class and interview gave me the opportunity to further my self-observational skills.

Timeline

Sample selection began in December 2001 through the “Netwell” announcement and continued till January, the beginning of the course. A week before the first class, initial questionnaires were sent out to everyone who had registered thus far. A body map was administered before the first class and after the last class. Observations, group interviews, document collection, and informal data analysis occurred throughout the period of the program, beginning January 7, 2002 and ending February 25, 2002. Each audio-tape was reviewed shortly after the respective class session. Field notes were taken...
during such review and the tape was selectively transcribed. Personal journals and
drawings were collected after every class. Emerging patterns developed throughout data
collection. The final questionnaire was completed after the last class and before the
individual interviews. Individual interviews were conducted within one week after
completion of the course. Interviews were transcribed shortly after the interviews. A
concentrated phase of analysis began after completion of the interviews and
transcriptions thereof.

Analysis and Write-Up

Analysis looks to uncover regularities in the physical and social worlds
(Huberman, 1994). Human science in particular is the “study of meaning” (Van Maanen,
1990). Hence, descriptive and interpretive studies seek to discover patterns, structures
and levels of meaning. Analysis in this study was not a discrete event that began after
completion of data collection. It occurred throughout the process. “Analysis occurs as
themes are identified, as the deeper structures of the social setting become clear, and as
consequent modifications are made in the initial design” (Marshall & Rossman, 1995, p.
107).

Process of Analysis

Analysis began with the somatics course and data collection. After each class I
read through the data received and looked for emerging themes. After data collection
was completed, I read through and looked over the full set of data several times. Initially
I had anticipated using computerized data management software. Yet, “[r]ead ing through
the actual notes page by page provides the researcher with a more holistic conception of
the content of the field notes than that which would be possible with the more partial view provided by computerized data retrieval” (Erickson, 1986, p. 149). I therefore decided to not make use of a computer software program; instead I “read by hand.” It gave me the opportunity to more deeply engage into the data, discover patterns and recognize unanticipated issues and disconfirming evidence.

I read through the data in two different modes. The first approach was to simply read it as a collective piece of information, paying attention to what type of issues or regularities became apparent. I applied this mode during both the time of data collection and fieldwork and after completion of the program and data collection. The second mode of reading was in the form of more systematic coding, paragraph by paragraph, according to grounded theory strategies (Strauss & Corbin, 1994). The second mode was only applied after data collection was completed. Both modes aided in creating and finalizing a code list (see Appendix L). After immersion into the various data elements I began to make assertions through “analytic induction” (Erickson, 1986). Some of the assertions were in alignment with my a-priori theory (see chapter 2). Others called for new conceptions which will be presented in the last chapter, as grounded theory. I then reviewed the entire data systematically, looking for “evidentiary warrants” (Erickson, 1986), data that confirmed or disconfirmed the assertions. “A deliberate search for disconfirming evidence is essential to the process of inquiry, as is the deliberate framing of assertions to be tested against the data corpus” (Erickson, 1986, p. 147). The major discrepant cases are presented so that they may be addressed in later analysis.

The above mode of analysis created a general view of the data. Looking at data based on the patterns arising, is a powerful mechanism to focus attention on only a few
attributes (Stake, 2000). It presents a general view of the issue at hand. Yet, according to my interest of also presenting a specific view, a “thick description” (Gertz, 1967), I chose several individuals for case studies.

“Case studies are of value for refining theory and suggesting complexities for further investigation, as well as helping to establish the limits of generalizability” (Stake, 2000, p. 448). My next question therefore was which cases to select. Stake considers the selection of the cases to study as the most unique and important aspect of the study in social science and human services. The three data stories presented in the write-up are of prominent interest because they each represent particular themes of this study, stress/trauma and kinesthetic experience, kinesthesia and self, kinesthesia and no-self and sensory-motor amnesia. The case studies presented are thus “instrumental case studies”, rather than intrinsic case studies1. In “instrumental case studies ... a particular case is examined mainly to provide insight into an issue or to redraw a generalization. ... The case still is looked at in depth, its contexts scrutinized, its ordinary activities detailed, but all because this helps the researcher to pursue the external interest” (p. 437).

Data Write-Up

“The researcher ultimately decides [the] criteria of representation” (Stake, 2000, p. 441). I was interested in having the data report address several different aims: (1) present a “thick description” to portray the individual viewpoint; (2) distill general assumptions about apparent regularities and patterns; and (3) model the process of emergence, which was present throughout the course of the research. These aims not only determined the content of the report, but also the style.
Valuing the aspect of in-depth heuristic inquiry, I depict three exemplary individual data portraits. In accordance with Heuristic research (Moustakas, 2001) the research participants retain visibility rather than getting lost in the process of general analysis. Presenting individual stories offers a format to which the reader can relate.

“When the researcher’s narrative provides opportunity for vicarious experience, readers extend their memories of happenings. Naturalistic, ethnographic case materials, to some extent, parallel actual experience, feeding into the most fundamental processes of awareness and understanding” (Stake, 2000. p. 442).

The individual portraits include information received through all the different data collection methods from the respective individuals. The written and spoken word is illustrated through artistic expressions. I did not attempt to analyze the drawings. This would take me beyond my area of expertise. I am simply employing the drawings to illustrate the individuals’ expressions.

To support my second aim of the data write-up, distilling general assumptions. I introduce “general descriptions” of themes arising out of the data and display respective “evidentiary warrants” for these assertions through “particular description” (Erickson, 1986). Particular description “narrative vignettes or ... direct quotes from the field notes” (p. 149) document that the incident, on which a particular assertion is based on, “did occur at least once” (p. 149). The general assertions are further supported by describing the pattern and evidencing the frequency of the particular phenomenon. Since I am dealing with a fairly small number of subjects, I am presenting very basic indications of frequency, such as “the majority of the subject,” “a few”, “less than half,”

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1 Intrinsic case studies are undertaken to better understand this particular case (Stake, 2000).
etc. My interpretive commentary, interspersed between individual stories and general assumptions, creates a connection between those two different viewpoints.

Based on the understanding that everything arises out of the researcher's world, I chose a narrative style of reporting. It is to model my personal engagement as a researcher. Including or organizing the report of a study through narrative elements allows for the practice of reflexivity as well as the modeling of the process of emergence that occurred. A narrative style of reporting can communicate all aspects of research in a related manner, without splitting theory, practice and method. It enables me to turn away from master narratives to present the process of knowledge production. It also enables me to move away from a "mechanistic model of writing", which shuts down creativity and sensibilities of the researcher (Richardson, 2000).

**Trustworthiness**

It is a common concern of traditional scientists whether a qualitative inquiry and its analysis is valid. Conventional criteria for evaluating the stringency of inquiry include customarily internal validity, external validity, reliability, and objectivity (Ary, Cheser Jacobs, & Razavieh, 1996). Qualitative inquiry often applies the term trustworthiness to ascertain whether a study is rigorous or not. Although there is no agreed upon list of criteria to determine trustworthiness, there are many that are generally employed to determine the soundness of a study (Garratt & Hodkinson, 1998). In the following I will present a few of these relevant to this study.

"An account is valid or true if it represents accurately those features of the phenomenon that it is intended to be described, explained or theorized. Does the data
match the real world?" (Hammersley in Altheide & Johnson, 1994, pp. 487-488). This study was exploring the kinesthetic sense as a fundamental dimension of human experience. Relevant data to illuminate the issue becomes available only via inner subjective experience. To represent the participants' subjective experience as authentic as possible, the research account needs to render a rich and thick description (Gertz, 1967). To not lose complexity of the data in somewhat simplistic categories, data and analysis was partially presented through individual portraits. The individual data allowed the reader to enter the research context and gain a richer understanding about the issue at hand.

**Triangulation** is one of the eminent techniques of trustworthiness in qualitative research (Janesick, 2000). Methodological triangulation is the use of multiple methods to study a single phenomenon. Limitations in one method can be compensated for by the strengths of a complementary one (Marshall & Rossman, 1995). In this study six sources of information were triangulated: (1) questionnaires, (2) observations and field notes, (3) written and visual narratives, (4) group interviews, (5) individual interviews, and (6) reflexive journals. Still holding to the basic idea of triangulation of employing a variety of methods, I choose to expand my concept of triangulation through what Richardson (1997) calls crystallization, since the crystal more appropriately symbolizes the multidimensionality of life and the process of knowledge production. Triangulation or crystallization of multiple methods of inquiry allows for a complex view and encourages unexpected data to surface.

The level of reflexivity in qualitative research is considered another main criteria to establish trustworthiness of the inquiry. The researcher's bias is being made clear
through the researcher’s reflexivity (Glesne, 1999). In the introductory chapter I presented my personal development. In the beginning of this chapter I clarified my paradigmatic standpoint. The theoretical as well as the personal context within which this study was designed and implemented was made clear to the reader. A reflexive journal about my own experiences and biases throughout the study allowed me to increase awareness about my own subjectivity and monitor it as the process of inquiry continued. The challenge was to question my judgments, feelings, perceptions and assumptions without stifling the development and uniqueness of my researcher self (Roberts & McGinty, 1995). Reflexivity allowed me to strike a balance between consciously interpreting through my personal lens and perceptions and ensuring that findings are nevertheless grounded in the data itself.

An additional category to evaluate trustworthiness of a study is that of catalytic validity. “Research that possesses catalytic validity will not only display the reality-altering impact of the inquiry process, it will direct this impact so that those under study will gain self-understanding and self-direction” (Lather in Kincheloe & McLaren, 2000 p. 297). I anticipated that the subjects of the study, through their engagement in somatic practice, would be able to expand their awareness about their kinesthetic experience, develop deeper understanding about themselves as bodily beings and increase their actual movement. Answers to the final questionnaire and individual interview responses attest that for most participants the study presents catalytic validity.

Member checking is another significant technique for establishing credibility (Glesne, 1999). It allows the researcher to have subjects’ confirm their own data. The subjects thus can note inconsistencies or concerns (Stake, 2000). At the end of the study,
after conducting the interviews and transcribing them, I e-mailed the transcriptions and draft interpretations to the individuals represented in the data stories. The individuals agreed with the content of the interviews, except for one small section, which was changed according to the interviewee's response.

I approached the study with an a-priori theory, the content of which was discussed in chapters 1 and 2 of this dissertation. The a-priori theory was tested, elaborated and modified against the patterns and themes arising out of the data. New and grounded theory was generated (Strauss & Corbin, 1994). Grounded theory keeps an investigation close to the data, rather than becoming focused on what we wish were the case. The movement of this study and the process of gaining insight and understanding went from the abstract to the concrete and back to the abstract. Thus, the emerging theory became an even more “credible explanation” (Janesick, 2000) of the issue at hand. Grounded theory brings additional credibility to the study at large.

A concern often voiced by adherents to the conventional quantitative paradigm is that because qualitative research does not project its findings onto a larger mass of individuals, it is not scientifically sound. Generalization to large populations is not the goal of qualitative research; rather it is seeking to gather information through naturalistic inquiry that is highly influenced by the context, including the researcher’s interaction with the participants. Lincoln and Guba (in James-Brown, 1995) note that an important goal of the quantitative researcher is knowledge of the particular. Through the use of thick description the researcher presents the reader with the context from which the data emerged to “facilitate transferability judgements on the part of others who may wish to apply the study to their own situations or situations in which they have an interest” (p.
90). The concept of transferability is an appropriate substitute for generalizability. The context of this particular study was made clear in this chapter. The reader thus can transfer the findings of this somatic study to a similar situation. The extent of the transferability is contingent upon the similarity between the contexts.

In summary, the various data collection methods allow the reader to "vicariously experience the setting," survey the evidence which formed the base for the author's interpretive analysis and evaluate the theoretical and personal foundation of the researcher's perspective. "Access to all these elements allows the reader to function as a co-analyst of the case reported [and to] ... judge the validity of the author's interpretive analysis". (Erickson, 1986. p. 145-146). Collectively all these categories substantiate the trustworthiness of this study.

**Ethics**

Power issues are one of the major issues of ethics in research. "The presentation of self in the field can never be done without some consideration of impact" (Roberts & McGinty, 1995. p. 115). The researcher-respondent relationship and the teacher-student relationship are not equal relationships. They always involve power dynamics. Although the understanding of many of the post-positivistic paradigms is moving away from a strict oppressor/oppressed model, there is an understanding that nuanced power issues are at play in any situation, including the research and classroom situation. "[N]o one is ever completely emancipated from the sociopolitical context that has produced him or her (Kincheloe & McLaren, 2000. p. 282). A heightened suspicion about power issues in the class can sometimes have a paralyzing effect. I thus attempted to strike a healthy balance
between awareness of such power dynamics and spontaneity and authenticity. Although no project is innocent, I considered the interactions between myself as the educator and the group or the individual as a reasonably non-coercive exchange.

Not only participation in the class, but also participation in the research was voluntary. Individuals could join the class without engaging in the research activities. Only thirteen participants completed the full range of research activities, including both questionnaires and the individual interview. An additional nine class members participated in the research partially. Seven class participants did not participate in the research activities. Having had a choice about the level of research engagement allowed the participants to select in a self-referencing manner, thus retaining power. It is interesting to note here that for the last class only the thirteen research subjects were present. Whether this expresses a deeper commitment by the subjects to somatic practices or whether the subjects felt obliged to fulfill their research obligations remains a question.

Research participants have a right to confidentiality (Glesne, 1999). All data gathered is kept confidential. The names presented in connection with the data stories are all pseudonyms.

Limitations

The goals of this study were to develop a broader theoretical understanding about human sensory experience and relate kinesthetic experience to the concept of self and to the ability to negotiate stressful experiences. It further investigated several methods of kinesthetic and inner cultivation. It intentionally focused on the experience itself and
searched for ways of understanding how somatic practices can enhance kinesthetic awareness. Because of its focus on the subjective experience, the study did not attempt to quantitatively measure the kinesthetic experience or any other experience described. The number of subjects was intentionally kept small to keep the collected data manageable; generalization of the findings was not intended. Nevertheless, the emerging themes may aid in the development of theories about the importance of this relatively unexplored area for a larger population over time.

As mentioned earlier, the majority of the participants of the course were female, only two were male. Additionally, there was only one African-American participant; all others appeared to be of Caucasian origin. According to my observations this is not an unusual composition in a somatics class. My focus intentionally was on the individual experience, not on categories of race, gender or age. I consider these categories somewhat over-analyzed and its discussion still steeped in confusion. The definitions of these categories are constantly in flux and as far as this issue is concerned, not a useful place to start an analysis of this kind (Martin, 1994). I thus did not pursue these issues. Certainly such an assertion may not be sufficient for some of the readers. Still, I hope that this study presents useful information for their personal analysis and endeavors.

This study investigates the experiences of individuals fairly inexperienced with somatic practices. Yet, three of the subjects have been involved in somatic cultivation over an extended period of time. It is unclear if the depth and quality of the participation of these particular subjects has been colored by such earlier exposure to these practices, although I assume it did.
Short-term engagement in somatic work is somewhat limited, as a change of physiological and/or psychological habits requires usually prolonged practice. As a somatic educator, I observed over the years that individuals are more willing to register for a course that does not involve long-term engagement. A short-term format thus enticed individuals with wider experiential backgrounds to participate. I considered this benefit important enough to sacrifice the long-term engagement into somatic practice.

The second questionnaires and the individual interviews provided substantial information about the impact the somatic practices had on the experiences of the participants. The feedback was given shortly after the course was completed. A long-term follow-up of a similar kind would provide valuable insight into long-term changes. Yet, the timeline of this study and the resources available for it did not allow for such a long-term follow up.

Summary

This investigation employed methods based on the umbrella paradigm of qualitative research, utilizing a network of theories including Constructivism/Interpretivism, Participatory Action Research and Heuristic Research. The research investigated into the phenomena of the kinesthetic sense, its link to the emergence or transformation of self, the dynamic of sensory amnesia, the possibility for sensory cultivation via somatic practices, and the connection between body awareness and stress. The design represents an emergent plan, arising out of the effort to develop an in-depth study and the intention to remain flexible to the empirical moment. The study explored
the relevance of a-priori theory as delineated in earlier chapters and the emergence of new and grounded theory through particular and general description.

Appendices

"Netwell" announcement of somatics course
Recruitment letter
Waiver of liability
Informed consent letter
Initial questionnaire
Final questionnaire
Body map
Observational guidelines
Interview guidelines
Somatics program syllabus
Code list
CHAPTER 4

THE COURSE: CULTIVATING THE KINESTHETIC

The somatics course developed from my work in a variety of venues, including workshop type settings, and the pilot project which I conducted during the fall of 2001. The course was created to furnish a framework for a somatics curriculum as well as serving as the main vehicle for this research project. Its design was thus driven by two imperatives: instructional and research.

Instructional Imperative

The instructional intent of the course was to present information and practice to cultivate kinesthetic sensitivity. Some subjects reported minimal previous experience with various cultivation practices. Only three had extended experience with somatic practices (yoga, meditation, karate). As anticipated, most of the participants were novices to the field somatic work, resulting in my presentation of basic information about somatic education and practices without assuming any previous knowledge or experience on the part of participants. Each class session contained a brief theoretical introduction and provided ample opportunity for practice. The course content demonstrated the underlying concept of body and mind as an integrated phenomenon.
Research Intent

Since the course was the major mechanism for this research project, data collection had to be part of the program. The research focus was on the kinesthetic sense as a fundamental aspect in human experience. Throughout the course I focused on the following questions: How much are individuals aware of their kinesthetic experience? What sensate experiences do participants report? Does kinesthetic awareness have a broader significance? Can it be cultivated through somatic practice?

A questionnaire (see Appendix F) was administered before the course began. It furnished initial data about the subjects’ motivations to participate, their somatic experiences and provided orientation for participants’ awareness towards the issue of kinesthetic and inner experience. Thus the initial questionnaire supported the instructional imperative. Kinesthesia is an internal phenomenon. Insight has to emerge through introspective methods including moving, sensing and attention. To shed light on the research focus, I collected descriptive reports. The methods of reflective drawing and writing were employed at the end of every class to generate descriptive and narrative data as soon as possible after somatic exercises. Group discussions at the beginning or end of class helped to put the reports into perspective. All three research activities, while shaping respondents’ expectations and sensitivities, are typical activities in somatic education courses and were therefore a natural aspect of the educational as well as the research process. The second questionnaire and individual interview, administered or conducted after completion of the course, did not appear to have any particular impact on class dynamics or participation.
The Somatic Setting

Somatics recognizes that any activity is always embedded in a particular environment. The somatic setting and course environment is considered to have significance. The course was held in a dance studio in Pomerene Hall, at The Ohio State University in a large, old fashioned and cozy dance room. The setting was an inviting one for the participants to explore body movement working on mats or hardwood floor. The studio, like many dance studios, had ballet bars and three large mirrors mounted on the walls. I regarded these as representations of the dualistic body and mind orientation, in which it is thought that the body needs to be looked at from the outside, rather than felt from the inside. However, in this situation, the external environment did not seem to interfere with the participants' ability to introspect. Students from various departments using the building tended to use the room as a corridor, even with a class in progress; I therefore had to post a “Do Not Disturb” sign on both entry doors. Only twice, at the very end of class, did people enter the room. Overall, the room seemed to provide a safe and non-threatening space for individuals to explore inner experiences, despite such occasional disturbances, including extraneous external noise.

The students were several times reminded that it was their choice as to whether they would participate in any particular activity. I was nevertheless aware that being in a class situation, students often feel the pressure to participate due to the presence of the teacher and other students. I attempted to be reflective in my observations and journal writings about how my role as authority/expert might create power imbalances. Overall, I considered the class atmosphere reasonably non-dominating and non-intimidating (see chapter 3).
The Course in Relationship to the Study

The course outline was designed so that it could stand alone with its elements able to be incorporated into regular somatics, wellness, psychology, education or spirituality curriculums. However, it is important to note that it was not designed as a static curriculum rigidly transferable to different contexts. Every situation and every group of participants will shape the actual content of a somatics course in a particular way. The specific setting of this program was very tied to the research context. The course was therefore organized based on the intention of data collection. The majority of the students agreed to function as partial or full research subjects. All of them were aware of their dual function in this project.

Teacher and Researcher Selves

This project presented a somatic education project and a research project and my roles as teacher/facilitator and researcher expressed the dual function of this project. Continual reflection about the two roles brought the educational aspect as well as the research aspect into focus at different times. My educator-self began to inform my teacher-self and vice versa. During class sessions I was primarily in touch with my function as a somatic educator while when reviewing audio-tapes or interviewing, I was more aware of my researcher self. Yet, even while teaching the classes, I noticed that I experienced both modes of observation. Likewise, while reviewing audio tapes I was aware of thoughts about the course content and my teaching methods. Thus, the different roles informed one another. The dual process brought forward valuable information for the educational process as well as the research project. Although I engaged in certain
practices myself, in particular the awareness practices, overall I did not function as a practicing participant. I simply presented or demonstrated exercises and otherwise observed the movement explorations.

Class Make-Up

The participant group consisted of a diverse group of individuals with varying backgrounds. Since it was organized through The Ohio State University Wellness Connection, most of the participants were faculty or staff of The Ohio State University who had responded to an advertisement in *Netwell* (see Appendix B) or had heard about it from friends. Two of the class members were students who had heard about the project in a university course I co-attended with them.

In initial introductions or later conversations, most participants shared whether they had previous experience in somatic practices. All but three had none or minimal somatic experience. The age of the participants ranged from 23 to 73, with a strong concentration in the 40s and 50s. As is often the case, there were many more female than male participants. Out of the 29 initial participants two were male. There was one African American woman in the group; the remainder appeared to be of Caucasian origin. As mentioned in chapter 3, because of the particular focus of this study I did not explore the issue of gender or race. In general the class members were individuals with a wide array of motivations, different experiential backgrounds, and varying degrees of body awareness.
Background of Methods

The methods utilized in this course derived from Eastern and Western somatic approaches. The approaches represent a choice of practices that allow the participants to enter into somatic inquiry and descend into a meaningful somatic investigation through a blend of structured and non-structured practices by means of introspective exploration and outer expression (see chapter 2, Movement Initiating Sensation). The course thus offered an eclectic mixture of practices deriving from Continuum work, the Halprin Life/Art Process, Body-Mind Centering, and Yoga. I have personally experienced fairly extensive practice or training in all these forms. Though these somatic approaches have developed particular aspects and principles of human movement, they all emphasize the importance of embodiment\(^1\) and cultivate a non-dualistic understanding. Some of their particular foci and practical elements are described below.

**Continuum**

The main principle of the Continuum movement work is that movement is not just something we *do*, but something we *are* (Conrad & Harper, 2001). Emilie Conrad, the originator of Continuum, considers fluid undulations of the body fundamental to all living creatures. "[O]ur oceanic origins exist in our fluid and cellular systems" (p.2). Emphasis is on the idea of our evolutionary beginnings in an aquatic environment. We carry the movement of water in every cell of our body, with micromovements, small pulsations of tissue, at an internal level almost imperceptible from the outside. This

\(^1\) The term "embodiment" describes the understanding that growth, personal and spiritual, is a process of connecting more fully and consciously with inner, sensate experiences. Embodiment processes are "strategies for recovering the wisdom and creativity present in breathing, sensing, moving and touching" (Johnson, 1995, p. ix).
dance of wave-like pulsations is always going on deep within us. We are always moving, even if we appear still. Conrad considers ongoing internal fluid undulations to be primary autonomous and biomorphic movements. They present an essential link between all organisms. These wave-like motions have no direction, no inside or outside, and no particular goal. They are unpredictable and non-serial, undulating like an anemone in water.

We live only a small range of our movement potential. Through socialization we move in culturally prescribed, codified ways. Traumatic experiences along the way create even more constriction and over time, our movements become structured and limited. Thus, we carry our own degree of paralysis in our bodies. Working with many paralyzed people, Conrad recognized that even paralyzed people can feel movement inside their bodies and express it in a myriad of ways. Beneath the layers of conditioning and restrictions, biomorphic movements occur autonomously. These pulsations, which a culture may ordinarily not even recognize as movements, present a primary healing force in all human organisms and provide individuals with deeply sensual experiences (Conrad & Harper, 2001).

The Continuum approach to the body is based on felt inner movement rather than prescribed movement patterns. It offers a non-linear biological basis for movement cultivation rather than the mechanistic models common in our society. Its practices include intrinsic and extrinsic non-patterned movements and a variety of sounds and breaths, coupled with continuous refinement of awareness for sensate experiences and the unpredictable path of innate motion. Subtle and dynamic explorations stimulate various inner impulses, echoing different vibrations, enlarging and bringing into awareness the
wave-like motions inside the body. They elaborate fluid and innate movements within our organs, circulatory systems and any other tissue. Cellurally inspired movements curve, arc, spiral, undulate, revealing themselves as replicates of biological forms in nature (Conrad & Harper, 2001).

Continuum increases sensitivity to movement and self awareness. Its goal is to develop conscious awareness of movement on all levels, inviting the human organism to return to a primary and healing wave-like motion. Its practice aims to soften and mobilize a bound rigidity and frozen structure by means of wave motions which help to liquefy habitual rigidity and blockages within the various body tissues. Continuum thus invites us to let go of fixed cultural imprints and contracted responses and move spontaneously based on inner impulses and in accord with what the body is biologically capable of (Knaster, 1996). “By increasing the dexterity of breath and complexifying wave motions, we bring mobility to static states. ... Experimenting with non-patterned, asymmetrical movement stimulates innovative growth and vibrancy” (Conrad & Harper, 2001. p.3). The minute movement explorations of the Continuum process help to develop a refined awareness for intrinsic movement, or (in alignment with Yuasa’s body scheme as described in chapter 2) for the autonomic circuit (circuit of somesthesis), as they by-pass the patterns lodged in the somatic circuit (circuit of kinesthesis). The movement begins to free the bodies’ innate expressive potentials, translating intrinsic movement into dynamic expression.

Continuum brings awareness of movement to a profound depth and subtlety. It is an invitation to participate in the minute and ongoing pulsations within ourselves. The

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following approach, Body-Mind Centering, is similar in that it investigates cellular awareness, but within an anatomical framework.

**Body-Mind Centering**

Body-Mind Centering (BMC) is based on Bonnie Bainbridge Cohen’s understanding that “consciousness pervades all of the body” (Aposhyan in Bainbridge Cohen, 1993, p. vii). BMC uses the anatomical differentiation of the various body systems as a framework to experientially investigate the cellular nature of various tissues and its inherent consciousness. A sequence of movement development is employed to integrate the stages of human development and the diverse qualities of consciousness. BMC invites people to “visit” the different body systems on a cellular level and to fully embody developmental movement stages as a path toward wholeness.

BMC promotes change through experiential anatomy (Golden, 1993). The felt exploration of the body systems including skin, skeletal, ligaments, muscular system, organs, endocrine, nervous, fluid, fascial system and fat (Bainbridge Cohen, 1999) and the developmental movement sequence (see chapter 2) (Bainbridge Cohen, 1993; Orlock, 1996) occurs by means of various movement and awareness practices. Embodying the full range of developmental principles and the dynamics of the body’s systems promotes cellular awareness and brings about transformation (Bainbridge Cohen, 1999; Hartley, 1995). Cohen developed many embodiment practices, including moving, touching, sounding, imaging, playing with props (i.e. large balls, stretch bands, sticks, toys and music), body-mind mapping as well as dialoguing and resonating with and within different body systems (Liu, 1998).
Bonnie Cohen (1999) considers movement and touch fundamental in human experience, seeing it as the first avenue of perception which establishes a baseline for perception through the other senses. Movement in all its varieties and expressions is essential to the continuation of life. Hartley (1995), a BMC practitioner, speaks about it in the following way: “As I live, I express my life-force in movement; as I move I feel my aliveness. To continue to live I continue to move and change” (p. xix). This life-force continually moves via the motions of the smallest cell or movement of the most powerful muscle. Regardless if conscious or unconscious, it is expressed through the most subtle and the most gross movements of the body. It expresses itself through the sounds we make and the thoughts we think.

To deeply enter into the body and bring about new learning, repatterning, growth and change (Bainbridge Cohen, 1993. 1999; Hartley, 1995), BMC offers a wide array of movement related practices. The content of the work is organized into five categories - the Body Systems, Developmental Movement, the Art of Touch and Repatterning, Breathing and Vocalization, and Dynamics of Perception. BMC provides a comprehensive approach toward embodiment and promotes body awareness and effortless and skillful movement in children and adults and can aid in the recovery from various inhibitions and neurological disorders (Liu, 1998). Awakening awareness at the cellular level allows us to come back home into our bodies and promote the integration of sensation, feeling, mind and spirit and to access our innate creativity (Hartley, 1995). Thus we alleviate inhibitions and cultivate our sensory abilities – autonomic as well as somatic – and enhance our emotional and cognitive functioning.
Both above practices are primarily inquiring into the subtle movement aspects. The following approach, the Halprin Life/Art Process, brings emphasis to the outer movement expression.

The Halprin Life/Art Process

The Halprin Life/Art Process integrates expressive and therapeutic arts for the purpose of personal, interpersonal and social transformation. Dance and other expressive arts are used in conjunction with therapeutic and creative techniques and principles. The vision of this work is based on the assumption that dance and the expressive arts can promote healing and solutions to life issues in creative ways. The Halprin method is applied to issues of the individual, communities and the environment and supports the creative development and expression of the whole person (Halprin & Halprin-Khalighi, 1994/95).

The Halprin method originated with the work of Anna Halprin, a dance pioneer. She was one of the first to promote and use dance as a healing and transformative art. The Halprin process engages the body with movement expression to pursue the integration of physical, emotional, mental and spiritual dimensions of experience.

A series of movement practices called Movement Ritual teach the individual a basic range of movement on different levels, on the floor, standing, or while moving through space (Halprin, 1979). Rather than presenting a static set of movement patterns, it provides for the experience and understanding of basic principles concerned with space, time, force, gravity, inertia, momentum, rhythm and relaxation. This practice, initiating primarily movements of the somatic circuit (circuit of kinesthesis) (see chapter
2. Yuasa’s body scheme, teaches a basic movement vocabulary which provides the basis for expanded movement exploration and awareness.

The Halprin method involves a “psychokinetic visualization process,” an expression of inner experience through shape and color in the form of drawings.

I have always been concerned with the relationship between the mind and the body. Understanding the connection of movements with feelings is easy enough, but understanding how the mind works in relation to the body isn’t as simple. ... I found it wasn’t enough to create images in the mind’s eye; I wanted people to draw their own images, reflect upon them, and begin to learn physically the language of these images. (Halprin, 1995, p. 65)

After a movement exploration each individual draws images representing the experience. Halprin regards these images as arising from the unconscious thus providing an avenue to uncover the connection between body and mind. The images often represent emotional content and connect the somatic circuit (circuit of kinesthesia) to the emotion-instinct circuit.

In the Halprin method, dances are created as expressions and revelations of a deeper intelligence within the body. Individual as well as group dances become creative responses to real life experiences. Dances in the natural environment promote an active and conscious relationship to nature. Personal and collective dance rituals are performed in the spirit of transformative power. During the course this approach allowed participants to explore their own dance.

The types of movement work presented thus far focus on free exploration, intrinsic or extrinsic. The following practice presents the practitioner with a structure within which to explore.
Yoga

Yoga is an ancient approach toward self-realization. Its philosophical background offers insight into the workings of the unconscious. It developed in India and pursues the experience of the body/mind unity through various practices aimed at gaining freedom from psycho-physiological structures and temporary conditionings thereby promoting the expression of the full human potential (Eliade, 1958). The eightfold yogic path (Mehta, 2001) embraces dualistic as well as non-dualistic orientations. Hatha yoga, a particular limb of this path, is considered a non-dualistic approach, as it seeks full embodiment in the pursuit of liberation, rather than transcendence (Eliade, 1958).

Hatha yoga as a physical discipline seeks transformation of the self and body (Budilovsky & Adamson, 1998; Eliade, 1958; Mehta, 2001). Its many different schools and styles, though having a common basis, focus on different aspects of the practice. The main practice, postures or asanas, are grouped according to the positioning of the body, such as standing, sitting, twisting, prone, supine, inverted, backbending, and balancing (Mehta, 2001). To support those who cannot otherwise achieve a certain posture, props and equipment, belts, benches, blankets, bolsters, chairs, non-slip mats, stools, and walls are offered (Liu, 1998). The practice of asanas (yoga postures) develops strength and equilibrium while reducing physical effort. Asana practice regulates physiological processes so that the attention can be devoted to subtle experiences and consciousness (Eliade, 1958).

Individuals who practice yoga are often initially drawn to the beauty of the postures and the pursuit of their mastery; other yogic practices, like breathing and meditation (Eliade, 1958) usually become part of the path along the way. Ekagrata, the
practice of concentration, teaches methods of holding awareness with one's body, one's thoughts, emotions, or with certain objects. It teaches how to control the fluctuations of every-day consciousness. Pranayama, the discipline of respiration, brings awareness directly into the body as it actively alters the processes of the body by modifying the rhythm of breathing. The breathing rate of the ordinary person is considered to be arhythmic. It varies with the external circumstances and with the activities of the mind. Irregular breathing is seen as producing psychic fluidity and instability as well as diffusion of attention.

Yoga practice improves physical flexibility, strength, stamina, and muscle tone (Budilovsky & Adamson, 1998; Mehta, 2001). It aids in relieving countless ailments and increases the overall physical health and well-being. Yoga asanas and breathing exercises are very effective in helping to reduce stress (Benson, 1975; Borysenko, 1987; Kabat-Zinn, 1990). Through yoga practice, body, mind and emotions can become harmonized and brought into balance and the individual can be nourished in a holistic way. Yoga aids in the acceptance of self, thus aiding in the evolution of the individual. The student works to embrace and move beyond mental, physical and emotional blockages through awareness within the specific structure of the asanas.

Through the practices of Hatha Yoga the practitioner develops flexibility and simultaneously enters deeply into the body by cultivating awareness for its deeper processes. Besides developing concentration and harmony within the body, the yogi pursues awareness and eventually mastery over generally involuntary processes. S/he seeks to consciously regulate the autonomic nervous system by controlling the cardiac muscles and smooth musculature of the viscera. "[S]uch a concentration ... is
accompanied by an increasing attention to the yogin’s own organic life. While the exercise continues, the yogin’s sensation of his body is wholly different from that of the noninitiate” (Eliade. 1958, pp. 66). Through highly developed awareness of body sensations, initiates over time have ventured deeply into the body and discovered the “subtle body” with its intricate maps of energy channels (nadis) and energy centers (chakras). Thus, the ordinary body is transformed into a subtle or divine body.

Other Methods

In addition to the approaches described above, I included in the study other movement practices and activities I was familiar with, even though I did not have prolonged experiential exposure to such modalities. Additionally, I presented various activities I had independently developed, including contemplative methods and movement explorations. The course was an attempt to offer a variety of somatic activities to the students and link them based on underlying common principles, rather than to separate out each specific approach.

Somatic Theory

The above described somatic approaches represent the practical content of the course. Because I believe that body and mind constitute a unity, I considered it imperative to continuously engage the mind within somatic practice. Participants were encouraged to bring awareness to their somatic practice, engaging their attentional faculties in this process. In addition, I offered brief theoretical somatic introductions: Theories about dualistic and unified body mind concepts, the kinesthetic sense, body and self, sensory amnesia, stress responses, information about movement cultivation practices and holistic perspectives were presented at the beginning of every class. The intent was
that participants would develop a certain understanding as well as an expectation, as a
positive element toward change (Hanna, 1988). The course participants were encouraged
to develop their own somatic narrative through group discussions. In light of the
discussions in chapter 2, I considered such narrative as essential for the "bright
consciousness" (Yuasa, 1987) to be willing to attend to bodily processes and to begin to
grasp the potentials of the "dark consciousness" and the life of the body. Only then will
the bright consciousness become a supportive force in investigating the inner life. An
informed and curious mind in this scenario can become a supportive force in the process,
rather than a sabotaging and reluctant element. It can promote the capacity to witness
internal experiences. Mind and body can move in tandem through this process as somatic
theory and somatic practice in concert can bring about change toward wholeness.

**Course Organization**

The course was planned according to the research intent and the instructional
imperative. Its content developed out of my personal somatic experience and the pilot
course taught previous to the study. During its inception and planning I was aware that
the course structure must be flexible, partially due to the very nature of its content,
partially to continuously accommodate research activities.

The content of each class consisted of introductions in the form of brief lectures.
Focusing on a topic each time, a general somatic theory presentation required about 20
minutes. The theoretical introduction was followed by the presentation of somatic
practices. Usually practice began in the form of awareness and attention exercises.
Breathing exercises most often preceded the entry into stretching. After presentation of
particular movement explorations, the major content of this learning process, students had time to explore on their own without interruption or instruction. This uninterrupted time allowed them to drop more deeply into the kinesthetic experience and investigate sensate events. Such explorations were concluded with sufficient time for unstructured attending or “open attention,” a time during which participants practiced simply listening and sensing their bodies, so that new sensory experiences could move into awareness.

Each class was concluded with a period for reflective drawing and writing.

The actual course calendar with specific practices and themes is presented as Appendix K. I find it important to again emphasize here that the calendar is not to be seen as a rigid or finalized course. Each group with its particular make-up of individuals and their respective experiences and somatic practices will create a different context for the course. The basic elements of awareness practices, breathing practices, movement explorations and reflective drawings and writings might be the same; however, the particular content will change according to the individuals’ needs. The course outlined in the appendix is thus not a recipe but a sample course from which other compositions of content and practice may be created. It will depend on the background, repertoire and sensitivity of each somatic educator to intuit and choose so that the issues and capacities of the group are met.

Summary

The development of the course was based on two different intentions: To set up the course as the main vehicle for this research project and to allow it to provide the opportunity for kinesthetic inquiry and cultivation.
The cultivation practices were aimed at a target population of different ages, with relative minimal somatic experience. The setting presented an inviting, supportive and non-judgmental environment and a reasonably non-coercive atmosphere. Both focused on facilitating inner work and bringing to the forefront awareness of bodily sensations.

The research and cultivation aspect determined not only the dual function of the course, but also the dual role of the individuals as participants and research subjects, and myself as researcher and teacher/facilitator. My dual function became a rich opportunity for cross fertilization, as my researcher self fed my teacher self and vice versa.

The methods employed presented a blend of my previous experience and training. They included practices and theoretical underpinnings of Continuum, Body-Mind Centering, The Halprin Life/Art Process, and Yoga. All of these practices share a common intention, the pursuit of a fuller and deeper state of embodiment. The somatic practices offered represent my personal integration of experiences with these different approaches, elements of other work and my continual personal explorations. The integration of theory and practice was a major element in my pursuit of a non-dualistic body-mind concept.

The course structure needed to be flexible due to 1) the nature of researching lived experience and 2) the nature of somatic cultivation. It needed to lend itself to unforeseen research and educational considerations. Elasticity in course structure and content is also a cherished principle in many different somatic approaches. Thus, the shape and content of the course took turns and changes throughout the process.

A general overview of the class make-up is presented in this chapter. More detailed descriptions are offered in chapters 3 and 5.
CHAPTER 5

ANALYSIS

General Themes and Individual Data Stories

The focus of this chapter is to depict participants' feelings and attitudes towards their bodies, and to present their experiences, particularly sensory experiences, throughout the somatics course and afterwards. This information is presented in two different ways: A general view of patterns arising within the group of subjects, and a particular view in the form of narrative tales of three participants' backgrounds and journeys. The data stories, although using participants' own words, are edited based on my own perspective and should be viewed as partisan narratives. Notably, my dual role as teacher and researcher framed this perspective.

The process of analysis was a continuous shifting from the general to the specific and from the specific to the general. Each viewpoint fed and inspired the other. Initially I read over the entire data corpus to establish preliminary codes and themes. I then determined the individual "cases." three stories which strongly represent particular themes. I constructed long and detailed accounts of the three cases. Subsequently I returned to the general data to further distill noticeable patterns and overall themes.
pursuit of reducing the data, I used the lengthy individual stories as my new data base and wrote new and shortened versions. I then finalized the general themes and evidentiary warrants.

The three data stories represent the following themes: (1) trauma/stress and diminished sensory experience; (2) kinesthesia and the emergence of self; (3) sensory inquiry and no-self; and (4) sensory numbness and cultivation. I chose to not only present the narrative data received from the interviews and questionnaires, but also to document, almost verbatim, the mood after each somatics session through reflective drawings and writings. This allows the reader to intuit the flavor of the sensory experience during and after the cultivation practices. The themes are foregrounded by the stories which run concurrently through the whole data corpus. They are analyzed, discussed, and related to the study project, its theoretical framework and other subjects' reports, following each of the three individual presentations.

Only a quarter of the fully-participating subjects is discussed individually. The remainder of the subjects, fully or partially participating, is dealt with in the discussion about general patterns, presented at the beginning and end of this chapter and after each individual story, if appropriate. The end of the chapter highlights aspects of somatic cultivation, the somatic process and any noticeable changes from the individuals' perspective. In particular body awareness is discussed relative to the ability to negotiate stress. Confirming and disconfirming evidence about the general themes and the process of sensory awakening is offered. "Outlier" data is represented at the end of the chapter to stimulate new thoughts and concepts.
General View about the Subjects

To gain deeper insight into arising patterns, I consider it important to make clear the underlying motivations for participation in the course. Such motivations, reported through the initial questionnaire and introductions during the first class, were quite varied. Individuals sought an opportunity to increase flexibility, well being, and relaxation. They were interested in engaging in somatic practice, including yoga, or to learn more about meditative practices. Some specifically wanted to explore the connection between body and mind, while others were seeking practices to develop body awareness or to aid in stress management. When asked about any engagement in introspective practices, 9 of the 22 subjects reported that they were engaged in meditative or prayer practices somewhat regularly, 7 only infrequently and 6 did not have any meditative or prayer practices at all. All of this makes for a fairly varied, yet motivated group of people, looking to enhance their own experiences. Collectively, the reported motivations demonstrate inner-directed rather than outer-oriented goals, like wanting to improve the appearance of the body. The group itself thus was already “holistically” skewed.

It is important to note that only 3 of the 22 research participants mentioned no particular illness in their history. Everyone else had experienced some health challenges in the recent past. Illnesses or physical challenges included a wide range: lupus, multiple sclerosis, heart valve replacement, accidents, breast cancer, foot/knee surgery, diabetes, fibromyalgia, arthritis, back pain, carpal tunnel syndrome, nerve damage, anxiety, dental
problems, hearing loss, muscular cramps and weight gain. It appears that these health challenges may have increased the motivation to actively participate in enhancing personal well-being and health.

The subjects reported a variety of feelings or attitudes towards their bodies. On the more critical end of the spectrum, participants talked about their bodies being sluggish, tired, inflexible, overweight, painful, non-feminine, uncomfortable, not strong enough, or not in the desired shape. Some of the participants worried about their physical well-being, didn’t like the demands of corporeal existence or felt at the mercy of their bodies. On the other end of the spectrum, participants reported appreciation, gratitude, love, acceptance, wonder, joy, strength, stamina, liking their body, finding it attractive, being in peace with it, or awakening toward bodily experience. There did not seem to be an obvious emphasis on one or the other end of this range. Several individuals reported negative or challenging feelings toward their bodies existing since childhood, others recalled a childhood during which they were positively aware of their own physicality. Several experienced the teenage and adolescent years as a particularly stressful time, during which they began to dislike their bodies and developed a negative attitude towards it. The group of subjects thus carried a mix of positive and negative feelings toward their bodies. Nevertheless, everyone present, at least to a certain extent, considered it important to actively participate with their bodies. The willingness to participate in this course documents such interest.
Individual Data Stories

The main assumption of this study emphasizes the kinesthetic sense as an essential aspect of human experience. Several research questions arose from this assumption: Is there a link between kinesthetic experience and self? Can sensory awareness be cultivated through somatic practice? What is the connection between sensory numbness and the ability to negotiate stressful situations? I have searched the whole data corpus for indicatory references. Much of the data supports the main assumption. Yet, the following three data stories give insight into the above questions and penetrate these issues in a magnified fashion. The individual narratives thus present "thick descriptions" (Gertz, 1967) of the issues investigated.

All of the individuals' narratives appear in italic, no matter whether the data came forward via the interview, the questionnaire, the journals or group interviews. Ellipses indicate where elements of text have been removed; brackets indicate insertions. Some of the text was rearranged in sequence for the sake of clarity. The drawings are presented as artistic expressions to illustrate the process. Many of the journal entries offer written explanations from the individuals themselves and thus elaborate on the meaning of the drawings. The last word/s of each entry, beneath the drawing, represent(s) the summarizing "weather report" given to the group at the end of class. The title of each data portrait is taken either completely or almost verbatim from the individual's report. The subjects' expressions are interspersed with my comments and interpretations to depict the larger meaning. At the end of each individual’s account I will offer further evidentiary warrants, documenting the breadth of the respective themes and their presence throughout the collective data base.
Finding Sensation – Finding Myself

The first narrative is the story of Hillary. Hillary, a woman in her late 40’s, is on the faculty of The Ohio State University. Her interest in participating in this course was to connect with herself and develop tools for stress management. “I am here to find ways to counteract stress and find out, you know, turn back inwards, as opposed to be turned outwards and be disconnected.” In the initial questionnaire, Hillary described herself as always having been out of touch with her body due to continuous anxiety. Her worry about what is going on in the external world keeps her from paying attention to her inner experience. In general, Hillary depicts herself as “totally stressed-out.”

In response to a question about her health, Hillary reported peripheral nerve damage (chronic tingling in her hands and feet) and a generalized anxiety disorder together with insomnia. She notices the anxiety in her chest and experiences often a sense of hopelessness. Hillary is a fairly small woman; her body appears agile. Nevertheless, at times she sees herself as fat, ugly, and unlovable. When asked about her overall movement and posture, she notes that she usually sits very tense at the edge of her seat. Her movement is oftentimes fast. Hillary does not engage in any hobbies, she works almost all the time. She would like to change this and begin to practice meditation, something she did many years ago.

Hillary appreciated and enjoyed many of the cultivation practices offered through the course. She loved stretching, “it gives you a feeling of your body.” Some movement explorations gave her an opportunity to let go while moving, and allow movement to unfold, rather than volitionally make it happen. Slow movements she experienced as respectful towards herself and thus healing. As did many other participants, she thought
she was not good at drawing pictures. Yet she found a way to circumvent her judgment.

"I just decided to try to shut up my critical mind and take pencil and do something. And whatever comes out would have to be it." Similarly with journal writing, it took her some time to discover ways of describing, rather than interpreting or analyzing. Hillary mentioned her difficulty with awareness practices, as her attention habitually moved towards areas afflicted with pain:

I have trouble focusing, but I know that is a matter of just practicing. And especially for me it is easy to go to pain. But I have trouble to figure out where do I have areas of comfort. Which again makes me realize how totally tensed and stressed-out I have been. Sort of like post-traumatic stress or something, in a state, where you actually forget that there must be areas of comfort.

When asked about the noted trauma, she talked about her experience in the womb and during early childhood. She became aware of her challenging pre-natal experiences through an experiential seminar on early trauma:

Yes, a part of it was actually in the womb, by not having been wanted. My parents haven’t been married at that time. They got then eventually married. So part of it was that. ... And then in early childhood, what you would call not physical abuse, but neglect. ... My parents then lived with my grandfather on the farm. My mother had to work on the farm. So apparently my grandfather, he told my mother, at 7 [in the morning], when the farm work begins. ... [the children] had to be in bed. So that’s what happened. When we woke up nobody was there. And we were fed when she had time, not when we were hungry and things like that. So, it’s not trauma like being in a car accident, or somebody raping you. I guess it still kind of leaves you with a heightened sense of arousal, where you are startled easily. ... Like my sister, she would say she feels she has ants in herself. And me, I sometimes would say I feel like I have an electric current, a low level electric current. ... It is constantly there.

Hillary interpreted her continual agitation as residue of her early traumatic experiences of not being wanted and being neglected. The course became for her an opportunity to reduce her baseline of agitation and discover strength. Even though she had difficulty focusing during attention exercises, Hillary was deeply engaged in the practices:
Figure 1, Hillary’s drawing after class I

Working at relaxing. Nice relaxation in middle.
Bad tingling, pain, headache in head and foot.

Journal

Hard to relax – hard to direct awareness at one side of body (toes, leg, etc.) without being aware of other side too. Hard to not have thoughts interfere and take your mind elsewhere. Aware of anxiety in my chest – easier to let body relax than mind. Aware of pain throughout (headache, painful tingling in feet), but at some time my body wanted to give up/relax/not do. Ah!!!!!!!!
Journal
- still very hard to focus inwards
  - too many thoughts
- but feel very relaxed now
  - glad I came!

Figure 2, Hillary's drawing after class II

o.k.
Figure 3. Hillary’s drawing after class III
(fresh) snow-scape

Journal

- first time I was able to calm down and settle inwards some
- chronic anxiety went way down, even totally gone at times
  - chronic tingling in hands and feet is gone right now
  - wish could do this all day long! Thank you!
- wish I could just let go and BE. just Be, not worry about anything
  - this kind of “practice” gets me as close to it as I can get.

Peace
This is where my healing from post-traumatic stress is going to come from:
getting to know and appreciate my body – relating that this is chronic anxiety,
manifests itself by a strong/painful vibration through my body, my cells.
This kind of body work calms the vibrations, makes them softer and less painful.
Want to heal so badly! Could do this kind of body work forever.

Healing
Figure 5, Hillary's drawing after class V

Breaking out of boundaries

Journal

Want to break free of what tightens me, what keeps me locked in/up.
Want to scream, free myself, get off me, let me be!
Don't hold me back, let me be, let me be free!

Breaking free

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Figure 6, Hillary's drawing after class VI

Rest

Journal

Tired, sleep/rest forever
Just be, not move
Not do
Rest

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Felt energized by the eye-jaw-neck-spine movement. As if my body was awakening, becoming aware of itself and its strength. Brings up some angry-destructive feeling, feeling of wanting to throw a tantrum, go wild, hit about me, but is not negative, rather positive.

Energy
Figure 8, Hillary's drawing after class VIII

Empowerment

Journal:

Pulsing with music felt good, about letting go but also feeling strong – empowered, like breathing through confining boundaries and freeing yourself. Stretching also feels good now, my body starts feeling strong and it gives me a sense of power. This is definitely it for me.

Empowered
During the interview Hillary looked at her drawings and was deeply touched seeing her journey in picture form:

*I can’t explain, but part of it is womb. Part of it is [takes a deep breath, some tears arise] me, as kind of a mass, with existence and with boundaries. And ... I sort of thought about it too, I thought god, why am I always going there, except the one time when I was doing the landscape, the calm part. And so I know it has something to do, it kind of actually [tears arise again] maybe it has to do with affirming myself in the womb or something. Kind of saying you know I am there.*

*I do feel that it is positive that it is this affirmation of existence. An affirmation of a right of existence. That it is o.k., that I have a right to exist, and that the colors are positive. Yes, that it is OK, maybe, for me to exist. And once it is OK for me to exist, it is o.k. for me to be good to myself, to learn who I am. What do I feel inside? What does my body feel? Oh my god, I didn’t realize that I went so far.*

The experience during the last class was very strongly embedded in Hillary’s memory. The participants did a pulsing exercise1, bouncing to the beat of drums and allowing the pulse to move freely through all the joints. A free movement exploration to percussive music followed. It gave everyone an opportunity to dance their own “dance.”

Hillary described her experience during this particular exploration:

*[A feeling of empowerment]. it came from that feeling that I felt actually I can let go. ... that it is OK to let go, and that it feels good to let go. Yes, that it feels good. ... The agitation was way down. Second, there was a feeling of hope and kind of feeling ... my body felt strong. I kind of felt muscles. it felt like strong, ... and maybe it had to do with that it felt like I am not powerless with all of this.*

*Because feeling-wise I do feel powerless, but the experience made me feel that I feel good about my body. I guess. usually I don’t feel good about my body. But actually my body felt healthy and strong. And also that I could learn to let go in a good way, that it will feel o.k. and that it is not that I have to hold on ... I feel like I go through life holding on for dear life. But I felt like maybe I don’t have to hold on anymore. That my body is strong enough. that I don’t have to hold on. That I will survive.*

*I don’t have to do the pulsing. that I can just let the pulsing happen. And it feels good and that is still OK ... It kind of made me feel strong, not just I exist, but I have actually strength, which is very different from what I feel a lot psychologically. Like I am at the*

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1 The pulsing exercise originates from Anna Halprin’s Movement Ritual work (1979).
mercy of a lot and can’t defend myself. In that sense it was important. It made me feel I can do these exercises. It makes me feel my physical being and a certain strength.

All these experiences, particularly the experience of strength and power, contradicted Hillary’s known sense of self. What she discovered kinesthetically did not fit into what she knew about herself psychologically. This presented a shift in her overall sense of self, it gave way to the emergence of a new self. 

It made me realize that I don’t have a relationship to myself. That I am just all doing and out there ... but what do I need to do to be OK just to be, to be OK, just myself, without being it to the outside world? And just the feeling that I have a presence, and existence. I don’t know how to put it in words. Yes, that I am.

In the wake of these powerful realizations Hillary spoke of some other changes she observed, particularly with respect to her state of health:

[There were] times when afterwards I felt really relaxed. I guess when we did a relaxation exercise at the end. Again, it made me feel like I can relax. ... I had this sort of tingling in my hands and feet and I have been feeling it much less. Like right now I don’t feel it. And so I was thinking maybe this yoga and this thing, maybe this really does something. Because, they could not find anything physical. Well, I know it is something physical. It is from not breathing or bad circulation or both. Anxiety! So, it really made me realize that this is psychosomatic. ... Because I saw a neurologist. All he could find that my nerves, instead of firing once, they are firing several times. But he said it is nothing that serious. Unless we find out why, we can’t treat it. ... I felt pretty hopeless about it. I was thinking I had a chronic thing and what I am going to do? And this class made me realize, first of all it doesn’t seem to be chronic since it goes away. And second that it is tied to stress and anxiety. And so it is within my power to do something about it.

Hillary’s keen sense of observation and her refined ability to express herself, made it possible for her to recognize and speak succinctly about the changes she noticed. I felt very blessed by Hillary’s ability and willingness to experience and share herself so deeply. It touched me to hear the rich description of her journey.

Hillary mentioned in her initial questionnaire that she had always been out of touch with her body. During the interview after the course she interpreted this
disconnection as the result of early challenging and traumatic experiences, the experience of not being wanted in the womb and the experience of neglect in early childhood. What was left was simply an overall sense of agitation. Hillary’s life became driven by expectations from the outside, with the experience of anxiety as a constant backdrop. Hence, Hillary documents a very clear connection between the experience of stress/trauma and sensory abandonment, as Hanna (1988) described it in his theory about sensory-motor amnesia.

In Hillary’s case, trauma and sensory abandonment happened so early in life that it interfered with the notion of existence and self. Interoceptive experiences, according to Margaret Mahler (Mahler, Pine, & Bergman, 1975), become the basis for the core of the two-layered body ego, and thus the emergence of self as discussed through the individuation and separation process. Hillary’s diminished interoceptive experience made her feel she didn’t exist.

Through the course Hillary was able to reconnect with her sensations and thus with her body. Through somatic practice she underwent a process of self-emergence, like a germinating cell coming into being. Her journey through the course became a journey of finding herself and coming into existence through sensing herself. She went from feeling agitated to experiencing relaxation and calm. She began to sense herself and her boundaries and her internal energy.

Hillary very strongly portrays how the inner experience of sensation is fundamental in the experience of self. The richer the sensory ground, the more differentiated the sense of self. “Letting go” during the last movement exploration precipitated an intense feeling of empowerment. She hence did not only feel that she

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existed, but she existed with a sense of strength and power, a totally new concept for her. It allowed her to trust herself and her body. Hillary's experience of reconnecting does not mean that challenging moments of agitation and anxiety will never again occur. Yet, her new found sense of existence and empowerment may serve as reference point from which old patterns can be witnessed.

The two body maps that Hillary completed indicated that her overall awareness had expanded. Comforting experiences had increased, painful and challenging experiences had lessened. The tingling in her hands and feet seemed to be gone a lot of the time. She noticed times when physical and emotional pain was absent. Hillary's experience here points toward a connection between body awareness and well being. While many health challenges arise from a host of different factors, it does appear that lack of body awareness does indeed impact healthy functioning. Kinesthetic cultivation thus may become a supportive force in a healing process.

At the end of the course, Hillary presented a different picture about her overall feelings toward herself/body through the final questionnaire than she did initially. From being out of touch with her body on a continuous basis, she described herself now as feeling good after the somatics class. Nevertheless, after a few days she would lose it again and feel disconnected. She did not think that having been involved in somatic practices helped her negotiate stressful situations. The reason for that she thought was the short-term exposure.

Hillary's story presents two themes: The link between trauma/stress and diminished sensations and the connection between kinesthetic experiences and self-emergence. Both themes were also documented through other subjects' reports.
Regarding the first theme, trauma and stress: Whether initiated through accident, sexual abuse or as in Hillary's case, the result of neglect, all the reports describe a certain degree of sensory abandonment as the result:

Tina: "I have remnants of trauma under my left shoulder blade, due to a fall where I caught myself secondarily, first on the hip, then on the hand, right at the thumb joint. And it stoked up the muscles underneath ... I used to have spasms for months, but I've worked that out. But there's residual. I can feel it if I bring my attention there. ... I think part of my senses had moved away from there. Bringing it back in, I really didn't quite know what to do with it. I hadn't been there in so long. So I enjoyed that. I began to feel graceful with it."

Tina: "Did not carry much body awareness during my childhood and adolescence – as a survivor of incest, this was the safest approach."

Helen: "I know I was used sexually as a young child. My childish escape was to 'go away.' I named the experience 'going to sleep' because that was the only reference that could explain the difference between being and not being at the age it began (two and a half). I think it became a powerful automatic response."

Thus, prolonged experience of stress and trauma have very severe long range repercussions. The experience elicits abandonment of the kinesthetic experience. In accordance with Hanna's theory about sensory-motor amnesia (1988), certain body areas no longer provide kinesthetic feedback and are thus no longer part of the inner experience. Places inside the body become forgotten. Although for Hillary, somatic practice did foster kinesthetic awareness and open access to inner experiences, she did not feel it helped her in her ability to negotiate stressful experiences. I will return to this issue at a later point in my analysis.

The second major theme represented through this story is the link between kinesthetic experience and self. Becoming aware of and elaborating the inner experience through somatic practice gave Hillary the notion of self. Other participants confirmed this issue through their reflections and interviews. While Hillary's story highlighted
sensation as the basis for a sense of existence, a self arising out of inner experiences and in relationship to others. Eric’s thoughts focused on sensation as the foundation for meaning making and cognition.

Eric: “The experiences in this class I think have flowed into this evolving thought process for me of not wanting to think in terms of a concrete self, ... [but] a self being an ever changing process and experience. The language doesn’t work very well because at least English specifically, so much of it is centered on the noun, which is such a static thing and the pronoun "I." I’ve been noticing those things so much in my conversations. ... and it affects my thought process, my thoughts are so dominated by language that, even to think about how to do that, it’s been different.

And there are things that I’m starting to pay attention to a lot because so much of my experience are the sensations. The fact that I’m sensing that I’m in a good place in my posture as I’m sitting and talking to you right now. My spine is pretty upright. I’m not slouching. I’m not really tilting my pelvis either way, in an uncomfortable way. That’s part of this experience. ... To notice that and how that’s flowing and changing has been really helpful. Then making meaning out of those sensory experiences and creating a story of myself. ... Those two things are what go together to kind of create the way we establish meaning in our lives.

And coming out of a really conservative Protestant orientation, everything that was emphasized was ideology. ... We had what I thought was a really vibrant community. ... But the community was really sedentary, it was based around sitting down and talking, which I think can be enormously valuable and it was very often for me. But to incorporate my physicality into that, this was something that I loved having direct encouragement of through experiences in this seminar and dance and yoga. ... I think it's been complicated for me because this has also been happening for me in the process of a lot of shifts in my religious orientations. ... I’ve stopped participating in the communities that I was really deeply invested in. A lot of that is due to ideology ... and things that stopped making sense to me, but to which I had previously been really committed. A lot of it is based on some of what I feel is a recognition of things.

I feel like of 6 billion people on the planet, all of us are constantly having all these sensory experiences, and we’re all making sense out of those. And it seems to be a process that we can't really help it. It’s just something, whether it happens through habituation, it might. ... But to feel that maybe there’s not as much that separates my making sense out of my experiences today, from somebody in Southwestern Australia who’s having lots of sensory experiences right now and making sense out of those. Previously I would have separated myself because of religious categories that I would put them in and that I would consider myself to be. And I’ve really been pleased to try to consciously dissolve this division I’ve created between self and other.
It's been enormously helpful for me to become more in touch with my sensations ... because [what I have left behind] was very set and established [with] supposedly reliable ways to interpret all of my sensory experiences that were governed by doctrine and ideas about God in that setting that I wasn't comfortable with anymore. So to be in places where people are actively encouraging me to pay attention more attentively has been really stabilizing for me.

I think [it creates a new reference point]. And one that I feel is a lot more flexible and where it isn't about conformity in any way. Whereas if I had certain types of experiences in the church settings that I was in, it was like a ready-made formula. Like if you have this experience, this is what it means. I'm at the point where I've had this experience and I don't know what it means and I don't know if it has an inherent meaning to it. ... At times it's really unsettling because it was really comfortable feeling everything had a set meaning. It made things, what I feel, a lot easier.

Eric very eloquently speaks about sensation as the base of making meaning. In alignment with Piaget's theory (1976, 1982), he describes sensory experience as the foundation for abstractions and concepts. If sensory experiences are abandoned, conceptual abstractions become stale. Ideologies become restrictive rather than supportive. On the other hand, sensory experiences present a bond between humanity. Everyone experiences a certain amount of sensations all the time. Sensation becomes a connecting thread that goes beyond ideology, religion, country, geography. It connects humankind.

Both Hillary's story about finding herself and Eric's contributions to the issue of meaning making and sensation underline the understanding that self and sensation cannot be separated. They highlight sensory experience as a fundamental human experience in a very pronounced fashion. In chapter 2, I discussed in depth the range of self, spanning from a conditioned to an unconditioned self. Hillary's story and Eric's thoughts speak mostly about the conditioned self, emerging with the development of the human individual. The following narrative presents a glimpse into the unconditioned self and moments of expanded awareness.
Andrea is in her mid-50s. She is on staff of The Ohio State University and attended a short somatics course I offered in her department over a year ago. From the very beginning Andrea was very interested in somatic work. "*My background is health education. We focus on disease prevention and that, but we really don't do much with the body-mind connection. So I have always been interested in the subject.*" She wanted to participate in the course to become more in tune with her body and improve her mental and physical health.

Andrea had a heart valve replacement four years ago and had suffered a heart attack during open-heart surgery. She described her body as having become less flexible with age and less able to endure physical activity. Lately she often felt tired and stressed. These changes are irritating to her and difficult to accept. Of her inner body sensations, she noted that she is most aware of her abdominal muscles and frequently notices upper back or shoulder pain. She describes her posture as slumped forward with rounded shoulders, especially when working on the computer all day.

Andrea found the meditation or awareness practices together with breathing very beneficial. "*The breathing and the meditation part sort of went together, like doing a physical activity that helps you focus during the meditation.*" Drawing her experiences was a new challenge for Andrea. As the weeks went on she felt more comfortable and able to express herself through drawing or writing. Although Andrea was not able to attend all the classes – she had a skiing accident mid-way through – her experiences during the course were very profound. They describe the notion of non-ordinary states, experiences when ordinary reference points of body and self drop away.
Mind drifted to thoughts related to family and work activities.
- Finally started to focus on body parts suggested by Theresa.
- One point not sure if I fell asleep or really was able to relax and follow suggestions.
- Later focused on suggestions and felt sense of warmth and felt contact with objects on the outside of my body — mat, floor, socks, collar of shirt, head on mat.
  - Loved music, really added to relaxed state of mind.
- By end of session was able to put outside distractions out of my mind.

Deeply relaxed
Journal

I was late arriving at session and felt a sense of rush, rush, rush. Could not focus at first and mind continued to drift to my life's issues. After starting physical movement, began to focus, began to relax, began to drift into myself. Looking at the clock after what seemed a short time, I was surprised to see many minutes had gone by - relaxing at last. It's good to have this time to focus on me. Feel refreshed at the end. Thanks Theresa
Journal

Still trying to focus and to relax. Think I'm being able to focus easier and quicker.
But still not there yet. I do love these sessions and feel refreshed after each session.
Have not practiced outside of class, but plan to do so beginning this week.
Journal

Felt sad and depressed and upset about my physical injuries at beginning of session.

Had some complications from injury - two-day nose bleed that required hospitalization and developed a cold over last three days.

Didn't realize I was depressed and upset about all until beginning of class.

Had shallow breathing at beginning, then movement helped to relax and breathe deep.

By end of class felt better, more relaxed and breathing deep.

Breathing deep
Journal

Beginning the session, I felt some discomfort in my hand and rib due to the broken bones. As I did the exercises I slowly focused on relaxation and sensation of comfort. For a while I was distracted. When I stopped again I was aware of pain and discomfort. It was nice to feel other sensations for a while. During the week – at least two – three times a day I visualize healing – kind of a warm sensation in rib and hand/thumb.

Healing
Journal

Despite of physical distractions, I could float off with the music and the breathing. It was like I lost track of time. This is the second time during class sessions that it happened. Not sure what happened. Was I asleep or in a trance? The feeling is so relaxing, so wonderful!

Trance

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The titles of Andrea’s drawings after the second and after the last class indicate significant experiences. Andrea came up to me after the second class and told me that she thought she might have fallen asleep, yet, she was not quite sure. She thought she went “somewhere.” She titled that day’s drawing “en-light-enment.” After her experience during the last class, which she called “out of body experience,” she spoke with me again about the experience she had drifted into. She wondered if it had been a trance. It was intriguing to me that she did not mention either of these experiences in her final questionnaire, nor during the interview. Only when I specifically asked her about it at the very end of the interview, did she talk more about it:

I was thinking about [the two trances] when I was coming over here too. It’s really kind of difficult to describe. Both times I think it was toward the end of the classes, and they weren’t two consecutive classes either. One was before the skiing accident and then the other one was at the last class or the class before. The music was on and I was laying flat on the mat in both situations and I was focusing on the breathing or the exercise ... I was listening to the music. Then all of a sudden it felt like this time had lapsed and I don’t know what I was thinking or doing in that time. I knew some time had lapsed. ... The first time I said to you ‘I don’t know if I fell asleep or what.’ I don’t think I did. ... I wasn’t tired or anything. At first that’s what I thought it was. But then it happened again and it felt the same way, like I had fallen asleep, only. I knew I hadn’t fallen asleep.

[I felt] just really relaxed, like everything was cleared out of my head. I wasn’t laying there thinking about obligations or work or anything like that. It was like everything cleared out of my head and the only thing I can remember is the music. I guess I was somewhat aware of the breathing but the thing I was most aware of was the music. ... I’ve never experienced anything like that before so it’s really hard to describe.

[There was] no [sensation], just the breathing. I was kind of aware of my breathing but that was all. ... Maybe, kind of I was light, like none of my body felt heavy. Everything just felt kind of light and comfortable. My head was just kind of clear. ... I wasn’t aware of the class or the people around me or you or anything like that. ... I didn’t feel like I was there.

I just wonder if I was weird. I haven’t told anyone else about it except you because it feels so strange. But it was nice, it was a nice feeling. ... I said something to my husband about it but he just pooh-poohed it. ...
The only thing that I could even remotely think was ... similar, is when I used to jog a lot, I used to run a lot. After you've built your physical body up, then you can tolerate longer distances. I would get this euphoric feeling in my head but also in the rest of my body. It wasn't like tingling. I've read about that ... the endorphins or something.

Even though Andrea was somewhat shy about her experiences, it was apparent to me that her “trances” were quite powerful. Andrea experienced a state that she usually does not have access to. Although she could not quite understand what happened, they felt significant to her. Both experiences happened during the “open attention” phase at the end of class, while she was lying on her mat, having her eyes closed. After having completed the various moving and breathing practices, it was time to simply be aware of whatever occurred in the body and to surrender to the body’s processes (Dogen in Yuasa, 1987).

All of a sudden time lapsed. She could not recall what she had been doing or thinking. She had a feeling of having been in the gap. Everything was cleared out of her head. She only remembered the music and somewhat her breathing. Her body experience was different than usual. There was no sense of heaviness. Her whole body felt light. She even called the experience “en-light-enment.” highlighting the word light. She was neither aware of me as teacher, nor the class. For moments – moments of absorption (Austin, 2001) – she had a sense that she, as an “I,” was not present. The distinction between the “I” and the “you,” between “self” and “body” had disappeared. There was simply a sense of clarity and presence.

This was such a new experience for Andrea that it was hard for her to talk about it. Some of her difficulty sharing it seemed to come from her fear or being considered “weird.” Non-ordinary experiences don't happen every day. When they do happen, they
are hardly talked about. So she felt she would be considered strange would she speak of it. In fact, when she did tell her husband, who seemed to have no reference point for it, he didn’t realize how significant the experience was for Andrea. He “pooh-poohed” it. This issue provides support for my call to include somatic theory in cultivation practices. Only when we find “validity” for our experience through other people’s reports or via theory, will we be able to embrace our experiences more fully, particularly those which are considered to be out of the ordinary.

It was also difficult for Andrea to put into language something that was not fully conscious. After the first experience Andrea wondered if she had fallen asleep. Sleeping, though often experienced as a pleasant activity, is most generally not considered significant. By putting the experience in the category of “sleeping,” Andrea thus was not giving it much significance. Nevertheless, she entitled her drawing “enlightenment.” The title alone expresses a deep profundity. Looking at both together, it becomes evident that Andrea was ambivalent toward her own experience. On one hand she felt it to be deeply significant, hence the title. On the other hand she relegated it to a state as ordinary as sleeping. In accordance with Rush’s theory about awareness (1970), the content of awareness and attention is determined by our systems of meaning. It is difficult to notice, let alone speak about something that holds such discrepant meanings in one’s own consciousness. Both of the above issues are possibly the reason why she did not mention her “trances” in the questionnaire, nor in the interview, until I specifically asked her about it.

It is very telling that Andrea relates both experiences to moments of euphoria and elation when running. She is making a connection here between “peak performance” and
“peak experience” (Privette, 2001). The first one came about at a time of heightened physical activity, the second one emerged at a time of extreme relaxation and surrender to the body, thus both related to bodily practice of some kind. In relating these types of experiences to each other, she created a reference point for herself. This might aid her in honoring her non-ordinary experiences during this course, rather than simply “forgetting” them. When talking about it during the interview, it became obvious that both experiences were still quite present for her. She was interested in reading more about it. It seemed that both had a catalytic function and will continue to propel her to inquire into experiences of this kind and to seek further understanding of their significance.

With the background of these non-ordinary experiences, Andrea talked a bit more about her issue of interest, the body-mind connection:

*I kind of knew what it was about, but I didn’t really pull it all together ... only the last couple of sessions where it was more like an “ah-ha!” Doing all of these things gives you different opportunities to really focus on your body, to become more aware of your body. It is almost like you’re standing outside looking in. ...I’m just able to look at it more objective, like it’s a living, functioning entity that has special needs. I don’t know how to explain it.*

It’s my body. I take it for granted. It’s just there. It does all the things for me I need for it to do. I get frustrated when I run out of energy or I get tired, or I can’t climb five flights of steps like I used to. It’s supposed to do all these things for me. Now I have a better appreciation that it isn’t just the physical thing but it’s the mental thing too. It’s all connected and you have to take care of it. ... Yes and how everything is connected. I’ve read some and attended conferences where they talk about the mind-body connection. I think this experience has helped me pull that together more. ... I think experiencing it makes more of an impact.

Andrea here is grappling with the connection of body and mind. Her language on one hand very much represents a division of the two, the physical and the mental. Yet, she attempts to reconcile the separation by saying that the body is not just this mechanical
thing, it is mental too. Both are connected. In alignment with Yuasa's theories (Kasulis in Yuasa, 1987), she tries to come to terms with the notion that body and mind are discernible, yet not separable.

Having had such profound and significant experiences, Andrea nevertheless had to deal with her injuries from the skiing accident. She had to face pain and discomfort. She experimented with different ways of embracing pain and discomfort rather than fighting it:

*I would think about the two broken areas in my thumb and in my ribs and I visualize these warm rays or something, kind of focusing in and radiating to those areas. That was kind of my visualization. I did it everyday and then throughout the day. ... If I had some discomfort I'd do my visualization again.*

Andrea in her introduction mentioned that she wanted to improve her physical and mental health. Obviously on one hand her physical health took a beating, due to the skiing accident. On the other hand she found ways to enhance both her mental and physical health by relaxing and deeply entering into her body and experimenting with visualization practices in support of her healing process. This goes hand in hand with the thoughts she shared with us about the body-mind connection. If the body is not just this "physical thing," but inseparable from mind, then mind can be a supportive force in a healing process.

At the end of the course Andrea felt that her ability to attend to her body had increased. In her rating via the questionnaire, the kinesthetic experience moved into a prominent place in her awareness. She developed a renewed awareness of her heart, even to a point where she was able to do her own bio-feedback, as she was listening to the sound of the heart beat during particular exercises. She did not feel her experience had
an influence on her ability to negotiate stress. She felt she would have needed more practice. It was important for her to allow feelings of depression and discomfort to surface. She gave herself permission to not have to be happy and energetic all the time. By embracing it all she recognized her body as a living, holistic entity, not at all a mechanical thing.

The issue of bodymind unity is the main theme emerging out of Andrea’s story. This theme also runs through the project as a whole and was expressed several times by other participants who similarly reported some type of non-ordinary experience:

Corey: “The pulse was everywhere and connected. What is this beat, beat, beat pulsating through my body. The beat, beat, beat of the drum, the heart, the blood in my veins. The pulse is everywhere. The pulse is peace. the pulse is calm. the pulse is me.”

Eric: “The music courses through me and I am alive. The sonorous pulse fills my veins, my limbs, my neck, and I move ... environment fades away, people fade away, light fades away and I slither through empty space, filling it, abandoning it, traveling, singing with my physicality and I become music ... Soaring over a tropical ocean.”

Paula: “After the neckroll. I felt lighter but more in my body as if my soul were swirling around in my atoms. very light. yet still encased within myself. ... Reverence.”

Sensory cultivation practices, particularly when done mindfully, provide opportunities to comply with the body (Dogen in Yuasa, 1987). Many of the above experiences speak of surrender to the body. Through focused, yet relaxed awareness, the separation between “I” and “body” became lost. It was replaced by the sense of being the very process of the body itself, the pulse that fills the veins, the pulse that is self. Such deep descent into the body brought forth direct experiences of soul - the soul that is swirling around in the atoms of the body – and expanded consciousness. The kinesthetic experience hence became the umbilical cord to being.
Andrea’s story gives a glimpse into the experience of the non-conditioned self. Experiences of this kind emphasize that the human potential for expanded consciousness is deeply linked with sensation. Andrea’s experience of going beyond her ordinary way of experiencing herself and the world around her arose through entering into her body. She relaxed into her body and surrendered to its processes. This became the gateway for the experience of a less conditioned reality, where separation between mind and body become blurred.

Like Hillary’s story, Andrea’s story evidences that kinesthetic experience and the experience of self are interwoven. Hillary’s story highlights the emergence of self; Andrea’s tale magnifies the transformation of self. These stories, along with related reports, underline that kinesthetic experience is fundamental in human experience. It presents the base for the experience of self and the experience of no-self. However, sensing is often a lost capacity. Long-term sensory amnesia can become such a habituated state that it is very difficult to reverse its grip. The following narrative gives us insight into its persistence.
Can’t Feel My Internal Sensations

Inez is on staff of The Ohio State University. She is in her late 50’s and heard about the somatics course through a colleague. Her interest in participating in the course was to get to know herself better and help her meditate. In the initial questionnaire she described her feelings toward her body as “not very good.” Inez was diagnosed with multiple sclerosis (MS) four years ago. She had been physically active throughout her life and resulting movement limitations have been difficult for her to accept. She has problems balancing and walking and is fatigued a lot. It is hard for her to concentrate at times. The movement limitations make her feel vulnerable, particularly at times like when she fell at the beginning of the course and had to receive stitches in her chin and needed extensive dental work. Migraine headaches have been an ongoing challenge since she was a teenager. Inez has been in recovery for alcoholism for more than four years.

Inez considers her hands the body area she is most often in touch with. When asked which body part she is least in touch with she responds “just about all of me.” except when she gets a massage every other week. Then she notices sensations all over her body. She describes her movements as stilted and her posture as caved in, particularly when she works on the computer a lot. Although Inez notes feelings of happiness and sadness at times. “most of the time I feel that my emotions are kind of numb.” When feeling critical of herself she feels older and worthless and yearns to be in her 20s again. Inez regrets that she has never been able to meditate, although she does pray sometimes. She does not engage in a regular practice or activity, though she likes gardening and enjoys seeing things grow.
During the course it was difficult for Inez to pay attention to her inner experiences. Her mind would wander, as she could not sense much inside. She liked exercises that involved stretching and various breathing practices. Drawing and writing after class was difficult. No particular images would come to mind and it was generally difficult for her to find words. She had to muster up a lot of willingness to stay with the process. She managed to be present at every class and participated in all the activities and practices. The following documents Inez’ journey through the course.
Was somewhat numb in areas. Mind kept traveling to the day's events (7:30 a.m. – 4:30 p.m.). Sounds outside the room were taking part in the travels of my body. Exploring my rib cage was the most noticeable. Stretching felt wonderful!
Figure 16, Inez’s drawing after class II

Tight

No journal entry
Journal

I don't see any images to draw.

I am becoming more aware of my breathing (or lack of it, actually).

I hold my breath a lot.

During the "Hu [sic] breath" exercise I became a little light-headed.

It feels good to stretch.

Limber

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Journal

Class flew by tonite.

I felt my body in every nook and cranny.
The fast breathing is hard for me – I get dizzy.

Concentrating on my stomach is where I can feel the most sensation.

I am going to make more of an effort during the next week to pay attention to myself.

Storm
Journal

I feel my body was stretched in every which way possible. Parts of my body turned warm and tingly - and a little bit shaky. When we left the area "below our belly button" it wasn't easy to stay focused on new areas. I kept traveling to different areas.

"Progress – not perfection."

Progress
Figure 20, Inez’s drawing after class VI

*Burning*

Journal

Be aware of your senses. My body was burning tonight. I felt somewhat uncomfortable most of the time. I am experiencing a small headache. The pounding up above didn’t help [someone was bouncing a ball in the gym above]. I felt stretched to the MAX. Uncomfortable
Journal

I enjoyed the movements involving the eyes, tongue and jaw and the neck/spine.
My body feels a little sore but not painful.
Class seemed to go by fast tonight.
Restful
I couldn't close my eyes while "pulsing." But I just kept looking down and that worked. Had to stop several times because of dizziness. I am still reminding myself to breathe.

Light headed

Journal
Inez’s body appeared tight and tense, particularly during the first part of the course. Her rigid movements gave me a sense of her diminished sensory experience. Due to MS, certain movement exercises were challenging for her and she had to adjust to them. Some she was unable to do at all. During relaxation practices, I often noticed her moving and fidgeting around. It was hard for her to relax. Inez appreciated and enjoyed the stretching and breathing exercises the most. Both initiated noticeable kinesthetic experiences. During several somatics sessions, particularly in the latter half of the course, she reported very pronounced sensations as well as experiences of rest.

During the interview, Inez’ responses were quite short. Unless I kept probing, she did not elaborate on any of the questions. It was hard to get into the flow of a conversation. As she previously noted about herself, it was in general not easy for her to find words. The interview was quite brief, yet still gave some insight into her experience during the course and afterwards. Overall she felt she had learned to relax and be less tense. I have not made much movement towards meditating, but toward relaxing more. Yes, I have. Yet, these experiences were primarily available only during class. [F]or the most part it only happened when we had class. I am not much for self-discipline. When I go home in the evening I just kind of slug out. I did not practice during the week.

Inez considered her most important and somewhat lasting experience her increased awareness of breathing or the lack thereof. At different times of the day, outside of class, she would remember paying attention to her breath:

Like driving over here I caught myself not breathing. Breathe! And I think I mentioned to you in one class, when I was in a dentist chair and I thought back to the class and to breathe, to help me relax in the dentist chair. And when I sit on my desk, I catch myself. I have to remind myself like every other minute practically. It is just years of being tensed up and not breathing. ... Immediately when it comes to mind, I realize I am not
breathing at all. And then, it is like a rush [deep breath] and then I start breathing. ... At the same time when I realize that I am not breathing I also realize that I am tensed up in my shoulders. ... When I did catch myself not breathing and would start to breathe, I would catch myself paying more attention to me at that time, with the breathing. It helped, being with me versus just this person that wasn't breathing, that doesn't have feelings. Because you almost don't have feelings or sensations in a way.

In my view, given Inez remembering to pay attention to her breathing at various times during the day, constitutes a noticeable and very positive change. Breathing is a very powerful avenue toward awakening inner sensations (Conrad and Harper, 2001; Mittendorf, 1995; Speads, 1995). It will invite movement and life back into abandoned areas and over time initiate fuller kinesthetic experience.

Overall it appears that Inez is living with a very severe condition of sensory-motor amnesia. She talks about an overall numbness of sensations and emotions. If she notices sensations, then mostly pain, burning, tingling and fatigue. Of course Inez' sensory-motor amnesia cannot be looked at as unrelated to her MS nor from being a recovering alcoholic, although it is difficult to know how much both conditions influence sensory capacity. Inez did not give us any insight in the development of her sensory-motor amnesia, besides noting that she has been under stress for a long time. “It is just years of being tensed up and not breathe.” Whether there were other particularly traumatic incidences along the way remains a question.

Inez's report documents the connection between muscular contraction and diminished experience (Hanna, 1998). Diminished movement and breathing means diminished feelings and sensations. This chain of events eventually creates alienation from one’s inner experiences. Inez’s sensory-motor amnesia was particularly evidenced through the reflective drawing and writing after the first class. Inez described numbness
and drew a body that had no content. Yet, contrary to this, the report and drawing after class IV “After the Storm” documents a very enhanced kinesthetic experience, “I felt my body in every nook and cranny.” Even though she did become aware of pronounced sensations right after some somatic explorations, like the above, she did not “remember” these in her reflections through the final questionnaire or the interview. When asked if the course had met her expectations she stated: “yes – met my expectations. Only thing was with myself – I couldn’t feel my internal sensations very well.”

Inez basically felt that her participation in the course did not have much of an impact on her experience of her body, except for remembering to pay attention to her breathing every so often. After the course was completed, Inez didn’t remember those moments when she felt “every nook and cranny” of her body. She also did not notice any change in her kinesthetic experience. Similarly, when comparing Inez’s “before” and “after” body maps, hardly any signs of change were noticeable. Both drawings are astonishingly alike. In neither map did Inez indicate any comforting or enjoyable sensations. The only change in the “after” map was one more place of challenging sensations, on top of her right eyebrow. Additionally, her rating of the kinesthetic sense in terms of its primacy in her experience decreased in the questionnaires from second place to fourth place. Her participation in the course did not alter her MS symptoms. Nevertheless, she felt she was remembering to be more attentive. I think I was paying more attention ... than I have been previously. I make more of an effort, to say, when I lose my balance, if I quickly turn to the left. Inez’s responses point out a discrepancy
between kinesthetic awareness right after somatic practice and kinesthetic awareness several days later. I will come back to this in the following chapter on findings and implications.

The issue of sensory-motor amnesia did surface several times throughout the course as participants reported difficulty in noticing their sensations. Some continued participation in the course; others did not. I speculate that several of the people who did not complete the course did so because it was extremely difficult for them to become aware of their inner sensations. Unlike Inez, they did not have the patience or interest to pursue sensory cultivation. Amelia, for instance, approached me after the second class and gave me her writing “Experienced nothing, felt lighter. very, very hot.” Amelia did not return to the course after the 4th class. Jenna, who also did not complete the course, and others expressed similar difficulties:

Jenna: “Looking for ? Difficult to focus on ‘center.’ nothing there.”

Danielle: “I found the focusing difficult. There seemed to be nothing to feel in that area.”

Helen: “I was trying to be in a place that I couldn’t find.”

In cases of severe sensory-motor amnesia, not much can be reported. It is a blank in our sensory experience and we don’t even know it (Hanna, 1988). Descriptions about this blankness are thus usually short. As more sensation arises, more description becomes possible. Once there is awareness about a particular area, numbness has already receded. For instance, Corey reports: “I forgot I had shoulder blades and was not
conscious/aware of the beautiful dance that they can perform.” Corey, instead of simply looking at a blank, with not much to report about, had experientially already identified her shoulder blades. There was no longer a sense of nothingness.

Inez’s story and other reports evidence the condition of sensory-motor amnesia. Sensory-motor amnesia presents a diminished sensory experience that creates an overall sense of numbness and makes it difficult to develop awareness inside the body. Although the theme runs through the whole data corpus, it can still only hint towards the significance of its occurrence. I consider this condition to be very prevalent and far-reaching. The more severe the condition, the less there is to say about it. A severe case is often not recognized as such, as it is taken as the normal state of affairs. Unawareness about it prevents dialogue about it. This makes it very difficult to counteract the condition. which. looked at from the “diminished” point of view. simply does not exist.

But even when acknowledged, as in Inez’s case, severe sensory-motor amnesia is not easy to reverse. According to Inez, her participation in the course had only very limited sensory cultivation benefits, although she noticed some possibility. “Before taking the course I didn’t realize that you can feel many sensations inside your body. While I really don’t feel many sensations. I believe with practice I eventually can become more in tune with my body.” Such minimal benefits of somatic practice, at least under the conditions of this study, bring us to the question of cultivation. To what extent and under what circumstances can sensory experience be cultivated? Which type of practices will support or initiate the process of sensory awakening most? The following paragraphs address these questions.
Cultivation Practices

The particular cultivation practices included in the program were attention exercises, breathing practices and movement explorations. The theoretical underpinnings of these were described in chapter 4. Many of the practices were new for most of the participants. To understand how the subjects took to these various modes of cultivation and how they experienced the respective benefits, I will present some general responses expressed by the participants.

Awareness and Attention Exercises

Many of the participants spoke in their interviews or journals about their difficulty in paying attention to their bodies and bringing awareness to their sensory experiences. Other experiences or thought processes interfered with this process, making it difficult to stay focused on sensations:

Natalie: “As we first started the experience, my mind was busy. I was thinking about things I needed to do.”

Inez: “I had great difficulty in feeling the awareness inside my body, and moving to different areas. My mind would wander and I really didn’t feel connected to the inside. I could never really concentrate on one area.”

Annette: “The attention was the most challenging for me because I found that I didn’t have a focal point. You would tell us to bring our attention to the knee and my attention would stay at my knee for approximately two to three seconds, and then I would go off into fantasy. I have a very vivid imagination so it’s almost like the resting quality would bring out the dream aspect. It was hard for me to pay attention.”

Most people don’t consciously register their internal sensations (Bermudez, Marcel & Eilan, 1998). When asked to veer attention toward this particular dimension of experience, there is often a sense that nothing can be found. There is sensory numbness, while other areas are very actively and habitually calling for attention. Thoughts, images,
emotions take over. Sensory input is below the threshold of recognition (Austin, 2001) and kinesthetic experiences are often not at all or only fleetingly recognized. An appropriate lens for noticing sensations has not been cultivated. Stimulation of sensory experience and continued practice of attending to sensation begins to develop awareness for this new territory:

Janice: “I really liked the meditation. I think I appreciated the meditation more because we were active in the beginning, we did our breathing, our exercises, the movement. I think I would not have enjoyed the meditation as much, had we not preceded with those two things. Like if we would have started out with that, I would have not been ready to meditate at that time.”

Awareness for the kinesthetic experience is being initiated or fed via breathing or movement practices (Hanna, 1988; Conrad, 2001). These initiate motion and increase sensory stimuli, thus presenting the possibility for sensations to become conscious.

**Breathing Practices**

Every class included at least one breathing practice. Most participants experienced the breathing practices as enlivening or supportive in becoming aware of kinesthetic experiences. Some breaths were practiced several times over the duration of the course, like the “Hu” breath, a fiery breath exercise focusing on an accentuated out-breath; or the “Lunar” breath, which is soft, calming and cooling. Following are some responses to breathing in general or the two breaths in particular:

Annette: “The ‘Lunar’ breath was amazing. ... A lot was going on right then, but I felt an amazing amount of, there was a physical sensation to hold on to. ... It just absolutely went all the way down and that was amazingly powerful ... for such a simple thing ... It’s like a liquid spilled out down over my chest. It kind of went right over my breasts and then faded but it really was very liquidy actually. I really had the sensation of the breath leaving from here [throat] and spreading out, which I thought was very interesting. ... I wasn’t expecting it. Often times they’ll tell you or you would hear what I should

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Both the “Hu” breath and the “Lunar” breath arise out of the Continuum movement work (Conrad & Harper, 2001).
expect in a sense ... I haven’t ever stuck with a practice long enough to get through that initial period of learning it, so that you don’t have any sensation, like you don’t speak the language. To have it be that readily available was interesting and memorable.”

Abby: “The ‘Hu’ [sic] breath seemed funny at first. I wanted to smile. It was something completely different than I have done before. But afterwards the feeling in my lungs was great. It was like all the old, dead, stale air was gone and my lungs felt fresh and clean. It was comparable to chewing a new stick of Doublemint gum. ... It worked and you could feel the difference inside afterwards.”

Eric: “The ‘Hu’ breath, I was really glad we had our eyes closed for that, because I feel like it is such a silly type of breathing to do and certainly an effective one. I really felt invigorated and warm when we were doing that.”

Helen: [After ‘Hu’ breath] “I was going, wow look, you could stimulate your guts, the inside.”

Yet, breathing practices did not come easy for everyone. Some participants reported the breathing exercises in general and some breaths in particular as quite challenging.

Mostly because they were so different from how they usually breathe:

Hillary: “I had trouble with ... I think mostly with the breathing. And that I think has to do with me because I breathe very shallow and very fast because I am very anxious always. And so, especially the ‘Hu’ breath, I had a lot of trouble with it. The other one, the calming one, the ‘Lunar’ breath that was OK. Or the one changing nostrils, that was OK. But the ‘Hu’ breath I had a lot of problems with.”

Janice: “The breathing techniques I think are really helpful in life situations. The one I didn’t like was the one where you had us close one side of our nose. I felt that sort of suffocating. So I probably would never practice that one.”

Breathing is a strong initiator for movement on all levels. It very profoundly and powerfully can disrupt or bypass habitual movement patterns (Conrad & Harper, 2001). This may be experienced as invigorating, profound, or challenging. Some breaths may initiate more sensation than the organism can handle at a given time. It is thus important to honor the individual response to any of these practices.
Cultivation through Movement

Movement practices constituted the bulk of the course. As described, the range was wide, from structured movements, stretches or postures, to movement explorations, exploring extrinsic and expressive movements as well as intrinsic movements. These various explorations were mostly reported as helpful, supportive, invigorating or freeing.

Danielle: “Stretching feels so good! I forget. I forget how to do it because I forget to do it. Stretching was wonderful. It awakened me to areas of my body that I have forgotten exist.”

Helen: “The stretching produces more sensation and blocks much else. On the floor I am more aware of stretching tight muscles than length of body or body position.”

Corey: “The movement exercises are just so important to me because I can just feel how they’re opening up spaces that were tight and closed. They’ve been really, really good for me. They’ve helped me to understand that life is fluidity. Just how important that is to keep those channels open so that life can flow through.”

Helen: “The last movement type you talked about is this free movement and I was surprised especially at the last class because typically I’m not that comfortable putting a lot of things together and just moving. I feel very awkward, physically awkward and stiff. But the way that exercise was set up, by the time, not even at the last one, but by the time we were doing what I think you called the free movement of expression, by the time we got there I was really like, “Hey, I’m almost dancing.” It was really different because that is not something that I have explored. To do it meant that it was possible and that was new for me.”

Janice: “I liked the movements. ... probably the exploring movements. ... Yes, it just was freedom. We could just close the eyes and moving without being observed by other people, because their eyes were closed too. And I liked that. I think you are surprised at how you move, when you are not thinking about it, when you are just doing it. And more satisfaction out of that movement, then being told specifically what to do.”

Eric: “It was so new to me to exercise my eyes, in particular. That was wild. Afterwards, when we were completed I had the opportunity to pay attention to what has changed now. It was just something that felt brand new. I’ve done things like learning to cross my eyes. I’ve never consciously worked at exercising my eye muscles before. I am trying to remember. It was strange, I didn’t feel anxious or afraid, but there was kind of that edge to it. Like just, I’ve never done this before. I think there was some throbbing of
those muscles, going on afterwards that I didn't know what was going on and just really kind of strange. It wasn't uncomfortable, there wasn't pain or anything associated with it, just it was so different.

Helen: “I appreciated that there could be movements, very, very, very small movements that I could choose to be aware of and that I could pick up on.”

Different types of movement will invite different sensory experiences. Many of the explorations allowed the participants to explore qualities, dimensions and places they were not familiar with. They initiated sensations of the somatic, autonomic and subtle circuits (Yuasa, 1987). Stretches, as Helen very clearly points out, often present a wonderful gateway into the body. The sensations initiated through them are very pronounced. Intrinsic movements on the other hand, often take the mover to a new and profound depth within the body. Expressive movements were challenging for many, thus they were presented toward the end of the course. As much as movement presents the ground for new sensory experience, it also offers feedback about limitations:

Danielle: “I find myself limited, unable to perform movements that used to be easy.”

Thus movement practices bring to light experiences of freedom and experiences of restriction. Movement calls forth awareness about the current bodily state.

Overall, the subjects reported most of the active practices (breathing, moving, writing, drawing) as supportive and engaging. In contrast, the attention practices were often described as challenging and difficult. Active practices for some subjects became the bridge towards subtle, meditative activities. On the other hand, contemplative explorations appeared to fine tune the capacity to consciously attend to the experience of motion. Thus movement and stillness become a cross-fertilization in the overall process of cultivating sensory awareness. In general, even though individuals may gravitate
toward one or the other exercise or activity and may have difficulty with others, the
above reports demonstrate very clearly that collectively, they do have a very profound
and positive impact on sensory experience.

Reflective drawing and writing were included into the course as a form of data
collection. Yet they also became a major tool in the pursuit of cultivating kinesthetic
awareness. Below I present some of the individuals’ responses towards these activities
and discuss in more detail the resultant cultivating benefits.

Reflective Drawing and Writing

Every class concluded with reflective drawing and writing. The first time I
presented the instructions, the response almost to a person was “I can’t draw.”

Nevertheless, all the research participants were willing to engage in it. At the end almost
everyone regarded at least one or both of these exercises as helpful.

Janice: “Actually I think it was supportive. I am not an artist, by any shape or means.
But I think it made you think about what you felt and how you experienced it. And
although your drawings can’t exactly show that, I think you were able to get these
sensations in. So I think it completed your day, your evening. I didn’t think it would.
First, when you first said to do that I thought oh, no. I think the chewing helped with the
writing. And I always did the drawing first and then I would write. And sometimes I
found myself that I could go back to the drawing. The drawing helped me to put it into
words and the words helped me maybe to complete the drawing.”

Corey: “You know, with the drawing, I’m just no artist at all in terms of being able to
draw. But the drawings, eventually I stopped trying to think about what to draw and I
just let myself pick out colors and let myself do what I felt like doing with those colors.
Still with some thought of what I had experienced in the meditation part. Some of the
colors I saw in there and some of the shapes and figures that I saw and the movement of
those, like spiraling up, flowing out of the colors and the shapes.
With words people know exactly what you’re trying to say but then with those images,
people might have a feeling for what I was trying to say. The words I used were often
descriptive of that feeling. But of course you lose some of that feeling with words. By
having to write it down, I think I took more care in choosing the words to express that.
And actually, I think the drawings helped me to find the right words.”
Eric: “I don’t know if the term poetic works – but I’ll use it. I’m just trying to play with language and not feel like I had to write in paragraphs or observe proper grammar or punctuation was really freeing to me and it was a little more familiar than the drawing.”

Thus, writing and drawing were not only important research tools, but also an important force in the process of developing kinesthetic awareness. A few participants, Inez for example, did not experience these activities as helpful.

Inez: “I don’t do well with journaling and writing. I never have done well. And I had trouble visualizing, drawing. Nothing really came to my mind, I would start drawing immediately. [I]t is difficult for me in general to find words.”

I very much appreciated the participants’ willingness to continue with drawing and writing, thus reporting about the experiences.

Both writing and drawing began to create an avenue for the silent world of sensation to come forward. Several course participants told me how important it was for them to hear verbal examples, words for sensation. Helen expressed it this way: “I didn’t have the vocabulary or know what to look for.” Various suggestive qualities for sensations such as dense, light, vibrating, soft, smooth, rough, moving, wet, dry, porous, flowing, swirling, hot, etc. were presented at different times during class. Once the participants heard possible adjectives for sensations they were able either to relate them to their own experience or to come up with new adjectives. Language thus became a way of recognizing more shades of the palette of sensory experience. Some participants, through descriptive and metaphoric language, reported very differentiated sensations.

Helen: “I felt a blanket of space or sensation extending beyond my body on the left side of my body. Where on the right I had a darkness that flowed from above. Between the two there was more of a feeling of twisted movement. Sometimes a screen/curtain came from above. I felt I was experiencing whole parts of my body in vastly distorted patterns. The left side was my whole body, the dark side was just a part of my head, the pulse came from near or above my ear, reflected a heartbeat.”
Eric: “Body falls into itself while the wonderment of it all ebbs and flows through my being. I curve, I fold, I release and a current of flexibility courses through my spine. I relax, I stretch, rest, feel tension, let it slick away, vertebrae by vertebrae. My spine folds and stretches and curves and I am long.”

Eric: “By body vibrates, pulses, bounces, twists, rotates, and I am dance. My body sighs with movement and I am free. Joy, fun, happiness effervesces from within and pours forth into my environment and this jubilant flow washes over me again, saturating me anew with rejuvenation. Release.”

Alice: “My drawing represents my experience with the Hu breath. I felt very clear and open through my chest, like it was a window.”

Abby: “Today I feel like my mind and body are trapped behind a big heavy gate. I can’t move it aside or get through. I couldn’t participate in class as much as I would have liked and I don’t feel the calmness that I usually do afterwards because I can’t get through the gate.”

Abby: “Working the eyes and jaw, and moving the spine like a snake brought to mind the image of Medusa. Except there were snakes coming out of the eyes as well as the hair. It was a very loose feeling. I pictured the spine as a snake also.

**Process of Awakening**

A movement teacher once reminded me that progress does not occur linearly, rather, we go two steps forward and one step back. This was quite evident in the processes documented here by the participants. Individual experiences precipitated through the cultivating practices were quite varied. There were moments of opening and moments of closing, moments of release and moments of resistance. Together these experiences contributed to an increasing awareness:

Tina: “About midpoint, there was a deep relaxation where I just could not get out of. And having had experiences in the past, I knew that was a deep healing, so I did not get up and join the drawers and the journalers.”

Annette: “I’m just irritated with myself that I’ve been exposed yet again and yet again... I haven’t practiced between classes and I haven’t brought it in as part of my experience. It’s a big question. Is it laziness or some internal resistance? I don’t know. I think I’m inclined to believe that it’s hard to acquire new habits. ... It’s like I’m frightened. ... [of] change. It would be just change. Once you become aware of yourself internally, the
old masks, or having a couple of beers or having a toke or whatever you’re doing that mediates or mediates the situation, are no longer applicable. It’s just change. I remember “The fear of change is greater than the fear of death.” Even when you know that, it’s still true.”

Tina: “I didn’t have much resistance. I did have some, which usually came with the breathing technique or a repeating technique. [Handled it] with a little bit of humor and knowing that I wanted this. I really don’t want to waste or misuse any of my energy by being fussy.”

Alice: “While I was bringing my head up very slowly, I felt like I was waking up and that I could become infinitely more awake.”

Corey: “I pay more attention to the sensations within my body. I think about these sensations and their connection to whatever is going on in my life’s experience.”

Tina: “It was a progressive experience into what the mind can sense in the body.”

As Tina expressed, most individuals and the class as a group descended deeper into their bodies throughout this course. The process of the class was reflected in my experiences as a teacher. I noticed a certain hesitancy in myself and the group over the first few class meetings. For the main part, during the times of “open attention,” a period of unstructured attending at the end of class, there was a lot of fidgeting, moving around, adjusting. As time went on, the group was able to drop more deeply into the explorations, and the participants were able to be present in their bodies in a more focused way. A sense of calm or stillness was noticeable within the group, while explorations were going on. As a teacher I had to again accept that the descent into the body cannot be orchestrated from the outside, but must be opened up from the inside.

Circuits of Experience

To facilitate deeper and more differentiated insight into the kinesthetic experience, I will provide examples of descriptions for the different circuits of experience.
according to Yuasa (Yuasa, 1987; Nagatome, 1992). The first circuit, the external sensory-motor circuit, is primarily concerned with exteroception, information coming in from outside the organism, and the behavior it calls forth in the individual. Even though it is an important aspect of experience, it is not of interest in this study. No examples are thus being presented for this circuit.

The second circuit, the circuit of coenesthesia describes the main focus of this study, the kinesthetic experience. Yuasa (1987) differentiated here between the somatic circuit (circuit of kinesthesis) and the autonomic circuit (circuit of somesthesis). The somatic circuit describes voluntary movements of the skeletal muscles. The autonomic circuit describes involuntary movements of smooth and cardiac musculature.

**Somatic Sensations (circuit of kinesthesis):**

Tina: “Have sitting-at-the-computer slump – sternum tends to cave, which carries into walking, with a tendency to curl pelvis upward as I walk. Frequently I correct posture by holding abs tight. Relaxing pelvis, lifting sternum and straightening crown of head.”

Tina: “In my hips, there’s been so much aggravation there. Actually, I guess [it is] … deep into my buttocks and how they attach to the spine, the sacrum, and the way it moved. I carry that awareness with me when I walk. It feels neat. I feel like I’m walking with more power.”

Corey: “Since this class, I take more notice how to hold my body when I sit. I pay more attention to how my body carries things when I am walking, what it does when the load is too heavy as compared to when I carry something light. … When I don’t check in on myself, I tend to slouch. I curve my back and let my shoulders fall forward. This posture makes me tired. When my load is too heavy, it pulls on my spine and makes it curve to accommodate the weight.”

Eric: “I most often seem to notice that very often I let my spine sink down into my pelvis (which leads to my upper back curving forward).”

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3 As mentioned earlier, I am defining the term kinesthesis much more broadly than Yuasa (1987). To not confuse the reader I will continue to use the terms I have chosen for either circuits (see chapter 2) and present Yuasa’s terms in parenthesis.
**Autonomic Sensations (circuit of somesthesis)**

Annette: “The ‘hara’ felt like pound cake, heavy, tasty, inoffensive, lightly nauseating after a while. Echo of things somewhat known. … The hara seemed to begin to boil a twist of anxiety and bubbles. … Most commonly, I am aware of my ‘gut feelings.’ I receive a great deal of information through what I have found out is my ‘Hara.’ It is not necessarily easy to decipher, as emotional information, reaction to a physical place or social interaction can all feel remarkably similar.”

Abby: “The ‘hara’ [sic] is firm and tightly packed with internal organs and energy. It pulses with life. The fluids move through in a neverending stream. Life is here.”

Corey: “I am also aware of lots of sexual energy in my genital area. I call it sexual but it is not necessarily that since the sexual and spiritual centers are in close proximity.”

The third circuit, the emotion-instinct circuit represents the affective processes and instinctual drives. This circuit is only rudimentarily represented in this study. Only one report spoke about it directly:

**Emotional Instinctual Circuit**

Corey: “I don’t get angry very much anymore. At least I don’t identity my feelings as anger. When something happens that disturbs me, I decide how I will respond by noticing or identifying the feeling and then deciding to let it go. Usually the thought to let it go is accompanied by deep breathing, and a few exercises to release the tension in my neck and shoulders. … I believe that I am my feelings – peace, joy, sadness, joy, pain, pleasure. I am paying more attention to the sensations that correlate to my feelings. What sensations do I experience when I feel joy? How is that different from feeling pain? Sadness? Pleasure? Confusion?”

The fourth circuit, the circuit of the quasi-body, describes subtle experiences which do not correlate with the Western understanding of physiology. Several descriptions about this kind of experience surfaced through subjects’ reports:

**Subtle Sensations**

Barbara: “Energy undulation – stretching to connect in all dimensions; then receiving and becoming streams of energy – spiraling and down.”

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Annette: "I felt as if I was honeycombed with light energy — as in light, subtly. I was given to physical joy — at the end ... The curling and uncurling of the spine produced a rod of power through me — like a rope.

Annette: "I was impressed again with the effect of the 'Lunar' breath. I felt as if a cool silk invisible pearl rippled down across my breasts at the end of each breath. ... I felt waves of power (subtle, very subtle) swirl through me as ocean water through a tide pool, creating receding. Then that wind would come. ... Oceanic."

Yuasa brought the various circuits into relationship with light and dark consciousness, relating the somatic circuit to the light consciousness and the autonomic, emotional and subtle circuits primarily to the dark consciousness. When sensory-motor amnesia occurs the somatic circuit recedes into the unconscious. In my interpretation of Yuasa's model, it means that somatic sensations under this condition also become part of the dark consciousness. As the above descriptions document, several subjects were able to report, with a noticeable degree of discernment, on the various aspects of their inner experience — mostly about the somatic, autonomic and subtle circuits. These reports, given immediately after each practice, indicate that aspects of the dark consciousness have become recognized by the light consciousness. I interpret this to mean that a process of awakening was underway.

**General Changes**

The course brought forward awareness of sensations which otherwise often reside in the dark. During the interview, several days after class, participants talked about these experiences and how they filtered into other areas of life:

Danielle: "I'm more conscientious of what I've been neglecting or even that I have been neglecting. ... It's like until something is brought to your attention, you pretty much just take it for granted."

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Barbara: “What comes to mind is what I got from it was mindfulness and the aspect of being in the moment and being aware at that moment of what I was feeling or what was going on within me. To me, that was probably from the experiences themselves ... Acceptance and confidence and being comfortable with who I am and what I am.”

Abby: “Like all during the day, it pops into my head: “Hey, you know, what’s going on now?”

Tina: “A positive sensitivity to my body’s messages, sweet surprises in my body’s flexibility, a more caring attitude toward ME and my body. More attuned to my gentle nature and treasuring ME and my body. ... I felt like my body was just, part of me moved back into me.”

Helen: “Yes, I have moved in new ways. I have connected those new ways of moving into more sweeping gestures. I have noticed more often when something is happening in my body. I may not know why the sensation is there. I notice when the sensation changes.”

Helen: “I think I also have a higher level awareness, or more awareness when looking at other people than I’ve had in the past. I am noticing smaller actions by other people.”

Some course participants did not feel that there was much overall change in their experience or their well-being:

Eric: “I feel like there have not been any significant or large changes in my well being since the beginning of this course.”

Annette: “Not much, because the effect of the course has been subtle, and I have thus far kept to my old patterns. However, I am more aware of breath, and that has really helped.”

Janice: “No, I think I need to become more sufficient at concentrating on specific areas before I benefit from these classes.”

In general, most participants, when asked directly, allow that there have been changes in their kinesthetic awareness throughout or since the course. The enhanced body awareness changed their experience of self. In light of these descriptions, the answer to one of the initial research questions as to whether the kinesthetic sense can be cultivated through somatic practice, may be answered positively.
However, when asked indirectly, by comparing answers to questions on the first and second questionnaire — rating of the kinesthetic sense, about movement, posture or internal body sensations, the body maps — hardly any changes were noticeable. This speaks of a discrepancy between the direct and indirect view. My interpretation of this discrepancy is that the directly recognized changes are of a more short-term nature and have not become established in the form of "new habits" on a long-term basis. This leaves us with the question of whether it is possible and what would be necessary for these changes to be established as long-term changes? I will return to these issues in the concluding chapter.

**Kinesthesia and Stress**

One of the research questions inquired into the connection between stress and kinesthesia. In the first story (Hillary's story), I discussed the dynamic of trauma/stress and its diminishing effect on kinesthetic awareness. In the following, I will explore the connection between body awareness and stress management. The majority of the subjects did notice an increase in their ability to negotiate stressful situations through the participation in the course. A few subjects reported no impact on their stress management abilities:

Alice: "I think I'm more able to, in a stressful situation, to sort of come back inside myself and feel sort of stronger in that way. Like I realize that, just really, sort of, how small the stressful situations are and how a lot of times they aren't really particularly relevant to me and other people are ... you know, they're trying to get you to be stressed out when you don't really want to engage in that. ... I just feel my whole body. It's a presence, a place to be rather than being totally engaged in the stressful situation. It's just like a feeling that just goes, boom, there you are."
Abby: “Just more awareness of what’s going on. Before, I don’t think I really realized I was doing the shallow breathing when I was stressed and now I realize it. So I start doing deep breathing and try to calm myself down. Things like that. ... Before, when I was stressed I would just stay stressed and I went home stressed and I went to bed stressed. Now, you know, I go and do breathing or I do stretches or forward flexion or something and spend maybe 10 or 15 minutes doing that. Then afterwards I feel much better and, you know, the stress is almost gone.”

Janice: “I did, because this is a very stressful time at work right now, because we are looking at, with the budget cuts, we are looking at layoffs. I supervise nine people. So at work I was able to just sit back and breathe, when somebody comes in and starts telling you how you have to do this and that. When they left the office I would just sit there for a couple of seconds and pull myself together and think about what they said and how to deal with it.”

Helen: “Yes, I have reminded myself to breathe. I have thought about calming down and taking just the moment that is happening now. I have noticed the stress and made a choice.”

Danielle: “Sometimes it does and sometimes it doesn’t. Today I was stressed [laughter] and I was tired on top of being stressed because I got in late last night. No matter what I did, I don’t think anything was going to work. But, yes, I have stopped and taken deep breaths, and thought OK, is it worth it to get all excited about this?”

Hillary: “No, because I haven’t practiced the techniques learned, except a handful of times where I tried to meditate and become aware of my body (can only do it when already relatively calm though, not when stressed out).”

Most reports speak of an increase in their ability to pay attention to bodily processes when in challenging situations. Remembering to stay aware of one’s body in stressful situations offers the opportunity to remain centered in the momentary experience of the body, rather than emphasizing the fear of not being able to master or even merely endure whatever the situation calls forth. Veering attention away from the source of stress, body movement practices and mindfulness exercises enhance relaxation and ease, even if outer circumstances are challenging.
To conclude this analysis, I want to present "outlier data," data that does not quite relate to the theory presented, but which appears to be significant for future theory building.

**Outlier Data**

While examining the data corpus I noticed that Abby, one of the course participants, often spoke about her developing ability to control her body.

“It’s given me a feeling that I have more control over my body.”

“Yeah, because I know that I’m sort of more in control of my body. I realize when something is wrong and, you know, I take steps to get me back to where I’m feeling good.”

Abby’s expressions surprised me. Cultivation in my understanding is based on surrendering to the body, rather than controlling the body. I wondered whether I was presenting something that I was not aware of. Looking over Abby’s reports again, I remembered that she had been diagnosed with “lupus,” an auto-immune disease, a couple of years prior to the course. She had to learn, and still has to learn, how to live differently. It is crucial for her to quickly recognize the signs of stress. Once noticed she needs to minimize the effects by either changing the situation or actively entering into a practice to initiate a calm state. Otherwise her body would go into a violent reaction, a stress response (Hanna, 1988; Selye, 1984). When she talks about controlling her body she talks about not allowing this downward cycle to happen. It can be very detrimental to her health; in fact, if ignored it could be fatal. Viewing this situation leads me to wonder about the relationship between surrender and control, between giving in to the body’s processes and learning to control or direct the body’s processes. Although the issue of
control, in my current understanding, is closely related to a dualistic orientation, there appear to be situations, like Abby’s, when control is appropriate and necessary. It is unclear to me at this point how this issue might impact my theoretical discussions in the future.

In conclusion, the above analysis is presented without defining and describing the participants’ style of meaning making. I am not offering any differentiations such as realistic, impressionistic, critical, reflexive, deconstructivist, accounts (Lather, 1991; Van Maanen, 1988). The different data stories and the general data reveal aspects of all of these. Deconstructing the individual styles of meaning making, excepting my discussion in chapter 3, would deter from my interest in presenting continuity in the content. By presenting continuity I intend to give primary importance to the overarching issue, rather than fragmenting it into different perspectives. I nevertheless want to remind the reader that this study is backgrounded by a Constructivist/Interpretivist paradigm and the understanding that interpreting is the core of human functioning (Richardson, 1997). This implies that all reports including the theory presented, represent interpretations about the situation at hand. Meaningful interpretations nonetheless contribute to valuable understanding and insight.

In the following chapter I will present the findings of this study and far-reaching implications about the kinesthetic experience relative to somatics as well as other disciplines.
CHAPTER 6

FINDINGS AND IMPLICATIONS

I began this exploration with the intent of developing a somatic theory about the kinesthetic sense. I wanted to investigate its importance and its meaning. Concurrently, I was interested in understanding the absence of kinesthetic awareness. In this chapter I will report about the major findings of this inquiry and discuss some of the implications for somatic research. Although this study was context specific, its findings and theoretical inferences may be transferred to other similar situations and settings.

Findings

This study analyzed the data from two different view-points, a general and a specific view. Even though this was not a quantitative study, some general patterns were detected and are presented below:

(1) Descriptive reports portrayed a variety of kinesthetic experiences. Participants reported that these internal sensations impacted their identity. This is consistent with the theories presented in chapter 2 (pp. 31-39), which describe sensation as the background for the experience of self and a sense of existence.
(2) Several subjects described non-ordinary experiences during somatic practice, such as experiencing the body as lightness or sensing bodily processes very deeply. They reported that these experiences blurred their usual distinction of body and self. These reports validate the theory about the non-ordinary experience of bodymind unity becoming accessible through sensory awareness.

Both above findings evidence that sensation is strongly connected to the notion of self and thus indicate that kinesthetic experience is fundamental in human experience.

(3) Some of the subjects consistently noted that they could not sense certain places in their bodies, others reported such difficulty most pronounced during the earlier part of the course. Reports of such sensory blankness validate the theory about sensory-motor amnesia (chapter 2, pp. 52-61) and indicate that sensory-motor amnesia needs to be investigated further as a possibly far-reaching condition.

(4) Several subjects described a connection between traumatic and stressful experiences and sensory numbness. This indicates that stress and trauma precipitate sensory-motor amnesia. It also verifies Hanna’s theory (1988) about sensory-motor amnesia and its link to stress responses (chapter 2, pp. 54-61).

(5) Ten of the thirteen fully participating subjects reported an increase in body awareness through their engagement in somatic practices. They would remember to pay attention to their bodies on a more regular basis, notice their breathing or be aware of posture and movement more frequently than before the somatics course. This implies that somatic practice fosters body awareness by cultivating the kinesthetic sense.

(6) The majority of the subjects was consistent in their response that their participation in somatic practices increased and refined body awareness. However,
comparisons of written experiential descriptions several days after completion of the course revealed no significant changes. This implies a short-lived change immediately after somatic practice. No consequential long-term change was noted. Further research is suggested to investigate the connection between short-term and long-term kinesthetic change.

(7) Seven of the thirteen fully participating subjects reported that their participation in the somatics course had a positive impact on their ability to negotiate stressful situations. Four of the subjects denied such impact and two responded in a neutral fashion. The reports of the seven subjects described that heightened body awareness and awareness of breath allowed them to partially disengage from stress-causing situations and precipitated grounding within and awareness of the body during challenging moments. This presents some evidence that kinesthetic awareness and stress management are linked and invites further investigation.

These findings are presented as indicators of arising patterns in relation to the kinesthetic experience. They reveal noteworthy regularities about kinesthetic experience in general. Further research – a long-term study with a larger group of subjects – is required to reach a more differentiated and in-depth understanding. Yet it is equally important to note again, that, in alignment with qualitative research, the strength of this approach was confirmed by the experiences themselves. Whether patterns become apparent or not, each individual experience on its own presents meaning and thus needs to be considered a finding.
Implications and Suggestions for Further Research

All of the above findings, the fundamental role of kinesthesia, its link to the notion of self, the condition of sensory-motor amnesia, the cultivation potential through somatic practice, and the connection between body awareness and stress, have implications for somatic theory, somatic pedagogy and somatic research. They also point toward further research issues.

Somatic Theory

This study has drawn from and integrated theories of various fields including somatics, psychology/neuropsychology, philosophy and spirituality. Its primary intention was to build theory for the somatic discipline. However, theoretical implications may be relevant to the fields the study has drawn from and to other areas such as education and health.

Sensory-Motor Amnesia and Body-Mind Dualism

The condition of sensory-motor amnesia is documented by many data reports throughout the study. I therefore consider it a very prevalent condition. I also consider it important to reiterate that this study was conducted within the cultural backdrop of a dualistic body/mind view that privileges mind over body. It is my understanding that a dualistic viewpoint and the condition of sensory-motor amnesia contribute to each other, that, in fact, they feed each other. Here I will highlight these connections.

In a natural state, our attention flows unobstructed between sensing, feeling and thinking (Hanna, 1988). Once the condition of sensory-motor amnesia has set in, the sensory experience of the body becomes diminished and narrow. This restricts the
natural movement of our attention and consciousness. Attention begins to reside primarily in the abstract faculties. Thinking becomes dominant. This does not mean that thinking becomes clearer or more insightful; in fact, to the contrary. It appears that mental processes, which are not fed by sensory experience, become disconnected and go into a state of overdrive. With the “overuse” of mental faculties, the body is more thought about and less experienced, and thus considered to be separate from the mind.

Additionally, sensory-motor amnesia results in progressive changes in the functioning of our nervous system. Because of its gradual descent, we are not aware of it and accept it as natural. Yet it affects us to our very core. Our sense of who we are, what we can experience and do, is thoroughly diminished (Hanna, 1988). The brain gradually adapts to the new type of functioning and normalizes it. Sensory-motor amnesia becomes pervasive and takes on hegemonic character (Apple, 1990). It is taken as the normal state of affairs. Hence, the condition of sensory-motor amnesia, which reinforces the split between body and mind, also normalizes it. Neither the individual afflicted with it nor society-at-large recognize it as a debilitating condition.

Simultaneously, a dualistic body/mind paradigm devalues bodily experience. It fosters the neglect of body awareness and does not promote cultivation of the kinesthetic awareness. A dualistic conception and sensory-motor amnesia thus reinforce one another, in that diminished sensing supports a dichotomized view of body and mind. A dualistic paradigm about body and mind, by virtue of its values, supports and strengthens sensory neglect and the condition of sensory-motor amnesia.

The dualistic view has been under scrutiny for some time. Yet, its connection to diminished sensory awareness has not thus far been elaborated upon. I consider further
exploration into the condition of sensory-motor amnesia as well as its link to a dualistic orientation as a very crucial issue for future research.

**Short- or Long-Term Kinesthetic Change**

Kinesthetic awareness can be cultivated through somatic practice. This was documented by the majority of the subjects' answers to questions about the benefit of their participation in the somatics course and through many reflective reports given at the end of each session. Yet it was striking to note the discrepancy presented by the above-mentioned data and data arising out of “before” and “after” comparisons of kinesthetic descriptions. The latter evidenced hardly any change.

O’Shaughnessy (1998) offers a differentiation between long-term and short-term body image, which may provide insight into this issue. The long-term body image represents the relatively permanent structure of the body. It establishes the image of one’s physical dimension, how one is shaped and sized, and how one moves. The short-term body image is comprised of sensations experienced in the moment, within particular body areas (Bermudez, Marcel & Eilan, 1998). The long-term body image impacts the momentary experience, as kinesthetic experience partially repeats the content of the relative fixed content of the long-term image.

Increased kinesthetic experience was most noticeable right after somatic practice. Such accentuated sensory information in the here and now moved the short-term body image to the forefront of awareness, while the long-term body image — comprised mostly of rigid and fixed sensory memory rather than current sensory experience — receded into the background. At a later date, when participants responded to interview or questionnaire questions, at a time when kinesthetic awareness was not highlighted, the
answers predominantly arose out of the long-term image. Such answers indicated no significant change when compared to responses from before the course.

I suspect that in order to hold the short-term body image in the forefront of awareness, prolonged kinesthetic cultivation must occur. Without such cultivation, the long-term body image remains the prevailing image. To investigate further the relationship between short-term and long-term body image and its implications for cultivation further, a long-term study including long-term engagement in sensory cultivation would need to be initiated.

**Kinesthesis and Spiritual Development**

Through this study I have pointed out the link between sensory experience and spiritual experiences, often called non-ordinary experiences. Although the study focused on the kinesthetic sense, several individual accounts indicated that body awareness opened doors to experiences of no-self, the awareness of presence and subtle experiences. Yuasa (1987) relates such spiritual and non-ordinary experiences to the circuit of the quasi-body (to reiterate, "quasi" means that this circuit does not conform to anatomical and physiological models but coincides with reports about subtle experiences). Unlike many Eastern traditions which have long investigated subtle phenomena (such as prana, chakras, life force, meridians, etc.), Western research is at the very beginning of even acknowledging the existence of such experiences. This study indicates that further exploration and cultivation of the kinesthetic experience can add to the verification and understanding of subtle experiences and further spiritual development.
Kinesthesis and Health

The issue of stress is a very current and pressing health issue. The theory about sensory-motor amnesia (Hanna, 1988) links diminished sensation to the experience of stress. Stress causes reduced body awareness as it decreases movement and sensory functioning. Conversely, subjects of this study reported that it was helpful to pay attention to their bodies as a tool to navigate stressful moments in their lives. Thus, increased body awareness appears to combat the effect of stress. Several stress reduction programs have already explored the connection between stress and mindful somatic practices (Benson, 1975; Borysenko, 1987; Kabat-Zinn, 1990). Stress is such a prevalent health challenge for so many people nowadays that it seems critically important to investigate the issue further and develop even more targeted practices, i.e. sensory cultivation practices, in order to counter-balance this situation.

Sensory numbness possibly spreads ripples across many areas of life including mental and physical health. Diminished sensory functioning and awareness potentially impacts other attentional processes, like the phenomenon of attention deficit disorder. It would be very interesting and conceivably very fruitful to explore these connections through further research.

Somatic Pedagogy and Somatics in Education

The predicament of kinesthetic numbness calls for differentiated somatic pedagogy to further the art and science of teaching and learning the process of sensory awakening. To promote overarching understanding and insight into this process of sensory awakening and to better understand the experiences arising out of such a cultivation process, an open dialogue about somatic principles is necessary. There is no
recipe for accessing the deeper realms of the body. Nevertheless, distilling and
discussing principles of somatic practice can foster an increased sophistication in somatic
pedagogy.

With regards to understanding experiences arising out of this process, I find it
particularly important to comprehend that by cultivating the kinesthetic realm we are
attempting to uncover deep unconscious layers and bodily processes. I want to
specifically mention the power and depth of the kinesthetic unconscious here and the
force it presents as it makes its way into consciousness. Kinesthetic cultivation implies a
descent into the body, which can be likened to a descent into the underworld of the
psyche. This is not to be undertaken lightly. As with any descent, it may bring forth a
time of chaos and confrontation with deep emotions, fears and sensations. Somatic
pedagogy must take the magnitude of this realm into consideration and develop practices
that enhance the capacity to embrace and tolerate such challenging experiences for
students as well as practicing teachers.

This study focused primarily on the field of somatics. Yet, many of the
aforementioned findings also have implications for education and pedagogy in general.
Kinesthetic awareness needs to be cultivated as a basic element of healthy, spontaneous
and intelligent functioning. Several educational approaches like the Montessori
(Montessori, 1995) and Waldorf curriculum (Edmonds, 1982) have included sensory
cultivation and learning as a major aspect in their educational activities. Gardner’s theory
of multiple intelligences (1983, 1997) has contributed to this discussion. It is
nevertheless astonishing, given the importance of this issue, how little this aspect has
been integrated into general education thus far. Traditional educational approaches are
still almost exclusively rewarding intellectual advancement. A somatic and kinesthetic approach to education may provide an alternative here and present a paradigm shift toward body/mind integration by supporting rather than squelching sensory sensitivity. Somatics may be applied in the schools both through an overall embrace of kinesthetic sensibility in the learning process and through specific programs that focus on somatic practice and kinesthetic explorations.

**Somatic Methodology**

In addition to the findings mentioned at the beginning of this chapter, I also noted a particular discovery with regards to methodological tools. Throughout the study, I found myself employing my own somatic sensitivity. My subjective kinesthetic impulses became a major asset in refining my observational skills, my research themes and my theoretical concepts and propelled me along the teaching, researching and writing process. I suggest further investigation into sensation as a catalyst for developing insight and understanding.

In conclusion, I would like to note here that I do consider it extremely desirable for quantifiable science and introspective science to move closer together. Observations, which not only speak of external scientific investigation of phenomena, but also represent insights through introspective inquiry, can be the basis of a form of “meta-science.” The result will not be an accumulation of more observations; rather the results will take us to an entirely new level of knowing, understanding and being, that will allow us to embrace differentiation and wholeness simultaneously.
APPENDICES
APPENDIX A

NERVOUS SYSTEM OUTLINE
The nervous system is an extraordinary fine and complex network of fibers that spans the human body from head to toe. It is involved in the regulation of bodily functions and behavior. Nerve cells, the foundation of the nervous system, in general serve one of three functions: (1) carry impulses from the receptors in the periphery to the core and are called sensory or afferent nerves; (2) dispatch impulses from the core to the muscles, organs and glands of the body and are called efferent or motor nerves; or (3) form a network of interconnecting neurons in between motor and sensory neurons and are called interneurons (Kapit & Elson, 1993).

The spinal cord and brain, core structures of the nervous system, belong to the central nervous system. All other structures are part of the peripheral nervous system and consist of afferent and efferent pathways. The peripheral nervous system consists largely of bundles of sensory and motor nerves originating from the brain or spinal column. The cranial nerves originating in the brain are connected to the functions of the head and neck and serve parasympathetic functions of the thoracic and abdominal viscera. Most of the remaining peripheral nerves originate from the spinal cord and mediate sympathetic innervation of abdominal and pelvic organs, parasympathetic innervation of the pelvic area, and somatic innervation of the trunk and peripheral structures. These nerves also conduct an enormous amount of sensory information from the respective areas back to the core.
The peripheral nervous system is organized into two components, the somatic nervous system and the autonomic nervous system. The interplay between the sympathetic and parasympathetic branch, the activating and restorative aspect of the autonomic nervous system, keeps the organism in a state of homeostasis (Willis, 1998). Both, the somatic and autonomic nervous system are comprised of afferent and efferent nerves. Both conduct motor and sensory signals. In the somatic division afferent and efferent nerves are in communication with voluntary skeletal muscles. In the autonomic division afferent and efferent fibers connect with the smooth and cardiac musculature of the organs and with glandular tissue.

Only recently has another aspect of the nervous system been more thoroughly described, the enteric nervous system. In the past it was considered a simple collection of relay ganglia. It is now by some neurologists regarded as a complex and integrative system in its own right (Gershon, 1998). It is responsible for the peristaltic reflex, which propels food through the digestive tract. The enteric nervous system is also thought to include primary afferent neurons to detect increases in pressure, as well as interneurons to coordinate the wave of activity down the length of the bowel. Most often it is considered an aspect of the autonomic nervous system (Willis, 1998). Some neurologists talk about it as an entity on its own with the ability to function independently from the brain (Gershon, 1998).

The brain is an enormously complex organ. It processes impressions through the senses and regulates sensory awareness, movement, emotions, thoughts, foresight, planning, memory, speech, language and interpretation of language, etc. (Horacek, 1998). Much interest in past brain research has gone into attributing particular human functions...
to particular locations in the brain. Research today has outdated many fixed maps of the brain. "Neuroscientists now envision brain cells as parts of a dynamic meganetwork" (Austin, 2001, p. 155). Some have even gone as far as looking into the brain function as a holographic event, where everything is recorded everywhere (Pribram in Briggs & Peat, 1984). The old model of the brain being a top down, hierarchical system is changing into a picture where each area affects several other areas. Adjectives of higher and lower for functions and structures are being replaced by terms such as older and newer. Any of the brain-mapping presented here needs to be seen in this light. For the purpose of this study I want to mention a few areas of the brain, as they relate to sensory processing.

The cerebral cortex, the outer and largest part of the brain, appears to regulate our conscious behavior. The front part of the cortex, the frontal lobes, represent generally the seat of executive functions like judgment, planning, organization, inhibition, and selective attention (Horacek, 1998). At the back of the frontal lobes is a band of cell bodies called the primary motor cortex. Together with associated areas it is considered responsible for the regulation of voluntary movement. The primary somatosensory cortex lies right in back of the frontal lobes, at the anterior part of the parietal lobes. A stroke here will produce loss of sensation in a part of the body. Beneath our temples are the temporal lobes, which are thought to "decode and interpret what we hear and see, and process other more elaborate, patterned sensory messages" (Austin, 2001, p. 149).

Underneath the cortex is a developmentally older aspect of the brain, the mammalian brain or limbic system. It is the seat of primitive instinctual responses and provides the wind that fills our sails, while the frontal cortex harnesses this energy and steers us (Horacek, 1998). The limbic system is strongly connected to the hypothalamus,
a cluster of nuclei which may be regarded as the motor control headquarters of the autonomic system (Netter, 1996). The thalamus also lies underneath the cortex. Strictly speaking, it is not part of the limbic system, but located in close proximity. It receives a vast range of sensory information and relays it to the brainstem or the cerebral cortex.

The oldest part in the evolution of the brain is referred to as the brainstem. It is the narrowing area that connects the brain with the spinal cord. The most basic functions like respiration, circulation, day and night rhythm, swallowing, coughing, sneezing, etc. are organized here. Behind the brainstem is the cerebellum. It plays a major role in the coordination of motor activities and posture. It processes conscious and unconscious sensory information from many different sources as it organizes movement and balance. It plays a key role in motor learning (Willis, 1998).

Paul McLean calls this tri-level structured brain a “triune brain” (Hanna, 1988; DeBeauport & Diaz, 1996). Each level evolved out of the earlier ones and added refinement and function. The earliest layer, the brainstem or reptilian brain, controls essential functions, which occur unconsciously. The intermediate level, the mammalian brain, represented by the limbic system, refines the functions of the first. It organizes a greater range of movement and behavior, and is mostly concerned with territoriality and social hierarchy. The cerebral cortex is the youngest aspect of the brain and is considered the source of conscious actions and voluntary learning and control. All three brain levels influence each other, as they process information from the periphery.

If we distinguish the peripheral nervous system according to its function, roughly half of our neurons send action potentials in an outward – centrifugal – direction. The other half is arranged to propagate action potentials in an inward – centripetal direction,
as sensory fibers (Juhan, 1987). The inward stimuli comprise the broad range of our sensorium, from special senses (visual, auditory, taste and smell) to our bodysenses, alternatively called the somatosensory system.

The somatosensory system provides information about what is happening on the surface of our body and inside. Some somatosensory nerves have exteroceptive functions. They take in information from the external environment through the skin and fine tactile sensations. Additionally, the somatosenses receive a large amount of interoceptive information, registering stimuli about internal events like movement, blood pressure, pain and temperature (Kolb & Whishaw, 2000). Most of these impulses come from the periphery into the central nervous system through the spinal cord. They travel up the cord in distinguishable tracts through a series of sensory neurons, eventually reaching different parts of the brain.

Although there are several sensory pathways traveling up the spinal cord; here I will only mention two major tracts, the dorsal column system and the spinothalamic tract (Willis, 1998). The dorsal column system, a tract of nerve fibers traveling up on the back side of the spinal cord, carries discriminative signals of touch or pressure, proprioceptive information such as muscle length, tension and joint position from the extremities and the trunk of the body and relays it largely to the somatosensory regions of the cortex. These are mostly sensations that arise from somatic afferents, our voluntary muscles, and are more easily accessible to our conscious experience. The spinothalamic tract being on the lateral aspect of the cord, conducts a wide variety of broad stimulations such as touch, pressure, vibration and temperature, painful stimuli, and some proprioceptive information. Many of these less discrete sensations arise from the organs and do not
necessarily reach the cortex, thus stay in the realm of the unconscious (Netter, 1996). Somatosensory information from the cranial and facial area is relayed to the brain predominantly by the trigeminal nerve or also called cranial nerve V (Willis, 1998).

The vagus nerve or cranial nerve X is a major player in the autonomic nervous system and is not always considered part of the somatosensory system. The vagus nerve does not only consist of motor fibers; it also carries large amounts of sensory information from the lungs, heart and digestive tract to the brainstem (Netter, 1996). Thus, to create a neurophysiological basis for our discussion about the sensory experience, it is important to remark on this particular sensory pathway. Though the connection is not entirely clear, it appears that the enteric nervous system feeds a continuous stream of sensory information through the vagus nerve to the brain. Yet it also has been observed that the enteric nervous system can continue to function if the connection to the vagus nerve has been severed. Thus, Gershon (1998) looks at the enteric nervous system as a brain unto itself.

The range of somatosensory information is determined by the variety of receptors connected to this system. Receptors are located at the originating point of a centripetal or afferent, sensory fiber and are tuned in to receive particular messages from its surrounding environment. About twenty different kinds of somatosensory receptors have been identified so far, responding either to mechanical, temperature or chemical stimuli (Willis, 1998). Overall the surface of the somatosensory receptor system is much larger than that of any other sense. They are located in all body tissues, except in the brain itself (Carlson, 2001). Following are the major categories of these receptors:
The muscle spindles make up an elaborate sensory network within our muscles. The sensory endings of the spindle, attached to the connective tissue of the muscle, are sensitive to stretch (Willis, 1998). They measure the length of a muscle’s fibers and the speed at which it is changing. When the muscle lengthens, they lengthen; when the muscle shortens, they relax.

Golgi tendon organs are located within the tendons. They are stimulated by the strengthening and recoiling of the tendon and detect the total amount of stretch exerted by the muscles on the bones they are attached to. These receptors don’t respond to muscle length, but to how hard it is pulling (Netter, 1996).

Joint receptors are responsive to movement and position of limbs. Different receptors respond to rapid and slow movement or extreme movement of the joints, like hyperextension or hyperflexion (Willis, 1998).

Touch receptors include a wide variety. They detect particular characteristics of stimuli such as vibration, skin indentation and certain types of hair movement. Some receptors respond to the velocity of the onset of the stimulation, others to the length of the stimulation or to moving stimuli (Kolb & Whishaw, 2000).

Temperature receptors show sensitivity to temperature change. They specialize in recognizing cold, warmth, or responding to rapid change of temperature (Kolb & Whishaw, 2000).

Nociceptors are pain receptors which are sensitive to mechanical, thermal or chemical stimuli (Willis, 1998) and report potentially harmful levels of change in the tissue. Some of them are associated with bright or sharp pain, to tell us where the pain is, and dull pain, to tell us that we are still injured (Kolb & Whishaw, 2000).
The vestibular system is generally not included in the somatosensory system. However, since it plays a major role in the inner experience I will incorporate it here. The inner ear contains a receptor system that reports the body's relationship to gravity. It detects movement of the body and movement of the external environment. It allows us to stay upright and keep our balance (Kolb & Whishaw, 2000).

Phylogenetic and Embryonic Development of Sensory Nerves

The nervous system developed during a long evolutionary journey and is common to all metacellular systems. However, movement and thus behavior, is not the sole privilege of the nervous system. “[T]he nervous system does not invent behavior, but expands it dramatically” (Maturana & Varela, 1998, p. 163). Biological movement occurs in single celled organisms and evolutionarily precedes movement caused by muscular contraction. The sensory and motor surfaces, responsible for this metabolic movement, are in immediate proximity (Maturana & Varela, 1998). In metacellulars, the relationship between sensory surface and a motor surface is no longer immediate. A system of coordination between both surfaces is necessary. This necessity initiated the birth of the neuronal network.

The phylogenetic development of the nervous system is recapitulated in the embryonic development. It originates out of the outer germ layer of the embryonic disc, the ectoderm. Its most primitive make up is a tube like structure called the neural tube. It is the forerunner of the spinal cord. Bulges, flexures and cavities develop out of this tube on one end and mark the beginning of the future brain with the hindbrain, midbrain and forebrain and its respective ventricles. As the brain differentiates, the spinal cord differentiates (Netter, 1996).
At about five weeks into gestation, as the neural tube continues to form, three layers develop. The innermost layer becomes the lumen of the central canal, the future home of the spinal fluid. The cells of the middle layer turn into the butterfly shaped gray matter or cell bodies. The third area, the outer white layer, eventually makes up the ascending and descending tracts. As these changes happen, a longitudinal groove on either side of the lumen of the cord appears, the sulcus limitans. It divides the tube into a back half (alar plate) and a front half (basal plate). Cell bodies begin to differentiate into sensory and coordinating neurons in the back alar plate, including the spinothalamic tract and the dorsal column system. Cell bodies of motor control neurons differentiate in front in the basal plate (Sadler, 2000).

The sulcus limitans, dividing sensory and motor neurons, travels up all the way into the diencephalon, an aspect of the forebrain. There the alar region (back side), with its ascending sensory tracts develops into the thalamus, the sensory coordinating region. The basal area (front side) develops into the hypothalamus, with the cell bodies of motor control. This establishes the centrifugal and centripetal system of information. The distinction between sensory and motor nerves is being born, as information comes into the organism and responses are going out of the organism (Netter, 1996).

The embryologist Blechschmidt (1982) notes that in the past, nerve development was seen to occur primarily in accord with an inherent masterplan. He posits a more current conception according to which cells differentiate based on their location. Michel & Moore (1999) describe a similar concept: "[E]mbryonic behavior may be the result of adaptations to the embryonic environment" (p. 330). Thus, initially unspecific nerve fibers become sensory or motor nerves through the specific function required by their
environment. Sensory fibers become activated via their proximity to functioning muscle fibers (Blechschmidt, 1982). Differentiated sensory stimuli fine-tune movement capabilities. Thus, sensory and movement capacities develop in concert. The sequence of this development proceeds from the core of the organism to the extremities, as the limb structures develop out of the central aspect of the developing embryo. A more detailed description of this sensory/movement development is presented in Chapter 2 of this study.
APPENDIX B

"NETWELL" ANNOUNCEMENT

OF SOMATICS COURSE
Mondays,
January 7, 14, 21, 28;
February 4, 11, 18, 25

Cultivating the
Kinesthetic Sense:
Developing
Body Awareness
Through Somatic
Practice
Theresa Silow
PhD Candidate in
Somatics Studies
College of Education

Join us on this journey into
the body. This somatics
course/study offers exer­
cises to cultivate the kinesthetic sense (awareness
practices, relaxation exercises, stretching, move­
ment, etc.). The kinesthetic sense—your internal
sensations—can tell you what is happening inside
yourself. Thus, sensations become an important
reference point for inner-guidance and healthy living.
Please wear comfortable clothing and bring a roll-up
floor mat or blanket.

5 p.m. – 7 p.m. (Note evening time!)
205 Pomerene Hall
1760 Neil Avenue
APPENDIX C

RECRUITMENT LETTER
CULTIVATING THE KINESTHETIC SENSE
THROUGH SOMATIC PRACTICE

Join in on this journey into your body! This somatics course/study offers exercises to cultivate the kinesthetic sense. The kinesthetic sense, your internal sensations, can tell you what is happening inside yourself. Sensations are important reference points for inner-guided and healthy living.

During this course you will practice a wide repertoire of somatic exercises (meditation practices, relaxation exercises, stretching, movement, etc.). You will learn to track your internal experiences through guided awareness exercises, journal-keeping and visualization techniques. No previous experience is required. Only the willingness to actively engage in the class process is necessary.

The class sessions will be held once a week on Mondays from 5:00 p.m. – 7:00 p.m. from January 7, 2002 through February 25, 2002 in Pomerene Hall, Room 205. Please wear comfortable clothing and bring a mat or blanket, paper to write on, a drawing pad and crayons. The class will be instructed by Theresa Silow, an OSU Ph.D Candidate in Somatic Studies.

In addition to participation in class activities, you are invited to participate in research being conducted by the instructor for her doctoral degree. Research activities will involve filling out questionnaires, journal writing, drawings, audio taped class discussions and individual interviews, all of which will be kept confidential. Research activities will be supervised by Dr. Sy Kleinman, kleinman.l@osu.edu, 688-5590. You can participate in the class without participating in the research.

For more information and to register, contact Theresa Silow at 238-3590/ tsilow@ix.netcom.com or Marianne Robinson, 293-7349/robinson.27@osu.edu, at the OSU Wellness Connection.
APPENDIX D

WAIVER OF LIABILITY
RELEASE OF ALL CLAIMS

The Ohio State University (the “University”) in support of the educational activities within its Faculty and Staff Wellness Program, is offering an eight part Complementary Somatics Class entitled “Cultivating the Kinesthetic Sense” commencing Monday, January 7th and concluding Monday, February 25th, 2002.

Although I realize that it is possible for injury to occur through this program, I agree to the following:

In consideration of being granted the opportunity to participate in the “Faculty and Staff Wellness Program,” and to use equipment and receive the help, assistance and advisory services rendered by members of the faculty and employees of the University during this program, I release and forever discharge for myself and my heirs, executors, administrators and assigns, The Ohio State University and its officers, agents and employees who arrange, provide, advise or supervise the above program, and exercise activities thereunder or any other function associated with participation in this program, from all claims, demands, actions, and causes of action for personal injury or any other damages now existing or which may hereafter arise out of or be in any way related to their conduct associated with the activities of the Faculty and Staff Wellness Program.

Date: ____________________________________________

_________________________________________
Signature
APPENDIX E

INFORMED CONSENT LETTER
CONSENT FOR PARTICIPATION IN SOCIAL AND BEHAVIORAL
RESEARCH

I consent to participating in (or my child’s participation in) research entitled:

Cultivating the Kinesthetic Sense through Somatic Practice

Theresa Silow as an authorized representative of the principal investigator has:

explained the purpose of the study, the procedures to be followed, and the expected
duration of my (my child’s) participation. Possible benefits of the study have been
described as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding
the study and that any questions I have raised have been answered to my full satisfaction.
Furthermore, I understand that I am (my child is) free to withdraw consent at any time
and to discontinue participation in the study without prejudice to me (my child).

Finally, I acknowledge that I have read and fully understand the consent form. I sign it
freely and voluntarily. A copy has been given to me.

Date: _____________________________  _____________________________
(Participant name, printed)  (Participant, signature)

Date: _____________________________
(Principal Investigator or his
authorized representative)
APPENDIX F

INITIAL QUESTIONNAIRE
CULTIVATING THE KINESTHETIC SENSE
THROUGH SOMATIC PRACTICE

Participant Questionnaire

The purpose of this study is to explore the potential for cultivating the kinesthetic sense through somatic practice. If you are open to completing this questionnaire, I ask that you answer the questions as honestly as possible. Please use extra paper if necessary. All information will be kept absolutely confidential. Please return the completed questionnaire to me at the beginning of the first class. I highly appreciate the time and energy you spend in participating in this somatic program and in answering the questionnaire. Feel free to contact me should you have any questions.

Theresa Silow
Tsilow@earthlink.net
238-3590
Personal Profile

Name: _______________________________________

OSU Department: _______________________________________

OSU Address: _______________________________________

E-mail (work): _______________________________________

Phone (work): _______________________________________

Home Address: _______________________________________

E-mail (home): _______________________________________

Phone (home): _______________________________________

Date of Birth: _______________________________________

Gender: female ( ) male ( )

Marital status (please check one):
( ) single
( ) married
( ) separated or divorced
( ) widowed
( ) living with significant other
Questionnaire

1. What was your interest/motivation in participating in this somatics course?

2. Describe your current feelings and attitudes towards your body as well as how it has changed throughout your childhood, adolescence, and adulthood.

3. Please note any information about your current state of health (injuries, illnesses, other challenges, etc.).

4. Please rate the following senses according to their prominence in your experience. (1 being the most prominent, 5 being the least prominent)
   
   ( ) visual sense  ( ) sense of smell
   ( ) auditory sense  ( ) kinesthetic sense (internal sensations, including touch)
   ( ) sense of taste

5. Which body area and/or body part are you most often in touch with?

6. Which body area and/or body part are you least often in touch with?
7. Of your inner body sensations, which are you most commonly aware of, and where do they occur?

8. Describe what you notice most often about your movements or posture during a regular day.

9. Which emotions/feelings do you most often experience?

10. Describe any non-ordinary body experiences you have had.

11. What do you notice within your body when you feel good about yourself?
12. What do you experience within your body when you feel critical of yourself?

13. When you experience stress, where in your body does it express itself and how?

14. When you experience stress, how do you respond?

15. Do you practice meditation and/or prayer? Does it effect your inner bodily sensations and how?

16. Are there any other practices or hobbies you engage in? Do they effect your inner bodily sensations and how?
APPENDIX G

FINAL QUESTIONNAIRE
CULTIVATING THE KINESTHETIC SENSE THROUGH SOMATIC PRACTICE

Final Participant Questionnaire

This is the second questionnaire for the above study. I ask that you answer the questions as honestly as possible. Please use extra paper if necessary. All information will be kept absolutely confidential. Please bring the completed questionnaire to your scheduled interview. I very much appreciate the time and energy you spent in participating in this somatics program and in answering the questionnaire. Feel free to contact me should you have any questions. Thank you!

Theresa Silow
Tsilow@earthlink.net
238-3590
Participant Questionnaire

Name: __________________________________________

Date: _________________________________________

1. Have your expectations about the somatics course been met? What was different than you had anticipated?

2. Do you have any suggestions for how you would like to see the course change?

3. Please note any information about observed changes in your current state of health (injuries, illnesses, other challenges, etc.) since the beginning of this course.

4. Please rate the following senses according to their prominence in your experience. (1 being the most prominent, 5 being the least prominent)
   - visual sense ( )
   - auditory sense ( )
   - sense of taste ( )
   - sense of smell ( )
   - kinesthetic sense (internal sensations, including touch) ( )

5. Which body area and/or body part are you most often in touch with?

6. Which body area and/or body part are you least often in touch with?
7. Describe your current feelings and attitudes towards your body?

8. Of your inner body sensations, which are you most commonly aware of, and where do they occur?

9. Describe what you notice most often about your movements or posture during a regular day.

10. Which emotions/feelings do you most often experience?

11. Describe any non-ordinary body experiences you have had.
12. What do you notice within your body when you feel good about yourself?

13. What do you experience within your body when you feel critical of yourself?

14. When you experience stress, where in your body does it express itself and how?

15. When you experience stress, how do you respond?

16. In your observation, has the course had any influence on your ability to negotiate stressful situations and how?
17. In your observation, has your participation in the somatics course had an impact on how you experience your body and how?

18. In your observation, has your participation in the somatics course impacted your overall experience of yourself and how?

19. Has your existing practice, meditation, and/or prayer changed since the beginning of the somatics course?

20. Are you planning on continuing a somatic practice and how?
APPENDIX H

BODY MAP

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BODY MAP

Please color areas within this body outline in the following way:

Body areas where you tend to experience challenging or painful sensations in red;
Body areas where you tend to experience comforting or enjoyable sensations in green.
APPENDIX I

OBSERVATIONAL GUIDELINES
OBSERVATIONAL GUIDELINES

1. Individual Behavior
   - verbal expressions
   - movement capacity
     - extrinsic movements
     - intrinsic movements
   - other non-verbal behavior
   - individual process

2. Group Behavior
   - Verbal interactions between group members
   - Verbal class sharings
   - Group atmosphere and class process

3. Teaching Observations
   - Teaching methods
   - Class content
   - Teacher-self
   - Teacher/student interactions

4. Researcher Reflections
   - Teacher/Researcher dynamic
   - Researcher-self
APPENDIX K

INTERVIEW GUIDELINES
INTERVIEW GUIDELINES

1. What type of practices did you prefer?
   - Which Awareness practices?
   - Which Movement practices?
   - Which Breathing practices?

2. Was drawing and writing at the end of class helpful? Did you feel you were beginning to develop language and words for your sensations?

3. Describe your most important experience

4. Was there a theme running through this course for you and what was it?

5. Has the program changed your experience of your body and how?

6. Has participation in the program impacted your general sense about yourself and how?

7. Has participation in the program impacted other areas of life and how?

8. Did your participation in the program have any effect on your ways of handling stress?

9. Is there anything else you would like to share?
COURSE CALENDAR

Class I
Somatic Topic: Introduction – Body mind dualism, neglect of sensation
Practice Focus: Grounding (BMC)
Breathing: Breathing into ribs, low, middle, high (Halprin)
Attention Exercise: Body scan
Movement: Exploration of flexion and extension while lying on floor (BMC)
Music: Deep Listening (Oliveros, Dempster, Panaiotis)

Class II
Somatic Topic: Awareness and attention – modes of attention
Practice Focus: Pelvis
Attention Exercise: Attention on Hara
Breathing: Lunar breath (Continuum)
Stretches*: Flexion forward (standing and sitting), half bridge
Movement: Pelvic rock into micromovements
Music: Shamanic Dream (Anugama)

Class III
Somatic Topic: The kinesthetic sense – neurological underpinnings
Practice Focus: Neck
Attention Exercise: Subtle and strong sensations (Continuum)
Breathing: Hu breath (Continuum)
Stretches*: Flexion forward, spinal twist sitting and lying down, half bridge
Movement: Neck movement, wafting (Continuum)
Music: Dessert Solitaire (Roach, Braheny, Stearns)

Class IV
Somatic Topic: Sensory-motor feed-back loop
Practice Focus: Spine
Attention Exercise: Flowing sensations (Continuum)
Breathing: Hu breath and Lunar breath (Continuum)
Stretches*: Flexion forward, triangle, lateral stretch, half bridge
Movement: On all fours, movement of wings (shoulder blades) and spine (Continuum)
Music: Propagation (Rich)
Class V
Somatic topic: Cultivation through movement
Practice focus: Wave motion (Continuum)
   Attention Exercise: Attention on Hara, attention on flow of sensations
Breathing: Sphinx breath (Continuum)
Stretches*: Forward flexion, downward dog, spinal twist, locust
Movement: Movement on all fours (spine, legs), micromovements (spine) (Continuum)
Music: Coyote Oldman (Allen, Fitzsimions)

Class VI
Somatic Topic: Kinesthetic experience, movement development and emergence of self
Somatic focus: Arms and legs
Attention Exercise: Sensing arms and legs
Breathing: Hu breath (Continuum)
Stretches*: Flexion forward, lateral flexion, spinal twist, half bridge, locust, cobra
Movement: Shaking hands, elbows, shoulders; pulsing (Halprin)
Music: Drumming/rattling tape (Cuyamungue Institute)

Class VII
Somatic topic: Sensation and bodymind unity
Body focus: Head and spine
Attention Exercise: Attention on third eye
Breathing: Alternate nostril breathing (Yoga)
Stretches*: Flexion forward, lateral stretch, spinal twist, spinal roll
Movement: Snake movement, eyes, jaw and tongue, neck, pelvis, spine (Continuum)
Music: Mahagony Nights (Kahn)

Class VIII
Somatic Topic: Cultivation – an organic and holistic process
Attention Exercise: Attention on heart
Breathing: Breathing into heart
Stretches*: Flexion forward, lateral stretch, spinal twist
Movement: Pulsing, stillness, movement exploration
Music: Drumming/rattling tape (Cuyamungue Institute)
   World of Rhythm (Talking Drum)

* All stretching practices derived from Movement Ritual (Halprin, 1979) or Yoga practices (Budilovsky & Adamson, 1998; Mehta, 2001)
CODE LIST

1. **Cultivation Practices**
   - Cultivation lecture
   - Breathing
   - Attention
   - Movement
   - Reflective drawing/writing

2. **Kinesthetic Experiences**
   - Autonomic sensation
   - Somatic sensations
   - Movement & posture
   - Pain

3. **Other Circuits of Experience**
   - Emotional experience
   - External senses
   - Non-ordinary experiences

4. **Sensory Motor Amnesia**
   - Disconnection
   - Stress Impact
   - Trauma

5. **Kinesthesia and Self**
   - Self and boundaries
   - Feelings/attitudes toward body
   - Body image
   - Conditioned self
   - Bodymind unity/spirituality

6. **Process of Awakening/release**
   - Release
   - Awareness
   - Negotiating Stress
   - General impact

7. **General Health**

8. **Outlier Data**

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