2
Embodiment in Somatics and Performance

"We are the material, our bodies and minds the medium of our exploration. The research is experiential as is the material."
Bonnie Bainbridge Cohen[1]

"Embodied practice and event is a recurring point of reference within performance studies."
Kirshenblatt-Gimblett[2]

"… it relates to the principle of the immediacy of experience… any technique or philosophy ultimately comes back to the axiom: know thyself."
Bonnie Bainbridge Cohen[3]

2.1 Introduction

This chapter explores embodiment within the field of somatics, tracing the historical influences and development of its epistemologies of practice. Body-based practices are the specific focus of the epistemological history shared between somatics and modern dance performance, fields that intersect and align through a common genealogy of practice[4]. Somatics offers an account of experience enacted through first-person methodologies incorporating technical expertise and reflection-in-action that has the attributes of being rigorous in its own right[5]. Its frameworks are rooted in its historical ties with modern dance performance and movement practices, and can be traced to philosophical underpinnings within contemporary phenomenology[6] and pragmatism[7]

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[1] Cohen, B.B. (1993). *Sensing, Feeling and Action: The Experiential Anatomy of Body-Mind Centering*, Northhampton, Massachusetts: Contact Editions, p. 1.

[2] 1999, adapted by Kirshenblatt-Gimblett from "Performance Studies", a report written for the Rockefeller Foundation, as quoted in Schechner, R., (2002). *Performance Studies,* London: Routledge, p. 3.

[3] Cohen, B.B. (1993), op. cit., p. 11.

[4] In this chapter, the term 'somatics' refers to the shared epistemological history of practice articulated within body-based practices, and is intended to include the movement arts, particularly contemporary dance and its ancestry from modern dance. This history is elucidated more fully, later within this Chapter.

[5] Schön, D.A. (1983), op. cit., p. 69.

[6] For example Elizabeth Behnke is a somatics practitioner who founded the Study Project in the Phenomenology of the Body in 1987, focuses on first-person Husserlian phenomenological practice. See <http://www.newschool.edu/GF/phil/husserl/Future/Part%20One/Behnke.html> (retrieved November 17, 2007).

and to ancient concepts of the 'self' that date back to Hellenistic[8] traditions and eastern philosophic thought[9]. Within somatics, technical practice is centered in first-person *technical enactments of experience*. These are self-reflexive techniques structured to transform one's experience of the *self in the world*. Somatic first-person body-based techniques form part of a larger history of practices of subjectivity and self-cultivation. First-person techniques engage what Michel Foucault termed *Technologies of the Self.*[10]

This chapter characterizes the technical practice of first-person methodologies as articulated in body-based disciplines. It outlines their instrumentality in approaches to reflection-in-action: technical problem solving within a broader context of reflective embodied inquiry. It analyzes traditional academic concerns of validation, seeking to illustrate an approach to incorporating first-person practices in a larger design context that can be applied within the design of computer technologies. Finally, it describes attitudes and values associated with experience from the perspective of body-based disciplines, and illustrates the historical intertwining of modern dance performance and

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[7] The American philosopher John Dewey studied with F.M. Alexander, one of the father's of somatic training. Dewey's approach to pragmatism and experience has recently entered the literature of user experience within HCI (see McCarthy & Wright, 2004). Dewey met F.M. Alexander in New York in 1916 and subsequently trained and worked with him for over twenty years. Dewey's philosophy of learning, education and experience was strongly influenced by Dewey's work and practice with Alexander. Dewey credits his work with Alexander in the development of a number of his philosophical frameworks of experience and education, particularly as they relate to habituated stances that refer to self-agency and ethics.

[8] This refers to an analysis of Foucault's "care of the self" in his late work, *The Hermeneutics of the Subject: Lectures at the Collège De France 1981-1982*. Foucault's textual analysis of ancient history of Hellenistic thought suggests that the Delphic prescription "know yourself" can be understood as being formulated in subordination to the precept of "the care of the self' from the point of view of a history of practices of subjectivity (first-person practices); that to know the self one must "attend to the self" Foucault suggests this as an "event in thought" where *knowledge* in a philosophical sense is subordinated to subjective physical practices that transform the self. He distinguishes this position from 'Knowledge' as it was transfigured in "the Cartesian moment", which he states functioned historically in two ways: re-qualifying the importance of "knowing the self" while "discrediting the practice of 'the care of the self'." The Hellenistic form of activating the knowledge of the self through the practices of the 'care of the self' has many resonances with the form of contemporary somatic epistemologies of practice. See: Foucault, M. (2004). *The Hermeneutics of the Subject: Lectures at the Collège De France 1981-1982,* F. Gros (ed). New York: Palgrave Macmillan.

[9] In Eastern Philosophy, the concept of self-cultivation is seen as a practice toward the goal of unifying mind and body. This is achieved through a set of rigorous technical first-person practices based on the somatic self, awareness (or attention) and cultivated within a somaesthetics of experience, see Yasuo, Y. (1987). *The Body: Toward an Eastern Mind-Body Theory,* SUNY Press. The notion of self-cultivation is resonant with technical practices of somatics.

[10] Foucault refers to technologies of the self as a set of processes that operate on the self to effect change or transform the self in order to attain a certain state. See Foucault, M., (1988). Technologies of the Self, in *Technologies of the Self, A Seminar with Michel Foucault*, University of Massachusetts Press, p. 18-19.

somatic practices, laying the groundwork for the use of these technical practices of embodiment within the field of human computer interaction.

I argue that first-person methodologies in somatics and body-based performance are technical practices utilizing reflection-in-action that can contribute in an integral way to design for user experience in new technology.

> The study of reflection-in-action is critically important. The dilemma of rigor or relevance may be dissolved if we can develop an epistemology of practice which places technical problem solving within a broader context of reflective inquiry, shows how reflection-in-action may be rigorous in its own right, and links the art of practice in uncertainty and uniqueness to the scientist's art of research. We may thereby increase the legitimacy of reflection-in-action and encourage its broader, deeper and more rigorous use.[11]

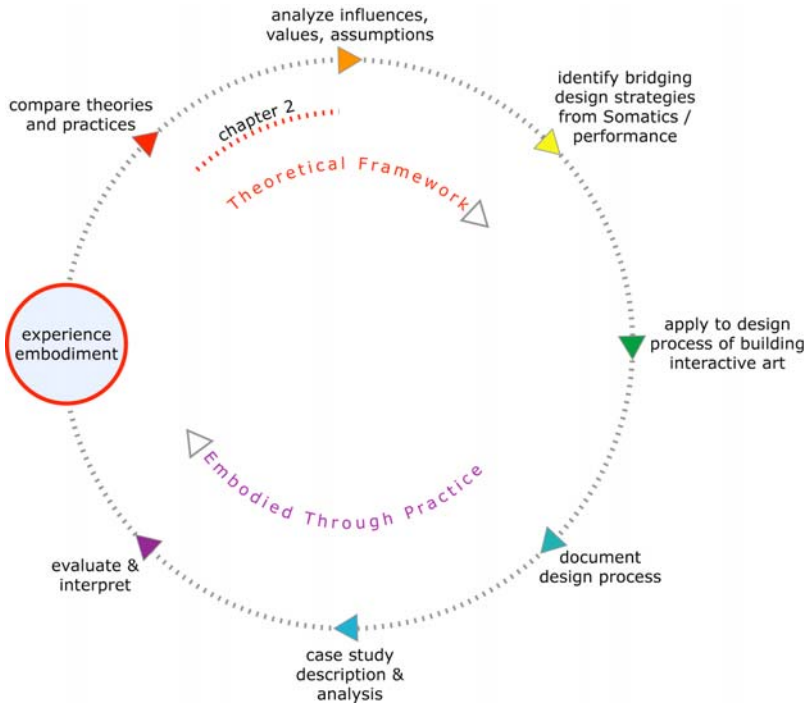

Figure 7. Chapter 2 Compares theories and practices of experience and embodiment within somatics and performance analyzing its influences and values in a historical context

[11] Schön, D.A. (1983), op. cit.

I invite the reader to explore the *experience* of research through the reading of this text and to imagine that the art of practice in uncertainty and uniqueness can develop the *researcher as an instrument* through the disciplined inquiry of the research itself.

2.2 What is Somatics?

Somatics is a term applied to a field of body-based practice and research developed largely outside of mainstream academia during the late nineteenth and twentieth centuries in Europe and America. Its western roots can be traced back to Delsarte[12] while its contemporary practice is richly influenced by eastern philosophy and body practices. In 1976 Thomas Hanna, a practitioner and philosopher, named the field *Somatics*, identifying a collection of embodied disciplines that share an approach to first-person practice focusing on *sensory awareness*: the ability to act on perceived stimuli. Naming the field also marked the foundation of the American *Journal of Somatics* and it was followed by its French equivalent, *Somatotherapie.* Somatics was christened almost a century after its emergence in Europe in the mid 1900's with the Delsarte Method of movement integration. The body-based practices of somatics have a long and interconnected history with modern dance. Their concurrent and intertwined emergence was born from the same historical source: the Delsarte Method was the precursor to both modern dance and the emerging body practices that became somatics. Contemporary somatics includes practices such as *Alexander Technique*, Feldenkrais' *Awareness Through Movement* and Rudolph Laban's *Effort-Shape Analysis*. Many somatics techniques are intended to be used '*by the self on the self*' in order to refine knowledge and precision through use of the human body in action. While

[12] Francois Delsarte (1811-1871) created a system of integrating movement, speech and gesture in the mid nineteenth century in order to enhance physical expression of emotions in connection with speech and thought. This practice was radical for its time as is emerged from the Victorian era of the court dance, and was also a part of the larger Belle Époque that liberated Europe. Delsarte himself an actor and operatic singer had a significant influence of modern dance and related fields including the fledgling development of somatics.

contemporary somatics maintains its historical goal as an ameliorative form that educates attentional skills of the *every-day* body by facilitating self-awareness, contemporary dance applies somatic techniques with the goal of educating a *virtuosic* technical body, where the dancer's skill is applied to the *body as finely tuned instrument* for performance, what Victor Turner refers to as "the liberated and disciplined body"[13]. Somatics and contemporary dance share a historical epistemology of practice. In this section I characterize the technical practice of first-person methodologies within somatics, outline the historical growth of two differing yet parallel epistemologies of practice with regard to the knowledge of the body, and illustrate how these differing epistemologies of practice can find a common ground in the 'turn to experience' within HCI. The growth of publications exploring embodiment within the field of human computer interaction is evidence of the need to refine instrumental knowledge of the human body in action, particularly when that action is implicated in or applied to the use of technology [see Table 1 Chapter 1].

2.2.1 Characterizing First-Person Methodologies

First-person methodologies can be characterized as embodied technical practice that is both self-reflexive and self-enacted. They *attend* to the self in order to *act* upon the self. First-person methodologies are an example of what Schön refers to as reflection-in-action, and what Foucault refers to as Technologies of the Self. As reflection-in-action, first-person methodologies involve technical problem solving within the broader context of 'reflective embodied inquiry'. As Technologies of the Self, first-person methodologies constitute part of a larger history of practices of subjectivity and self-cultivation that include ancient western and eastern cultural forms. This section outlines characteristics shared by first-person methodologies and illustrates how first-person practices play a role in defining the areas of intersection between somatics and

[13] Turner, V., (1986). Dewey, Dilthey, and Drama: An Essay in the Anthropology of Experience, *The Anthropology of Experience,* Chicago: University of Illinois Press, p 43.

other contemporary disciplines such as performance, philosophy, physiology, psychology and eastern medicine. While first-person methodologies are central to somatics and body-based performance such as modern dance, they also contribute to the technical practices and tacit knowing: the 'know-how' of many other disciplines. Section 2.4 gives examples of the values and instrumentality of first-person practice.

2.2.1.1 Common Characteristics of First-Person Methodologies

First-person methodologies share a set of common characteristics. Their goal is ameliorative: to *learn* through the *experience* of the self. They are technical practices that use a set of definable, rigorous, physical techniques that can be learned. When enacted, they produce recognizable and repeatable body-states. First-person techniques are self-reflexive and self-enacted. While third-person methodologies use observation to gain knowledge about the world, first-person methodologies use observation to gain knowledge about the self. Based in self-observation, they use the direction of attention or awareness to re-educate perception. Intention, intuition and movement play important roles in their attentional processes. Other disciplines that use first-person methods refer to them in a number of ways. Within phenomenology these techniques are referred to as *epoché*, reduction-suspension or phenomenological reduction, and engage techniques such as phenomenological description[14] to access and record these states. Within psychology first-person techniques are known as introspection or reflection, focusing[15] and cotention[16]. Within the contemplative

[14] Following from the earlier writings of Maxine Sheets-Johnson, Sondra Fraleigh, a dance scholar, somatics practitioner and contemporary dance choreographer, introduced the first-person method of phenomenological description into contemporary dance scholarship, opening a discourse for first-person experience of the dancer and choreographer to be acknowledged, valued and interpreted as formal knowledge within the field. Fraleigh's contribution included examples of phenomenological description in the context of choreography and dance education. See Sheets, M. (1967). *The Phenomenology of Dance,* Madison: The University of Wisconsin Press, pp. 10-31 (as cited in Nadel & Miller, 1978), and Fraleigh, S.H. (1991). III. A Vulnerable Glance: Seeing Dance through Phenomenology, *Dance Research Journal, 23*(1), 1991, 11-16.

[15] Eugene Gendlin developed first-person attention processes which he called Focusing 'the experiential method'. Focusing is a mode of inward bodily attention that cultivates self-managed attentional skills and expertise. See: Gendlin, E.T. (1996). *Focusing-Oriented Psychotherapy: A Manual of the Experiential Method,* New York: The Guildford Press. Mark Johnson cites Gendlin's contribution to embodiment practices, attributing his blending of formal-structural with felt-qualitative as an approach to *revaluing* the bodily

traditions they are referred to as mindfulness[17]. A central characteristic of first-person techniques is the simple act of paying attention to the self. The common goal is learning: re-educating perception to increase discernment and freedom of choice for action. First-person methodologies access and construct knowledge in the body.

> Our body moves as our mind moves. The qualities of any movement are a manifestation of how mind is expressing through the body at that moment. Changes in movement qualities indicate that the mind has shifted focus in the body. Conversely, when we direct the mind or attention to different areas of the body and initiate movement from those areas, we change the quality of our movement. So we find that movement can be a way to observe the expression of mind through the body, and it can also be a way to affect changes in the body-mind relationship. [18]

Section 2.4 gives examples of the values underlying the instrumentality of the common characteristics of first-person methodologies introduced here, including: access to body-state, self-observation, sensory-motor perception, attention, intentionally directed action, and state-dependant access to knowledge.

2.2.1.2 First-Person Methodologies Intersect Somatics With Shared Disciplines

While first-person methodologies are central to somatics and performance, they also contribute to the epistemologies of practice of a number of other contemporary disciplines. First-person methodologies are the common ground for shared knowledge across the multi-disciplinary boundaries of somatics and performance, psychology, cognitive science, physiology, eastern philosophy and medicine, and western philosophy, particularly phenomenology and pragmatism.

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experience of language and meaning, see: Johnson, M. (2007). *The Meaning of the Body: Aesthetics of Human Understanding,* Chicago: The University of Chicago Press, p. 79-85.

[16] The psychoanalyst Trigant Burrow highlighted what he called the 'ecosomatic' function of first-person attention in its importance to connecting us is a sustaining way with our environment. His term for *cotention* identifies shared attention to experience, while distention defines a loss of ability to 'attend to' ourselves in relation to the world around us. See: Burrow, T. (1999), op. cit.

[17] For a discussion of similarities among first-person methodologies particularly with regard to method and validation see Varela, F.J., & Shear, J. (1999). First Person Methodologies: Why, What, How? *Journal of Consciousness Studies, 6*(2-3), p. 7.

[18] Cohen, B.B. (1993), op. cit., p. 1.

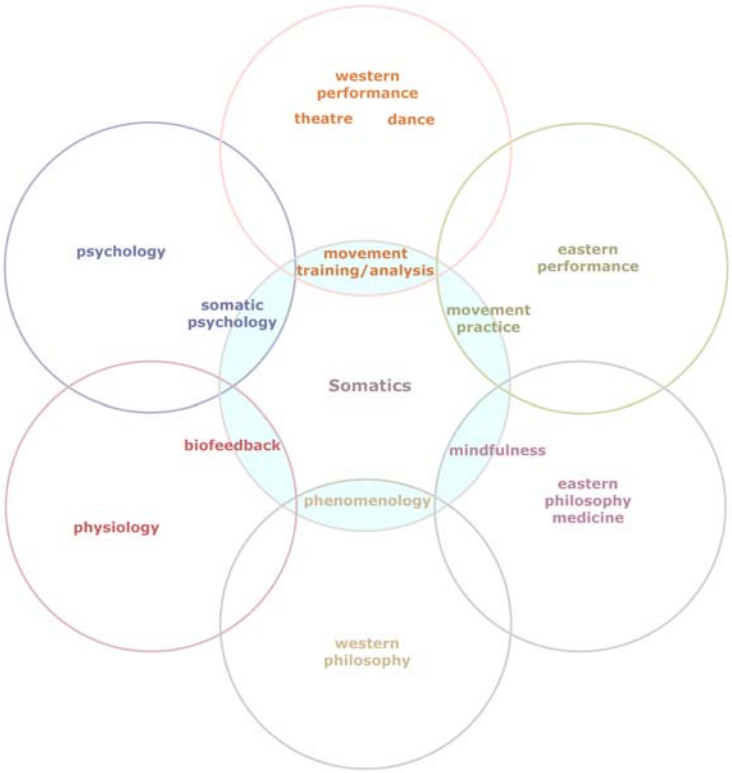

Figure 8. First-Person Methodologies are the Intersection between Shared Disciplines

Figure 8 illustrates how first-person methodologies form the intersecting areas shared between somatics and other contemporary disciplines. First-person methodologies hold an integral position in knowledge construction, particularly where the body or self is the site of research. In the disciplines illustrated first-person methods are often partnered with second- and third-person methodologies. In *The View From Within: First-person Approaches to the Study of Consciousness,* Varela and Shear explore the efficacy of first-person practice and acknowledge the expanded understanding that can be gained by blending first-, second- and third-person methodologies. They describe the need for creating a continuum of practice where first-person methodologies are neither isolated in nor excluded from research:

> It would be futile to stay with first-person descriptions in isolation. We need to harmonize them by building the appropriate *links* with third-person studies. We seek methodologies that can provide an open link to empirically based description… This often implies an intermediate position, a second-person position.[19]

The following examples investigate the way we understand *knowing* in the world and explore first-person approaches that can expand our *quality* of knowing the world through ourselves.[20] The examples are far from exhaustive, yet they illustrate the breadth and applicability of first-person methodologies in their capability to explore personal, social and political forms of knowing.

First-person methodologies have direct transferability beyond knowledge of the self because they access and train acuity in multiple aspects of cognition including observation, discernment, synthesis, critical distance, focus and clarity. Valerie Janesick in *Stretching Exercises for Qualitative Researchers* suggests that observing the self increases a researchers skill, capability and mastery of the practice of observation of other phenomenon in the world. She argues that since empirical research relies on 'direct experience and observation', the qualitative researcher herself is the *instrument* used in observational research, and that this instrument requires development, practice and refinement.

> In qualitative work, the fact that the researcher is the research instrument requires that the senses be fine-tuned. Hence, the idea of practice, on a daily basis, sharpens the instrument.[21]

First-person approaches engender concepts that value attention to the senses, the importance of practice and the self as an instrument of perception. These are echoed in the skills developed within the body-based practices of somatics.

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[19] Varela, F.J., & Shear, J. (1999), op. cit., p. 2.

[20] Neuman, Y. (2003). *Processes and Boundaries of the Mind: Extending the Limit Line*, New York: Kluwer Academic, p. 3.

[21] Janesick, V.J. (2004). *Stretching Exercises for Qualitative Researchers,* Thousand Oaks, California: Sage Publications, p. 3.

Mathew Miles and Michael Huberman resonate with Janesick's stance in their discussion of what they call 'recurring' features of qualitative research, elements that persist, reappearing time and time again in the process of building research design:

> The researcher attempts to capture data on the perceptions of local actions "from the inside" through a process of deep attentiveness, of empathic understanding *(Verstehen*) and of suspending or "bracketing" preconceptions.[22]

Miles and Huberman highlight the need for an inner process that enables greater refinement, subtlety and accuracy in data collection. First-person accounts of experience access attention as a precursor and foundation for accessing and 'capturing' data in the world. It is the first-person framework that develops and deepens abilities of attending, enables empathy through inter-subjectivity and, at its best, is able to suspend preconceptions through techniques of self-observation and reflexivity that support a critical discernment.

Just as first-person approaches can contribute to third-person methodologies, the converse is also true. Third-person methodologies can provide constructs that can be applied to self-observational techniques and phenomenological description. One such example is anthropology's influence on performance studies through Victor Turner's articulation of the use of ethnographic methods in their cultural and performative contexts. Ethnography studies human social phenomena and meaning created in the context of cultural values. While ethnography uses participant observation to bridge the *intersubjective* experience of the cultural 'other' with the researcher-as-observer, autoethnography turns the observation back toward the self, in a reflexive account of one's own experiences situated within culture. In Victor Turner's edited collection *Anthropology as Experience* he recounts the potency and transcendental nature of the aesthetic qualities of theatrical experience. He notes that somatically based techniques

[22] Miles, M.B. & Huberman, A.M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook,* Thousand Oaks, CA: Sage, p. 6.

used in ritual are *designed* to shift the neurobiological state of the entire soma toward a shared group experience of gestalt, timelessness and transcendence[23]. Turner's approach to anthropological fieldwork influenced and formulated approaches within performance studies[24] that borrowed from anthropology's methods in order to create a 'field-work of the self':

> Fieldwork as in "participant observation" is a much-prized method adapted from anthropology... Participant observation is about learning about cultures other than that of the fieldworker. In anthropology for the most part the home culture is "Western" and the "other" non-Western. *But in performance studies the* other *may be an aspect of one's own behaviour*… [italics mine] In an active way, one performs fieldwork [on the self]. Taking this critical distance from the self invites revision, the recognition that even knowledge itself is not fixed, but subject to a "rehearsal process" of testing and revising.[25]

This describes the concept of constructing first-person methodologies by *appropriating* third-person observational techniques that focus outwardly to the world, turning them inwardly toward the self. In this example, self-observation techniques are enacted to create a discerning and critical self-reflective distance. This notion of re-visioning the self through critical self-observation in order to revise knowledge is an example of the first-person practice of autoethnography, brought to performance studies through anthropology. Its self-reflexive approach to self-observation is also an example of reflection-in-action as described by Schön.

Observation plays a critical role in all research and inquiry and is central to first-, second- and third-person methodologies. It follows that knowledge can be gained by

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[23] Turner, V. (1986), op. cit.

[24] Performance Studies as a whole accounts for many different registers and epistemologies of practice outside of body-based approaches, including other frameworks such as those of spectatorship and reception theory, which do not emphasize physical theatre, movement-arts or enacted performance. The example given here focuses on those aspects of Performance studies that utilize first-person methods in a somatic educational form, those techniques that re-form the somatic self. See Schechner, R. (2002). *Performance Studies,* London, UK: Routledge.

[25] Victor Turner and Richard Schechner met in 1977 prior to Clifford Geertz's Trilling Lecture in New York; their meeting began a productive and creative interdisciplinary partnership. They remained colleagues, collaborators and friends until Turner's death in 1983. The intersection between anthropology and performance studies has had an historical effect on the development of both fields. See Schechner, R. (1985). Forward by Victor Turner, *Between Theater and Anthropology,* Philadelphia: University of Pennsylvania Press.

sharing observational strategies and techniques, and that the skills of observation lie within the observer herself.

From the intersections of philosophy, psychology and Buddhist mindfulness practices, Natalie Depraz, Francisco Varela and Pierre Vermersch explore first-person observational techniques in *On Becoming Aware: a Pragmatics of Experiencing*[26]. They describe the concrete activity of self-observation: how we examine what we live through, and how we *become aware* of our own mental life. Acknowledging that the range of our experiences is immense but that our inherent ability to observe ourselves is habitually ignored or left atrophied, they illustrate that exploring human experience amounts to developing and *cultivating* this basic ability through *specific training.*

Their work is rigorous and precise: describing methods for stepping back from our day-to-day perception of experience (suspension), techniques for moving attentional focus from the world to ourselves (redirection), the process of recognizing qualities of attention (letting-go), intuition as gesture and as process, the nature of intuitive evidence, criteria of appreciation and completion, and comparing similarities of expression and validation. By applying Husserlian phenomenology to practices of observation and attention, Depraz, Varela and Vermersch outline a method of exploring our experience that is consonant with somatics and body-based performance.

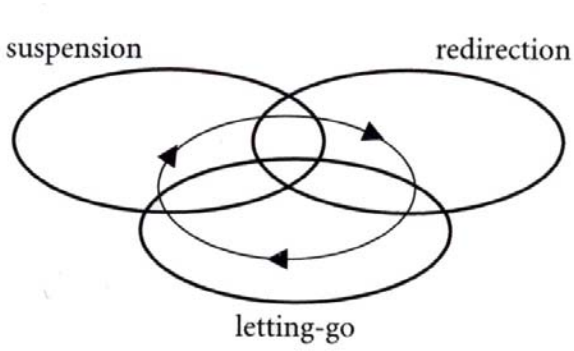

Figure 9. The process of *Becoming Aware* (from Depraz, Varela and Vermersch)

[26] Depraz, N., Varela, F.J., & Vermersch, P. (2003). *On Becoming Aware: a Pragmatics of Experiencing (Advances in Consciousness Research, 43)*, Amsterdam: John Benjamin Publishing.

Through examples taken from empirical research, meditation, psychoanalysis, teaching, writing and interviewing, *On Becoming Aware* illustrates the breadth and applicability of first-person methodologies in their capacity to explore personal and social forms of knowing, giving an account of validation that places first-, second- and third-person methodologies along a continuum where the three positions are not differentiated by the content they address, but *by the manner that they are inserted in a social network.* By favoring a *continuum* of methodological positions along a social network, the need for oppositional positions between public and private, or objective and subjective, can dissolve. This model allows for the sharing of knowledge and insight through observational strategies and techniques, supporting *radical interdisciplinary dialogues*.

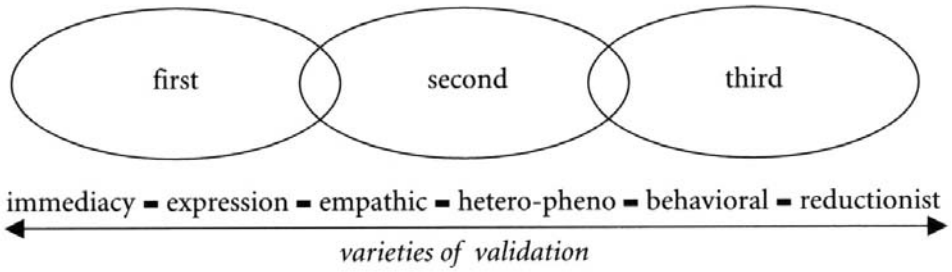

Figure 10. Validation Methods along the Continuum of a Social Network (Depraz, Varela, Vermersch)

This section has described ways in which first-person methodologies contribute to the epistemologies of practice of many contemporary disciplines. First-person methodologies have direct transferability beyond knowledge of the self, and just as first-person approaches can contribute to third-person methodologies, the converse is also true. Observation plays a critical role in all research, so that exchanging observational methods along a social continuum has the potential to enrich research methods and the knowledge they create.

2.2.2 The Politics of the Self in an Ethics of Radical Interdisciplinarity

Accessing experience as a political 'tool of knowledge' also forms an integral part of our histories of subjectivity and in Foucault's terminology, our technologies of the self. Like Foucault, the authors Depraz, Varela and Vermersch, draw attention to the ancient lineage of self-observational practices linking them with Greek Antiquity. Foucault traces subjective practices including self-observation to the ancient Hellenistic concept of the 'care of the self' illustrating how first-person practices such as 'attending to the self' were utilized as a foundation of knowledge. In Greek Antiquity, the Delphic oracle *know thyself* was understood as a form of knowledge born from self-cultivation, self-observation and somatic practice in which the body was held 'accountable' for knowledge construction. This differs from our contemporary rationalist epistemological reading of the directive *know thyself,* which has shifted toward an objective third-person knowledge 'about' the self, which Foucault links to the *Cartesian moment:* the historic Cartesian split between body and mind[27]. While both these forms of knowledge offer tremendous value and resources for acting in the world, my own research proposition applies these differing epistemological frameworks in a complementary and ethical radical interdisciplinary framework: one in which technology design can be born through self-knowledge, enabling a form of 'citizenship' of technological inquiry. This refers to the Hellenistic notion that mastery of knowledge gained through 'attending to the self' enabled one to enter public life as a mature citizen: one could *care for the city* only when one understood the techniques and subtleties of care for the self[28]. Depraz, Varela and Vermersch also link the attentional practice of *epoché* or suspension with the Greek ethical attitude of the Stoics in which the freedom of the wise man constituted the ability and the techniques to suspend

[27] Foucault, M. (2004), op. cit., p. 17-18.
[28] Ibid.

judgment until he had gained an 'absolutely certain knowledge'[29]. In this case, the act of self-cultivation, the observation of inner processes transform and ameliorate the act of discernment, developing observational acuity resulting in greater objectivity *through* the subjective relationship with the self. This is a crucial example, since it illustrates the ability of a subjective position to increase a form of clarity, resulting in greater objectivity (a rationalist term that has been valorized to refer to truth-value).

The threshold between self-knowledge and the role of the self as a citizen in public life locates body-based somatic techniques (technologies of self-change) within the issues of disciplinary power structures. Our ability to effect change within our self is a precursor to our ability to effect change within our context. This corporeal transformative relationship between our self and our disciplinary, social and institutional role[s] is a vital political link in our ability to alter our world and our technologies *through* our self.

The necessary connection between self-knowledge and ethical action in the world is echoed in the pragmatist view of John Dewey, the political view of Michel Foucault, the social-activist view of Augusto Boal and the somatic-philosophical view of Thomas Hanna, Sondra Fraleigh, Bonnie Bainbridge-Cohen, Elsa Gindler, Trigant Burrow and Richard Shusterman (in addition to countless somatic practitioners). These positions share the view that repetitive or habitual action limits human agency. These limitations are evidenced by habitual thought, feeling and physical bodily postures, combining to create a narrowing of the human faculty of perception, reducing access to knowledge of the surrounding environment and the world. Thomas Hanna, the somatics-educator, refers to this as "sensory-motor amnesia"[30], a bodily state that reduces our ability to act and respond with agency in the world.

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[29] Depraz, N., Varela, F.J., & Vermersch, P. (2003), op. cit., p. 25.

[30] Hanna refers to sensory-motor amnesia as a habituated state of forgetfulness, a memory-loss situated in our central nervous system affecting the image of who we are, what we can experience and what we are

Augusto Boal, the Brazilian theatre director and cultural activist founded the Theatre of the Oppressed, a theatrical form originally used to effect social change by enabling the impetus for change to come from within the *spect-actors*, who acted simultaneously as participants and audience members. He evolved the performative practices commonly associated with the Theatre of the Oppressed for the purpose of ameliorating social conflict, creating harmony within society[31]. These forums enabled habitual and often unseen social and political situations to 'come to light', highlighting the underlying or embedded emotion and thought. Within this political and ethical stance Augusto Boal and Michel Foucault can be compared in their political strategies and goals of social transformation. Both Boal and Foucault enact their goals by constructing skills (of thinking and acting) that support self-agency and self-knowledge. While the example below compares habituated feeling with habituated thinking, the goals are ethically similar. Augusto Boal's early theatrical exercises outlined in *Games For Actors and Non-Actors* was concerned with de-habituating the performers loss of ability to express a greater *range* of feeling:

> Our first principle at that time was that emotion … should be given free rein to shape the final form of the actor's interpretation of a role. But how can emotions 'freely' manifest themselves … if that very instrument (the body) is mechanized, automated in its muscle structures and insensible to 90 per cent of its possibilities? … How does this mechanization of the actor's body come about? By repetition. The senses have an enormous capacity for registering, selecting and then hierarchising sensations.[32]

This can be compared with Foucault's notion of the habituation of thought. Foucault focuses on the history of thought and how our thinking patterns are created through social constructs, ideologies and institutions. His primary goal was to analyze these formal social structures "related to specific techniques that human beings use to understand themselves"[33]:

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able to act upon, Hanna, T. (1980). *Somatics: Reawakening The Mind's Control of Movement, Flexibility, and Health.* Addison-Wesley Publishing, p. xiii.

[31] Boal, A. (1995). *The Rainbow of Desire: The Boal Method of Theatre and Therapy*, London: Routledge.

[32] Boal, A. (1992). *Games For Actors and Non-Actors*, London, UK: Routledge, p. 40.

[33] Foucault, M. (1988c), op. cit., p. 18.

> My field is the history of thought. Man is a thinking being. The way he thinks is related to society, politics, economics, and history and is also related to very general and universal categories … The political and social processes by which Western European societies were put in order are not very apparent, have been forgotten, or have become habitual. They are a part of our familiar landscape, and we don't perceive them anymore.[34]

Just as Boal and Foucault identify the form of habit as a precursor to limiting agency and knowledge, they suggest the *practices* of self-ameliorative process, which lie in the somatic form of bodily retraining, or what Foucault refers to as technologies of the self. Augusto Boal suggests exercises of 'de-mechanization':

> Like all human beings, the actor acts and reacts according to mechanisms. For this reason, we must start with 'de-mechanisation', the re-tuning (or de-tuning) of the actor … He must relearn to perceive emotions and sensations he has lost the habit of recognizing.[35]

Michel Foucault notes his goal of creating greater discernment with regard to the habits of thought that he claims are created by historical social forms that have become habitual and therefore unconscious.

> It is one of my targets to show people that a lot of things that are a part of their landscape—that people think are universal—are the result of some very precise historical changes.
>
> All my analyses are against the idea of universal necessities in human existence. They show the arbitrariness of institutions and show which space of freedom we can still enjoy and how many changes can still be made.[36]

My proposition is that the ethical attitude of the attentional practice of *epoché* can be used to apply Boal's notion of de-mechanization and Foucault's notion of the technologies of the self to the design and development of our digital technologies of production. By positioning the concept of an ethical citizenship born of a 'care of the self' within the landscape of technology design in the world, we can work to improve the *quality* of knowing that underlies our technology design and use.

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[34] Ibid, p. 10.
[35] Boal, A. (1992), op. cit., p. 41.
[36] Foucault, M. (1988c), op. cit., p. 11.

2.2.3 Two Parallel Epistemologies of Practice

Having characterized the technical practices of first-person methodologies and positioned them within an ethics of radical interdisciplinarity, I would like to return to the historical development of the parallel yet differentiated epistemologies of practice that represent somatics and human computer interaction. First-person methodologies of body-based disciplines began to develop as a *secular* practice with the emergence of Delsarte's (1811-1871) movement system in the mid-nineteenth century. In her book *Heilkraft durch Bewegung,* (translated as: Healing Through Movement), Hede Kallmeyer, one of the early forerunners of the discipline, attributes Delsarte's originating work with inciting "the dawn of body consciousness"[37]. Her reference identifies a historical moment when the subjective experience of the body could be reclaimed in what would become a growing secular development of 'body-based disciplines'. Delsarte developed his movement system during the mid-nineteenth century Victorian Era, which saw the influence of the Greek revival and its effects upon architecture and the movement arts. Togas and loose robes were worn regularly in Delsarte's classes, freeing the body from the heavier constrictive clothing of the day, and later influencing dance arts during the Belle Époque that established Isadora Duncan and her infamous attire. Hede Kallmeyer's statement addresses a historical juncture in western European culture when the body's *own experience* was re-appropriated or reclaimed to a wholly 'secular self'. This marked a growing understanding of the body as less singularly defined by the religious mores that had dominated Europe. In this re-appropriation, the body was freed to become not only its own first-person subject, but also an object of third-person empirical study.[38] Each of

[37] As quoted by Ilse Middendorf in The Perceptible Breath: A Breathing Science, in Johnson, D.H. (ed.) (1995). *Bone, Breath and Gesture: Practices of Embodiment,* Berkeley: North Atlantic Books, p. 76.

[38] Delsarte was a contemporary of Étienne-Jules Marey and Eadweard Muybridge, both involved in studying human movement. Marey was a French scientist and chronotographer who studied heartbeats, respiration, muscles (myography), and movement of the body. To aid his studies he developed many instruments for precise measurements. Muybridge was an English-born photographer, known primarily for his early use of multiple cameras to capture human and animal motion, and his zoopraxiscope, a device for projecting motion pictures that pre-dated the celluloid filmstrip that is still used today. Both Marey and Muybridge worked to understand the body in movement and have been connected with the development of Cinema.

these trajectories represent a direction in which the body began to be 'loosened' from the grips of Victorianism and are identified by a set of parallel histories. First, the history of constructing knowledge through the first-person subject (the domain that defines body-based disciplines and includes somatics) and second, the history of constructing knowledge through third-person scientific data that describes the body in action (the domain of medicine and the sciences, including HCI). Each of these trajectories refined their own parallel epistemologies of practice from the nineteenth century to contemporary frameworks. These trajectories branched and traversed over time, inciting various intersections that included phenomenology, psychology and, more recently, embodied cognition and neurophysiology. The main differentiation between these two parallel paths remains 'the mechanism by which experience is claimed': one from *within the subject* and the other from the externalized frame of an *empirical body*. In this junction lies a key historical moment where the relationship of knowledge to observation and experience results in the differentiation of epistemologies of practice. Over time, these epistemologies developed differing language, methods, values, assumptions and approaches to validity. The trajectory based in first-person experience used methods centered in self-observation: valuing knowledge enacted through experience. The trajectory based in empirical methods used third-person observation utilizing scientific methods: traditions where knowledge was claimed outside the subject, in which the body became an object of knowledge rather than the subject of experience. These parallel and differentiated practices have viewpoints that define complementary yet differing epistemologies of practice, which even today remain central to the fields they encompass.

2.2.4 The Turn to Experience within Human Computer Interaction

At this present juncture in history, contemporary research in human computer interaction is re-directing its inquiry toward designing for lived experience, asking what

Delsarte on the one hand and Marey and Muybridge on the other exemplify these two parallel and differentiated trajectories and approaches to human movement and experience.

it would be like to put *felt-life*[39] at the centre of HCI without marginalizing the cognitive aspects of interaction with technology. In *Technology as Experience*[40], John McCarthy and Peter Wright introduced the term *felt-life* into HCI, drawing on the philosophical pragmatism of John Dewey and Mikhail Bakhtin. McCarthy and Wright define *felt-life*:

> … life as lived, sensed and experienced [focusing] attention on the sensual and emotional [while] throwing light on the cognitive and intellectual aspect's of people's interactions with technology.[41]

McCarthy and Wright argue for the importance of sensory engagement, the value of emotional life as goal-setting and evaluative, and the irreducible relationship between a person and their use of technology. They propose the inclusion of subjective, personal values to be sought, documented and incorporated within the empirical research of user experience, and they advocate redressing the balance between our inner life and external behaviour in relation to technology. Their argument and valuation resonates deeply with my own positioning of somatics practice as an example of an ameliorative, ethical and relational design resource within HCI. Somatics and body-based practices focus their expertise precisely on techniques of self-awareness, subjectivity and agency created through an ethical-aesthetic relationship to our bodies and our selves. The exploration of felt-life within HCI holds a nascent and yet-to-be fulfilled place within the design of technology and there is a continued need for such a discourse to develop and flourish within HCI. McCarthy and Wright state:

> An account of self as the narrative centre of experience is insufficient. It is too cognitive an approach to self, underplaying as it does the often-inexpressible feelings that constitute our awareness of our self or our subjectivity. This is an area [within HCI] … which none have yet engaged in a fully satisfying manner. A radical approach to the mediation of our subjectivity by technology requires us to linger in the gap between inner life and external behaviour, where our subjectivity or sense of self is created, and *we have not yet done that in reflecting on our practices with technology*.[42] [italics mine].

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[39] McCarthy, J., & Wright, P. (2005). Putting 'felt-life' at the centre of human-computer interaction (HCI), *Cognition, Technology & Work,* 7(4), p. 262-271.
[40] McCarthy, J., & Wright, P. (2004). *Technology as Experience,* Cambridge, Massachusetts: MIT Press.
[41] Ibid, p. 262.
[42] Ibid, p. 267.

Within HCI, the turn to experience is sketching felt-life as first-person, self-reflexive and personal, and acknowledging that

> … although [felt-life] does not lend itself to a natural sciences approach, it is possible to use it to enquire into practical reasoning in a systematic and critical way,[43]

This approach to felt-life echoes the research goals of this thesis. By bridging methodologies from somatics and the body-based disciplines of modern dance performance, we can demonstrate their instrumentality in supporting the growing discourse of felt-life within HCI.

> From a felt-life perspective, it is in the moment when experience is being expressed … that feeling and expression create each other … [that] human subjectivity or self-awareness is created. Putting felt-life at the centre is an attempt to press into these gaps in order to focus our discussions of people and technology on the moments of potentiality in which human subjectivity is created.[44]

From the field of somatics, Thomas Hanna's perspective corresponds with that of McCarthy and Wright addressing the need for the subjective somatic viewpoint that can augment knowledge from the perspective of inner-life and outer behaviour. Hanna states that:

> the somatic viewpoint complements and completes the scientific view of the human being, making it possible to have a science that recognizes the whole human: the self-aware and self-responsible side as well as the externally observable bodily side.[45]

There is an intentional movement from within both HCI and somatics, to create a dialogue for greater complementarity: a movement toward bridging these differing epistemologies. Echoing McCarthy and Wright's propositional framing for lived experience within HCI, I turn this approach toward somatics by suggesting that 'although first-person methods of somatics do not obviously lend themselves to a

[43] Ibid, p. 270.
[44] Ibid, p. 267.
[45] Hanna, T. (1980), op. cit., p. 21.

natural sciences approach, it is possible to use these epistemologies of practice to enquire into practical reasoning of design in a systematic and critical way'. This can be seen as a response to the invitation within human computer interaction to explore experience in the context of felt-life, an endeavor that has the potential to enliven and enrich knowledge of humanity and the experience of itself.

2.2.5 Summary of First-Person Methodologies

First-Person Methodologies
• Are embodied technical enactments of experience that exemplify reflection-in-action
• Are self-reflexive and self-enacted
• Form part of a larger history of practices of subjectivity and self-cultivation.
• Are the central epistemology of practice and are well-understood within somatics and performance
• Contribute as an epistemology of practice within a number of contemporary disciplines such as phenomenology, biofeedback in neurophysiology, psychology, cognitive science, Western and Eastern forms of movement studies, martial arts and contemplative traditions
• Are often used in partnership with second- and/or third- person methods in order to communicate, describe, document, validate or transmit representation of knowledge
• Can transfer knowledge applicable in empirical methods requiring direct experience and observation. Knowledge Transfer can be directed toward the researcher as an instrument of observation and toward human participants that engage as subjects or objects of experience or study
• As praxis they have their own internal validity, and are authenticated and corroborated through a technical community of practice. Mastery is attained when the techniques and knowledge they represent are fully embodied through experience.

Table 2. Summary of First-Person Methodologies Context and Concepts

2.3 Historical Influences

Moving forward from the definition of somatics and first-person methodologies, we explore the historical influences that provide the context for its contemporary technical development and its epistemologies of practice. Somatics shares a rich cultural history with modern dance and performance, the development of cinema, the emergence of phenomenology, the development of medical empirical science, its description of 'the body', the historical links of Taylorism, work studies, ergonomics and the birth of HCI. A comparative historical analysis of somatics and its links to the history of modern dance performance practice illustrates its connection to cultural phenomenon that define 'markers' in nineteenth and twentieth centuries history of thought. The earliest origins of somatics are found within ancient cultural forms of movement practice including those of the Hellenistic era, eastern forms of movement, theatre, yoga, martial arts and primitive ritual practices involving body and transformation of body-state: including shamanism and tribal practices that have existed across almost all cultural forms. The historical analysis presented here focuses on European pioneers of body-practices, tracing the migration of their traditions across Europe to America. For the purpose of this analysis the scope is delimited by western traditions. The goal of the historical analysis is twofold: 1) to illustrate the parallel trajectories of epistemologies of practice representing 'body knowledge' that emerged following the industrial revolution, and 2) to link these trajectories to historical markers that influenced thought and practices leading to the development of technology, the emergence of ergonomics, Taylorism and the pre-cursors to the field of human computer interaction. The historical influences of somatics occur within the larger *history of subjectivity and the self*: through its intertwining with performance and dance, its eastern influences, and the shared twentieth century 'history of thought and practice' that has shaped both HCI and somatics. This historical trajectory is illustrated in Figure 12 (page 73).

2.3.1 The Landscape of a History of Subjectivity

Figure 12 traces the history of western body-based traditions to the present, illustrating their development within three categories of practice: 1) somatics, 2) performance and, more specifically, the modern dance and movement arts, and 3) theories of experience and embodiment. The last category concerns the discursive practice of developing and transcribing historical concepts in the traditions of philosophy and psychology.

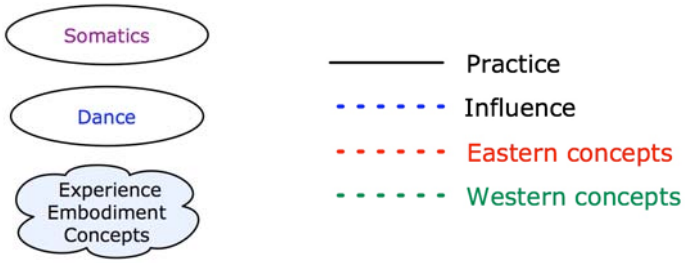

Figure 11. Explanation of Legend for Figure 12 History Illustrations

The connecting lines illustrate the *forms* of transmission of knowledge and influence. Practice is represented as a solid line and indicates knowledge that is *transmitted* through 'physicalization': physical mastery through the body within the practice itself. A dashed blue line indicates influence: concepts or knowledge that have *influenced* or that are concurrent with the development of the physical practice. The historical lineage traces its emergence through a European and western milieu influenced by cultural, social, political and philosophical undercurrents, yet richly influenced by eastern practices and philosophies. The historical illustration in Figure 12 depicts individuals, rather than named techniques. The history of somatics abounds with individuals who pioneered body-based techniques as a personal response to physical injury or illness that threatened their lives or their personal freedom.

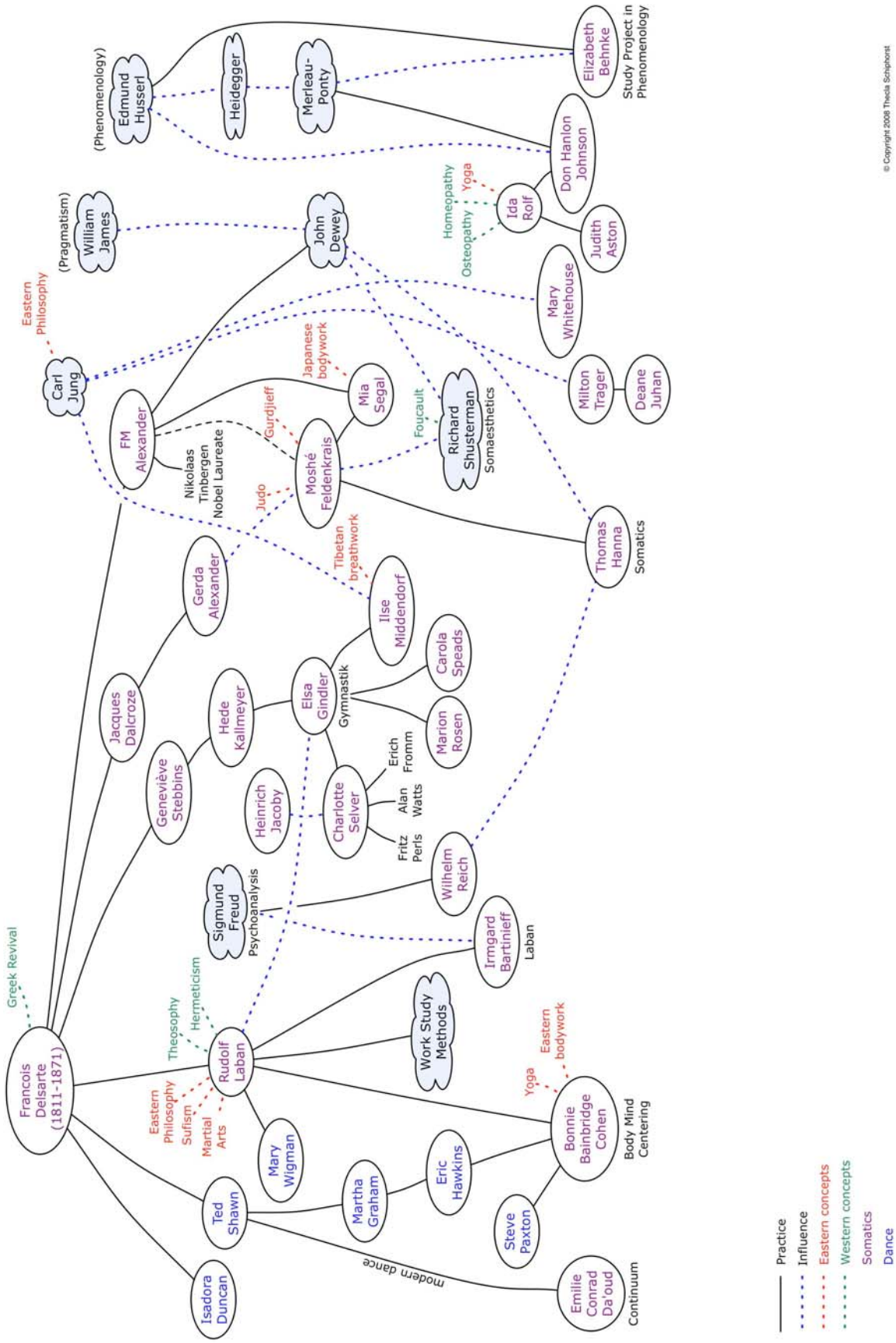

Figure 12. History of Somatics: Contemporary Influences in Western Practice

Don Hanlon-Johnson writes in an impassioned voice about the "feistiness"[46] of these individuals viewing their history as a resistance movement against the dominant notions of the 'knowledge of the body'. The writing of these practitioners frequently acknowledges their marginalized positions within the scientifically and medically legitimized forms of body-knowledge.

> Although muffled by the din of the dominant voices, there has been a steady resistance building among innovators who have devoted their lives to developing strategies for recovering the wisdom and creativity present in breathing, sensing, moving and touching. They worked quietly, wrote very little. Typically, they spent their lives outside the vociferous worlds of university and research clinic.[47]

The necessary interrelationship between the political and the self is acknowledged in Foucault's explication of the *technologies of the self*: a category of subjective processes that operate on the self to effect change or to transform the self in some way in order to attain a certain 'state':

> Technologies of the self … permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, …[48]

One of Foucault's key concepts is that an individual's choice and ability to act *upon herself* is at once personal and political: that individual domination is in part the ability to reclaim power over the self, and that this 'care of the self' prepares us to care for the world from a different locus of power.

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[46] Don Hanlon Johnson compiled one of the early collections of texts written by Somatics practitioners and describes the field in *Introduction,* in Johnson, D.H. (ed.) (1995). *Bone, Breath and Gesture: Practices of Embodiment*, Berkeley: North Atlantic Books, p. xi.

[47] Ibid. p. ix.

[48] For Foucault, Technologies of the Self are one of four Technologies each a matrix of practical reason, the others being Technologies of Production, which permit us to produce, transform or manipulate things; Technologies of Sign Systems, which permit us to use signs, meaning, signification; and Technologies of Power, which determine the conduct of individuals and maintain an objectification of the subject. Technologies of the Self permit individuals to effect by their own means operations on themselves. For Foucault these technologies hardly ever function separately, and each is concerned with a certain kind of domination. Technologies of the Self are concerned with individual domination and therefore refer to a power of or over the self. See Foucault, M. (1988c), op. cit., p. 18.

> I have attempted a history of the organization of knowledge with respect to both domination and the self. I am more and more interested in the interaction between oneself and others in technologies of *individual domination*, the history of how an individual acts upon himself in the technology of the self.[49]

These technologies of the self are among the core values operating from within the practices of embodiment with somatics and performance and define the mechanisms by which experience is understood and claimed. Augusto Boal's work in theater echoes the values of developing the self through technical practices where 'care of the self' prepares us to care for the world from a different position of power and knowledge.

> As the most important element of theatre is the human body, this book is concerned with physical movements, distances, volumes, relations ... We should know the world we live in, the better to change it. Theatre is a form of knowledge; it should and can also be a means of transforming society.[50]

The history of the subjectivity of the self is often linked to movements in art, where the context of art practice enables a critical stance and problematization of social, cultural or political structures. Don Hanlon Johnson links this view to the acts of resistance of the pioneers of body-practices:

> The pioneers in embodiment are unwilling to take at face value a poor medical prognosis … or ordinary states of consciousness. Rejecting the bleakness of conventional wisdom, they have chose to survive outside the mainstream...
>
> It is no surprise that the community represented here is not well understood. Its principal teachers have worked to break the 'verbose' hold of rationalism by working on the quieter side of the flesh. With the exception of a few innovators they write little, and often in fragments, close to the logic of bones interlocking with each other without proliferation of unnecessary adhesions. Identifying the harmony of voices of the tradition is similar to the tasks of scholars of other traditions that have existed on the margins of the dominant culture.[51]

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[49] Foucault, M. (1988c), op. cit., p. 19.

[50] Boal, A. (1992). *Games for Actors and Non-Actors*, London, UK: Routledge Press, p. xxxi.

[51] Don Hanlon Johnson compiled one of the early collections of texts written by Somatics practitioners and describes the field in *Introduction,* in Johnson, D.H. (ed.) (1995), op. cit., p. xi.

I seek to identify and to work with the 'harmony of voices' within somatics and body-based performance practice, bridging these practices of embodiment to human computer interaction, while continuing to 'rehearse and perform' the concordances of radical interdisciplinary dialogue. In order to continue this process I will view the historical trajectory illustrated in Figure 12, from three schemas: 1) the intertwining of somatics with modern dance practice and performance, 2) the eastern influences of the development of western body-practices, and 3) the shared twentieth century 'history of thought and practice' that has shaped HCI and somatics.

2.3.2 The Intertwining Relationships of Somatics and Performance

Body-based practices have a long and interconnected history with modern dance. They emerged during the mid-nineteenth century from the same historical source: the Delsarte Method was the precursor to both modern dance, and the emerging body practices that became somatics.

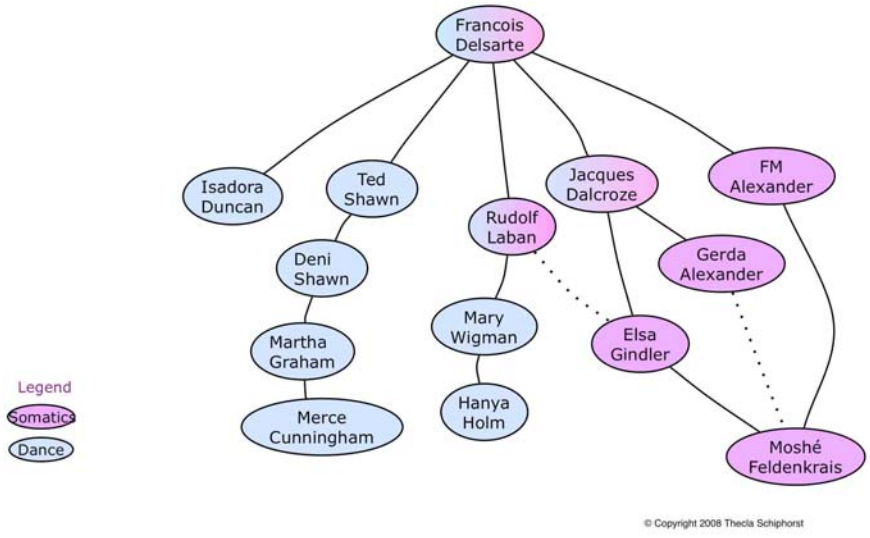

Figure 13. Francois Delsarte's System as Originating Somatics and Modern Dance

Francois Delsarte's (1811-1871) movement system known as *The Delsarte System of Expression* is historically acknowledged as originating the disciplines of somatics and modern dance. Hede Kallmeyer, a student of Genevieve Stebbins who brought the Delsarte system to America, refers to it as the dawning of body consciousness[52]. Figure 13 illustrates the lineage of Delsarte's system, which stimulated the growth and development of the first generation of modern dancers: Isadora Duncan, Ruth St. Denis, Ted Shawn and the Denishawn school. In America, Denishawn produced students such as Martha Graham and Doris Humphrey, continuing the lineage through an entire second generation of early modern dancers. Rudolph Laban and F. Mathias Alexander studied Delsarte's system before they developed their own unique techniques and practices, and through Laban, Mary Wigman and Hanya Holm founded the early European forms of Modern Dance. In the late nineteenth century, Delsarte's method was used to establish the first acting school in the United States. Delsarte's system countered attitudes in the ballet academies that eschewed knowledge of the body for fear that it would produce mechanical movement and a loss of expression.[53]

Delsarte trained as an actor at the Paris Conservatory but was dissatisfied with the lack of authenticity in the posed style of acting. He began a comprehensive quest to understand expressive mechanisms of human movement. Through empirical research, observation and analysis of how humans actually moved, behaved and responded to a multitude of circumstances, Delsarte developed and refined his method.

> Delsarte observed and studied in parks, cafes, hospital wards, churches, mortuaries, and even scenes of disasters. He also studied anatomical medicine. Eventually expressive patterns emerged that he could clearly observe. His "Science of Applied Aesthetics" was a thorough examination of voice, breath, movement dynamics, line and form, and virtually all the element of the body in their roles as expressive agents of the human impulses, mind, spirit, and the vital instinct.[54]

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[52] As quoted by Ilse Middendorf in The Perceptible Breath: A Breathing Science, in Johnson, D.H. (ed.) (1995), op. cit., p. 76.

[53] Stebbins, G. (1886). *Delsarte System of Dramatic Expression*, E. S. Werner, New York. <http://www.openlibrary.org/details/delsartesystemof00stebuoft> see also Williams, J., *the Delsarte project history page*, <http://www.delsarteproject.com/history.htm> (retrieved November 15, 2007).

[54] Ibid.

Delsarte was heralded for bringing experiential knowledge of the body into arenas we now think of as 'movement technologies': techniques to refine knowledge and precision through use of the human body in action. This approach, and the knowledge that was incorporated through it, was carried forward from Delsarte to Rudolph Laban. In the 1930's it emerged in Laban's Work Study Methods, the precursor to ergonomics, and one of the foundations of research that presaged Human Computer Interaction.

Many contemporary practitioners in somatics were technically trained as dancers. Of the practitioners illustrated in Figure 12, these include Emilie Conrad Da'oud, Bonnie Bainbridge Cohen, Irmgard Bartenieff, Mary Whitehouse, and Steve Paxton. The human instinct to move as a form of expression, and to understand that movement as a form of knowledge, intertwine and intersect in a continual cycle of knowing-through-doing that is reflected in the combined practices of somatics and modern dance. As Bonnie Bainbridge Cohen describes her technical practice:

> In Body-Mind-Centering we are the material, our bodies and minds the medium of our exploration. The research is experiential as is the material. We are each the study, the student, the teacher. Out of this research, we are developing the empirical science – observing, contrasting, corroborating, and recording our experiences of embodying all of the body systems and the stages of human development.[55]

The description of her methodological approach highlights the centrality of *observation* as a site and technique for sharing knowledge between self, others and the world. It resonates with the approach of Depraz, Varela and Vermersch in favoring a *continuum* of methodological positions, enabling a greater unity or multivocality between objective and subjective, even science and art: positions that have been unnecessarily cast in opposition to one another. This model allows a co-operative range of validation methods and a return to the notion of supporting *radical interdisciplinary dialogues*

[55] Cohen, B.B. (1993), op. cit., p. 2.

between embodied knowledge in somatics and body-based performance and empirical methods in human computer interaction.

2.3.3 Eastern Influences in the History of Somatics

The Western development of somatics is richly influenced by eastern practices and philosophies. Some of the eastern influences include yoga, martial arts, Tibetan breath work, Sufism, Japanese bodywork, and the contemplative forms of Buddhist meditation. Eastern practices develop mind *through* body, so that the training of one creates knowledge within the other.

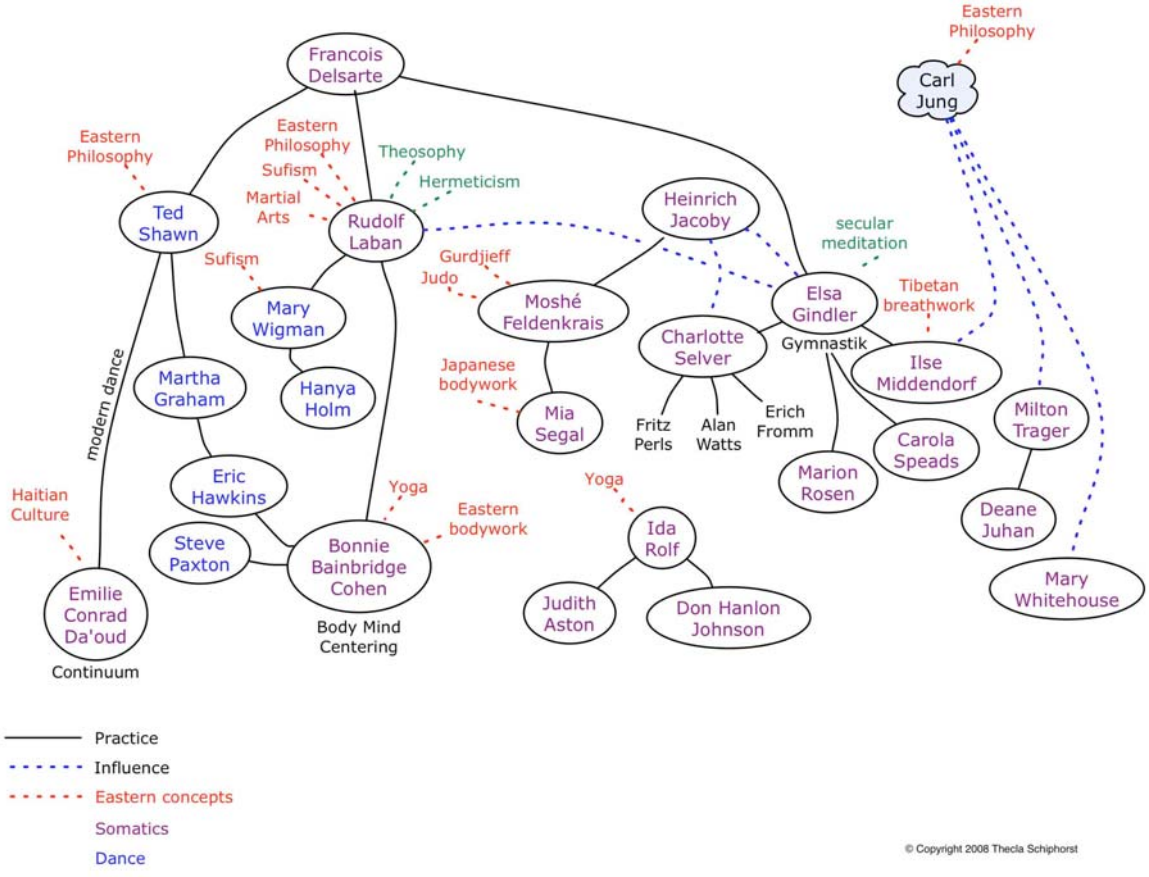

Figure 14. Eastern Influences in the historical development of Somatics

Eastern movement-forms often integrate knowledge from eastern medicine so that movement utilizes a working knowledge of the neurophysiological responses of movement on thought, feeling and action.[56]

In western somatics, the techniques of eastern practices are applied in a secular context, unhooking the necessity for body practice to be bound to non-secular teachings. Within the practice of somatics, the concept of allowing the body to be guided by its own nature does not in any way deny its meaning or the depth of knowledge accessible through its experience. Bonnie Bainbridge Cohen has made considered choices for her approach to teaching:

> It is not that we are trying to change our basic natures. We develop more [knowledge-experience] to be what we already are.
>
> It was a very conscious decision. In my years of working in hospitals [as an occupational therapist] I saw so much physical and psychological suffering, both in the patients and in the people working with them… It was as if everyone was caught up in a labyrinth of some kind… So I wanted to take what I learned [from her experiential work in the studio] back into the mainstream of the general population. Many people have argued with me that I should make my work into a spiritual practice, or more of a psychological practice, but that isn't my goal. That is someone else's goal. I want to bring the physical principles into the culture, where they are accessible to the average person.[57]

Cohen's goals of making the physical techniques accessible within 'everyday' life, echoes the goals of this thesis, which sets out to illustrate how practices of embodiment can be instrumentalized in designing for 'technologies of experience' that embody our choices in enacting technologies of the self.

Eastern philosophy views the concept of self-cultivation as a practice toward the goal of unifying mind and body, a framework that is founded in a long history of integrating philosophy with everyday practice. Self-cultivation is achieved through a set of

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[56] The Japanese philosopher Yasuo describes the correlative system between Eastern practices and their effects of the neurophysiological systems including kinesthesis, somaesthesis and the 'emotion-instinct' circuits. See Yasuo, Y. (1993). *The Body, Self-Cultivation, and Ki-Energy,* Albany, New York: State University of New York Press.

[57] Cohen, B.B. (1993), op. cit., p. 8.

rigorous technical first-person practices based on the somatic self. It uses awareness (or attention) and is cultivated within a somaesthetics of experience[58]. One of its techniques, known as 'meditation in motion', is a form of self-observation that is sometimes referred to as slow-motion walking. The notion of 'slowing-down' the body in order to gain perception of our physical or mental processes is a common technique within many somatics forms and is also noted by Depraz, Varela and Vermersch as a technique to induce 'suspension' in their discussion of *epoché*, and by Augusto Boal in The Arsenal of Theatre of the Oppressed.[59]

> [In Eastern philosophy] all forms of self-cultivation utilize in one-way or another the body, or more precisely "one's own body" as a vehicle for cultivating one's self. The philosophy of self-cultivation stipulates the goal of "enhancing the mind by training the body."[60]

This accords with the concepts echoed in Bonnie Bainbridge Cohen's description of the techniques within Body-Mind-Centering (BMC).

> There is something in nature that forms patterns. We, as a part of nature, also form patterns. Our mind is like the wind and our body is like the sand. If you want to know how the wind is blowing you can look at the sand. Our body moves as our mind moves. The qualities of movement are a manifestation of how the mind is expressing through the body at that moment.
>
> We use maps of Western medicine and science—anatomy, physiology, kinesiology but the work is being influenced by philosophy of the East as well. It is a study coming out of this time of East and West merging, so we are working with the concept of dualities blending, rather than sets of opposites conflicting. We are constantly looking at relationships and are always recognizing how opposite qualities modulate one another.[61]

Cohen's concept of *dualities blending* rather than sets of opposites conflicting can be applied to the varied epistemologies of practice that exist between HCI and somatics. If we work with the concepts of *blending* the 'dualities' of first- and third-person

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[58] Yasuo, Y. (1987). *The Body: Toward an Eastern Mind-Body Theory*. T.P. Kasulis (ed.), (N. Shigenori & T.P. Kasulis, Trans.), Albany, New York: State University of New York Press.
[59] Boal, A. (1992). The Arsenal of Theatre of the Oppressed, in *Games for Actors and Non-Actors*, London: Routledge Press. p. 73.
[60] Yasuo, Y. (1987), op. cit.
[61] Cohen, B.B. (1993), op. cit., p. 8.

methodologies rather than viewing them as sets of opposites with conflicting versions of 'truth', then our dialogue can be enlivened with a critical reflective practice that is multi-vocal and rich with methodology.

2.3.4. A Shared History of Thought: Somatics and HCI

The third schema of this historical analysis illustrates the existing resonances between HCI and somatics from the point of view of a shared history of thought and practice. Figure 15 illustrates some of these common influences.

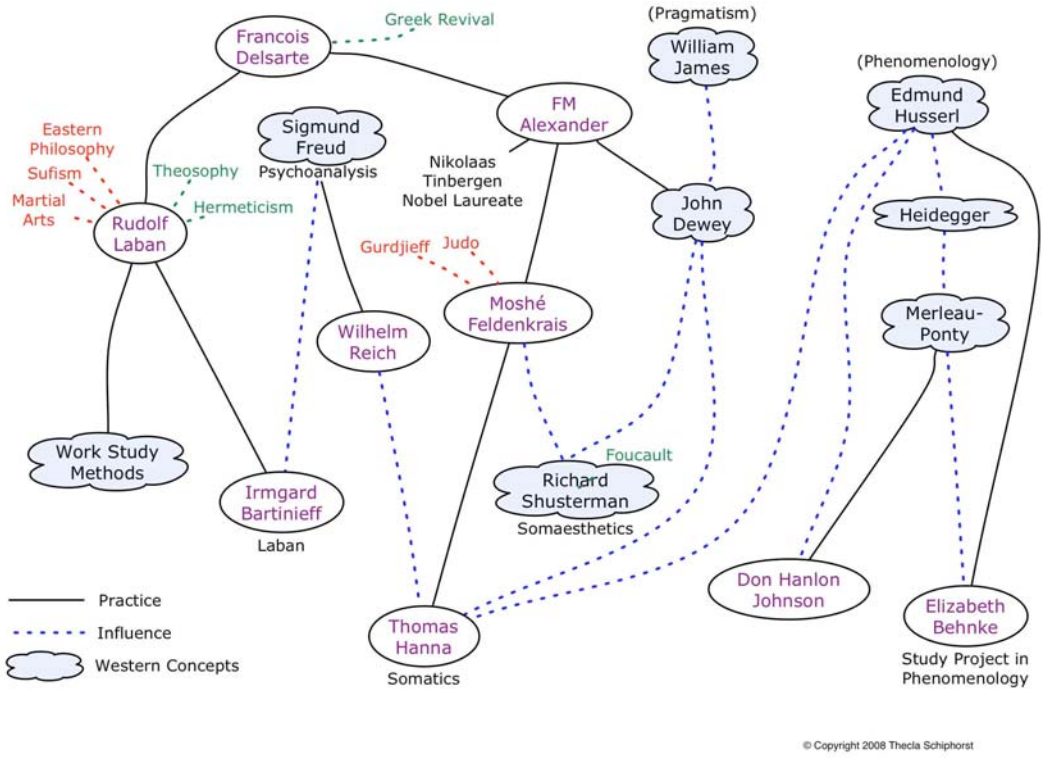

Figure 15. A Shared History of Influence: Somatics and HCI

2.3.4.1 The Influence of Laban on Work-Studies and Ergonomics

Laban's development of movement analysis, methods and applications were prolific. In 1938, like most artists and somatics practitioners living and working in Nazi Germany, Laban migrated, taking refuge in Britain. This marked a new phase in his practice, as he began to work in industry, introducing work-study methods to increase production through humane means. These methods came to be called 'Effort-Shape' Analysis, a rigorous explanatory taxonomy, describing qualities of movement. Although his work-studies were historically related to the studies of Taylorism and later to the development of ergonomics, Laban's approach to work-studies emphasized a whole-body approach where optimal functioning, normally referred to as movement efficiency, was expressed and *validated* through qualities of grace and eloquence in motion.

2.3.4.2 The Influence of F.M. Alexander

F.M. Alexander, a student of Delsarte and the original innovator of the Alexander Method, has influenced a generation of philosophers and scientists, underscoring the ability of self-observation to support the development of a precise technical practice. John Dewey the American philosopher and Nikolaas Tinbergen the Nobel Laureate have both acknowledged its sophisticated approach to observation.

John Dewey's approach to pragmatism and experience has recently gained recognition in the user-experience literature within HCI, primarily through the contribution of McCarthy and Wright in *Technology as Experience*[62]. John Dewey himself was influenced directly by the concepts and practices of somatics. Dewey met F.M. Alexander in New York in 1916 and subsequently trained and worked with him for over twenty years. Dewey's philosophy of learning, education and experience was greatly influenced by his work and practice with F.M. Alexander. Dewey credits his work with

[62] McCarthy, J., & Wright, P. (2004), op. cit.

Alexander in the development of his philosophical frameworks of experience and education within a social system. In Dewey's Introduction to Alexander's *The Use of the Self,* Dewey acknowledges Alexander's technical work, its wholly embodied nature, its ability to retrain (to educate) perception, and its instrumentality in effecting change or knowledge.[63] Dewey describes how attention to the shifting *qualities* of experience, are definitional in our ability to discern with precision, and eventually with sophistication:

> But, while the principle of continuity [of experience] applies in some way in every case, the *quality* of the present experience influences the *way* in which the principle applies. [italics mine][64]

In their discussion of the techniques of *epoché*, Depraz, Varela and Vermersch also address the ability to observe and discern the *quality* of attention as a fundamental skill of first-person methods:

> You … re-direct your attention from exterior to interior, [and then] you change the *quality* of your attention, moving from an active search to an accepting letting-arrive.[65]

These practices of attention and observation were pioneered in Alexander's methods and the effectiveness of Alexander's observational techniques have been noted by scholars and scientists (Huxley 1937), (Coghill 1941), (Dart 1947), (Sherrington 1946, 1951), and notably Nikolaas Tinbergen, the Nobel Laureate who presented a thoughtful account of Alexander's 'epistemology of practice' in his 1973 Nobel Lecture[66]. Tinbergen noted that Alexander technique is based on "exceptionally sophisticated observation, not only by means of vision but also to a surprising extent by using the sense of touch." He continues by exploring and contextualizing the effectiveness of its practice.

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[63] Dewey, J. (1932). Introduction to Alexander, F.M., *The Use of the Self*, New York: E.P. Dutton, p. 12.
[64] Dewey, J. (1997). *Experience and Education*, New York: Simon & Schuster, p. 37.
[65] Depraz, N., Varela, F.J., & Vermersch, P. (2003), op. cit., p. 31.
[66] Tinbergen, N. (1974). Ethology and Stress Diseases, *Science, New Series*, *185*(4145). American Association for the Advancement of Science, p. 20-27.

> "First of all they stress the importance for medical science of open-minded observation – of 'watching and wondering'. This basic scientific method is still too often looked down on by those blinded by the glamour of apparatus, but the prestige of 'tests'… But it is by using this old method of observation that … the body can be seen in a new light…"[67]

Tinbergen appeals to medical science and research to widen their perspectives and their methodologies to enable a richer space for research:

> My … excursions into the field of medical research have much wider implications… but at least in one respect the situation could be improved: a little more open-mindedness, a little more collaboration with other biological sciences, a little more attention to the body as a whole, and to the unity or body and mind, could substantially enrich the field of medical research.[68]

Tinbergen's premise that 'watching and wondering' is a considered basis for research, and his argument that a 'little more attention to the body as a whole and to the unity of body and mind' can substantially enrich research, are a salve to my research goals. There is a clarity and a logic in this approach that I attempt to apply to my own exploration of practices of embodiment within HCI, allowing the 'old method of observation' to enrich the design and the 'humanity' of technology.

2.4 Values Underlying First-Person Methodologies in Somatics

This final section of the chapter explores the *values* underlying the attitudes, practices and methodologies of first-person experience. These values *define* the epistemologies of practice within somatics: how knowledge is accessed and constructed within the first-person techniques. Meaning *emerges* through the application of these values, and for somatics this meaning lies in the body.

> Meaning grows from our visceral connections to life and the bodily conditions of life. … it is through our bodily perceptions, movements,

[67] Ibid, p. 26.
[68] Ibid.

> emotions, and feelings that meaning becomes possible and takes the forms it does.[69]

In somatic practice meaning is constructed through self-observation, experience and the inter-connectedness of body with mind. I have summarized and will exemplify four principle values from which the attitudes, practices and knowledge within somatics arise. These values can be summarized as the values of self, attention, experience, and interconnectedness. Each of these values creates an intentional, ethical and aesthetic stance that constructs meaning and frames knowledge production.

1. The value of the **self** as enactor of change, knowledge and transformation.
2. The value of **attention**, self-observation, awareness in relationship to the self.
3. The value of **experience** as a source of knowledge, through which language gains its integrity and ethical connection to knowing.
4. The value of **interconnectedness**, in relation to mind and body, self and world, subjective and objective, theory and practice.

2.4.1 The Value of the Self

The epistemologies of practice within somatics value the self as an instrument of change, knowledge and transformation. The 'self' of somatics, is an *embodied* self, and the ability to enact self-change is at once personal and political. This chapter has presented numerous examples that illustrate self-observation, self-awareness, self-cultivation and self-study. The notion of educating the self is seen as freeing the self from restrictive postures and prejudices, or habits and hidden assumptions. This is represented in the concept of "learning how to learn"[70] that has its history in esoteric practices that have influenced body-based disciplines. Hede Kallmeyer's reference to Delsarte's movement methods as inciting "the dawn of body consciousness" marks a

[69] Johnson, M. (2007), op. cit., p. ix.

[70] Moshé Feldenkrais was influenced by Gurdjieff's teachings and techniques which included the importance of the techniques of self-observation and the practice of "learning how to learn", see Feldenkrais, M. (1985). *The Potent Self: A Study of Spontaneity and Compulsion*. Harper & Row.

historical juncture in Western European culture when the body's *own experience* was re-appropriated or reclaimed to a wholly 'secular self'. The care of the self and its emergence in a secular frame is also addressed by Foucault, and in Varela's discussion of "Concerning Practice" in *On Becoming Aware*[71].

Foucault analyzes the sister concepts of the 'Care of the self' and 'Know thyself', following them to their historical transformation in our contemporary relationship to self and self-knowledge. In Greco-Roman culture, *knowledge* of oneself emerged as a *consequence* of taking care of the self, applying practices and techniques of subjectivity: self-development and change. In modern society we have inverted this relationship or 'hierarchy'. In Foucault's analysis, this has occurred for two interconnected reasons. 1) As a result of the development of theoretical philosophy born from Descartes, in which the modern day conception of *knowledge of oneself* became a fundamental principle of the 'thinking subject', severing and disenfranchising its connection or need for the 'care of the self'. This was made possible, in part, by 2) western societies' inheritance of the ascetic tradition of Christian morality, which makes self-renunciation the condition for salvation, thereby problematizing the position or existence of the 'body' in either salvation or knowledge, and enables a moral 'rejection of the self'.

> Western culture [also] inherits a respect for *external* law as a basis for morality rather than a morality of the self, so that "Know thyself" has obscured "Take care of yourself" because our morality, a morality of asceticism inherited from Christianity, insists that the self is that which one can reject.

Viewed from this historical context of the 'care of the self', Hede Kallmeyer's reference to "the dawn of body consciousness" becomes an important historical marker in the appearance of a 'secular self' that was able to claim its *own experience* and its own *techniques of change* and transformation in relation to the 'domain of the self'. We also

[71] Francisco Varela acknowledges the first-person knowledge developed within the body-based disciplines and its emergence outside of academic institutional knowledge, linking this with Schön's concepts of reflective practice. See Depraz, N., Varela, F.J., & Vermersch, P. (2003), op. cit., p. 167-168.

see that *Value of the Self* was an important nascent ideological concept that bore fruit to the lineage of somatics, (including modern dance and the first-person body-based disciplines of today), allowing the self to *exist* in a relationship *with* knowledge, experience and practice. Elsa Gindler, a pioneer of bodywork, reminds us:

> Generally speaking, in all of this, the most essential things we have to keep in mind are: that any correction made from without is of little value, and that each of us must try to gain understanding for the special nature of our own constitution in order to learn how to take care of ourselves. [72]

2.4.2 The Value of Attention

The value of attention is in its technical ability to affect change in the body through self-volition. A central characteristic of first-person methodologies is the simple act of paying attention to the self. Based in self-observation, the direction of attention or awareness re-educates perception. Attention is a technical skill that can be applied in specific ways.

> The late Elsa Gindler (1885-1961) is known throughout the world for having created a radically simple way of working with experience, a Western form of meditation, in which participants learn how to simply pay attention – to eating, standing, walking, speaking, lifting a stone. Her school flourished between the two wars in Berlin. Partly in reaction to Nazi demands, she refused to give her work a name. Sometimes she called it “Human Work”, or “unfolding at a later stage of life” [73]

As a technical process, attention exhibits specificity, rigour and knowledge: explicit as well as tacit. Attention is also referred to as awareness, attending to, concentration, being ‘awake’, focusing and consciousness. The goal is learning: retraining or re-educating perception in order to increase discernment and freedom of choice for action. Charlotte Selver, who brought Gindler’s work to America, describes this in relationship to the informational and contextual aspect of our sensory life:

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[72] Gindler, E. Gymnastik for Peoples Whose Lives are Full of Activity, in Johnson, D.H. (ed.) (1995). *Bone, Breath and Gesture: Practices of Embodiment,* Berkeley: North Atlantic Books, p. 14.
[73] Ibid, p. 3.

> [The important questions are] how we can become more awake, and how, after we wake up, we can learn to trust our own sensations… *This is the practice.* While people are *attending to* the given task, the attitudes they bring *with* them clearly show… It takes patience and time to discover what the gesture says… The work is partly to discover what amount of energy is needed for every given task and to allow this energy to flow unhindered. This is what it means to be *potent*. And this potency goes hand in hand with seeing more, hearing more, feeling more, and being more in touch with what happens.[74]

These techniques directly address 'felt-life' as introduced to HCI by McCarthy and Wright[75] and resonate strongly with Foucault's discussion of a *morality of the self*, where one's own experience can be *trusted* as a primary form of knowledge, forming a centre *of the self* from which volition, choice and action arise. Selver reiterates the potency of a morality of the self when she says:

> People have usually learned from other people what to think, and we are not going this way because we feel that the person has all the abilities to find out for himself. He doesn't have to look to other people to be told what is right. This possibility of discovering gradually that one can trust one's own reactions can be a very powerful event.[76]

In 1938, as a refugee from Germany, Charlotte Selver immigrated to the United States; her early students included Fritz Perls, Alan Watts, and Erich Fromm. Selver had a tremendous influence on Humanistic Psychology; the radical simplicity of her work led to her frequent invitation as a teacher of Zen students[77]. In *On Becoming Aware,* Francisco Varela acknowledges Fritz Perls and Humanist Psychology as an exemplar of first-person practice enabling 'self-change'. Varela notes that this approach works "directly with human experience, with subjectivity, developing that which one might call a psycho-phenomenological practice."[78] Although somatics is a discipline that has developed outside of academia and has remained 'out of the

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[74] Selver, C. Interview with Charlotte Selver, in Johnson, D.H. (ed.) (1995), op. cit., p. 17.
[75] McCarthy and Wright have explored how 'felt-life' in relationship to technology can foster curiosity and trust. A next step could be how technology could support a first-person relationship to trust, See McCarthy, J., & Wright P. (2004). *Technology as Experience,* Cambridge, Massachusetts: MIT Press, p. 137-145.
[76] Ibid. p. 20-21.
[77] Selver, C. Introduction to Interview with Charlotte Selver, in Johnson, D.H. (ed.) (1995), op. cit., p. 15.
[78] Depraz, N., Varela, F.J., & Vermersch, P. (2003), op. cit., p. 167-168.

spotlight', the potency of its concepts, practices and teachings have flourished, and have been widely disseminated. Humanistic Psychology's five postulates[79] illustrate the resonance and concurrence of concepts and values of somatics: these include the notion of irreducibility, intentionality, the value of awareness or attention, and the value of self, including self-volition, self-enactment and self-awareness.

Learning to develop attention requires practice; to become an *expert* in the skills of attentional processes one needs to continually revisit technique. This is similar to the way that we think of a musician or a surgeon developing skill through practice. In the same way that motor skills are developed and fine-tuned through the neurophysiological pathways of the sensory-motor system, the practice of attention is also a physical skill.[80] In Gindler's description of this concept she uses the term 'concentration' to describe the importance of the goal of developing attentional skills:

> The aim of my work is not the learning of certain movements, but rather the achievement of concentration. Only by means of concentration can we attain the full functioning of the physical apparatus in relation to [all human activity]… We therefore advise our students from the very first lesson that the work must be pursued consciously;"[81]

Attention is given *through* activity, and so its practice is also defined by Schön's concept of the epistemology of practice of reflection-in-action:

> "thinking in activity" … is a very *attentive* process. You've got to pay attention. This is something we all find extremely difficult—our attention span is about a second and a half.[82]

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[79] The work of Wilhelm Reich, who postulated an essentially 'good', healthy core self, was an early influence to Humanist Psychology. James Bugental summarized the five postulates in 1964, see Bugental, J. (1988). *The Search for Authenticity: an Existential-Analytic Approach to Psychotherapy,* Irvington Publishers.

[80] Recently, cognitive neuroscientists have successfully used electroencephalography (EEG) to pinpoint, in space and time, the neural activities involved in paying attention. See Green, J.J. & McDonald, J.J. (2006). An event-related potential study of supramodal attentional control and crossmodal attention effects, *Psychophysiology 43*(2), p. 161–171.

[81] Gindler, E. (1995), op. cit., p. 5.

[82] Marjory Barlow is a master teacher of the Alexander Technique and the niece of F.M. Alexander; see Barlow, M. (1995). A Conversation with Marjory Barlow, in Johnson, D.H. (ed.) (1995), op. cit., p. 91.

Depraz, Varela, Vermersch (2007) define attention as one of the 'practical acts of consciousness'. It requires self-cultivation, and can be learned. Attention is pragmatic and a well-tested primary material within body-based disciplines. Somatics recognizes both multiple *qualities* as well as *uses* of attention. Rudolph Laban's Effort-Shape Analysis identifies various ways of defining attention:

> When people interact with you they can focus attention on you in more than one way. In a discussion, when it is necessary for a person to "take you in", to pay attention to you, in order to communicate something to you, he might pinpoint or channel his attention on you directly, "zeroing in" on you with a single focus. Or he might take you in from various angles, keeping his attention scanning around you, allowing his body to move among a number of spatial approaches to you, or foci that continuously overlap. Here, spatial focus appears constantly flexible, sometimes "roundabout" – we call it indirect."[83]

Attention can be focused through a specific sense. We can imagine visual, tactile, auditory, kinesthetic, or visceral attention such as our blood flowing or breath processes. Attention can expand or contract, or move in a path through the body or through space. Attention can be 'positioned' in a location outside the self, such as another person's skin, breathing patterns, movement or even internal organs. The direction of attention *through* touch can create an intersubjective support for awakening perception. Both Sondra Fraleigh and Bonnie Bainbridge Cohen describe this approach:

> When I touch someone in somatic movement therapy, I follow with my hands, or just with my attention, the movement that another person is already doing; I listen to it [with my attention]. The movement thickens between us and becomes more of itself.[84]
>
> Through holding the head in my hands, I can feel the block. I don't go in and move someone's brain around and say, "Oh, this belongs in this place and this belongs there". Through *focusing attention* on a place where someone simply doesn't move, *they* can become aware of that place and begin to move it themselves.[85]

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[83] Dell, C. (1977). The Space Factor: Changes in the Quality of Spatial Focus or Attention, Becoming Either Indirect or Direct, *A Primer for Movement Description Using Effort-Shape and Supplementary Concepts*, New York: Dance Notation Bureau Press, p. 28-29.

[84] Fraleigh, S. (2004), *Dancing Identity: Metaphysics in Motion,* Pittsburgh: University of Pittsburgh Press, p. 126.

[85] Cohen, B.B. (1993), op. cit., p. 55.

In Sondra Fraleigh's work with somatic movement and in Bonnie Bainbridge Cohen's work with re-patterning and touch, the use of focused attention is an example of intersubjectivity and illustrates the continuum between first- and second-person use of attention. Intersubjectivity requires that first-person attention be accessed in order to contact another body's information. In Cohen's re-patterning method, touch is used in combination with focused attention.

> If I'm working with any area of someone else's body, I will [direct attention] into that area of my own to see. In the process I become more open also. It becomes like two bells ringing on the same pitch. We can resonate each other.[86]

Re-patterning in the Body-Mind Centering can be understood as a learned technical skill using our neuroperceptive systems in a refined and trained way. It is an example of an expert technical practice.

Attention can have specific *qualities* that relate to activating body-state: a constellation of feeling, sensation, thought and 'thought propensities.'[87] In somatics, attention can be focused with physiological processes such as breath, or 'slow-motion walking'. When attention is focused, information is ascertained. Applying attention is a part of a 'knowledge loop': we learn by paying attention.

> .. you should feel a change… at every moment. If you're not, then you should be somewhere else. So training isn't a matter of repeating the same thing for one week or two months and then expecting a result. Each moment should be a dialogue of response and change. I think that relates to the Buddhist principle of the immediacy of experience. Also, it seems that any technique or philosophy ultimately comes back to the axiom, Know thyself. We all come to a common ground, whatever our path, if we follow it far enough.

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[86] Ibid.

[87] Damasio refers to body state as represented in the body's somatosensing maps. A body state is a configuration that represents the combination of thought, feeling and the 'internal milieu', and what Damasio refers to as thoughts of a certain theme, which refer to 'thinking propensities'. The nervous system maps body-states by transforming the neural patterns in those maps into mental patterns or images in the brain. In an evolutionary sense, feelings became possible because of the development of brain maps that are able to represent body states. See Damasio, A. (2003). *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain*. New York: Harcourt, p. 109-111.

Attention is an important ingredient in the common ground that exists between HCI and somatics, where to 'know the self' is based on the experience of the self. Somatics takes the approach that we can learn to use our bodies more wisely, more effectively, more gracefully and more fully. Somatics views attention as generative.

> We see over and over again that people who accomplish the most are fresher than those who do nothing. And if we observe successful people we can often see that they display a wonderful flexibility in reacting, in constantly changing from activity to rest.[88]

2.4.3 The Value of Experience

Many disciplines, including HCI, concern themselves with experience, embodiment and the richness of felt-life: the ways in which experience supports knowledge. Somatics values the somatosensory experience of the body as a source of knowledge through which language gains its integrity and ethical connection to knowing. Bonnie Bainbridge Cohen describes the connection of knowledge and perception in sensory-motor experience:

> Learning is the opening of ourselves to the experience of life. The opening is a motor act; the experience is interaction between sensory and motor happenings. When the experience of movement is integrated into our education, our perception of ourselves and the world changes. [89]

It is common within somatics traditions to encounter reticence or even refusal to name concepts or techniques. This reticence is also seen in *setting* exercises or in *concretizing* the development of procedures that refer to learned experience. This is due in part to the attitude of continual learning in the present moment:

> As we analyze our experiences, the challenge is to not be confined by what we have already learned but to continually allow our discoveries to pass into our unconscious and to approach each moment with trust and innocence.[90]

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[88] Gindler, E. (1995), op. cit., p. 9.
[89] Cohen, B.B. (1993), op. cit., p. 118.
[90] Ibid, p. 2.

Attitudes toward being 'open to learning through practice' are examples of reflection-in-action. The 'practitioner is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case… She does not separate thinking from doing.'[91] The viewpoint expressed by somatics practitioner Charlotte Selver exemplifies this approach.

> It changes every day because it's "no method", it's always meeting new whatever reality brings, whatever the moment is acute.

Selver's remark is consonant with viewpoints elicited from Donald Schön in design case studies of reflection-in-action:

> This system of teaching appears good to me. I like this kind [of teaching] because it is practical. Because what one *does* is difficult to forget. It is easier to forget when something is only said.[92]

Somatics is pragmatic in nature, where *experience* constructs knowledge directly through practice. Elsa Gindler refused to name her work, in part, because she 'advised her students to replace her words with their own' to develop language from their own experience. This is not a refusal to use language, but to enable her students to articulate and choose to speak their own language from experience. This reticence to 'name' is not positioned as anti-intellectual, or as a disregard for the power, expressivity or eloquence of language. It is a mechanism to give permission to expand the space for the experience of the body in its own right. This fortifies the power, expressivity and eloquence of embodied knowledge. It can be born from the experience of knowing. Language can be uncoupled in its position as an external prerequisite to knowledge. This places experience at the centre; one can learn to know the self. The history of somatics holds a counterbalancing position to the hegemony of

[91] Schön, D.A. (1983), op. cit.

[92] Schön's example is a case study of education in Buenos Aires. In order to shift a growing epidemic of child malnutrition, Dean Wilson worked with educating children in a rural school. The quotation is a response of one of the children to a program that had remarkably positive results in reversing child malnutrition through developing knowledge and skills in the children themselves. See Schön, D.A. (1983), op. cit., p. 198.

linguistic knowledge and its monopoly on the historical 'thinking subject' that has refuted the self. Elsa Gindler explores this position:

> "[in attention or experience] we also become more human because, when a task is executed thoughtfully, and when we are contented with ourselves in the doing, we experience [ourselves]. By that I mean … fully centered, reacts to the environment and can think and feel. I deliberately avoid defining this … as soul, psyche, mind, feeling, sub-consciousness, or individuality. For me, the small word "I" summarizes this. And I always advise my students to replace my words with their own (those words which they use in talking to themselves) in order to avoid getting a knot in their psyche and having to philosophize for hours about what was really meant. In that same time they could be doing something useful."[93]

Somatics does not deny language, but asks that it be initiated from *within* experience, from a first-person position within the self, what Maxine Sheets-Johnson refers to as "the challenge of *languaging experience* [and] the challenge of *being true to the truths of experience".*[94] Somatics supports a practice of languaging experience *from within.* This practice maintains an ethical connection to our experience and our ability to respond (response-ability). Language is a form to be enlivened with the knowledge of the self, so that it can express, communicate, and disseminate wisdom. Charlotte Selver describes this precision:

> One very important part of this is that people speak directly *out* of their experience and not speak *about* what they experience, and by that their way of speaking becomes more direct more precise, more fully backed by their experience. [italics mine][95]

Within somatics, language is understood as a mediator of knowledge emerging from experience.

> Now to the areas of learning: which are breathing, relaxation and tension – words often misused as are all beautiful things in the world. As long as they remain just words, they create mischief; as soon as they are imbued with experience they become great mediators of life.[96]

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[93] Gindler, E. (1995), op. cit., p. 6.

[94] Sheets-Johnson, M., (2009), What Are We Naming? in *The Corporeal Turn: An Interdisciplinary Reader,* Exeter: Imprint Academic, p. 328.

[95] Schick, J. (1995). Interview with Charlotte Selver, in Johnson, D.H. (1995), op. cit., p. 18.

[96] Gindler, E. (1995), op cit., p. 8.

> This essay… is something to be lived or felt or done in your own body. Even the philosophical reflections presuppose direct, first-person, somatic acquaintance with what I am discussing. My job is to put a somatic technique into words as well as I can, so that you can learn the technique (and grasp the principle) by reading my descriptions. And your job, as I see it, is to test my descriptions by actually "cashing in" the words for the experience itself. Only then will this essay be more that "just so much hot air".[97]

Just as physical exercises are designed for various stages of knowledge and are applied and then discarded as expertise is gained, somatics' epistemologies of practice view language as a support, an alliance, and a partner in knowledge, yet the physical practice is not bound by this language in its continued mastery.

> When I was teaching the Mastanang [Tibetan breath system], I did my own explorations between five and seven in the morning before I went to work. I wrote notes, but I never read them again because it wasn't necessary. Once you have had an experience, you don't have to read about it anymore.[98]

Language is a way to elicit experience, reconnecting us to what we know and have known, to states we understand and have understood, and to trajectories we are poised to enact. Susan Bødker, a computer scientist working within HCI, acknowledges this embodied framework, illustrating the connection between words and the experiences from which they derive.

> When writing or reading . . . like this, we face the problem that we cannot learn what we do not already know. Writings are not representations or explanations of the world; they are intended to trigger some awareness by the reader toward his or her own experiences.[99]

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[97] Behnke, E.A. (1995). Matching, in Johnson, D.H. (ed.) (1995), op. cit., p. 317-318.

[98] Middendorf, I. (1995), op. cit., p. 69.

[99] Bødker, S. (1990). *Through the Interface: A Human Activity Approach to User Interface Design,* Hillsdale, New Jersey, Lawrence Erlbaum Associates, p. 3.

2.4.4 The Value of Interconnectedness

Somatics values the interconnectedness of the body, its practice and the world. This concept is also referred to as unity, indivisible nature, inseparability, and unmitigated connectivity. Just as Delsarte's contemporaries in the Ballet Academies feared that knowledge of the body would threaten expressivity, ability and communication, the concept of interconnectedness can be misunderstood as a threat to empirical knowledge and rigour. However, the *experience* of interconnectedness does not need to diminish knowledge; it can expand our experience of the world, inviting additional perspectives that pose challenging scientific, social, cultural and artistic questions.

William James has said: "our fields of experience have not more definite boundaries than our fields of view."[100] Interconnectedness is a perspective that is held by a growing number of disciplines. The value of interconnectedness enables multivocality and radical interdisciplinarity, (McCarthy & Wright) viewing concepts, practices, histories and theories along a continuum (Depraz, Varela, Vermersch). Cohen reminds us that: "we are working with the concepts of dualities blending, rather than sets of opposites conflicting. We are constantly looking at relationships and are always recognizing how opposite qualities modulate one another." (Cohen) Within somatics the concept of self-cultivation is a practice toward the goal of unifying mind and body: the goal moves toward a centre, rather than an end-point. Body-based disciplines engage in 'practices' that develop unity, that explore the continuum of interconnectedness *as experience*. Within somatics, interconnectedness can be understood as a 'state' and a practice, as well as a concept. Interconnectedness enables multivocality and is rich with methodology. It enables open-mindedness (Tinbergen) and in Cohen's words "opens itself out to the world". Somatics, performance and body-based disciplines share the viewpoint of interconnectedness

[100] James, W. (2003). *Essays in Radical Empiricism*, London, UK: Dover Publications, p. 37.

with phenomenology (Husserl, Merleau-Ponty, Depraz), pragmatism (James, Dewey, Shusterman), psychology (Gibson, Johnson, Lakoff), social science (Schön), embodied cognition (Varela, Thompson, Noë, Gallagher) and embodied computing (McCarthy, Wright, Agre, Dourish, Nardi, Bødker). The work presented here proposes to contribute to this growing tradition, illustrating the value of developing rigorous interconnections between first-person and third-person methodologies, that can be applied to the epistemologies of practice bridging embodied methodologies from somatics and performance to human computer interaction.

2.5 Coda

In this chapter I have characterized the technical practice of first-person methodologies as used in somatics and body-based disciplines while outlining their instrumentality in approaches to reflection-in-action: technical problem solving within a broader context of reflective embodied inquiry. Using Schön's concept of reflection in action, I have illustrated how somatics can be viewed as a technical embodied practice with attributes of the reflective practitioner. Revisiting Schön's words:

> The study of reflection-in-action is critically important. The dilemma of rigor or relevance may be dissolved if we can develop an epistemology of practice which places technical problem solving within a broader context of reflective inquiry, shows how reflection-in-action may be rigorous in its own right, and links the art of practice in uncertainty and uniqueness to the scientist's art of research. We may thereby increase the legitimacy of reflection-in-action and encourage its broader, deeper and more rigorous use.[101]

I have illustrated how the epistemologies of practice of somatics exemplify reflection-in-action. Somatics' approach to reflection-in-action supports the dissolution of the 'dilemma of rigor or relevance' that is postulated by Technical Rationalism. I have presented examples of somatics' development of an epistemology of practice, which places embodied 'technical problem solving within a broader context of reflective

[101] Schön, D.A. (1983), op. cit., p. 69.

inquiry', and have shown how somatics' practice of reflection-in-action constructs an internal validity within the discipline that is 'rigorous in its own right'. Its rigor is based on the efficacy of its practice, so that outcomes are continuously validated based on pragmatic 'problem-solving' in the world. Somatics and performance body-based disciplines link 'the art of practice in uncertainly and uniqueness', attending and valuing the specific moment as presented by a body's condition and state. As Schön and others have stated, this has the potential to link to the 'scientist's art of research'. Through my research, I work to 'increase the legitimacy of reflection-in-action' particularly as it is exemplified in body-based practice and 'encourage its broader, deeper and more rigorous use' through bridging these methodologies to the discipline of human computer interaction. The intention is to support the efficacy of experience and embodiment practices while contributing to knowledge that responds to an increasingly technological world. Skills of observation lie within the observer herself, and by beginning from within the self, we can move outward more clearly into the world.

> In this work we seek the development of a person's responsiveness to all life. When one studies human nature and really experiences what is given; when one take it seriously to see, to listen, and to feel, then it is obvious that the wish will come to contribute to the world which makes it possible that more and more people can be open for what they experience … and lose their aggressions, and feel with others and speak their mind and act their mind.[102]

I invite the reader to continue this exploration of the *experience* of research in Chapter Three, by examining approaches to experience within HCI, while emphasizing the richness of its interdisciplinary traditions, drawing a perspective that can enable knowledge sharing between HCI and somatics.

[102] Selver, C. (1995). Interview with Charlotte Selver in Johnson, D.H. (1995), op. cit., p. 18.