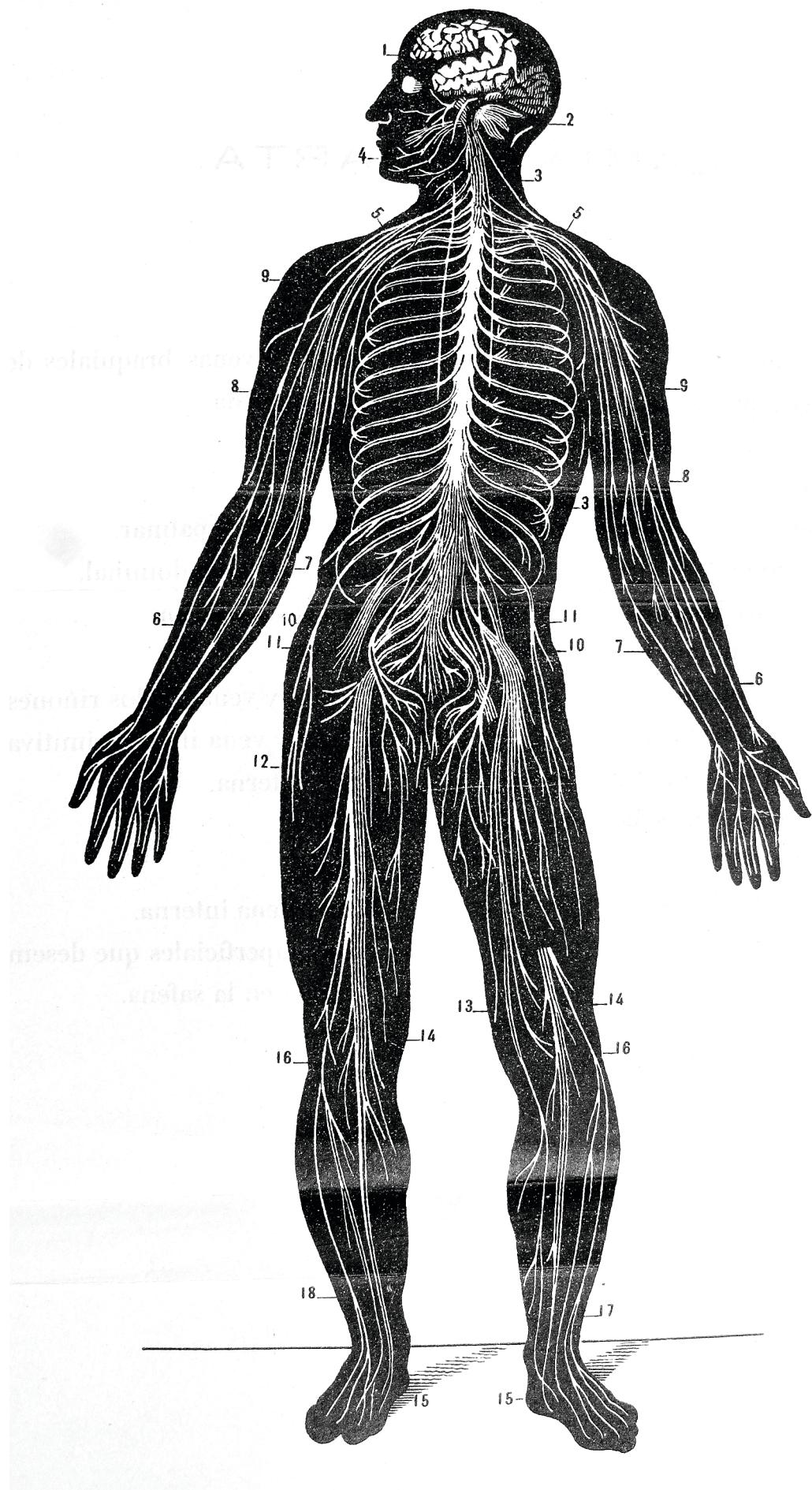


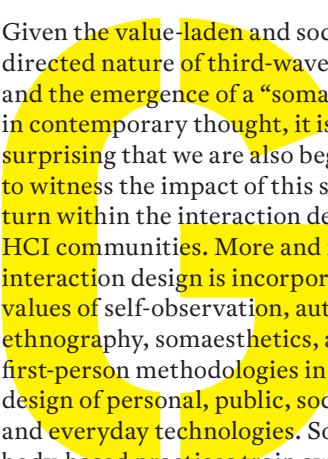
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The Somatic Turn in Human-Computer Interaction

Insights

- The body is both an instrument and a material for creative exploration and expression.
- Attentional techniques play a key role in transforming felt bodily experience.
- Somatic sensibility has an evaluative dimension.



Given the value-laden and socially directed nature of third-wave HCI and the emergence of a “somatic turn” in contemporary thought, it is not surprising that we are also beginning to witness the impact of this somatic turn within the interaction design and HCI communities. More and more, interaction design is incorporating values of self-observation, auto-ethnography, somaesthetics, and first-person methodologies in the design of personal, public, social, and everyday technologies. Somatic body-based practices train awareness of self and environment through directed attention to bodily sensing,

feeling, and moving. This self-inquiry at the heart of somatics provides a rich experiential ground from which to understand and empathize with the experiences of others, the people for whom we design.

Somatics practices explicitly frame an ethical relationship between care of self and our capacity to care for and act in the world. Somatics proposes an ameliorative practice of self-cultivation that aligns with the social tenets of research through design in HCI, which seeks to transform the world from its current state to a preferred state. The role and responsibility of the designer in

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creating technologies and interfaces that can take account of the somatic dimension, with its ethic of care, is yet to be fully realized.

In only the past decade, we have witnessed the emergence of somatic practices from the fringe to the mainstream. What may have been considered New Age practices in decades previous are being reevaluated as critical approaches for health and well-being (e.g., mindfulness meditation, yoga) by public health and medical faculties, with vocal advocates in the press and proactive adoption by large corporations interested in the health and productivity of their employees. This comes with the realization by health authorities that in order to decrease the burden on the public health system, citizens need to be empowered with tools and techniques for monitoring and improving their own personal well-being.

Apart from technological tools currently being developed such as personal medical informatics dealing with data and analytics, the somatic approach can also provide tools and techniques for an individual person to acquire some sense of mastery over their own mental, emotional, and physical well-being. Equally of interest is the development of technologies to support the individual development of self-mastery skills, or what we refer to as *skills of experience*.

If we look closely at the past 20 years of design research in HCI, we can see a growing interest in practically engaging with what we term a *somatic sensibility*. Somatic approaches in HCI build on established methods of role-playing, scenario enactment, bodystorming, and other performative approaches inspired from theater practices, which advocate for an embodied understanding of design situations and the generative power of physical engagement by thinking

through doing (or moving).

The influence of the pragmatist philosopher Richard Shusterman and his project of somaesthetics on HCI is visible from his keynote address at CHI 2012 and the series of collaborations with leading HCI researchers interested in bridging the practice and theory of the body. Practical somaesthetics is concerned with enhancing sensory appreciation and improving the quality of lived experience through a reflective art of living [1]. Most notable is the work of Kristina Höök in establishing *somaesthetic design*, in which somatic sensibility plays a central role.

WHAT IS SOMATICS?

Somatics is a set of body-based traditions developed largely outside of academia. It has historical ties with the secular treatment of the body in medicine and physiology, as well as performance and movement practices of the 19th and 20th century. The secular self was loosened from the religious hold over identity, enabling a wave of exploration and research into how the self could be constructed, manipulated, performed, and expressed.

Somatics is a term applied to a field of practice and research developed during the late 19th and early 20th centuries in Europe and America. Following over a century of development and practice from pioneers of bodywork and body awareness, the field was named *somatics* by American philosopher Thomas Hanna, and *somatotherapie* by French physicians and educators. Hanna founded the American journal *Somatics* in 1976, subtitled *The Magazine-Journal of the Bodily Arts and Sciences*, and French psychiatrist Richard Meyer founded the French journal *Somatotherapie* in 1989 to review theoretical and practical work in the field. Hanna's definition is

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“the field which studies the soma: namely the body as perceived from within by first-person perception” [2].

Valuing subjective, first-person perception. One of the defining features of somatics is the privileging of the subjective, first-person perception of one’s own body. This is in contrast to the dominant third-person views of the body encountered in science, where the body is considered as an objective datum and subjective accounts are often ignored. However, Hanna points out that these two distinct viewpoints are an integral part of the nature of human observation—a capacity to be internally self-aware as well as externally aware [2].

At the core of the somatic process is the **sensory-motor system**, a closed-loop feedback system within the soma that contributes to the ongoing process of **self-regulation**. What this means is that we cannot sense without acting (or moving) and we cannot act (or move) without sensing. Many somatic practices are concerned with developing a greater awareness, articulation, and reorganization of this sensory-motor feedback system through movement and touch-based explorations.

Paying attention to the quality of everyday bodily processes of breathing and moving can reveal unhealthy patterns of bodily organization deeply embedded in habit. Central to these explorations is the notion of **defamiliarization**—the interruption of our habitual ways of moving, sensing, and feeling—in order to revitalize perception, or make new connections in reorganizing our sensory-motor neural pathways. The Feldenkrais system of Awareness Through Movement is an exemplar of this approach and is now recognized as being founded upon the principles of neuroplasticity, as illustrated in Norman Doidge’s recent book, *The Brain’s Way of Healing*.

Somatic values. In earlier Christian mystical usage, the soma is the luminous body transformed by faith. This idea of transformation at a bodily level within an intentional framework is key to the somatic approach.

Somatics can be framed as a set of instrumental values:

- Self as a set of states
- Attention as an operator
- Experience as a skill
- Interconnectedness as empathy.

In the majority of somatic practices, the emphasis is on the learning and cultivation of experiential skills through doing. Typically, novice practitioners are guided through the techniques of practice by an experienced teacher. Observation of self and observation of others is an integral part of the learning and practice. There is a continual checking-in, cross-referencing, and calibration process that takes place between the self-directed intentions embodied in some kind of physical action with an inner focus of attention, and the awareness of one’s inner state as a shifting dynamic, together with guidance, cues, or stimuli from an external position such as a teacher/facilitator, and observations of others involved in the same somatic practice.

The kind of somatic awareness and sensibility to which we are referring is only one part of our ongoing daily experience. The heightened form of somatic awareness that is foregrounded in somatic practice is part of a cyclic process of consciousness. We can choose to enter this mode and do so by a process of attunement, adjusting our sensorial focus and rhythm of attention to synchronize with the energies and rhythms of self and others. It is not a mode or state that can, or should, be continuously maintained. In somatic ideology, rest and recuperation phases in activity are critical for the learning or repatterning of sensory-motor habits to take place [3].

The generative dimension of the body. In somatics, the body is understood as a site of creative thinking and imagination. This is well known to dancers, physical performers, and artists but also recognized by philosophers. Eugene Gendlin talks about the body being on the edge of thinking; the body knows more than our rational minds register [4]. Gendlin’s Focusing technique is based on this supposition, providing a way to access the tacit information implicit in the living body. Ideas and imaginings are felt in the body; by attending to the felt inner states of the body, we can generate design concepts and qualities. In generative terms, these felt inner states can include spatial images, kinaesthetic sensations and qualities, emotions, and the flow of dynamic forces. In articulating these

felt states in words, we often need to use metaphors (“feels like a crumbling rock,” “uplifting, soaring sensation”). The body is understood as a process, a generative material that can be listened to in the same vein as Donald Schön spoke about materials talking back to the designer.

The evaluative dimension of the body. The body can also be considered as a qualitative set of states, constantly changing as a result of our homeostasis and the interaction of mental events on physiological processes. When we focus our attention onto our internal state, we can register and begin to differentiate the changes in state. If we redirect our attention to some external event (such as an interaction with a piece of technology), without losing connection to our sense of internal state, we can utilize the shifts in internal state for the purpose of evaluating our experience of that interaction.

This evaluative dimension can augment existing methods for evaluating experience, such as think-aloud, video-cued recall, self-assessment manikin, pragmatic hedonic scales, and usability heuristics. It provides a more nuanced, descriptive account of the textures of, and qualitative shifts in, experience, acknowledging immediate impressions as well as the lingering effects of interaction.

First-person methods can support traditional empirical observation and evaluation. Traditional empirical approaches to the observation of current practice and the evaluation of the user experience of existing and prototypical interactive technologies have been dominated by third-person perspectives, which are valued for their supposedly objective accounts of phenomena. However, with the third wave of HCI and its valuing of situated, embodied epistemologies, there has been a rise in first-person methods for understanding and evaluating experience, such as phenomenological inquiry into lived experience, diary studies, and auto-ethnographic design. The somatic perspective contributes to these first-person methods, deepening access to, and articulation of, layers of lived experience. It enables a higher level of accountability by the designer or researcher for their own presence and influence on the design

or research process. The awareness and refinement of one's somatic self as an instrument of knowledge through first-person observation underpins this accountability. Just as important, somatic approaches include second-person empathic modes of observation and knowledge generation, which can support others in accessing and articulating their particular somatic experiences.

Somatic connoisseurship can be developed in community. The lived experience of the body has been described by philosophers as operating in the background of our everyday awareness. This does not mean that it is not available to conscious inspection. Despite some aspects of bodily experience remaining ineffable, the tacit dimension of embodied knowing need not remain mute. In somatic facilitation, the shared enactment of a specific process within a community of practice has the purpose of picking up where verbal language falls short in articulating experience. The somatic facilitator provides a process and structure for feelings and inner states to emerge, where participants can continually develop powers of discernment within a joint experience. In the same way that a connoisseur of wine can develop an appreciation of the characteristics, subtle nuances, and differences available to olfactory and gustatory perception, a somatic connoisseur of the body can develop an appreciation of the complex qualities of somatic experience [5]. The training of the body and its powers of appreciation underpin Kristina Höök and colleagues' strong concept of *somaesthetic appreciation* [6]. As with any other design skill that we wish to develop to a level of expertise, this takes time and practice. But it is worth it, as a good dose of pleasure is involved in refining one's somatic awareness and sensibility!

Self-awareness or self-care goes beyond narcissism to empathy. Common criticisms of the somatic turn in HCI tend to make the mistake of equating a focus on the self with narcissism and a selfish preoccupation. In the somatic tradition, the development of the self is not narrowly constrained to individualistic self-serving behavior, but rather viewed

as a means of becoming a better human in an ethical sense, able to connect with, empathize with, and care for others. Given that empathy is a core principle in human-centered design approaches, it makes sense to enhance empathy with others through empathizing with oneself. This understanding is resonant with Eastern traditions of self-cultivation, which lead to self-knowledge and an egoless state of being, going beyond empathy to compassion [7].

FUTURE DIRECTIONS

In conversations with fellow design researchers exploring similar terrain, we have identified several challenges to incorporating a somatic approach to HCI and interaction design, reiterating Höök's concerns in her article in the July–August 2015 issue of *Interactions*:

- Integrating a somatic approach to design in HCI, so that the somatics is not running alongside and separate to the design work
- Maintaining a sense of a specific felt state for use in design; how to find entry points to return to that felt state
- Collaborating with other practitioners not trained in somatic methods.

One research strategy is to design technologies to support developing skills of experience. Notable examples include artist George Khut's biofeedback interactive audiovisual artworks *The Heart Library* and *Bright Hearts*, informed by his ongoing practice of Feldenkrais Awareness Through Movement and the idea of qualities of attention. Works like these make visible and encourage active reflection on the interdependency between mind and body. They also promote the cultivation of strategies for practicing mindfulness and enhancing health and well-being.

Another strategy is to train researchers and designers in the application of somatic approaches to research and design. This includes building a community of researchers and designers that value somatic approaches and enable each other to continue the inquiry into how best to incorporate somatic values and methods into a variety of research and design approaches and contexts. Already, practical workshops are

taking place in educational and research settings, and at international conferences (e.g., CHI and TEI). Training of novice interaction designers includes workshops that integrate somatic and technical learning; for example, learning how to design and program movement and haptic interfaces using physical computing is complemented with somatic inquiry into kinaesthetic and haptic experiences.

We envision the transformative potential of somatics in HCI and interaction design, contributing to a world where the interconnection between the mind and body is valued and the skills of experience are cultivated to improve quality of life.

ENDNOTES

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