

Somaesthetics of Discomfort and Wayfinding: Encouraging Inclusive Architectural Design

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Abstract: *Somaesthetics of discomfort facilitates intentionally inclusive designed spaces for wayfinding by accounting for individuals' distinct navigational experiences. Following the work of Richard Shusterman, somaesthetics of discomfort is a combination of somatic awareness and somaesthetic reflection centered around feeling ill-at-ease or out of place. The increased awareness of discomfort and reciprocal reflection upon feelings of discomfort enhances how activities and places are experienced, recognized, and categorized. How people experience difficult wayfinding is an element that is often missing from architectural planning and development. Considering uncomfortable somatic experiences of navigation would provide designers with tools to conceptualize and create wayfinding affordances within various spaces. Discomfort may be understood as a somatic affordance during wayfinding because it indicates that there is something problematic about the intersection of soma and environment. This paper describes wayfinding and somaesthetics as they pertain to architectural design. By using the examples of hospitals and parking garages, somaesthetics of discomfort is introduced as a tool that uses somatic appreciation and individual reflection about wayfinding experiences for improving how spaces are designed.*

1. Introduction

In his classic work, *The Image of the City*, Kevin Lynch wrote (Lynch 1964, 5):

To become completely lost is perhaps a rather rare experience for most people in the modern city. We are supported by the presence of others and by special way-finding devices: maps, street markers, route signs, bus placards. But let the mishap of disorientation once occur, and the sense of anxiety and even terror that accompanies it reveals to us how closely it is linked to our sense of balance and well-being.

Perhaps now more than ever, because of GPS tracking systems, search engines, and social media platforms, one might think that the anxiety and terror of being lost has waned to the point of vanishing, but this is not the case. If we examine architectural spaces within the city,

such as hospitals and parking garages, we might note a heightened sense of anxiety and terror, in part, because most people have become dependent upon way-finding devices that tend not to work well or at all within those spaces. Often, structures are designed with wayfinding as an afterthought, and the tools that apply within one type of space prove insufficient or even confounding in other types of spaces. For instance, when traveling into a tunnel, satellite signals that provide directions are often lost instantly, creating a suddenly harrowing experience for navigators. Structural design seldom accounts for persons' anxiety or terror or their differences from one another as they attempt to navigate. How people experience difficult wayfinding is an element that is missing from planning and development of spaces that require people to find their way. Following Richard Shusterman's observation that "the soma is the crucial medium through which architecture is experienced and created," the design and improvement of wayfinding spaces benefits from tools that include somaesthetics (2012a, 227).

I argue that somaesthetics of discomfort facilitates accounting for experiences of disorientation and anxiety and is a useful tool for contributing to better designed spaces for wayfinding. First, I describe wayfinding as it pertains to architectural design. Second, I provide a brief overview of somaesthetics and discuss its application to navigation. Third, I explain somaesthetics regarding discomfort and how discomfort may be understood as a type of affordance for navigation. Finally, I consider somaesthetics of discomfort for improving how spaces are designed. To elucidate this point, I consider hospitals and parking garages as traditionally problematic types of spaces for wayfinding that tend to neglect individuals' somatic differences.

2. Wayfinding

When Lynch wrote *The Image of the City*, he defined wayfinding as "a consistent use and organization of definite sensory cues from the external environment" (Lynch 1964, 3). For Lynch, individuals use what he called an environmental image— "the generalized mental picture of the external physical world"—as a strategic tool for wayfinding. "This image is the product both of immediate sensation and of the memory of past experience, and it is used to interpret information and to guide action" (4). Since the time of Lynch's book, wayfinding has been specified as an epistemological process that involves identifying one's location and knowing the quickest and most effortless way to reach one's destination. According to Farr et al., there are three interrelated processes that comprise wayfinding: decision-making, decision-execution, and information-processing (Farr et al. 2012, 716). Wayfinding may be undirected or directed.¹ In directed wayfinding, which is the focus here, an individual aims at reaching a particular goal (Wiener, Büchner, and Hölscher 2009). Two of the key elements to wayfinding are locomotion (e.g., steering) and spatial orientation (e.g., establishing one's position in relation to direction). Notably, much of the literature pertaining to wayfinding focuses on cognitive mapping, which often entails a dualistic perspective that splits the mind of the wayfinder from their environment (Jamshidi and Pati 2021). However, as James Gibson noted, wayfinding entails no cognitive map separate from one's environment. Rather, perception, recalling, and knowing are active elements of the environment of which the individual is a part. These activities occur in real-time with movement and are inseparable from the experience of wayfinding (O'Connor 2019, 17). Inspired by pragmatism, Gibson's concept of wayfinding collapses the false division between individual and environment and highlights the body's embeddedness within the navigational context. The

¹ The phrase undirected wayfinding may seem like an oxymoron, but this is the type of wayfinding wherein one wanders without a predetermined course. Examples include unplanned hikes in which the destination is what one happens upon without planning or the French Situationist concept of *dérive*, in which a person or group wanders or drifts aimlessly.

body's role as an active part of the environment is key to understanding how somaesthetics is a tool that suits questions concerning wayfinding. Gibson's ecological psychology has contributed substantially to understanding wayfinding and design and provides a useful bridge between studies of wayfinding and how somaesthetics of discomfort benefits the subject.

Ecological psychology follows the pragmatist rejection of the idea of the individual as a knower separated from environment. The individual is always already part of the context they are experiencing. As William James puts it, the person is "in the game, and not a looker on" (James 1878, 17). M.R. O'Connor reiterates this point nicely when discussing the work of Tim Ingold, who was inspired by Gibson. "We are not self-contained individuals confronting a world out there, but developing organisms in an environment, enmeshed in tangled relationships" (O'Connor 2019, 212). Harry Heft, a student of Gibson, highlights the relationship between wayfinding and the enmeshed nature of individuals. "Perceivers cease to be viewed as stationary spectators of a world spread before them ("out there") and instead are recognized to be actors who explore the environment and discover what it affords" (Heft 2013, 164). As individuals navigate, they utilize previously acquired spatial skills with currently available tools within the environment to enhance their knowledge and, in cases of directed wayfinding, reach their destination. One of the most important concepts to this process that has developed in ecological psychology is that of *affordances*.

The concept of affordances has been used widely with various—sometimes contradictory—meanings across disciplines. Affordances are considered values, aspects, or properties of one's environment that provide or limit an individual's actions (Crippen 2020; Heft 2013). Gibson provides a general definition that captures how affordances may be beneficial or detrimental. "The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill" (Gibson 1979, 127). When wayfinding in undesigned environments, such as snow-covered landscapes of the Arctic, affordances may include specific types of snow drifts that are shaped by the wind in a particular way, which assists in navigation to persons versed in values of the snow and wind in that region (O'Connor 2019). In a forest, wayfinding affordances may include patterns of foliage, rock formations, bodies of water, and other aspects of the environment that help or hinder an individual's navigation. Designed spaces usually include intentional affordances, such as signage, windows, and other indicators, to assist persons in wayfinding. These spaces also include unintentional affordances that may confuse navigators. For instance, dead ends, confusing signage or lack of signage, and unintuitive floor plans, can function as problematic affordances. Some signage may operate as a beneficial affordance within some cultures, but as a confusing affordance for others. Devlin uses the example of a teddy bear with a cross on its midsection as a symbol for the pediatric department in hospitals. Although this symbol proves beneficial to many familiar with hospital symbols within North America, outside of the continent, the symbol lacks the same meaning (Devlin 2014, 431). The design of spaces often depends heavily on signage as affordance, but neglects somatic experiences of navigators. This is especially true of feelings of discomfort within spaces like hospitals and parking garages. Both types of spaces, among others, contribute to disorientation and anxiety for navigators, and somaesthetics supplies affordances from our somatic experiences to learn from these feelings and contribute to the architectural design of spaces in ways that diminish such discomfort.

3. Somaesthetics

According to Richard Shusterman, somaesthetics constitutes a broad framework of inquiry that is “concerned with the critical study and melioristic cultivation of how we experience and use the living body (or soma) as a site of sensory appreciation (aesthesis) and creative self-fashioning” (Shusterman 2008, 1). Somaesthetics is an extension of pragmatic aesthetics and the idea of philosophy as an embodied art of living (Shusterman 2015, 181). Following the pragmatic tradition, somaesthetics collapses the false dichotomy between body and mind, and it highlights somatic experience as the root of understanding the world. Somaesthetics also moves beyond the strictures of phenomenology by including pragmatic reflection upon the soma and its habits that is oriented toward improving experience (Shusterman 2008, 75).² Combining theory and practice, pragmatic somaesthetics facilitates cultivating and enhancing experience by recognizing the soma and somatic practices. These practices include the representational (e.g., tattoos), the experiential (e.g., posture), and the performative (e.g., dance) (Shusterman 2000, 142-143). These types of practices often overlap, depending upon the activities considered (Mullis 2006). Within this paper, wayfinding is considered primarily as an experiential somaesthetic practice applied to architectural design. By focusing on the everyday functioning of the body within designed spaces and paying special attention to discomfort experienced within those spaces, I am pursuing a way to improve upon how problematic spaces are designed by including somaesthetic reflection.³

Recognition of soma as an acting, perceiving, and reflecting intentional agency provides ways of considering somatic experiences that shifts attention from the immediacy of feeling to reflection upon feeling that enhances the ability to discern feelings from one another and shift somatic habits to alter those feelings. Additionally, somaesthetic reflection provides critical awareness to engagement with one’s environment, including how the environment and one’s soma fit or misfit, what is valued and valuable within the environment given different somatic experiences and habits, and how somatic transactions within a context affect and are affected by elements of experience, such as the soma and affordances within the environment. As Shusterman states, “If the body is our primordial instrument in grasping the world, then we can learn more of the world by improving the conditions and use of this instrument” (Shusterman 2008, 19). Somaesthetics helps us focus on how we engage with our environments as lived experience. Regarding designed spaces, Shusterman notes that the “soma is thus what enables us to appreciate not only the visual effects and structural design features that rely on perceiving distance and depth, but also the multisensorial feelings of moving through space (with their kinaesthetic, tactile, proprioceptive qualities) that are crucial to the experience of living with, in, and through architecture” (Shusterman 2012a, 224). A significant aspect of somatic engagement with architecture involves how we navigate through the variety of contexts in which we are positioned and how we feel while navigating these spaces.

Our soma is a primordial point that acts as our center and supplies direction and volume to space. As Shusterman notes, most instances of navigation constitute basic modes of implicit memory and habit that involve utilizing unreflective perceptions of space (Shusterman 2011). Directional wayfinding is a somatic process of moving intentionally through space to reach a particular aim or goal. When we move through space, our experience of the environment is

² Somaesthetics includes the concepts of *Körper* and *Leib* as elements of the soma, thereby recognizing appearances and effects within the environment, not simply subjective feeling and perception (Shusterman 2020).

³ Somaesthetics of discomfort fits well with established somatic practices, such as the Feldenkrais Method and the Alexander Technique.

modulated through our feelings. How we emotionally, aesthetically, and ethically encounter a space affects the way we perceive, cognize, and move through that space (Crippen and Klement 2020, 469). Because we tend not to engage in somaesthetic reflection about wayfinding, often our habits are rife with what Shusterman calls *everyday somaesthetic pathologies* that remain unrecognized. Although navigating is colored with tones of emotion and meaning, we do not recognize that these may be addressed when problematic (Shusterman 2011). Pathological reactions to wayfinding through certain environments and situations may entail undue stress and anxiety, but without somaesthetic reflection, there is often little we can do to identify and address the factors that lead to discomfort. Regarding most wayfinding experiences within designed spaces, a generally accepted attitude follows an insight of Bálint Veres: many experiences with architecture are considered non-aesthetic. Veres explains frequent neglect of aesthetic engagement within these spaces. “Within the unconscious, dull, and fragmented everyday experience, architecture offers impulses for physical and mental collectedness, stimulates consciousness, and provides intensity. In the next moment, however, all these could lapse into habituation and everyday familiarity” (Veres 2018, 95-96). Being open to somaesthetic reflection about experiences with wayfinding entails recognizing Dewey’s insight from which somaesthetics develops: there is continuity between aesthetic experience and everyday experience (Dewey 2005). The familiar, mundane, and quotidian are potentially rich somaesthetic experiences if we are receptive to them.

Somaesthetics supplies a dimension to wayfinding wherein we reflect upon our somatic practices in relation to how we navigate through space and how it feels to navigate the space. We account for the lived experience of space as quality or *atmosphere* that affects how we engage within the space as we contribute to its meanings and values. (Shusterman 2012a, 232-234). Spaces may be open, confining, relaxing, freeing, tense, harrowing, dizzying, or a number of other qualities that constitute how the space feels to us. When somaesthetics is applied to wayfinding specifically, reflection includes sensory appreciation of the experience of decision-making, decision-executing, and information-processing regarding locomotion and spatial orientation. We do not simply reflect on where we are going, but how past experiences, feelings, thoughts, and values that accompany and moderate that process are embedded in our somatic habits and experiences associated with the environment. We recognize types of spaces, memories of similar spaces, how we feel about such spaces and how those spaces make us feel, and what those spaces mean to us.

Wayfinding becomes an object of transactional experiential inquiry. As Shusterman explains, this type of inquiry is double-barreled in the sense that William James described experience. It entails *what* is experienced and *how* it is experienced (Shusterman 2015, 181-182). We reflect on what we are doing and how it feels while doing it. Inquiring into wayfinding in this way incorporates the practice of everyday navigation, involves the way that the environment is experienced, and transgresses the traditional separation of spatial design and somatic experience. The inquiry concerns what Peirce called the *deliberative formation of habits of feelings* (CP.1.574). We not only question what navigation is, but how wayfinding is experienced and may be improved upon. In other words, we critically engage in assessing the feelings of wayfinding within spaces and situations as objects of thought. Somatic perception—the unreflective feeling of wayfinding—is re-considered as an object of somaesthetic reflection. Through the process of somaesthetic reflection, we enhance our ability to deliberate about our habits of wayfinding in ways that contribute to improving those habits. This falls within the domain of experiential somaesthetics.

Moving beyond self-improvement to architectural design, somaesthetics provides tools for considering how spaces are designed to improve wayfinding experiences. Somaesthetic reflection entails the contexts and situations we experience, including kinesthetic and proprioceptive qualities of spaces in which we move (Lee, Youn-kyung, and Shusterman 2014). Following Kristin Höök's use of *somaesthetic appreciation* as a strong concept that may be used to generate new or alternative designs, wayfinding may be considered as a somaesthetic practice that includes first-person experiences of specific spaces for the sake of design considerations (Höök et al. 2016; Höök et al. 2018; Höök 2018). By slowing down and intentionally engaging with wayfinding as a somatic practice, we are better able to re-cognize ourselves as both *Körper* and *Leib* while navigating. We are objective bodies navigating through space that are subjective, active, and intentional. Somaesthetic reflection supplies the ability to discern movements, emotions, and linkages between the different parts of an experience of wayfinding (Höök et al. 2018, 17). First-person, somaesthetic perspectives are not only useful for somatic self-cultivation, but also provide insights about how a space may be improved for better wayfinding. Specifically, discomfort experienced during wayfinding may function as an affordance that indicates how elements of a designed space detract from one's ability to navigate successfully.⁴ Somaesthetics of discomfort provides tools for remedying detriments within architectural spaces that may be addressed by considering first-person perspectives.

4. Discomfort

Somaesthetics of discomfort focuses on somatic experiences wherein we feel ill-at-ease or discontented. The aim of experience and reflection is of being at-odds-with the immediate environment and honing our awareness to feel what about our engagement with the environment is disruptive to our ease or contentment. In this sense, discomfort is a tool for scrutinizing engagement of our bodies with the environment to discern what is stress-inducing. Feelings of discomfort become affordances for understanding what is problematic. By focusing on somatic experiences of discomfort, we develop the ability to identify and reflect on fine-grain feelings and understand how aspects of the environment are disruptive (Tschaepé 2021). An example of discomfort is indigestion. Initially, discomfort is only a tone of experience. In its immediacy, it overwhelms experience without being differentiated into specific feelings. Without somaesthetic reflection, we may feel the pangs of indigestion but not the specificity of the feelings or how they relate to the way we have engaged with our environment. We may be cognizant of what we have consumed, but not how we have consumed it or how these feelings relate to other feelings. Such feelings might slip into habituation when we are unreflective. We simply experience indigestion as a general feeling. Through somaesthetic reflection, we may scrutinize a case of indigestion as a certain type with a specific tone, discern our feelings as akin to those we feel during moments of intense stress or fear, or we may note that these feelings align with feelings we have had previously after consuming a similar dish. Alternatively, we may recognize that the feelings correspond to eating in haste or not masticating adequately. Focusing on how the feeling relates to our context, we may discover that we tend to experience a particular type of indigestion when we are in a certain situation or environment. In each case, our discomfort is transformed from a mere feeling into an affordance for understanding our engagement with the environment. When

⁴ María Auxiliadora Gálvez Pérez has developed similar tools with Somatic Architecture (SA), where she considers somatic perspectives related to spatial navigation (Anderwald, Grond, and Pérez 2021, 61; Gálvez 2019). As somaesthetics of discomfort continues to develop, I imagine that it will utilize the work emerging from SA. The "Platform of Somatics for Architecture and Landscape" (PSAAP) provides photographs, sketches, and writings related to projects in SA (<http://psaap.com/en/>).

we understand discomfort through somaesthetic reflection, we enhance our bodily awareness of discomfort and improve our ability to inquire about the feelings and causes of discomfort. Optimally, we gain tools for preventing or curtailing similar discomforts in the future. What we gain from somaesthetics of discomfort is not only applicable to our own abilities to feel and understand our experiences of discomfort but is also applicable to improving upon designing spaces that tend to pose problems for wayfinding.

Shusterman argues that “heightening somatic consciousness could improve our architectural experience, both by improving the architect’s ability to design and by improving the people’s capacity to make informed judgments about architectural designs meant to serve them” (Shusterman 2012b, 14). How a space allows or disallows wayfinding is an element of architectural design that benefits from heightening somatic consciousness. Detection and reflection upon moments of discomfort during wayfinding are tools that are enhanced through somaesthetics and apply to architectural design. By coupling what Höök calls *somatic connoisseurship*—expertise concerning somatic self-awareness, including the ability to observe, discern, analyze, synthesize, empathize, and focus—with first-person perspectives concerning discomfort during wayfinding, I propose developing a practical somaesthetic practice that is applicable to architectural design (Höök et al. 2018, 18). Somaesthetic appreciation and connoisseurship that Höök and others have used successfully in designing objects, such as the soma mat and breathing light, are tools that architects may use to design better spaces for wayfinding (Ståhl et al. 2022; Ståhl et al. 2016). As María Auxiliadora Gálvez Pérez indicates, “disorientating spatial structures can be used as a tool to include bodies with different capacities as agents of design. In this manner, we challenge the everyday present conventions of ableism” (Anderwald, Grond, and Pérez 2021, 62). Somaesthetics of discomfort relates directly to soma design, architecture, and wayfinding because it helps indicate elements of design that are problematic to various persons’ navigational experiences but may not be detectible unless navigators have the somatic connoisseurship and tools necessary to share those experiences and architects are receptive to them while also having somatic tools to understand and implement those experiences into designs.

5. Hospital Design

Wayfinding is often an afterthought in architectural design (Devlin 2014). When navigation is considered and incorporated into design, the focus tends to be on signage (Mollerup 2009). Structures and signs meant to assist in wayfinding usually are designed in tandem with a variety of considerations, including pedestrian and vehicular traffic flows, pedestrian patterns and needs, and operational requirements of a space. These may be developed following interviews, focus-group meetings, and site surveys. Given the type of space and the persons for whom the space is being designed, environmental considerations regarding wayfinding vary. For most spaces, pathways and decision points are the key elements that determine what wayfinding affordances are included intentionally in the design process (Gibson 2009). Even when these factors are regarded as part of the design process, specific spaces tend to trigger stress and anxiety during wayfinding. Although carefully planned signage is developed and implemented in these spaces, they remain sources of navigational discomfort for many users and rarely account for the various capacities of different bodies. Two of the common culprits that I consider are hospitals and parking garages. Somaesthetics of discomfort provides tools that assist in the design to benefit wayfinding for differently abled persons in each space.

Hospitals are multilevel buildings that pose challenges for wayfinding, especially for those

persons who are unaccustomed to navigating the space, including patients, visitors, staff, and suppliers. Navigational confusion within hospitals accounts for significant losses of material resources and time devoted to care (Devlin 2014; Mollerup 2009; Rooke 2013). Each hospital has a unique floorplan, organization of decision points, and signage. Per Mollerup lists the following reasons people have problems wayfinding in hospitals: complicated floorplans; lack of familiarity with the space, including changes in the space between visits; epistemic challenges regarding unit names on signage; reduced capacities for navigation (e.g., illness; exhaustion; visual impairment); anxiety associated with the space (Mollerup 2009). These issues are often complicated by complexities within the environment, such as number of rotations within stairways, confusing alterations between floor numbers (vertical incongruence of floors), arrangement of complex decision points and linking paths, and few affordances related to landmarks (Hölscher et al. 2006). Accessibility due to permissions or status is also a challenge to patients, visitors, and even staff: restricted areas are often confusing due to where they are placed within the structure. Being forbidden from an area is often unclear until a person who is not permitted access accidentally wanders into a restricted space.⁵ This possibility contributes to stressful experiences of wayfinding in hospitals. Although variables such as decision points, linking paths, availability of help desks, and signage may play a role in the design of hospitals, somatic experiences that contribute to navigational discomfort are neglected.

There are tools, such as *MyWay*, that provide audio and visual assistance with navigation, but these do not enhance the structural design of hospitals to curtail wayfinding problems. Rather, these assist users *despite* design flaws. As Devlin explains, “*MyWay* is a mobile application produced by Meridian to access hospital maps and locate the user within the facility through GPS via smartphones, with turn-by-turn steps” (Devlin 2014, 428). I do not mean to suggest that tools like *MyWay* are not useful. In fact, they are beneficial to users during moments of navigation, but they neglect to address overarching issues with hospital design that require somaesthetic reflection about discomforts that limit the ability for users to wayfind. User-centered design, which utilizes user sensing evaluation and works with wayfinders to help gather information about needs and limitations that is often unfamiliar to designers, is a methodology that could easily accommodate somaesthetic discomfort as a tool (de Aboim Borges and da Silva 2015). For instance, sensors that collect haptic foot texture information and integration with visual orientation are being used to assist hospital visitors with wayfinding (de Aboim Borges 2019; 2020). Collecting sensory data from navigators is an initial step that opens the way for further somatic tool development. Somatic education principles and techniques, such as somatic ethnography, should be coupled with tools already used in ergonomics and soma design to assist in improving upon architectural design (Anderwald, Grond, and Pérez 2021). Were somaesthetic feedback available to architects, it may not only contribute to developing better navigational tools for users, but also to designing less problematic hospital spaces.

Because the soma is our primordial point of navigation, wayfinding issues within hospitals are somatic. Additionally, the problems posed by architectural design to wayfinding in hospitals is rooted in feelings of discomfort. Somaesthetics of discomfort addresses what the feelings of discomfort are and how individuals feel within the contexts of hospital navigation. Such reflection accounts for environmental features, such as position and design of stairways, signage, and decision points, while adding somatic first-person perspectives to wayfinding experiences that entail these features. Somaesthetic reflection includes discomfort that tends to adversely

⁵ This is an experience I have in medical spaces frequently. Because of the labyrinth design of such spaces, I have suddenly found myself in rooms or wings in which I was not to be permitted but had accidentally wandered.

affect patients and visitors generally, such as exhaustion, symptoms of illness, and anxiety. By using somatic techniques that focus on feelings of discomfort during wayfinding, architects may utilize these perspectives to provide insight into how to design hospitals. Tools like somatic ethnography provide individualized experiences that are important for designing hospital spaces that are inclusive.

6. Parking Garage Design

Parking garages are another type of designed space notorious for posing wayfinding difficulties. Wayfinding within parking garages is somatic in two distinct ways that are rooted in what Shusterman calls performative or procedural memory, but that require focus and intentionality because of the difficulties presented by the space (Shusterman 2011). First, drivers are required to navigate into, within, and out of parking garages with their vehicles, which act as mechanical extensions of their bodies. This introduces one set of somatic experiences for persons as drivers. Second, drivers and passengers are required to navigate into, within, and out of parking garages as pedestrians. This introduces another set of somatic experiences for persons separate from their status as driver or passenger. Each set of experiences supplies its own discomforts that provide insight into structural issues built into garages that are problematic for different users. Although architects of parking garages account for wayfinding, the primary considerations are visibility, size of floor areas and number of floors, ramping and traffic circulation systems, and signage (Rebora and Monahan 2000). Factors that pertain to pedestrian wayfinding directly include pedestrian-vehicular coordination and separation, walkway widths, ramps, stairways, escalators, moving walkways, and elevators, as well as lighting and signage (Weant and Levinson 1990). All these considerations are factors that contribute to drivers' and pedestrians' comfort and discomfort with navigating the space, but they stop short of somaesthetic discomfort wherein individual drivers and pedestrians with diverse needs, capabilities, and capacities are encouraged to reflect upon and share their somatic experiences to enhance wayfinding within parking garages. Present considerations within parking garage design do not capture what people experience and how they experience moving within, as well as to and from vehicles in parking garages.⁶

Historically, differences between drivers were considered as parking garages first developed. Initially, navigating in parking garages was believed to require a certain expertise that only attendants possessed, providing them with a level of wayfinding comfort beyond that of car owners and passengers. As automobile design changed, garages were built to allow for easier entry and exit, ramps friendly to the size and height of newer automobiles, and more parking spaces. Eventually, most garages became self-parking, and their design distinguished between skilled and unskilled drivers, attempting to accommodate both.

Most aesthetic considerations regarding parking garages are restricted to their outward appearance and how they fit with the external environment (McDonald 2007; Rebora and Monahan 2000). In fact, this is a major theme for parking garage designers, whereas internal aesthetics are barely considered. Affordances for drivers and pedestrians are created solely for functionality, but with little concern for diversity and inclusion (Gregory 2009). Accessibility

⁶ Designers are aware of the disconnect between designed wayfinding paths and how pedestrians engage in wayfinding in parking garages. Weant and Levinson remark, "In most parking garages, pedestrian regulations are difficult to enforce. Pedestrians tend to walk in a path representing the shortest distance, and they have a basic resistance to changing grades or following a prescribed path that is obviously circuitous to an alternative travel route" (1990, 198). Somaesthetics of discomfort may help explain what and how pedestrians experience parking garages that motivates them to create their own alternative travel routes. This could contribute to altering designs of parking garages to accommodate the needs of the users.

guidelines that are used in the design of parking garages account for numbers and locations of parking spaces, sizes of accessible parking spaces, accessible routes, and detectable signage for those who are visually impaired, but these are general guidelines that do not gauge the somatic experiences of drivers, passengers, and pedestrians (Beebe and Lew 2000). By adding somaesthetics of discomfort to the tools used by architects who design wayfinding routes within parking garages, accessibility would be increased for a greater number of drivers, passengers, and pedestrians, while improving aesthetic factors that would constitute beneficial affordances for persons with diverse navigational experiences, capabilities, and resources. Somatic considerations that included experiences of driving, riding, and engaging as a pedestrian would contribute to increasing diversity, equity, and inclusion for the users of garages by becoming part of the design.

The use of somaesthetics of discomfort should not be limited to designing hospitals and parking garages. I have used these two types of wayfinding spaces because they tend to present somatic challenges for me, and I have discovered through discussions with others that I am not alone in feeling discomfort within these types of spaces.⁷ Other spaces that contribute to somatic discomfort during wayfinding include airports, public transit stations, educational facilities, and government buildings, to name some of the most notorious.⁸ I imagine that the design of any wayfinding space benefits from somaesthetic considerations, including what discomforts people experience and how they experience those discomforts while navigating the space.

7. Conclusion

Wayfinding is a somatic activity. Our center is our soma, which intentionally and purposefully engages in attempting to find its way. Within architecture, wayfinding is an essential process for those persons who will use the space, although often this activity has not been considered of primary importance during the design of most spaces. Considering somatic experiences of navigation would benefit architects by providing them with tools to conceptualize and create wayfinding affordances within various spaces. Discomfort may be understood as a somatic affordance during wayfinding because it indicates that there is something problematic about the intersection of soma and environment. We should develop and use somaesthetics of discomfort to understand what allows and disallows ease of movement within a space, as well as adjust how such space is designed to improve it.

One of the most important factors for including somaesthetics of discomfort when designing architectural spaces is how it contributes to overcoming exclusion and accommodating different experiences of wayfinding. Varieties of discomfort experienced while moving through a space may be utilized as affordances to facilitate improving upon the design of that space and future spaces that serve the same or similar functions. By developing somaesthetic tools and applying them to architectural considerations, spaces like hospitals and parking garages will become less harrowing for those who must navigate through them. Additionally, we will develop greater

7 When discussing these issues, I use the Texas Medical Center as exemplary because it captures somatic discomfort with wayfinding in both types of spaces. The medical campus spans over 2 square miles (more than 5 square km) in Houston, Texas, and consists of over 60 medical institutions. Not only are the parking garages harrowing because of limiting affordances (confusing pathways, tight curves, dead ends, private parking, multiple security gates to enter or exit certain areas), but the medical facilities are also discomforting because of confusing layouts, inaccessible areas, public skywalks that are unclearly distinguished from personnel-only skywalks, and lack of continuity between buildings (this is especially stressful during extreme heat and heavy rain, both of which occur in Houston frequently).

8 I have been on at least three university campuses in three different countries that included buildings that had floors that changed while one was moving horizontally without moving vertically (e.g., while walking North-South on the second floor, a person would be on the third floor suddenly and without warning). In all three cases, this caused somatic discomfort for conference attendees who were unfamiliar with wayfinding in the buildings. I have experienced similar design issues that affected wayfinding in government buildings.

somatic appreciation, connoisseurship, and empathy for our own and others' experiences, as well as for design.

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