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PALLASMAA

“A real architectural experience is not simply a series of retinal images; a building is encountered—it is approached, confronted, related to one’s body, moved about, utilized as a condition for other things, etc. . .

A building is not an end to itself; it frames, articulates, re-structures, gives significance, relates, separates and unites, facilitates and prohibits. Consequently, elements of an architectural experience seem to have a verb form rather than being nouns. Authentic architectural experiences consist then of approaching, or confronting a building rather than the façade; of the act of entering and not simply the frame of the door, or looking in or out of a window, rather than the window itself..

The authenticity of architectural experience is grounded in the tectonic language of building and the comprehensibility of the act of construction to the senses. We behold, touch, listen and measure the world with our entire bodily existence and the experiential world is organized and articulated around the center of the body. Our domicile is the refuge of our body, memory and identity. We are in constant dialogue and interaction with the environment, to the degree that it is impossible to detach the image of the Self from its spatial and situational existence.”

Juhani Pallasmaa,

From: *“Images of Muscle and Bone,” An architecture of the*

Seven Senses

1994

“We need to remember that, as stated above, the practical situation “includes not only people doing or experiencing something but also things that contribute to the fulfillment of human life.” The latter category embraces everything associated with human activity: for instance, the table on which we take our daily meal, or the walls that protect the intimacy of our conversation within a room.

Restoring the practical nature of situations as the primary vehicle of design enables us to move away from inconclusive play with abstract forms and functions. Once divorced from the unity of practical life and cultivated separately, forms and their functions can never be satisfactorily integrated. The tendency to express the richness of life through transparent, clearly defined functions grows out of the replacement of the traditional understanding of creativity, based on the creative imitation of praxis and poetic knowledge (techn poitik), by the imitation of rationally formulated standards of theoretical knowledge (techn thertik). This replacement has led to the degeneration of practice to technique and to a serious impoverishment of culture.”

Dalibor Vesely,

From: *Architecture in the Age of Divided Representation*,

2004

The divide between “muscle and bone” and that “impoverishment of culture” wrought by the rationality of postmodern thought seems to be an unusually large divide to span, even with the similar phenomenological perspectives of these two authors. Yet what unites the two perspectives, separated by a decade, is the fact that the existential nature (or might I say beauty) of architecture, its success, resides not in its material forms but in the pleasure of the individual who dines at a table or enjoys a conversation within the intimacy of a room.

In spanning this gaping divide, I would like to begin with a simple theorem: architectural theory is dead and incapable of resuscitation!

I should at least qualify my theorem by noting that the speculative body of theory to which I am referring is that of the late-20th century—that which reduced design to a rational, visual, symbolic, and therefore conceptual process, one indubitably ensnared or seduced by a form’s meaning or destruction thereof. My contention is that this superannuated exercise in Cartesian dualism has been entirely overtaken by the new perceptual and cultural models, which are centered in the multimodal and embodied nature of the experience, at the same time highlighting the embedded and reciprocal relationship of the human organism with the built and cultural environments in which we live. As Pallasmaa suggests, there is no space between the “self” and the world in which we dwell.

Yet what do we really mean by the experience of architecture? At the most basic level it is a homeostatic one. A good shelter must have a certain range of temperatures and light, together with a few other things, for us to maintain our most basic sensory functions. All architects can agree on this, and these necessities in fact prompted the first members of our

antecedent species (*Homo erectus* and *Homo heidelbergensis*) to erect the first huts.

Beyond homeostasis, however, is another level of sensory coupling with the environment that we might call aesthetic—employing Alexander Baumgarten’s word for sensible cognition without the Kantian imperative of judgment (which will come later). Philosophers and the biologists are now informing us that this aesthetic dimension is multimodal (generally operating across cortical, limbic, and brainstem regions of the brain), emotional (the endocrine system’s hormonal input), inherently meaningful (we read the world not with concepts but through affordances), and intentional (our animal anticipation or readiness for action). Moreover, our sensory coupling with the environment operates within the media of minds, bodies, environments, and cultures interacting with each other in a developmental process on multiple levels over the course of generations. In other words, just as we design our environments, so do our environments (through the process of neural plasticity) design who we are and what our species will become. And we do so with the capabilities and limitations of our bodies—that is, as motile organisms encountering, approaching, confronting, and measuring the built environment with our muscle and bone.

One of the more promising models of perception today is embodied simulation, which is based on the discovery in the early 1990s of mirror neurons. Visible to today’s neuroimaging technologies, systems of mirror neurons become active in premotor and parietal areas (tightly connected with emotional and endocrine circuits) when we perceive the actions, expressions, and intentions of others. Mirror circuits in other areas allow us to read another’s mood or connect with their emotional state. One example of embodied simulation is how we might, in viewing a dancer on a stage, prep the muscles that we see being used within our own premotor

cortex, all without lifting a finger from our seats. Mirror systems and the new models of embodied simulation have profound implications for designers, because they allow us to understand how we actually experience architectural forms and space, in a far more complex way than the semiotic (conceptual) basis of postmodern theory would allow.

Studies in which participants viewed abstract paintings, for instance, have found activity in the cortical premotor system demonstrating that we simulate the intensity with which the artist applied the brush to the canvas. Other studies have shown that we not only simulate the force of chisel marks on figurative sculpture but also the muscular and emotional activity displayed in the sculpted bodies. This makes it very likely that we similarly simulate the heaviness and power of the rusticated blocks of the Palazzo Medici, the more delicate scoring of the applied stonework on the Palazzo Rucellai, the twisting and almost visceral force of a Romanesque spiral column—generally speaking, the material qualities and shapes of any architectural surface.

Certainly, materials have different textural and thermal qualities. The architect may view glass, steel, and concrete as quintessential modern materials, and glass indeed has become the predominate exterior envelope in nearly all tall buildings today. Yet non-professionals may view these same materials in different ways. Glass and steel are generally quite cool to the touch and devoid of any textural interest. Glass in the upper stories affords good views out over the city, but numerous studies have shown that people do not like to walk past glass facades along the street. Concrete is not only a drab material in its coloration but it is also often rough to the touch. Many people associate it (not happily) with car parks and other eye sores within the city. Architects who have used concrete successfully, such as Louis Kahn, have always softened the impression by complementing it

with the textures and warm thermal qualities of wood, as if to humanize the building fabric.

Buildings in their totality, as Heinrich Wölfflin noted more than a century ago, invoke in us vestibular and formal responses. The Leaning Tower of Pisa, most agree, makes us uneasy, and the initial professional craze over the structural ingenuity of Beijing's CCTV tower seems to have waned considerably in just a few short years. The recent exercises in bigness don't seem to have the long shelf-life of, say, the vestibule of S. Marco in Venice. Other longstanding architectural masterworks are viewed today in different ways. Mies van der Rohe's Crown Hall, as I can testify personally, is not a happy place to sit, think, or work. The glass walls resist any temperature control, and are ill-suited to the cold and windy climate (not to mention summer's solar gain), while and the soundscape is excessively loud. During studio hours there is a veritable din or cacophony of noise. The lightly supported deep truss of Mies's New Gallery in Berlin suggests to the visitor that it may at any moment crash down upon one's head. In an art installation few years ago, David Chipperfield introduced a forest of thick tree trunks, as if to lend the multi-ton canopy some measure of visual support.

Chipperfield's intervention underscores another aspect of the architectural experience, which is the importance of detailing or grounding it with what Pallasmaa calls a tectonic language. One of the more remarkable fMRI studies of the last few years attempted to monitor human responses to viewing another's touch by introducing a control image of two inanimate materials touching one another. What they found was quite unexpected, in that the contact of two inanimate materials ignited similar tactile responses inside our sensorimotor systems—that is, similar to when we view one person touching another. The experiment demonstrated that the mirroring/simulation principle is active with the

observation of any touch, and embodied simulation is the key to how we conceptualize the world.

Yet what is architecture, if not the art of composing materials that touch one another—or what we generally refer to as detailing? It explains why the classical column in Roman times had a capital and a base, why the Greeks employed entasis and other optical effects to enliven their articulated forms. The English critic Roger Scruton once noted that detailing imparts humanity and grace to the design because it allows us to judge the appropriate use of the detail. For example, the detailing of the Gothic nave, in its striving for height, charms us with its luxurious articulation, while the modern glazed and detail-less skyscraper only scorns us with its “downcasting inhumanity.” This is not to say detailing can only be historical, as Scarpa ingeniously demonstrated. In his various writings on the detail, Edward Ford has referred to detailing as a way not only to escape the abstract and geometrical character of a building but also to animate it with tactile, sculptural, and empathetic qualities. Well considered detailing, Peter Zumthor once noted, establishes a dialogue with the occupant, thereby forming “levels of intimacy.” As Pallasmaa reports above, this dialogue assures the authenticity of the design experience. Nevertheless, many architects in recent years, particular those with a penchant for digital design, have shunned the detail as outmoded and unnecessary. The perceptual models of contemporary neuroscience, however, dispute this claim.

If we are neurologically attuned to the tactile qualities of form and its configuration, the same is also true of space. Dozens upon dozens of neuroimaging studies have demonstrated that the space surrounding our bodies, referred to as peripersonal space, is a highly sensitive zone that moves with the movements of the body. Some neural circuits like to define a comfort or defense zone around the body, while

this zone for other circuits becomes active with the perception of affordances. If we view a toothbrush or hammer in our peripersonal space, for example, our premotor cortex is already rehearsing how to pick them up, even if we have no intention of doing so. In walking toward a staircase, our bodies measure and adjust the length of the gait, in addition to preparing the legs for the lift and ascension. We do so without thinking.

Awe-inspiring spaces allow us to stand tall, lift our heads, and deepen our respiration. Narrow, confining spaces, lacking elbow room as we say, evoke contrary responses, perhaps the first of which is the desire to escape them. Numerous “rubber hand” experiments (where the real hand is shielded from sitter’s sight while a rubber hand is placed on the table in front of the subject) have shown that people experience a tactile response when only the rubber hand is brushed. Other experiments have shown that the body can be fooled as to its actual location, and even experience tactile sensations of being touched from walls that are not touching. The body does not like to move close to a surface with a rough texture, whereas the same surface might be fine in distant or extrapersonal space. In short, space is pregnant with body-related meanings and architects should be aware of this fact. Space is not, as architects believe a half-century ago, an Euclidean or space-time abstraction. We cannot detach our existence from the environmental field in which we dwell.

The strides that neuroscience has made with our relation to form and space have been matched by what the sciences and humanities have learned about our social natures in recent years, and the new perspective draws us back to what Vesely referred to as the “practical nature of situations.” As designers, we often think of designing *the* building and then at some future time handing the keys to the occupant. We

should, however, stop and reflect on whether or not we are viewing the issue from the wrong end of the looking-glass. The table on which we dine or the setting for an intimate conversation is the more proper starting point for our efforts.

Only a generation ago textbooks on human evolution liked to compress modern human behaviors into the last fifty-thousand years, beginning with the cave paintings of southern Europe. Yet we now know that the human species appeared at least 300,000 years ago, and that those behaviors we use to call human—protolanguage, laughter, the use of ochre, cooking, empathy, music, song, dance, and symbolism—all appeared before the inception of our species, in some cases, beginning with *Homo erectus*, up to two million years ago. Sociality, like our cultural need for ritualistic and artistic expression, are not recent additions to our biological resumes; they are deeply written into our genetic codes.

Anthropologists now dismiss the belief that social behavior is simply a cultural program applied to our biological hardware. For this reason, ritualistic expression and our empathetic relationship with others should not be programmatic afterthoughts to the design. Who does not enjoy a warm social setting, and participating on the stage on which human life unfolds? Social and aesthetic experience needs to be both accessible and tangibly relevant to the world in which we live. Manifestations of ritualistic play, for the designer, might consist of striking uses of space, forms textures, materials, light, and color—all in accord with our sensory and cognitive dispositions. As Ellen Dissanayake has noted, ritual play satisfies us when it appeals to our social and emotional natures, when the effects are modulated with the build-up or down-play of intensity, or the play on expectation and surprise. One hundred and fifty years ago Gottfried Semper argued that the “haze of carnival candles” (the carnival spirit and the

mask) was the proper atmosphere for architects to create.

Moreover, today we are learning that ideas such as beauty not only may have a neurobiological basis but also that they need to be reinforced and connected with a social ethos. Environmental degradation or poor design is a form of moral degradation or disrespect toward the occupants of our creations. For too long architecture has been held under the painful arm of theoretical abstractions or the rationally formulated standards of technological progress. What we need today is a fundamental rethinking of our habitats and cities. I am not speaking here of newer digital technologies or driverless cars, but humanistic cities that, through mindful creative labor, enrich our collective existence. What we need today, as Vesely correctly notes, is a more sincere and genuine participation in the order of human reality—specifically, the humanizing and sensuous creativity of “poetic knowledge.”