The Power of Place:
How environment affects brain function and meaning

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*Change the environment, change the brain, change the behavior.*
-- Fred H. Gage, Ph.D. – neuroscientist

Your brain on context

The human mind is highly situational. Although we rarely think in any conscious way about the power of our physical surroundings, our subconscious mind is highly sensitive to them. Human situational awareness and the factors that create thematic cognition are just starting to be studied and appreciated by environmental psychology. Brain research is now becoming capable of telling us, through imaging, what these factors are and how they work. There are even indications that the qualities of place – lighting (artificial or natural), sound, room dimensions and color, thermotics (heating and cooling), and even
furniture styles, can inhibit or promote brain cell growth. But this research is just beginning to reveal how fine-tuned our brains are to respond to the places we find ourselves – from the neo-natal hospital unit at birth to the places we travel, sleep, eat, work, play, shop, bond with others, heal from illness and injury, vacation, and finally die—most often, in the clinical settings of our birth.

It has been estimated that the unconscious mind can process eleven million pieces of information per second. By contrast, our capacity for conscious processing is a paltry 40 items per second. It is our fast-working unconscious mind that sets our location in cultural space at any given moment, setting off a cascade of decisions below the conscious threshold that result in behavioral change. One example: high ceilings tend to promote abstract and creative thought; while low ones favor concrete detail work. Thinking effects are also driven by social surroundings (who we are with), the cultural imprint of place (meaning) along a behavioral range (action within place), and the potential and real outcomes of what happens in such purpose-built venues (expectations, values, and decision making).

Cultural studies can define and analyze these factors to explore the potentials of a variety of settings and their effects—from simple seating in a classroom to the layered complexity of theme parks. All five senses, especially sight and sound, play a role in the setting’s physiological DNA and its ties to perception and meaning. The role of place is a rich example of cultural software as an IIS—Integrated Information System—that accommodates and facilitates the many venues encountered in everyday experience.

Context richly influence how we feel at any given moment, and our brains are fine-tuned (though largely at a subconscious operating level) to acclimate to our surroundings. Most of our information comes from our highly developed visual sense, but it has been pointed out by perception experts that sound often outranks sight as the cueing system that cuts past conscious and rational prefrontal awareness to connect with our more primal brain centers. In film-viewing, for example, the music score sets the emotional tone of the screen image, not vice-versa. Even tactile cues, such as flooring (stone, carpeting, wood,
concrete, lawn, or linoleum) each carry individual built-in “codes” that cue our instincts to relax, tense, socialize, hurry up or slow down, leave or linger.

Understanding environment

Dozens of disciplines—from art history and archaeology to neuroscience and industrial psychology—study environments, from ancient cites to healthcare settings to space station design. But there is far more to these environments and their artifacts than their physical qualities and ingenuity. In terms of the human mind and its prime output, culture, the core reason to study material culture is ultimately to understand how it works on the mind. Besides its utility as props in daily life (shelter, tools, action props, aesthetics), the essential question is this: What role do these artifacts and landscapes play in human thinking and behavior across time and in space? In other words, how do our creations affect us as we live with and within them?

Thought experiment

As an example, try this simple thought experiment. Think about a range of contexts: conference room, swimming pool, store, bedroom, classroom, stadium – all with their own sensory inputs, comfort levels, and press (the demands on the brain and sensory systems). Then ask yourself: how does my behavior change in each environment?

As an even shorter route, think of various types of chairs: a throne, an armchair, an electric chair, a beach chaise, a church pew, a roller-coaster seat.

How do each of these mini-environments operate as “thinking boxes” – influencing the way we handle ideas, the topics we think about, making us smarter, dumber, present- or future-oriented, more social or more private?
Virtually superimpose your body onto these various mini-settings and you can instantly sense the mental shift that automatically follows. Shift the context, shift the mentality. This comes as close to being a human universal as it gets.

Where we are, in fact, seems to be essential to consciousness – which is why medical rescue teams will ask “Where are you?” as an index to awareness. Where you are, in fact is key to who you are at any given moment; following the Japanese proverb, as quoted in the TV series Mad Men, “A man is whatever room he is in.”

Neuroscience seeks to define place impact in order to discover just how essential human activities can be enhanced: these include learning, mood, focus, social motivation, brain activity levels, productivity, stress, even memory. Mall designers long ago realized that expanding the field of available choices was central to raising sales; as was making customers feel affluent by keying the mall “room tone” to spaciousness, glamour lighting, and muted crowd-noise levels. Food plays a role by raising the sense of safety and gratification, which promotes buying behavior; food courts are actually a core feature of successful shopping centers.

Brain science is bringing on the future of design. Based on these research outcomes and their implications for “experience architecture”—the design of spaces to become the places of human activity—cultural analysis is on a quest for the cultural geography of the
mind. This means looking at the built environment not just for its intended pragmatic uses, but for something more sophisticated—as the delivery mechanism for those mental and neurological states that are often inadvertently created and encouraged. “Room tone” is a term we have conceived to describe the mind-setting effect of our surroundings. Place, through room tone, works as a channel changer by evoking different styles and moods along the dial – tied into different brain regions and functions.

The brain on place

Place dynamics as a way to understand culture and cultural values enlists the collated wisdom of cultural geography, material culture study, neuro-architecture, and social history and perception psychology. The overall project is to discover and define the cultural logic that follows from the spatial logic in any given venue. To do this, the challenge is to discern from the way that places are actually used (which is not necessarily the way they are designed to be used) their core meanings. The entry point to this knowledge is a series of basic questions, answered from the point of view of the space user:

1. What is this place ABOUT? Do you immediately comprehend the purpose of the place based on the physical themeatics—the holistic meaning, not at the detail level.
2. How does this place make me feel? The primary question is “Do I feel secure?” All other stimulation is secondary.
3. Who am I here? What is my role and status in this context?
4. How does this place call on me to think and act? Who else is here? What is expectable? What’s at stake? What are the risks and opportunities?
Design as experience

In fact, the purpose of all places is to induce various behaviors for a range of purposes—expressing the full span of human experiences on earth. Built environments are designed to evoke and manipulate our mindsets, through leveraging memory, themeatics (our collective ideas about all times and places), shared cultural values, and social consilience (groupthink or the “wisdom of crowds”). Places can be thought of as triggering decision-making and behavior, activated as a rich array of modes. For every mood and value there is a setting, either real or recreated, that is ideal for evoking it.

These designs are variously effective at this purpose—but there are far more less-effective designs than effective ones, and we need to know how to become much better at understanding and applying what people need, want, and respond to. (Urban sociologist William Whyte remarked, “It is difficult to design a space that will not attract people. What is remarkable is how often this has been accomplished.”) The more we know about the power of place and what drives it, the better our “thinking boxes” can be designed to act on and assist thought, decision-making, and behavior. Builders and designers, along with sociologist Joe Zeisel of Columbia University, are asking “What is there about people that we need to find out in order to build buildings that respond to people’s needs?”

This is one definition of liberating human potential—matching our brains to our built environments.

A deeper understanding of placemaking in terms of human factors over design aesthetics has enormous implications, both for academe and commerce. Understanding how the built environment has worked for decades or centuries on the minds of previous generations can provide a more meaningful historical narrative. A more mind-based design ethic can equate to more effective and compelling experiences, from household design elements that cue quality behaviors to large-scale commercial enterprises—for goods, services, and experiences—of every kind.