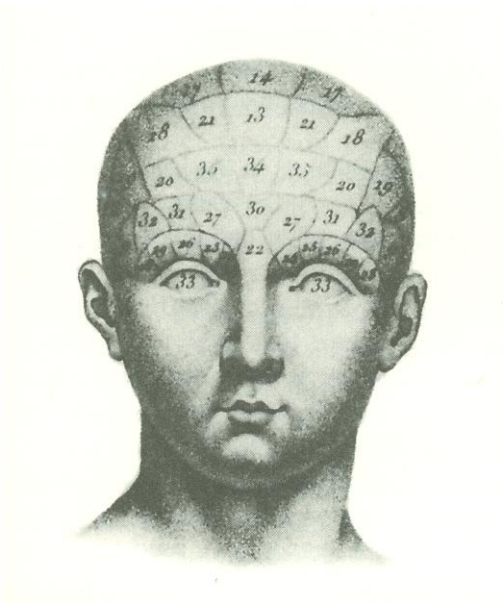
Design for Consciousness

An Exploration into the Relationship between

the Built Environment and Human Potential



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KA*702 – Consciousness and Human Development

Winter 2009

INTRODUCTION

How do the qualities and characteristics of the environments in which we live influence our potential as human beings? Can the morphology and structural arrangement of the built environment influence what we call "consciousness?" If this is so, can we design environments that actually support and *enhance* consciousness? These are the kinds of questions that will be explored in this essay. While the questions will be exploratory, the conclusions that will be reached are meant to be purposeful, for what else could design be?

Why design for consciousness? What is consciousness anyway? These are pertinent questions, not only for this essay but for the world at large. "Consciousness" is a term that has been enjoying widespread usage lately, as if everyone is talking about the same thing, without taking the time to look closer at what is really meant – or implied. We hear about "raising consciousness," "expanding consciousness," "a shift in consciousness," "the transformation of consciousness," "evolution of consciousness," "altered states of consciousness," "cosmic consciousness," etc., etc. – but what does all this really mean?

As an example of the extent to which "consciousness" has entered the lexicon of the day, here is the Dean of the Yale School of Forestry and Environmental Studies, speaking on occasion of a 2007 conference entitled "Toward a New Consciousness: Creating a Society in Harmony with Nature:"

> Many of our deepest thinkers and many of those familiar with the scale of the challenges we face have concluded that the changes needed to sustain human and natural communities can only be achieved *in the context of the rise of a new consciousness* (J. G. Speth, 2007, in Leiserowitz and Fernandez, 2008, p. 5, emphasis added).

This is an interesting challenge to set before the Forestry and Environmental Studies community; yet, I am very curious to know, and I think it is fair to ask, what is it exactly that will be rising in this promoted "rise of a new consciousness?"

As another example of potential ambiguity, in an interestingly prescient book entitled *The Consciousness Revolution* – a trialogue that took place back in 1999 between three notable thinkers postulating about changes to anticipate in the, then, coming millennium – we read statements like this:

> [The root of the global crisis]…is not our business ethics, our politics or even our personal lifestyles. These are all symptoms of a deeper underlying problem. Our whole civilization is unsustainable. And the reason that it is unsustainable is that our value system, the consciousness with which we approach the world, is an unsustainable mode of consciousness (Russell, p. 5).

In this passage, "consciousness" seems to be equated with "value system," but I wonder if that is going far enough? It is quite significant, however, that consciousness is regarded as *underlying* the problems of the world, which are seen as symptoms. In another excerpt from the book:

> On all sides we are threatened with a problem, on all sides we have to adapt – and that means changing the dominant consciousness. This is the root of the problem. We have to start thinking differently, feeling differently, and relating to each other and to nature in different ways…Do you think we have the ability to change? Is there a real chance of a major change in consciousness (Laszlo, p. 3-4)?

Here there is reference to "the dominant consciousness" as the root of the problem. (I have to wonder if this "dominant consciousness" is in fact a *dominator* consciousness – but in that I digress.) Yet, what would it look like to have "a major change in consciousness?" How would this change affect the world at large? And how would this change possibly come about? Stanislav Grof, a consciousness researcher, anticipates this last question:

> I have therefore no doubts that a profound transformation of consciousness is possible in individuals and that it would increase our chances for survival if it would occur on a sufficiently large scale. Naturally, it remains an open question whether a transformation of this kind will occur in a large enough segment of the population in a short enough time to make a difference. The practical question is, whether such a change can be facilitated and by what means[?] (Grof, p. 4).

I will attempt to show that facilitating the desired transformation of consciousness of which these authors speak *is* possible on a grand scale, and that this change – like a positive feedback loop – can be made ever more permanent through the generations, only getting better over time. The means are as prosaic as the effects are extraordinary; the

process as tangibly practical as it is superbly sublime. The solution could, in fact, be considered an advanced function of human being on Earth:

Consciousness is enhanced naturally through *the intelligent, knowledgeable, co-creative design of the built environment.* A corollary could be: A well-designed built environment has a beneficially transformative effect on the consciousness of participants in that environment.

These statements are not as bold as they might at first appear, for this is an art and science that has some precedent, although it has not yet been applied to its ultimate potential except in a few scattered cases. So, to return to Grof's question, how do we facilitate a transformation of consciousness on a scale large enough to make a difference? The answer is simple: *we initiate a Design Revolution of the built environment*; we establish as the number one priority of the human project the design and creation of beautiful, functional, vibrant and alive – some would settle for 'sustainable' – places in which to live. This is well within our means.[1]

In order to justify and elucidate this position, I will first re-examine the context, the situation in which we find ourselves. I will then take a close look at the meaning of "consciousness," for we need to know what we are designing *for*. I will then examine various theories describing environment-behavior relationships, drawing from the extensive literature that has built up around the field of Environmental Psychology, including some of the fascinating research suggesting isomorphic relationships between environmental structure and the patterning of internal neural networks. Finally, I wish to propose some environmental design criteria that practitioners can utilize for the intended consequence of supporting and enhancing consciousness.

[1] The first Design Revolution was called for by R. Buckminster Fuller in his 1969 book *Utopia or Oblivion: The Prospects for Humanity,* in which he claimed that the only way for techno-industrial society to climb out of its predicament is through the ubiquitous implementation of an information-rich "design science." That way, the prospects for humanity are not left to capricious chance – we can, in fact, with intention design our future.

CONTEXT

Apparently there was a time when the study of consciousness within the psychological profession was deemed irrelevant at best, subversive at worst. These were the early days when psychology sought to acquire an air of respectability by aligning itself with the natural sciences. Physics, of course, was the empirical standard to emulate. Says one of the founders of modern psychology:

> Psychology…is a purely objective experimental branch of natural science. Its theoretical goal is *the prediction and control of behavior*. Introspection forms no essential part of its methods, nor is the scientific value of its data dependent upon the readiness with which they lend themselves to interpretation in terms of consciousness (Watson, 1913, in Thomas, 2001, p. 13, emphasis added).

This was the 'Behaviorists' agenda: "The behaviorists…argued that we should confine ourselves to the measurement of overt behavior and the way it is controlled by observable stimuli in the external environment" (Crain, 2000, p. 362). Knowledge was to be obtained within the controlled experiments of the laboratory, where 'subjects' were tested for stimulus and response, thus leading to theories of predictive behavior. Even as late as 1974, Behaviorists could state unapologetically: "Since there is no agreement among psychologists about the structure, content, or operating principles of *mind*, dwelling on such matters merely distracts people from the publicly observable controllers of behavior – the rewarding and punishing consequences" (Skinner 1974, in Thomas, 2001, p. 14).

These days, such an attitude conjures an icky feeling of being the authoritarian program of some totalitarian thought regime; yet these scientists believed in the validity of their project – instituting a "behavioral technology comparable in power and precision to physical and biological technology" (Skinner, 1971, p. 3). I take the time to review these origins of psychology because plenty of this deterministic, materialistic, reductionistic, sterilely objectivistic influence still lingers – *across* the disciplines. I want to stress resolutely that within the concepts developed in this essay, environment does not *determine* behavior, as if there was some linear cause-effect connection; instead, it is more

accurate to say that environment and organism *co-evolve* within the mutually-defining interrelationships of "structural coupling" (Maturana and Varela, 1987) – the organism influences the environment as much as the environment influences the organism.[2] Similarly – and this is a critique of Environment-Behavior research in general – I would argue that behavior is *subsidiary to* or *a consequence of* consciousness; consciousness in fact *precedes* behavior. Therefore, a more revealing and relevant research agenda will focus on the effects or relationships of environment on *consciousness,* out of which will arise associated behavior. Perhaps that is why Ziesel in his new book has expanded the title to include Environment-Behavior-Neuroscience (E-B-N) research – what he calls "a new paradigm to further the discipline of environment-behavior studies" (2006, p. 356).

Another illustrative point to make, considering the essentially interdisciplinary nature of this study, is that Behaviorist psychology – the psychology that would attempt a "technology of behavior" to control populations by environmental stimuli – arose concomitant with the Modernist agenda in architecture and urban planning:

> [Modernism] describes both a set of cultural tendencies and an array of associated cultural movements, originally arising from wide-scale and far-reaching changes to Western society in the late nineteenth and early twentieth century. The term encompasses the activities and output of those who felt the "traditional" forms of art, architecture, literature, religious faith, social organization and daily life were becoming outdated in the new economic, social and political conditions of an emerging fully industrialized world (Wikipedia, retrieved 12 March 2009).

Yes, perhaps one aspect of this "emerging fully industrialized world" could be exemplified by the mechanized assembly lines of Henry Ford, churning out Model-Ts for mass consumption in a socio-economic phenomenon sometimes labeled "Fordism" (Antonio and Bonanno, 2000).[3] In a similar way – and they probably didn't even notice at the time – "fully industrialized" human beings were becoming progressively relegated to cogs in the wheel, replaceable parts in the machine, numbers in a file. I find it significant that in the same year that Watson made his disclaimer about consciousness – 1913 – the

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[2] "We speak of structural coupling whenever there is a history of recurrent interactions leading to the structural congruence between two (or more) systems" (Maturana and Varela, 1987, p. 75). "Structural coupling is always mutual; both organism and environment undergo transformations" (ibid, p. 102).

[3] "Ford offered the first Model-T in the fall of 1908 at $825 for the "runabout" and $25 more for the "touring car"" (Kuntsler, 1993, p. 89). "The number of automobiles in the United States increased from 9 million in 1920 to 26.5 million in 1930 and to about 40 million in 1940" (Tuan, 1974, p. 233).

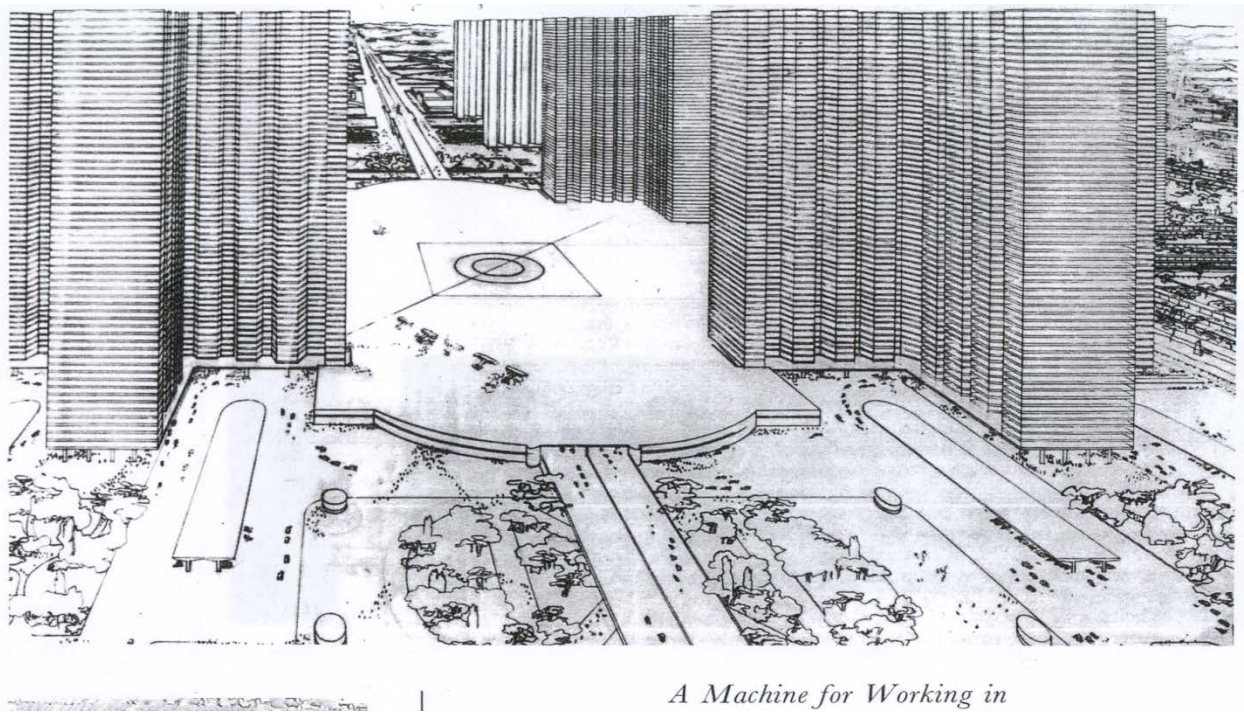
Federal Reserve was deceptively installed, whereby a cabal of private bankers took control of the money supply of the United States (Mullins, 1985). Soon after in rapid succession followed WWI, the credit bubble of the 1920s, the Great Depression, the rise of Fascism, WWII and the atomic bomb. Within this frenzied *zeitgeist* of unrelenting scientific materialism, as human beings were increasingly subordinated to the machine and the machine to the State, Modernist heroes like Le Corbusier could earn a descent reputation by uttering the famous phrase, "The city is a machine for living" (Hitchcock, 1958, p. 367).

Indeed, in its rejection of the traditional forms and functions, patterns and relationships, that had sustained architecture and planning for thousands of years, Modernism – as a product of its times, as an ideology of the "fully industrialized" mind – injected a mechanical paradigm that effectively sundered the built environment. [4] As an example, "one of the most decisive consequences of the [Modernist] revolution [was] the cutting off of the building from the land…Since the design of the building and the design of the land could now be treated separately, and since most architects were interested in buildings and not in land, the result has been concentration on building design independent of its environment, and the thoughtless, arbitrary placing of it on the land, without regard to total design principles. By the great liberation of Le Corbusier, the great surgical amputation of the building from the land, we have a new liberty of design for which we have paid a great price because, in the process, the total environment has suffered" (Bacon, 1967, 231). "Where Modernists had their way, the concern for context became an irrelevancy" (Kostof, 1991, p. 90). Bacon further describes the effects of these developments on the architectural profession as nothing less than "a disaster" (ibid).

The Modernist vision of individualized isolated units arbitrarily situated across the landscape neatly corresponded to the growing egoism and associated alienation of the Fordist industrialized populace, whereby active 'citizens' were mutating into the individualized isolated units of passive 'consumers.' This egoism that results as a natural consequence of rapid material expansion was epitomized by the architects themselves, who thought it was there task to produce highly individualized expressions of their innate

[4] "The Modernist cityscape had displaced two other urban traditions that [are] now being reclaimed: the "organic" townscape with its picturesque effects and irregularities all within a system of spatial closure, of tight spatial sequences; and the Baroque townscape with its complete compositions, its visual drama, its showcasing of monuments in formal squares and at the end of vistas, its scenographic hierarchies" (Kostof, 1991, p. 157).

– and no doubt 'gifted' – creativity: "[The architect and] client silently agree that a building is an isolated work of art, an inhabitable sculpture, in which the most significant ingredient is the flavor of the designer's characteristic style" (Ackerman in Lang, et al. 1974, p. 17). This elitist attitude has its most striking affect in "[t]he arbitrary rambling of highrises in Modernist estates" (Kostof, 1991, p. 333) – the typical 20th century downtown skyline of a collection of menacing towers of steel and glass, each one with its 'signature' effect, yet each also a sadly isolated, individualized unit lacking relationship with its surroundings. And so we see justification for Bacon's claim to "disaster," for in the absence of context, openly antagonistic to vernacular tradition, and with no standard for evaluating the impact of these designs on users, the Modernists have succeeded in creating a lifeless display of personal 'artifacts.' "There is a very close relation…between the privilege to owners of erecting high buildings, and the burden thrown upon the community of taking care of the consequences" (Delano, 1926, p. 8, in Kostof, 1991, p. 335). "Hence the appeal for a pre-skyscraper, indeed pre-industrial, urban form by the likes of Leon Krier" (ibid, p. 333).



Le Corbusier's "City for 3 Million People" – from Eisner, et al. 1993

The mechanical mindset of the Modernists also looked with eager anticipation to the potential changes in the built environment afforded by the new technology of individualized motorization. No longer was it necessary to conceive and design in terms of coherent, pedestrian-scale, mixed-use streetscapes, embellished with public amenities and aesthetics – for these were now old-fashioned and "outdated." "With the publication of *La Ville Radieuse* in 1933, Le Corbusier could presume to speak for all Modernism in stating: "Streets are an obsolete notion. There ought not to be such things as streets; we have to create something that will replace them"" (p. 121, in Kostof, 1992, p. 235). Le Corbusier's devout technocratic reformism approaches shrill when he avers: "A city made for speed is made for success" (1929, p. 179, in ibid, p. 233). Yet he wasn't the only one:

> From the Thirties onward, American concepts of superblock planning became increasingly allied with theories emanating from the International Congresses of Modern Architecture, or CIAM. According to Modernist canons set down in CIAM's 1933 position paper…*traffic flow and its design was the primary determinant of city form* (Kostof, 1991, p. 154, emphasis added).

And we all know where that leads: to a built environment compulsively shaped for automobiles, not for human beings (and other living things). Since there was plenty of room to expand, this "determinant" inevitably 'paved the way' for that amorphous condition affectionately called 'sprawl.' The result is a society completely dependent on motorized transportation, so much so that, in these days, it's no exaggeration to say that many people would absolutely perish if they were unable to find gas for their machines. These machines have become a sort of somatic extension. Any North American knows the story: driving off in one direction for a job, then off in another to get food, and still another for social events or whatever. Having children onerously compounds the requirement to *drive, drive, drive*. People these days, having grown up in this highly energy-intensive situation believing that it is quite "normal" (Heinberg, 2003), may not be able to fully appreciate the profound changes the ubiquity of this new mode of transportation has had on the built environment, and subsequently on social and economic relationships. Can we say that these changes also had an effect on "consciousness?"

James Kunstler, a recent celebrity for his incisive ability to analyze with shrewdness and wit the dreadful nature of the built environment in America, adeptly places all this in an historical perspective that is eerily pertinent to our present times:

> The automobile rapidly reshaped the nation's economy in ways that had strange and unforeseen repercussions. Certainly, the car was the main force behind the economic boom of the 1920s. Refitting the human habitat to accommodate the car required vast capital expenditures that translated into jobs with rising wages and business activity with soaring profits. Real estate and construction boomed as the urban outlands were carved into homesites for the new automobile commuters. Small businesses sprouted to serve the new auto culture. Even more important, the techniques of the assembly line pioneered by Henry Ford quickly spread throughput American industry, resulting in a deluge of consumer goods, everything from toasters to radios, which were bought by those workers with their rising wages and businessman with their soaring profits. But the system was booby-trapped and it would blow up in 1929 (1993, p. 92).

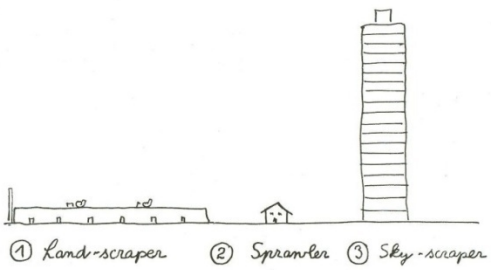
Kunstler infers that a bubble was created by the increased economic activity spurred by the massive construction project of "refitting the human habitat to accommodate the car," and that the bursting of this bubble contributed to the economic crash of '29. If this is so, then there *is* a parallel with our present day, in that the massive construction project of building Suburbia – launched after WWII in a long, euphoric, though rather fantasy-hyped period during which the nation gloated in unprecedented wealth – created a bubble that has just recently burst with the so-called "sub-prime" debacle. Apparently there are now millions of houses standing vacant, repossessed by banks with no one qualified to take over the loans.[5] Kunstler likes to say that the project of building Suburbia – with its associated malls and strip malls, shopping 'villages' and business 'parks,' beltways and drive-thrus – largely *became* our economy (Electric Wallpaper, 2004). He also calls this suburban project "the greatest misallocation of resources in the history of the world," and adds with a warning that Suburbia is "a living situation that has no future" (ibid).

This, then, is the context in which we find ourselves: We are living in a dysfunctional (because it requires inordinate amounts of energy), incoherent (because it was randomly concocted, not purposefully designed), unsustainable (because it lacks symbiosis with the underlying ecology) built environment that was feverishly thrown together in a mad rush of speculative development. This built environment apparently was intended to be a techno-utopia for some, an endless growth and credit-enabled cash cow for others, and a shining tribute to rugged individualism for still more…yet, nobody seemed to be thinking

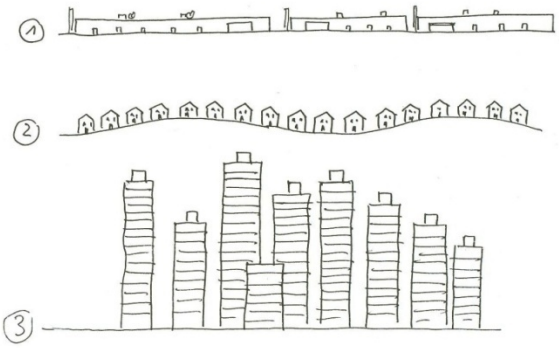
[5] Ron Paul stated that the number of vacant homes now exceeds 19 million! (Retrieved from RonPaul.com on 18 March 2009). Could this be true? Forecasts predict even more foreclosures.

about creating endearing places worth caring about. The point is, we're still living with all this mess; we inherited it, the unfortunate consequences of an ideology conceived and propagated by the "fully industrialized" mind. "The result of Modernism, especially in America, is a crisis of the human habitat: cities ruined by corporate gigantism and abstract renewal schemes, public buildings and public spaces unworthy of human affection, vast sprawling suburbs that lack any sense of community, housing that the un-rich cannot afford to live in, a slavish obeisance to the needs of automobiles and their dependent industries at the expense of human needs, and a gathering ecological calamity that we have only begun to measure" (Kunstler, 1993, p. 59-60).

> Modernism may well denounce all forms of historicism, but when it conceives of churches that resemble warehouses, palaces of culture that imitate oil refineries, and houses that look like ships, it practices historicism's own confusion of categories…Once it had exhausted the vocabulary and repertory of traditional architecture, the ideology began colonizing other fields with the same voracity, usurping the formal registers of industrial and naval architecture, and of machines and tools…Modernism in art and architecture seeks to impose itself upon the public and the authorities not by the superiority of its propositions but by the violence of its promises (Krier, 1998, p. 63).



3 Basic Modern Building-types



3 Forms of Environmental Pollution

If there really is a direct relationship between the nature of the built environment and consciousness, as this essay proposes, what can we surmise about the prospects for the present generation, with its inherited legacy of a program explicitly promoted to be the expression of a "fully industrialized world?" They are everywhere, these Modernist artifacts; and the mechanistic imperative of the scientific materialism that brought them into view also is notably evident in the way they are deployed across the landscape – each

type according to its appropriate zone, "the Modernist dogma of breaking the city into "functions" prevails" (Kostof, 1991, p. 157). What does it mean for the people who daily must navigate through environments emulating the qualities of a machine? What changes would we introduce in design philosophy, methodology, and practice if our goals were not *controlling behavior,* or *maximizing profits,* but rather *enhancing consciousness?*

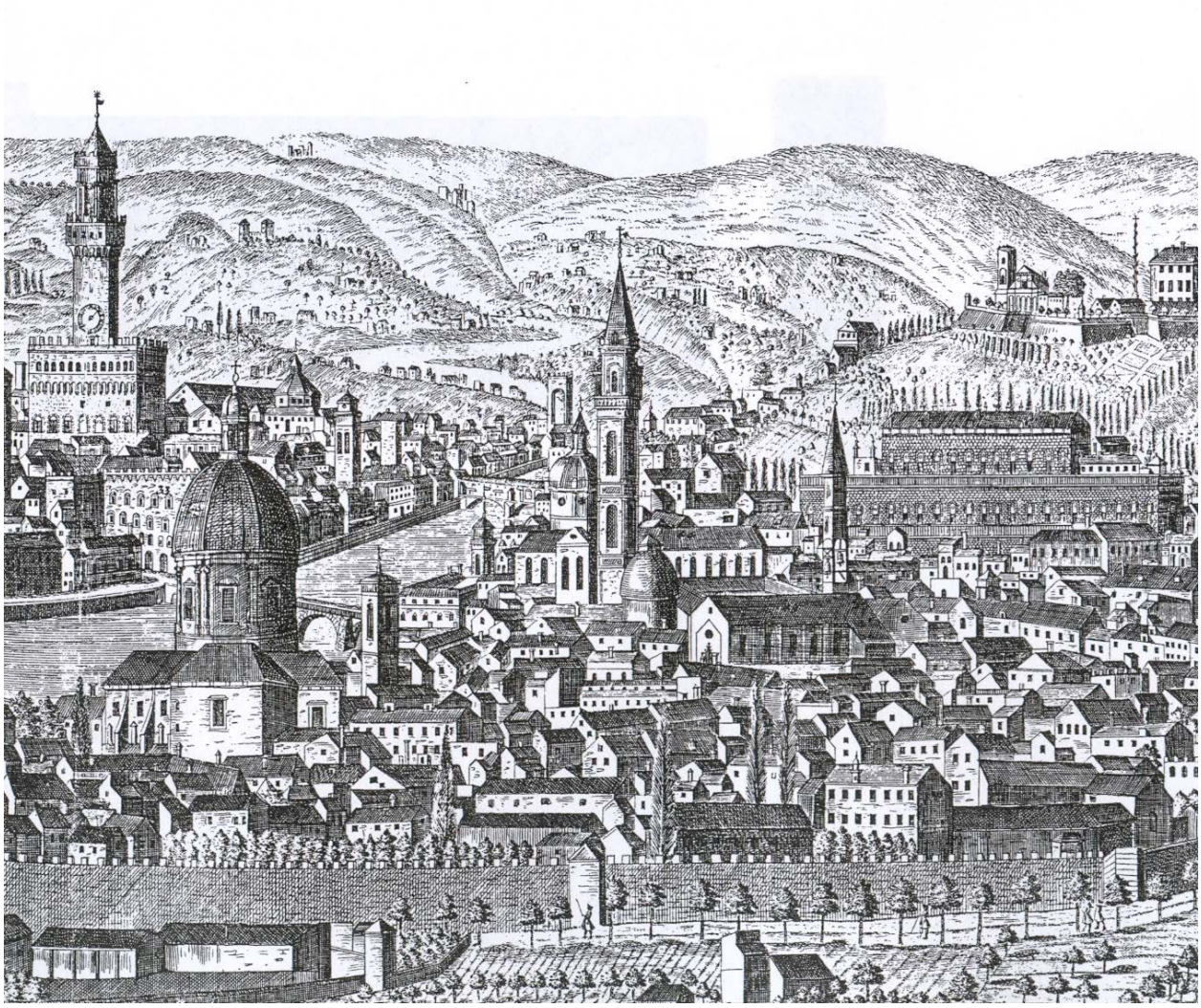
Fortunately, the control leveraged by the Behaviorist/Modernist axis was eventually loosened: "What is sometimes referred to as "The Cognitive Revolution" surfaced in the 1960s and 1970s in North America as a reaction against behaviorism's eliminating *thinking* from accounts of development. Whereas the dominant behaviorists had removed *mind* from consideration, cognitivist-oriented psychologists reinstated *mind* and assigned it a crucial role in accounts of development" (Thomas, 2001, p. 19). I notice a recurring pattern here in that Thomas, in this passage and in an earlier quote, uses the term 'mind' where I would prefer 'consciousness.' In the next chapter, it will be informative to introduce Eastern perspectives in order to draw subtle yet necessary distinctions between 'mind' and 'consciousness.' For now it is enough to notice that during the same historical period that "cognitive-oriented" psychologists were initiating a so-called "revolution" against the authoritarian hold of the determinist-oriented behaviorists, other citizens across the country were attempting to loosen the authoritarian hold of the military-industrial complex on the very life of the society. There are indeed patterns of *zeitgeist,* in which seemingly disparate trends or events suddenly converge in an unmistakable transition from one age to the next. What could this imply for our current historical period, so active with discontent, so ripe for change? Could we in fact be witnessing an 'evolution of consciousness?'

In order to answer that question meaningfully, we need to have a much more serviceable understanding of the meaning of 'consciousness;' but first, please allow me to close this section with one more quote from Spiro Kostof, whose two awe-inspiring volumes – *The City Shaped* and *The City Assembled* – have been so influential to a generation of urban designers. In the last few lines of his first book, he summarizes his lessons:

> The esthetic vision of how of how our cities will look will always be supplied by professional designers, of course. But it is perfectly appropriate, indeed imperative, for the citizens to control the limits of that vision. While private interests are entitled to seek their advantage in the urban fabric, and city authorities and their

> experts are paid to find wholesale planning solutions to the problems of unfettered growth, it is the citizens as a collective voice who must ultimately decide the shape of their city. Like the communes of Tuscany which took charge of their city-form in the later Middle Ages and shaped it to reflect their governance, their political and social priorities, so it is given to us to do the same (1993, p. 335).

Ah, Tuscany….What quality of consciousness would you expect to find associated with *that* manner of built environment?



South bank of Florence 1420s, with view of Palazzo Vecchio top left. From Bacon, 1967, p. 107

CONSCIOUSNESS

An exploration of consciousness may not be so simple or straightforward, for it turns out that one's level of consciousness actually influences (and I purposely avoid the word 'determines') what one will find. "There is no universally-accepted theory of consciousness" (Cotterill, 2000, p. 283), even though "[f]ew questions have endured longer or traversed a more perplexing history than this, the problem of consciousness and its place in nature" (Jaynes, 1976, p. 1). "Consciousness stands alone today as a topic that often leaves even the most sophisticated thinkers tongue-tied and confused" (Dennett, 1991, p. 22), so we're surely not going to arrive at the final solution today, in this little subsection of an essay. The purpose here is to survey the literature in order to obtain a conception, a way of thinking about and describing consciousness, that can place it in active relationship with the design of the built environment.

A good way to begin, as with any detailed analytical study, is to clarify definitions. This is especially true with a multi-variant concept like 'consciousness,' for a survey of the work of many authors by Baruss (1987) found 29 separate definitions! In an effort at consolidation, Wallace and Fisher (1999, pp. 3-5) limited their discussion to the seven most commonly accepted definitions, and they're listed here in order to get a feel for the range:

1) "Joint or mutual knowledge." This definition characterizes a kind of relationship and a kind of knowing between individuals in which they are confidants.
2) "Internal knowledge or conviction." This refers to a certain cognitive relation to oneself or to being witness to one's own behavior.
3) Consciousness as equivalent to "a state of awareness." Such a state includes knowledge of unobservable, private events or mental occurrences, as well as knowledge of external, observable objects or events. Therefore, this concept of consciousness involves the knowledge of being aware of something, generally through sensory confirmation.

4) "Direct awareness." This is a state or faculty of being conscious as a condition or concomitant of all thought, feeling, and volition.
5) A person exemplifies consciousness by being aware of his or her perception, thought, or other occurrent mental episode. This fifth definition differs from the previous one in that direct awareness has no involvement with sensory organs or receptors. To undergo a direct awareness is to have a thought that something is happening when there is no sensory confirmation of its occurrence.
6) The sixth definition, which is the most common, refers to consciousness as a normal waking state, "a general state or condition of the person." This consciousness is a "state of wakefulness with attentiveness to stimuli or to events in one's environment."
7) And then the authors' preferred definition: "Consciousness is the *processing of information at various levels of awareness*." Say they, "We are equating the terms **consciousness** and **states of awareness**. Consciousness exists at *many* levels."

This much is acknowledged: consciousness is awareness: levels of consciousness *are* states of awareness.[6] States of awareness may include knowledge of internal (private) events as well as knowledge of external events, "generally through sensory confirmation" – although there is also a kind of "direct awareness" "when there is no sensory confirmation." The sixth point above says that the most common conception of consciousness is a "state of wakefulness with attentiveness to stimuli or to events in one's environment," so it would be reasonable to expect that whatever is happening *in* consciousness, at least on one level, is a reflection or impression, mediated through the senses, of what is happening outwardly in the environment. Could this be extended to include the proposition that the nature or quality of consciousness is a reflection or impression of the nature or quality of the environment? Or is consciousness a pre-given, an *a priori* condition that is being acted upon or remains the same no matter what the condition of the environment?

Wallace and Fisher go on to assert: "we have only begun to touch the surface in our understanding of consciousness, especially of the different levels of consciousness and

[6] Being cognizant of the subtle distinctions, the American Heritage Dictionary discriminates: "*Aware* implies knowing something either by perception or by means of information…*Conscious* emphasizes recognition of something sensed or felt" (1970, p. 92).

what takes place in them" (ibid, p. 5). Different levels of consciousness – and therefore "states of awareness" – may include: awakening, lucid dreaming, daydreaming, meditative states of awareness, the non-ordinary states of awareness induced by entheogens, the sort of multi-tasking states of awareness as when one is working on a rote project yet simultaneously imagining some future possibility, the "aha" kind of sudden intuitive knowing accompanying a peak experience, the focused attention while reading or problem solving, awareness of the other through the dialogic interplay of conversation, etc. – all the way up to the sustained state of enlightenment called Samadhi by the Yogi (Yogananda, 1946) or what the Rig Vedas refer to as Sachchidananda – *bliss consciousness* (Aurobindo, 1990). Of course, those poor souls born with varying degrees of mental challenges are enjoying their states of awareness too. If all these are examples of 'levels of consciousness,' then what is it that winds continuous through them all? Are they merely varying intensities, amplitudes, or clarities of awareness? If so, then why wouldn't it be possible to affect consciousness through *design* – to activate, stimulate, and/or elevate awareness so that higher levels of consciousness can be sensed, experienced, and ultimately integrated?

I have to admit, on a good day I can experience the entire spectrum of levels of consciousness listed above, and more – all the way from being assuredly aware of unification with some effulgent divine mercy to sensing a wearisome sort of dimness, as if I had just climbed out of the primordial soup! Rita Carter (2002, p. 11) elaborates on this idea of varying levels of consciousness by describing how they seem to be continuously in motion: "Your consciousness, like mine, constantly moves in time and space – switching from a passing face, to the origin of the universe, to tonight's dinner or the tickle in your toe – seemingly at the behest of your will. It is like an all-enveloping movie, behind which the self lurks like some shadowy director calling the shots." Julian Jaynes prefers the 'river' metaphor to describe this motion, while his 'self' seems to be less in charge:

> I shut my eyes and even if I try not to think, consciousness still streams on, a great river of contents in a succession of different conditions which I have been taught to call thoughts, images, memories, interior dialogues, regrets, wishes, resolves, all interweaving with the constantly changing pageant of exterior sensations of which I am selectively aware. Always the continuity…we feel that our very self, our deepest of deep identity, is indeed this continuing flow that only ceases in sleep between remembered dreams" (1976, pp. 23-4).

Jaynes holds that this use of metaphor is central to understanding consciousness, going so far as to assert: "Subjective conscious mind is an *analog* of what is called the real world (ibid, p. 55, emphasis added)...[C]onsciousness is an operation rather than a thing…It operates by way of analogy, by way of constructing an analog [mind-] space with an analog 'I' that can observe that [mind-] space, and move metaphorically in it (ibid, p. 65)…Conscious mind is a spatial analog of the world and mental acts are analogs of bodily acts" (p. 66). An analog, of course, is a correspondence, "especially in function or position" (American Heritage, p. 47).

In *The Embodied Mind,* a brilliant synthesis of Cognitive Science and Buddhism, the commonly sensed 'self' identity (for example insinuated by Carter as the "director" of consciousness) is called into question: "[T]he self isn't really a lasting and coherent thing; it is just the continuity of the stream of experience. It is a process and not a thing…" (Varela, et al. 1991, p. 71-2). This position is certainly understandable, given the Buddhist insight of impermanence, derived as it is from the mindfulness/awareness practice of meditation; however, a little later, even the sensed motion of a metaphorical *stream* of consciousness is questioned:

> At [the] immediate experiential level, we do not feel as if the self is *merely* the stream of experience. Indeed, even to call it a stream reveals our grasping after some sense of solidity, for this metaphor implies that experience flows continuously. But when we subject this continuity to analysis, we seem able to find only discontinuous moments of feeling, perception, motivation, and awareness (ibid, p. 72).

This discontinuous movement of consciousness – "a transitory and fleeting phenomenon" according to clinical psychologist Merlin Donald (2001, p. 15) – apparently also has been verified through the controlled medium of laboratory investigations:

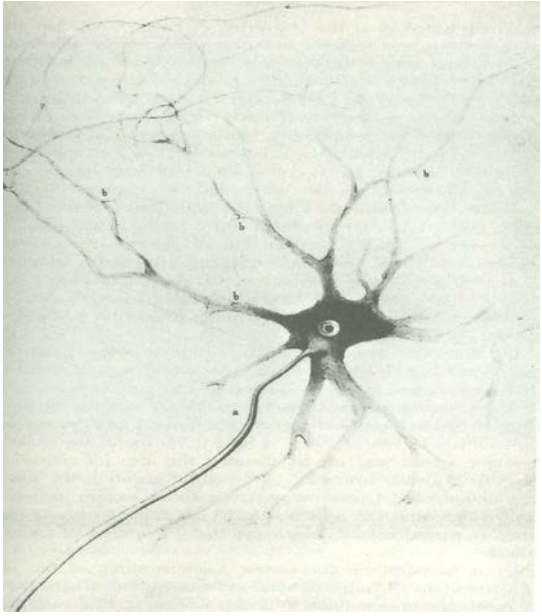
> The ephemeral nature of consciousness is especially obvious in experiments on the temporal minima of memory – that is, the length of time we can hold on to a clear sensory image of something. Even under the best circumstances, we cannot keep more than a few seconds of perceptual experience in short-term memory. The window of consciousness, defined in this way, is barely ten or fifteen seconds wide (ibid)…Regardless of how many items we may recall from our inexhaustible long-term memory banks, we can hold them in consciousness for only a few seconds, and then they too slip away" (p. 26).

It appears that consciousness is not quite as stable and enduring as we might at first expect. Returning to that revealing synthesis of Cognitive Science and Buddhism: "An examination of experience with mindfulness/awareness reveals that one's experience is discontinuous – a moment of consciousness arises, appears to dwell for an instant, and then vanishes, to be replaced by the next moment" (Varela, et al. p. 73). Yet it turns out that this discontinuity of "moments of consciousness" arising and then passing away is not entirely random or arbitrary, but rather could be considered pulsated or even syncopated:

> There is a literature in neuroscience and psychology that can be referred to as "perceptual framing," which deals with sensorimotor rhythmicity and parsing…[T]he brain has a periodic rhythm of activity, which is detectable in the electroencephalogram (EEG). Since the dominant rhythm for the visual cortex is…about 0.15 seconds, it is natural to assume that there is a relationship between temporal framing [moments of consciousness] and cortical alpha rhythm (ibid).

"Parsing," by the way, is the phenomenon whereby the brain segmentizes perceptual events into more easily manageable component parts:

> Such neural parsing is to be expected given the fact that the brain is not a sequence of relay stations…At each level there are strong reciprocal and branching connections, so that the entire network can operate only by a large amount of cooperative, back-and-forth matching of activity at all levels. Furthermore, it has become evident that neurons in the central nervous system have a rich diversity of electrical properties based on ionic conductances that endow them with autorhythmic oscillatory properties. This entire cooperative activity takes a certain time to start and to culminate (p. 75).

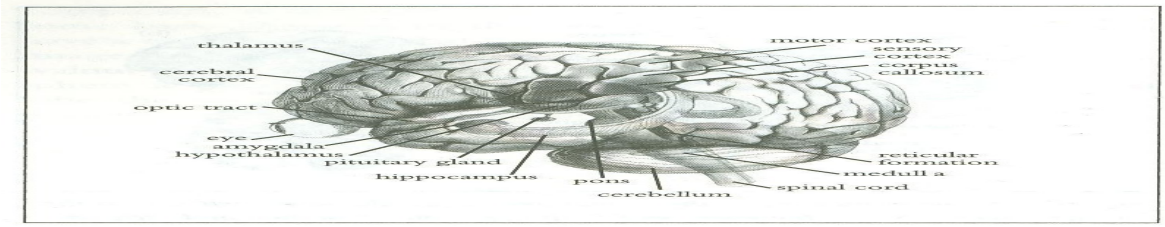


from Changeux, 1985, p. 25

So, the heart beats, the lungs respirate, and the nervous system oscillates. The image being conveyed here – synthetized by the fecund interface of neuroscience and the phenomenology of mind – is of a vibrantly alive, meta-organismic-cognitive system, vibrating according to its own internally constitutive rhythms and sub-rhythms.

Consciousness, then – as varying states of awareness with an ultimate potential for, as some would say, cosmic self-awareness – must be an intrinsic quality or attribute of the living system itself. This can be confirmed during the mindfulness/awareness practice of meditation: As a conscious observer sits quietly still and focuses concentrated awareness inwardly, paying close attention to activity occurring within the mind-space (another metaphor, for there really is no 'space' to speak of, just the dense clustering of 100 billion neurons with their associated axons, dendrites, and synapses, right?), it becomes apparent that no external stimuli is needed: thoughts, images, memories, feelings, sensations all arise quite naturally on their own accord, presumably attuned to some internal base-rhythm physiological tempo. The entire neural-cognitive system enabling human consciousness thus can be self-referencing and self-regulating, if it chooses to be.

A calm, detached, attentive attitude by the observer can play witness to this continual arising and passing away without becoming emotionally involved with any of the contents, and so not acting – or worse, habitually *re*-acting – in response. The benefit at this level (and we have been talking all along about *levels* of consciousness) is to be fully aware *within* the system while maintaining a choice whether to participate in any of the consequences resulting *from* the system, and its internal morphology. This meditating observer, then, is enjoying a *meta*-perspective: consciousness includes not only awareness of mental objects and cogitations but also awareness of being aware of these same phenomena. The meta-perspective can be considered as occurring in some sense tangential or transcendent to the immediate neural cognitive system and its dynamicizing, centered within a more inclusive supra-system frame of reference, at the juncture or domain where all participating systems meet, and are 'One.' Perhaps this is what Aurobindo had 'in mind' when he said, "Man's consciousness can be nothing else than a form of Nature's consciousness. It is there in other involved forms below Mind, it emerges in Mind, it shall ascend into yet superior forms beyond Mind" (1990, p. 99).



Expanded consciousness? A slight distortion taken from Ramachandran, 2004, p. 6

With an opening like that, this must be a good time to introduce the subtle distinctions between 'mind' and 'consciousness,' in the context of a "design for consciousness," as was promised in the previous chapter. I think I can achieve some practical multi-tasking by beginning the discussion with another perspective on the definition of consciousness, this one by cognitive researcher Margaret Matlin, in her textbook *Cognition* (2005, p. 90), a hefty read:

> [C]onsciousness is a controversial subject. One reason for the controversy is the variety of different definitions for the term. I prefer a broad definition: Consciousness means the awareness people have of the outside world and of their perceptions, images, thoughts, memories, and feelings. The contents of consciousness can therefore include your perceptions of the world around you, your visual images, the comments you make silently to yourself, the memory of events in your life, your beliefs about the world, your plans for activities later today, and your attitude towards other people.

Within her "broad definition," Matlin begins with the word "awareness," so there at least is a touchstone or recurring theme. As I read through her descriptions of the various contents of consciousness, I notice that they can be divided, as before, into two manifestations or modes: 1) "awareness people have of the outside world:" these include "perceptions of the world" and "visual images;" and 2) what we might call awareness people have of the *inside* world: these include memories, beliefs, plans, attitudes – and my favorite, which seems to encompass them all, "the comments you make silently to yourself," which I take to mean that internal dialogue that seems to be running nonstop.

Now, many writers locate the emergence of consciousness squarely with the acquisition of language. For example, Maturana and Varela, in their treatise on *The Biological Roots of Human Understanding*, claim that "human consciousness" arose within a "linguistic domain:" "[T]here is no self-consciousness without language as a phenomenon of linguistic recursion" (1987, p. 230). And Jaynes, in his curiously entertaining *The Origin of Consciousness in the Breakdown of the Bicameral Mind,* prepares his conjecture by proposing, "For if consciousness is based on language, then it follows that it is of a much more recent origin than has heretofore been supposed" (1976, p. 66). And then there's the faction that Donald likes to call the "Hardliners:" "Hardliners are a varied group, and the only thing that they have in common is a desire to strip consciousness of its complexity and tie it down to a simple operational definition…Some have tried to reduce it to sensation,

while others have preferred to make it entirely contingent on language" (2001, p. 10).[7] Donald goes on to make a poignant rebuttal to this "contingent on language" claim, *in* language that helps support our developing thesis:

> For now suffice it to say that *language could be the greatest beneficiary, rather than the cause, of the extended human capacity for self-consciousness.* The conscious mind may have reinvented itself and greatly extended its reach in language, but it has never lost its vestigial roots in embodiment (ibid, p. 137, emphasis in original).

As long as the question of language has arisen (as it will arise inevitably whenever approaching a philosophical treatment), I recognize the need to be very clear and consistent in the actual language that is used to describe the intricate, diaphanous, at times fleeting, subject matter of this essay. For example, in two of the quotes above, the authors chose to use the phrase *self*-consciousness. How is "self-consciousness" any different than regular consciousness? Does it matter? Perhaps it does, when we consider that there is also to contend with 'subconscious' and 'unconscious' and 'collective unconscious.' What is the functional difference "which makes a difference" (Bateson, 1972, p. 318) between a 'self' and an 'ego' – or for that matter between a 'self' and a 'Self?' Sure, Jung would know (1990, pp. 299-337); but how come Donald says "conscious mind?" Doesn't utilizing the capacity of 'mind' imply already being 'conscious' or possessing 'consciousness?' This whole paragraph might seem rather rambling and superfluous to the intention of learning how to "design for consciousness;" yet you have to admit, it is a cogent example of 'mind' in action, making discriminations and contriving categories based on the symbolic, conceptual use of language.

There is another group of theorists who bypass this tangle by positioning the emergence of consciousness *pre*-linguistically, such that it is common to all organisms who utilize *cognition* – defined as "embodied action" by Varela, et al. (1987, p. 172). Representative of this perspective is R. M. J. Cotterill, in an article in the journal *Brain and Mind.* Sounding like a practitioner of mindfulness/awareness, he says, "Consciousness is

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[7] I do not understand why anybody would want to "reduce" consciousness to anything? What we're doing here is laying the groundwork for *enhancing* consciousness, for discovering the full reaches of human potential. Then again, the Hardliners belong to that same positivistic science crowd that includes behaviorist psychologists and modernist architects, so what more can we expect? Their agenda all along has been explicitly reductionistic, mechanistic, materialistic – attempting to frame consciousness and even life itself as some kind of errant statistical anomaly within an otherwise entropying physical universe.

the most sophisticated aspect of behavior because when it prevails, response need not automatically follow stimulus" (2000, p. 283) – although he is defining consciousness as innately "intimately connected to self-paced probing of the environment," "present even in the simplest monocellular organisms" (ibid). The theory is further elaborated:

> The kernel of the mechanism advocated here concerns influence on a currently proceeding (or currently planned) muscular act. That influence stems from motivation-triggered anticipation of the act's outcome, and prevails only if consciousness is present…*Consciousness lies at the operational interface between body movement and the body's surroundings.* The anticipation is mediated by specific anatomical features, the independent functioning of which underlies thought – simulation of the body's (sometimes passive) transactions with its milieu" (ibid, p. 285, emphasis added).

The above sentence is emphasized because I believe this image to be the kernel of understanding for applying design to the art of consciousness enhancing. For effect, I'd like to repeat: **Consciousness lies at the operational interface between body movement and the body's surroundings.** I would go so far as to say that consciousness not only *lies* at the operational interface, consciousness *is* the operational interface between body movement and body's surroundings. This means that consciousness doesn't require 'language' for its appearance, nor is a 'self' or an 'ego' required; neither is consciousness the "epiphenomenon" (Dennett, 1991) or "emergent property" (Shakun, 1999) of a certain threshold of neuronal systemic complexity. No; instead consciousness is the inherent awareness resulting from "embodied action," or cognition, as an organism purposively and adaptively negotiates its environment. Purposeful activity generates awareness; active intentionality is a recursive learning process whereby specific actions are tested for anticipated or desired outcomes; and design itself *is* the art of intentionality, a very purposeful human activity (Wahl, 2006).

With consciousness as the operational interface between body movement and body surroundings, that is, with consciousness as the awareness generated by purposeful activity in the/an environment, than any organism with volitional cognitive (as opposed to automaton reflexive) behavior will be displaying a corresponding level of consciousness – and we could claim this to be true all the way from the simplest probing-for-food

prokaryote to the initial stirring of the all-inclusive, omniscient Brahman in the void.[8] To help illustrate this primordial connection, I would like to revisit some writing I did back in 2000, in an essay entitled "Neogenesis." Describing the miraculous phenomenon of the creation of the first pre-biotic molecular chains during hyper-energized conditions far from equilibrium, where "[b]y sustaining their improbable patterns of ordered relationships for extended periods, before dissipating back into their amorphous background, these complex, autocatalytic rings made indelible impressions upon their environments by the morphological memory of having come into existence." The conclusion was:

> This relationship between the new structures and the immediate environments in which they occur is extremely vital; in fact, it is mutually defining. Once an impression has been made, the next time similar conditions appear, there is already a 'mental' model for the new structure to align with. New structures can form more quickly and sustain their patterns for longer periods, because there is a precedent of recursive mutual interaction impressed into the environment from what has come before. This is the initial emergence of 'mind,' and the commencement of an evolutionary procession (Mare, 2000, p. 11).

I'm still fascinated by this self-organizing process whereby Life begins under appropriate conditions on a suitable planet; however, I'm not so sure that the "indelible impressions" made by the first "autocatalytic rings" constitute the initial emergence of "mind" – nor of consciousness for that matter. In the vocabulary developed since then, Mind (now capitalized to show its universal supra-significance, i.e. the Mind of minds) has a more specific function to play in the realm of Consciousness, such that Consciousness must come first, and then only after a certain level of inner inter-referencing refinement and complexity will Mind appear. The indelible impressions made in the primordial milieu, therefore, are *pre*-mind and *pre*-conscious – specifically, geometric proto-structural arrangements that *will,* nevertheless, influence by their very morphology the *quality* of consciousness that eventually does arise.

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[8] I realize that by making this 'embodied action' or 'volitional cognitive' distinction, excluded are types of consciousness registered by, especially, the immense plant kingdom and those associated with celestial bodies, such as Gaia consciousness for the Earth. This is an instance of the many subtleties in usage for the term 'consciousness;' however, with my purpose being to propose design considerations for built human environments, it is very necessary to include movement as a criterion, and so limit the prospective space. For the classic statement on plant consciousness, see Tompkins and Bird *The Secret Life of Plants.* For amazing current work on plant consciousness, please refer to the ecovillage of Damanhur (www.damanhur.org). For some of the beginning conceptualizations of Gaia consciousness, please see Lovelock (1979) *Gaia: A New Look at Life on Earth,* Sahtouris (1989) *Gaia: The Human Journey from Chaos to Cosmos,* and Thompson, ed. (1987) *Gaia: A Way of Knowing.*

If Mind is a functional 'subsystem' or 'subroutine' of Consciousness, which is itself an "operational interface" between a volitionally cognitive organism and the environment in which it negotiates, then what exactly is this function of Mind? Here again, there is much potential for ambiguity, for it becomes clear that we are not talking simply about discrete items like apples and oranges, but rather that intangible, evanescent awareness or attention which is concentrating at this very moment on writing (and reading) these words! Another challenge comes from the inherited legacy of the Cartesian mind/body split, "a rigorous distinction between *res cogitans* and *res extensa*" that was "the basis for the sharp separation of two types of quasi-substance, mind and body" (Bernstein, 1983, p. 115); thus "the notion of "the mind" as a separate entity in which "processes" occur" (Rorty, 1979, p. 3-4).[9] The "rigorous distinction" of the Cartesian split resulted in the postulation of a pregiven objective world 'out there' being acted upon by subjective thinking minds 'inside the head.' Noted philosopher Richard Rorty, in his *Philosophy and the Mirror of Nature*, alludes to the implications of the institutionalization of this stance:

> To know is to represent accurately what is outside the mind; so to understand the possibility and nature of knowledge is to understand the way in which the mind is able to construct such representations. Philosophy's central concern is to be a general theory of representation, a theory which will divide culture up into the areas which represent reality well, those which represent it less well, and those which do not represent it at all (despite their pretense of doing so) (1979, p. 3).

Let me get this straight: through philosophizing it could be possible to evaluate an existing "area of culture" and find it to be pretentiously lacking for not "representing reality well," for not accurately reflecting a supposed objective reality lying somewhere outside the mind? One has to wonder whether Rorty is being facetious? What more can be said about this illustrious culmination to the Western intellectual tradition other than we see its divisive and separating effects all around us – transmitted, of course, and reified through such practices as behaviorist psychology, modernist architecture, and the ascription of mechanistic computer metaphors like "central processing unit" to the numinous processes of consciousness. The sort of epistemology expounded by Rorty has led Will Wright to conclude that philosophy itself is "incoherent," "since we can never have direct and

[9] I approached this conspicuously important and far-reaching influential event in the history of Western philosophy in more detail in a previous and complementary essay: *Towards an Epistemology for the Ecovillage Designer: Place-making, Co-worlding, Eco-poiesis,* available from Village Design Institute.

innocent knowledge of an independent and objective world…the idea of achieving objective knowledge of a world from somewhere outside of the world to be known" (1992, p. 27).

Wilber attributes this sort of epistemology as being expressly a product of the Enlightenment: "And the fundamental Enlightenment paradigm is known as the *representation paradigm*. This is the idea that you have the self or the subject, on the one hand, and the empirical or sensory world, on the other, and all valid knowledge consists in making maps of the empirical world, the single and simple "pregiven" world. And if the map is accurate, if it correctly represents, or corresponds with, the empirical world, then that is "truth"…The map could be an actual map, or a theory, or a hypothesis, or an idea, or a table, or a concept, or some sort of representation – in general, some sort of map of the objective world" (1996, pp. 58-9). This way of describing it – the mapping of a supposed objective reality, a "single and simple "pregiven" world" – makes it easier to visualize how a worldview or level of consciousness can be graphically re-presented in the arrangement of the built environment.

A more balanced, integrative, life-affirming comprehension of 'mind' to that of the Western paradigm comes from perennial traditions arising more eastwardly, especially Buddhism, since "[i]t is true that, from the very beginning, Buddhism has emphasized the primacy and importance of "mind" (Guenther, 1989, p. 15).[10] As a scholar of ancient Buddhist texts, Guenther gives a cautionary introduction to mind, helping to place this whole inquiry in perspective:

> From the outset it must be noted that the concept "mind," even in its Western context, is not precise, because it reflects two conflicting trends. One trend is to elevate it into a metaphysical entity; the other is to reduce it to a metaphor for neurophysiological processes of the brain…Because of the inherent vagueness of this term, its use to render the Sanskrit Buddhist term *citta* carries with it not only the risk of oversimplification but also the danger of our becoming oblivious to the

[10] Eastern traditions are very wary of mind, generally regarding it as a barrier to true understanding, as an obstacle to overcome. Here's an expressive example of this sort of view from a Zen practitioner: "This is the situation of your head: I see cycle-handles and pedals and strange things that you have gathered from everywhere. Such a small head…and no space to live in! And that rubbish goes on moving in your head; your head goes on spinning and weaving – it keeps you occupied. Just think what kind of thoughts go on inside your mind. One day just sit, close your doors, and write down for half an hour whatsoever is passing in your mind, and you will understand what I mean and you will be surprised what goes on inside your mind. It remains in the background, it is constantly there, it surrounds you like a cloud. With this cloud you cannot know reality; you cannot attain to spiritual perception. This cloud has to be dropped" (Osho, 1994, p. 71).

> rich nuances of meaning of which the Buddhists were well aware when they used the term *citta* (ibid).

The value of including the Buddhist perspective lies precisely in recognizing the "rich nuances," gleaned from mindfulness/awareness experience, intrinsic to the term *citta* as translation of 'mind.' Guenther's analysis of Buddhist texts over time reveals "the evolution of the understanding of mind from being seen as a set of operators "representing" the world to being seen as a self-organizing process in which the totality – mind/experience/world – evolves dynamically according to inherent guiding principles. This change of understanding, from a representational to a process view, is also at the forefront of the study of mind in the modern cognitive sciences" (Hayward, in Guenther, 1989, p. ix), perhaps best articulated in the languaging approach developed by Varela, Thompson, Rosch:

> We propose as a name the term *enactive* to emphasize the growing conviction that cognition is not the representation of a pregiven world by a pregiven mind but is rather the enactment of a world and a mind on the basis of a history of the variety of actions that a being in the world performs (1991, p. 9)…Instead of "representing" an independent world, [we] enact a world as a domain of distinctions that is inseparable from the structure embodied by the cognitive system (ibid, p. 139)…[C]ognition is not representation but embodied action…the world we recognize is not pregiven but enacted through our history of structural coupling (p. 200).

As you may infer from my repeated referencing to *The Embodied Mind*, I find this "enactive" attitude not only indispensably significant but vitally refreshing – for therein, I believe, lies the epistemological foundation for "reweaving the world" (Diamond and Orenstein, 1990)[11] and optimizing human potential through a proposed "design for consciousness;" for, if our world is not "pregiven" – a static configuration to which we must readily adapt – but is rather actively "enacted through our history of structural coupling," then we can – or shall we say *must* – assume full responsibility for how our world is being shaped, for in return we are determining in no small way *how our world is shaping us*. In the carefully chosen words of our eminent cognitive scientist authors, this startling realization

[11] Ecofeminist scholars demonstrate that the divisive, separatist effects we experience in an objectified and objectifying world is a result of the institutionalization of patriarchy. Naturally, any movement towards integration and wholeness (i.e. healing) – "reweaving the world" – will instantiate the relational, interpersonal dynamics of matriarchal focus. This return has major design implications.

can be summarized as follows: "the organism both initiates and is shaped by the environment…we must see the organism and environment as bound together in reciprocal specification and selection" (Varela, et al. p. 174); or as expressed in the systems languaging of theorist Erich Jantsch: "As humans shape the systems in and through which they live, they are in turn shaped by their human systems" (1975, p. 61); or in the terse stately words of Winston Churchill: "we shape our building and later they shape us" (quoted in Hall, 1974, p. 214).

These themes will be developed further in the next chapter, "Environment and Behavior." For now, I would like to begin closing this very brief introduction to becoming conscious of consciousness (and mind) by elevating it with the keen insights from a venerable sage steeped in the Vedic tradition – Sri Aurobindo. In the voluminous collection *The Life Divine*, an extended discourse on the evolution of consciousness from Matter to what Aurobindo refers to as "Supermind," and the role or potential of the conscious-izing human being in this evolution, we read that there is a "unitarian or indivisible consciousness of pure Sachchidananda in which there are no separating distinctions" and in contrast an "analytic or dividing consciousness of Mind which can only know by separation and distinction and has at the most a vague and secondary apprehension of unity and infinity, – for, though it can synthetise its divisions, it cannot arrive at a true totality" (1990, p. 135):

> Mind is an instrument of analysis and synthesis, but not of essential knowledge. Its function is to cut out something vaguely from the unknown Thing in itself and call this measurement or delimitation of it the whole, and again to analyse the whole into its parts which it regards as separate mental objects. It is only the parts and accidents that Mind can see definitely and, after its own fashion, know (ibid, p. 137).

According to this schemata, it would seem that the Western tradition, with all its associated disciplines and sub-disciplines, has all along been operating at the level of Mind, as if that was all there is – no unity, no Sachchidananda except for in some transcendent realm external to and beyond the world of the living. The trouble with relying exclusively on Mind as an organizing principle, of course, is that everything stays separated, divided, anomied, with no coherent wholeness or inclusion – under these conditions it could be possible to rationalize that what's good for me is good for everybody! The ultimate destination to this attitude, like we've been reviewing, is a society-culture like we're living with today,

especially in North America: individual isolated egos constructing individual isolated buildings to house individual isolated functions all for individual isolated purposes at individual isolated gain – and nobody knows how to put it all back together again! Indeed, few even are prepared to speculate how such living arrangements might be affecting our potentials as human beings. That's why it's so important to position these ruminations in an evolutionary perspective, as is Aurobindo's purpose:

> Mind has to make room for another [level of] consciousness which will fulfill Mind by transcending it or reverse and so rectify its operations after leaping beyond it…The utmost mission of Mind is to train our obscure consciousness which has emerged out of the dark prison of Matter, to enlighten its blind instincts, random intuitions, vague perceptions till it shall become capable of this greater light and this higher ascension. Mind is a passage not a culmination" (ibid, p. 138).

Yes, this much is understood: Mind is a transition stage from one level of consciousness evolution to another. What then could be the culmination? The answer is surprisingly simple when surveyed from an evolutionary perspective, yet there it is: "The extension of our consciousness, to be satisfying, must necessarily be an inner enlargement from the individual into the cosmic existence" (p. 26). And what, pray tell, would this be like – the experience of cosmic existence, cosmic consciousness?

> Nor do we become merely conscious of this cosmic existence, but likewise conscious in it, receiving it in sensation, but also entering into it in awareness. In it we live as we lived before in the ego-sense, active, more and more in contact, even unified more and more with other minds, other lives, other bodies than the organism we call ourselves, producing effects not only on our own moral and mental being and on the subjective being of others, but even on the physical world and its events by means nearer to the divine than those possible to our egoistic capacity (p. 27)…Therefore man's importance in the world is that he gives to it that development of consciousness in which its transfiguration by a perfect self-discovery becomes possible. To fulfill God in life is man's manhood. He starts from the animal vitality and its activities, but a divine existence is his objective (p. 43).[12]

This is the uplifting unifying message expounded in *The Life Divine*: humanity is destined for spiritual growth, for an evolution of consciousness far beyond current capacities and capabilities, to levels which few can yet barely sense. There is a process, however. In an essay entitled "The Ascent towards Supermind" we are instructed: "The

[12] This passage was probably written in the 1920s, back when it was fashionable in academic circles to speak of "man" when referring to all of humanity. The passage lost its impact when I made the politically correct changes from "man" to "humanity" so I left it in its original form.

spiritual evolution obeys the logic of a successive unfolding; it can take a new decisive main step only when the previous main step has been sufficiently conquered…[T]he conquest of the spirit supposes the execution in one life or a few lives of a process that in the ordinary course of Nature would involve a slow and uncertain procedure of centuries or even of millenniums: but this is a question of the speed with which the steps are traversed…[W]hen the conscious Spirit intervenes, a supremely concentrated pace of evolutionary swiftness becomes possible. Still, an involved rapidity of the evolutionary course…can only come in when the power of the conscious Spirit has prepared the field and the supramental Force has begun to use its direct influence…[to affect] an unfolding of higher and higher states that lead us from the spiritualised mind to Supermind" (pp. 968-69).

This is exactly what I have 'in mind' when speaking about designing for consciousness – this image of "Spirit preparing the field" so that the "supramental Force" can begin "using its direct influence." In this context, preparing the field means none other than carefully, consciously, competently designing whole 'places' that can influence the acceleration of the evolution of consciousness for the inhabitants dwelling therein. Simply moving through such well-designed spaces can activate and enhance awareness, perception, sensitivity, presence, belonging, etc. and so influence consciousness. This is the epitome of co-evolution: human beings consciously participating in their own self-unfolding – *by design* – by purposeful intentionality. Viewed from this perspective, "the design process…is nothing else but such an attempt to "tune in" to evolution – it is learning, healing (improvement), and enlightenment in one and the same process" (Jantsch, 1975, p. 151).

It appears that we have arrived at a temporary apex to our brief exploration into consciousness, re-cognizing that "consciousness is a constituent feature of the creative continuum" (Burneko, 2008, p. 2). From there "humanity and cosmogenesis are covariant forms of the same process" so that it becomes apparent that "our evolving consciousness is the universe coming-to-consciousness in us" (ibid).

> The universe is the only self-referent mode of being in the phenomenal world. Every other being is universe-referent in itself and in its every activity. Awareness that the universe is more cosmogenesis than cosmos might be the greatest change in human

> consciousness that has taken place since the awakening of the human mind in the Paleolithic period (Berry, 1999, p. 190, as quoted in Burneko, 2008, p. 14).

Berry is saying that the universe is a continual unfolding of potential (cosmogenesis) rather than strictly a static order (cosmos). Let us then celebrate in this unfolding; let us rejoice in our beneficent fortune to be consciously alive, to have the capacity to co-create our destiny. Since we have a choice, let us set as a priority designing and creating magnificent living arrangements in which and through which to expand our consciousness into what the sages call a "cosmic existence," thus realizing our latent divine potentials. In that sense, this essay is expressing nothing less than, in the contemplatively considered words of the adept Burneko, if I may borrow the phrase, "a transdisciplinary hermeneutics of enlightenment" (2008, p. 1).

Galactic design proposal for Auroville, India – Sri Aurobindo's 'city' for the evolution of humanity.
From Kostof, 1991, p. 207

Biliography:

- Ackerman, J. S. (1969) "Listening to Architecture." *Harvard Educational Review.* Vol. 39, November 4
- Adams, P. C., S. Hoelscher and K. E. Till, editors (2001) *Textures of Place: Exploring Humanist Geographies.* University of Minnesota Press; Minneapolis
- Alexander, C. (1964) *Notes on the Synthesis of Form.* Harvard University Press; Cambridge, MA
- Alexander, C. (1969) "Major changes in environmental form required by social and psychological form." *Ekistics.* (28), 78-85
- Alland, A. Jr. (1967) *Evolution and Human Behavior.* The Natural History Press; Garden City; New York
- Altman, I. (1975) *The Environment and Social Behavior.* Brooks/Cole Publishing Company; Monterey, CA
- American Heritage Dictionary (1970) American Heritage Publishing Co., Inc.; New York
- Antonio, R. J. and Bonanno, A. (2000) "A New Global Capitalism? From 'Americanism and Fordism' to 'Americanization-Globalization.'" *American Studies.* 41 (2-3): 33-77
- Appelyard, D. (1970) "Styles and methods of structuring a city." *Environment and Behavior.* (2). 199-218
- Arbib, M. A., Erdi, P. and Szentagothan, J. (1998) *Neural Organization: Structure, Function, and Dynamics.* MIT Press; Cambridge, MA
- Aurobindo, Sri (2000) *The Life Divine.* Lotus Press; Twin Lakes, WI
- Baars, B. J. (1997) *In the Theater of Consciousness.* Oxford University Press; New York
- Bachelard, G. (1958) *The Poetics of Space: A Classic Look at How We Experience Intimate Places.* Beacon Press; Boston, MA
- Bacon, E. N. (1967) *Design of Cities.* Penguin Books; New York
- Baer, M. F., Connors, B. W. and M. A Paradiso (1996) *Neuroscience: Exploring the Brain.* Williams & Wilkens; Baltimore, MD
- Bandura, A. (1977) *Social Learning Theory.* Prentice-Hall, Inc.; New York
- Baruss, I. (1987) "Meta-analysis of definitions of consciousness." *Imagination, Cognition and Personality,* (6), 321-329
- Bateson, G. (1972) *Steps to an Ecology of Mind.* Ballantine Books; New York
- Bell, P. A., J. D. Fisher, A. Baum, and T. C. Greene (1990) *Environmental Psychology, Third Edition.* Harcourt Brace Jovanovich College Publishers; Fort Worth, TX
- Bernstein, R. (1983) *Beyond Objectivism and Relativism: Science, Hermeneutics, and Practice.* University of Pennsylvania Press; Philadelphia
- Berry, T. (1999) *The Great Work: Our Way into the Future.* Bell Tower; New York
- Bloomer, K. C. and C. W. Moore (1977) *Body, Memory, and Architecture.* Yale University Press; New Haven, CT
- Bridgman, P. W. (1954) "Science and common sense." *Scientific Monthly.* July, 32-39
- Bronfenbrenner, U. (1979) *The Ecology of Human Development.* Harvard University Press; Cambridge, MA

- Bronfenbrenner, U. (1983) "The ecology of cognitive development: Research models and fugitive findings." in R. H. Wozniak and K. W. Fisher (Eds.) *Development in Context: Activity and Thinking in Specific Environments.* (pp. 3-24). Erlbaum and Associates; Hillsdale, NJ
- Burneko, G. (2008) "Contemplative Conduct as Self-Organizing Resonance: Notes for a Future beyond Sustainability." The Institute for Contemporary/Ancient Learning; Seattle, WA
- Canter, D. (1977) *The Psychology of Place.* The Architectural Press, Ltd.; London
- Carter, R. (2002) *Exploring Consciousness.* University of California Press; Berkeley, CA
- Changeux, J. P. (1985) *Neuronal Man: The Biology of Mind.* Princeton University Press; Princeton, NJ
- Chermayeff, S. and C. Alexander (1963) *Community and Privacy: Toward a New Architecture of Humanism.* Anchor Books; Garden City; NY
- Cohen, J. D. and J. W. Schooler (1997) *Scientific Approaches to Consciousness.* Erlbaum and Associates; Mahwah, NJ
- Cohen, R. (1985) "What's so special about spatial cognition?" in R. Cohen (Ed.) *The Development of Spatial Cognition.* (pp. 1-12). Erlbaum and Associates; Hillsdale, NJ
- Cotterill, R. M. J. (2000) "Did consciousness evolve from self-paced probing of the environment, and not from reflexes?" *Brain and Mind* 1: 283-298, Kluwer Academic Publishers, Netherlands
- Crain, W. (2000) *Theories of Development: Concepts and Applications.* Prentice-Hall; Upper Saddle River, NJ
- Damasio, A. R. (1994) *Descartes' Error: Emotion, Reason, and the Human Brain.* A Grosset/Putnam Book; New York
- Davis, D. N. (2005) *Visions of Mind: Architectures for Cognition and Effect.* Information Science Publishing; Hershey, PA
- Day, C. (1995) *Places of the Soul: Architecture and Environmental Design as a Healing Art.* Thorsons; Hammersmith, London
- Dehaene, S. (Ed.) (2001) *The Cognitive Neuroscience of Consciousness.* The MIT Press; Cambridge, MA
- Delano, F. A. (1926) *The American City Magazine.* (Jan.)
- Dennett, D. C. (1991) *Consciousness Explained.* Little, Brown and Company; Boston
- Devlin, A. S. (2001) *Spatial Cognition and Environmental Behavior.* Praeger Publishers; Westport. CN
- Dewey, J. and A. F. Bentley (1949) *Knowing and the Known.* Beacon Press; Boston
- Diamond, I and G. F. Orenstein (1990) *Reweaving the World: The Emergence of Ecofeminism.* Sierra Club Books; San Francisco
- Donald, M. (2001) *A Mind So Rare: The Evolution of Human Consciousness.* W. W. Norton & Company; New York
- DuNann, D. W. () *Ecological Psychology: Healing the Split between Planet and Self.* Lawrence Erlbaum Associates, Publishers; Mahwah, New Jersey
- Edinger, E. F. (1992) *Ego and Archetype: Individuation and the Religious Function of the Psyche.* Shambhala; Boston and London
- Eisner, S., A Gallion and S. Eisner (1993) *The Urban Pattern (Sixth Edition).* John Wiley & Sons, Inc.; New York

- Electric Wallpaper (2004) *The End of Suburbia: Oil Depletion and the Collapse of the American Dream.* DVD produced by Electric Wallpaper; Toronto, Canada
- Farthing, G. W. (1992) *The Psychology of Consciousness.* Prentice-Hall; Englewood Cliffs, NJ
- Fishman, R. (1987) *Bourgeois Utopias: The Rise and Fall of Suburbia.* Basic Books, Inc., Publishers; New York
- Flanagan, O. (1992) *Consciousness Reconsidered.* The MIT Press; Cambridge, MA
- Fuller, B. (1969) *Utopia or Oblivion: The Prospects for Humanity.* Bantam Books; Toronto/New York
- Gallagher, W. (1993) *The Power of Place: How Our Surroundings Shape Our Thoughts, Emotions, and Actions.* Poseidon Press; New York
- Gans, H. J. (1962) *The Urban Villagers: Group and Class in the Life of Italian-Americans.* The Free Press; New York
- Gebser, J. (1949, 1985) *The Ever Present Origin.* Ohio University Press; Athens
- Gifford, D. (1990) *The Farther Shore: A Natural History of Perception. 1798-1984.* Vintage Books; New York
- Gifford, R. (2002) *Environmental Psychology: Principles and Practice, Third Edition.* Optimal Books; Victoria, Canada
- Gold, J. R. (1980) *An Introduction to Behavioral Geography.* Oxford University Press; Oxford, England
- Goldhaber, D. (2000) *Theories of Human Development: Integrative Perspectives.* Mayfield Press; Mountain View, CA
- Goodman, P. and P. Goodman (1947, 1960) *Communitas: Means of Livelihood and Ways of Life.* Vintage Books; New York
- Grof, S. (1985) *Beyond the Brain: Birth, Death and Transcendence in Psychotherapy.* State University of New York Press; Albany
- Grof, S., editor (1988) *Human Survival and Consciousness Evolution.* State University of New York Press; Albany
- Guenther, H. V. (1989) *From Reductionism to Creativity: RDzogs-Chen and the New Sciences of Mind.* Shambhala; Boston and Shaftesbury
- Gutman, R. , editor (1972) *People and Buildings.* Basic Books, Inc.; New York
- Hall, E. T. (1966) *The Hidden Dimension.* Anchor Books; Garden City, NY
- Hall, E. T. (1974) "Meeting man's basic spatial needs in artificial environments." In Lang, et al. *Designing for Human Behavior.* Dowden, Hutchinson & Ross, Inc.; Stroudsburg, PA
- Heft, H. (2001) *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James's Radical Empiricism.* Lawrence Erlbaum Associates, Publishers; Mahwah, NJ
- Heidegger, M. (1962, 2008) *Being and Time.* HarperPerennial; New York
- Heinberg, R. (2003) *The Party's Over: Oil, War and the Fate of Industrial Societies.* New Society Publishers; Gabriola Island, B.C., Canada
- Hesselgren, S. (1967) *The Language of Architecture.* Lund; Sweden
- Hiss, T. (1990) *The Experience of Place.* Alfred A. Knopf; New York
- Hitchcock, H. R. (1958) *Architecture Nineteenth and Twentieth Centuries.* Penguin Books, Baltimore, MD

- Holahan, C. J. (1978) *Environment & Behavior: A Dynamic Perspective.* Plenum Press; New York
- Horgan, J. (2003) *Rational Mysticism: Dispatches from the Border Between Science and Spirituality.* Houghton Mifflin Company; Boston
- Houston, J. (1982) *The Possible Human.* Jeremy P. Tarcher/Putnam; New York
- Hunt, H.T. (1995) *On the Nature of Consciousness: Cognitive, Phenomenological, and Transpersonal Perspectives.* Yale University Press; New Haven, CN
- Ittelson, W. H., editor (1973) *Environment & Cognition.* Seminar Press; New York
- Jantsch, E. (1975) *Design for Evolution: Self-organization and Planning in the Life of Human Systems.* George Braziller; New York
- Jaynes, J. (1976) *The Origin of Consciousness in the Break-down of the Bicameral Mind.* Houghton Mifflin Company; Boston
- Jenkin, M. R. M. and L. R. Harris (2006) *Seeing Spatial Form.* Oxford University Press; New York
- Jung, C. G., edited by V. de Laszlo (1990) *The Basic Writings of C. G. Jung.* Bollingen Series XX, Princeton University Press; Princeton, NJ
- Kelso, J. A. S. (1995) *Dynamic Patterns: The Self-Organization of Brain and Behavior.* The MIT Press; Cambridge, MA
- Kostof, S. (1991) *The City Shaped: Urban Patterns and Meanings through History.* Thames & Hudson Ltd.; London
- Kostof, S., with the collaboration of G. Castillo (1992) *The City Assembled: The Elements of Urban Form through History.* Bullfinch Press; Boston
- Krasner, L., editor (1980) *Environmental Design and Human Behavior: A Psychology of the Individual in Society.* Pergamon Press; New York
- Krier, L. (1998) *Architecture: Choice or Fate.* Andreas Papadakis Publisher; Windsor, Berks, UK
- Kunstler, J. H. (1993) *The Geography of Nowhere: The Rise and Decline of America's Man-made Landscape.* A Touchstone Book; New York
- Kunstler, J. H. (1996) *Home from Nowhere: Remaking Our Everyday World for the 21st Century.* A Touchstone Book; New York
- Lang, J., C. Burnette, W. Moleski, and D. Vachon (1974) *Designing for Human Behavior: Architecture and the Behavioral Sciences.* Dowden, Hutchinson & Ross, Inc.; Stroudsburg, Pennsylvania
- Lang, J. (1987) *Creating Architectural Theory: The Role of the Behavioral Sciences in Environmental Design.* Von Nostrand Reinhold Company; New York
- Laszlo, E., S. Grof and P. Russell (1999) *The Consciousness Revolution.* Element; Shaftesbury, Dorset, UK
- Lawlor, R. (1982) *Sacred Geometry: Philosophy and Practice.* Thames & Hudson; London
- Le Corbusier (1929) *The City of To-Morrow.* F. Etchels, trans. London
- Le Corbusier (1933) *The Radiant City.* B. P. Knight, trans. New York
- Leiserowitz, A. A. and L. O. Fernandez (Eds.) (2008) "Toward a New Consciousness: Values to Sustain Human and Natural Communities." A Synthesis of Insights and Recommendations from the 2007 Yale Forestry and Environmental Studies Conference. Yale University Press; New Haven, CT

- Lovelock, J. (1979, 1987) *Gaia: A New Look at Life on Earth.* Oxford University Press; Oxford, UK
- Lynch, K. (1954) "The Form of Cities." *Scientific American.* 190 (4), pp. 55-63
- Lynch, K. (1960) *The Image of the City.* The MIT Press; Cambridge, Massachusetts
- Lynch, K. (1965) "The City as Environment." In Scientific American (Eds.) *Cities.* Knopf; New York
- Lynch, K. (1981) *Good City Form.* The MIT Press; Cambridge, Massachusetts
- Mare, E. C. (2000) *Neogenesis: An Autobiography of Sorts.* Village Design Institute; Seattle, WA
- Mare, E. C. (2004) *Towards an Epistemology for the Ecovillage Designer: Place-making, Co-worlding, Eco-poiesis.* Village Design Institute; Seattle, WA
- Matlin, M. W. (2005) *Cognition (Sixth Edition).* John Wiley & Sons, Inc.; Hoboken, New Jersey
- Maturana, H. R. and F. J. Varela (1987) *The Tree of Knowledge: The Biological Roots of Human Understanding.* Shambhala; Boston & London
- McDonough, W. and M. Braungart (2002) *Cradle to Cradle: Remaking the Way We Make Things.* North Point Press; New York
- McGurk, H., editor (1977) *Ecological Factors in Human Development.* North-Holland Publishing Company; Amsterdam
- Meadows, D. H., D. L. Meadows, J. Randers and W. H. Behrens (1972) *The Limits to Growth: A Report to the Club of Rome on the Predicament of Mankind.* Signet Books; New York
- Meadows, D. H., D. L. Meadows and J. Randers (1992) *Beyond the Limits: Confronting Global Collapse: Envisioning a Sustainable Future.* Chelsea Green Publishing Company; White River Junction, VT
- Meadows, D. H., D. L. Meadows and J. Randers (2004) *Limits to Growth: The 30-Year Update.* Chelsea Green Publishing Company; White River Junction, VT
- Mehrabian, A. (1976) *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments.* Basic Books, Inc.; New York
- Merleau-Ponty, M. (1962) *Phenomenology of Perception.* Routledge; London
- Meyrowitz, J. (1985) *No Sense of Place: The Impact of Electronic Media on Social Behavior.* Oxford University Press; New York
- Michelsen, W. (1970) *Man and His Urban Environment: A Sociological Approach.* Addison-Wesley; Reading, MA
- Miller, P. H. (2002) *Theories of Developmental Psychology, Fourth Edition.* Worth Publishers; New York
- Mitchell, H. E. (1974) "Professional and Client: An Emerging Collaborative Relationship." In Lang, et al. *Designing for Human Behavior.* Dowden, Hutchinson & Ross, Inc.; Stroudsburg, PA
- Mithen, S. (Ed.) (1998) *Creativity in Human Evolution and Prehistory.* Routledge; London and New York
- Mullins, E. (1985) *The Secrets of the Federal Reserve.* Bankers Research Institute; Staunton, VA
- Norberg-Schulz, C. (2000) *Architecture: Presence, Language, Place.* Skira Editore; Milano, Italy
- Osho (1994) *Osho Zen Tarot.* St. Martin's Press; New York

- Ornstein, R. and P. Ehrlich (1989, 2000) *New World, New Mind.* Malor Books; Cambridge, Massachusetts
- Orr, D. W. (2002) *The Nature of Design: Ecology, Culture, and Human Intention.* Oxford University Press, Inc.; New York
- Piaget, J. (1950) *The Psychology of Intelligence.* Routledge Classic; London and New York
- Proshansky, H.M., W.H. Ittelson and L.G. Rivlin (1970) *Environmental Psychology: Man and his Physical Setting.* Holt, Rinehart & Winston; New York
- Ramachandran, V.S. (2004) *A Brief Tour of Human Consciousness.* Pi Press; New York
- Rapoport, A. (1969) *House Form and Culture.* Prentice-Hall, Inc.; Englewood Cliffs, New Jersey
- Reed, E. S. (1996a) *Encountering the World: Toward an Ecological Psychology.* Oxford University Press; New York
- Reed, E. S. (1996b) *The Necessity of Experience.* Yale University Press; New Haven and London
- Rorty, R. (1979) *Philosophy and the Mirror of Nature.* Princeton University Press; Princeton, NJ
- Roszak, T., M. E. Gomes and A. D. Kanner (1995) *Ecopsychology: Restoring the Earth; Healing the Mind.* Sierra Club Books; San Francisco
- Russell, P. (1992) *The White Hole in Time: Our Future Evolution and the Meaning of Now.* HarperSanFrancisco
- Safdie, M. (1982) *Form & Purpose.* Houghton Mifflin Company; Boston
- Sahtouris, E. (1989) *Gaia: The Human Journey from Chaos to Cosmos.* Pocket Books; New York
- Salkind, N. J. (2004) *An Introduction to Theories of Human Development.* Sage Publications, Inc.; Thousand Oaks, California
- Santayana, G. (1896, 1955) *The Sense of Beauty: Being the Outline of Aesthetic Theory.* Dover Publications, Inc.; New York
- Seamon, D., editor (1993) *Dwelling, Seeing, and Designing: Toward a Phenomenological Ecology.* State University of New York Press; Albany
- Shakun, M. F. (1999) "Consciousness, spirituality and right decision/negotiation in purposeful complex adaptive systems. *Group Decision and Negotiation,* 8: 1-15, Kluwer Academic Publishers; Netherlands
- Skinner, B. F. (1948) *Walden Two.* The Macmillan Company; New York
- Skinner, B. F. (1971) *Beyond Freedom and Dignity.* A Bantam/Vintage Book; New York
- Skinner, S. (2006) *Sacred Geometry: Deciphering the Code.* Sterling Publishing Company, Inc.; New York
- Smith, L. and J. Voneche (2006) *Norms in Human Development.* Cambridge University Press; UK
- Steinitz, C. (1968) "Meaning and the Congruence of Urban Form and Activity," *Journal of the American Institute of Planners.* (34). pp. 233-248
- Stokols, D. and I. Altman (Eds.) (1987) *Handbook of Environmental Psychology.* Wiley & Sons, Inc.; New York
- Thomas, R. M. (2001) *Recent Theories of Human Development.* Sage Publications, Inc.; Thousand Oaks, CA

- Thompson, W. I., editor (1987) *Gaia: A Way of Knowing.* Lindisfarne Press; Hudson, NY
- Tompkins, P. and C. Bird (1973) *The Secret Life of Plants.* Avon Books; New York
- Toomela, A., editor (2003) *Cultural Guidance in the Development of the Human Mind.* Ablex Publishing; Westport, CN
- Triandis, H. C. (1994) *Culture and Social Behavior.* McGraw-Hill, Inc.; New York
- Tuan, Y. F. (1974) *Topophilia: A Study of Environmental Perception, Attitudes, and Values.* Prentice-Hall, Inc., Englewood Cliffs, NJ
- Varela, F. J., E. Thompson and E. Rosch (1991) *The Embodied Mind: Cognitive Science and Human Experience.* The MIT Press; Cambridge, MA
- Vitruvius, translated by Morris Hicky Morgan (1914, 1960) *Ten Books on Architecture.* Dover Publications, Inc.; New York
- Wahl, D. C. (2006) "Design for human and planetary health: A transdisciplinary approach to sustainability." WIT Transactions on Ecology and the Environment, Vol. 99; WIT Press
- Wallace, B. and L. E. Fisher (1999) *Consciousness and Behavior (Fourth Edition).* Allyn & Bacon; Boston
- Wegner, D. M. (2002) *The Illusion of Conscious Will.* The MIT Press; Cambridge, MA
- Whitehead, A. N. (1957) *The Aims of Education and Other Essays.* Macmillan; New York
- Wolf, S. G. (1976) *Urban Village: Population, Community, and Family Structure in Germantown, Pennsylvania, 1683-1800.* Princeton University Press; Princeton, NJ
- Wolman, B. B. and M. Ullman (Eds.) (1986) *Handbook of States of Consciousness.* Von Nostrand Reinhold; New York
- Wright, W. (1992) *Wild Knowledge: Science, Language, and Social Life in a Fragile Environment.* University of Minnesota Press; Minneapolis
- Wylie, L. (1957, 1964) *Village in the Vaucluse: An Account of Life in a French Village.* Harper Colophon Books; New York
- Yogananda, Paramahansa (1946, 1972) *Autobiography of a Yogi.* Self-Realization Fellowship; Los Angeles, CA
- Ziesel, J. (2006) *Inquiry by Design: Environment/Behavior/Neuroscience in Architecture, Interiors, Landscape, and Planning.* W.W. Norton & Company; New York