

## In-Between Memory and Anticipation

**Author** Lisa J. Mullikin, Associate Professor  
*University of Tennessee*

What happens when we carry our memories into a space? And what about anticipation while we are in that space? It is this very sense of time and space that lives in our imagination and becomes the designer's basic tool to manipulate perception, but it is a difficult concept to instill in the first-year student. Psychologist James Gibson coined the term "affordance" and it has since been used to describe possible opportunities we think about as we move about in our environment.

<sup>1</sup> It is fruitless to talk about it without finding ways to demonstrate it through exercises, such as actually moving about in space and making students more aware of proxemics, parallax and perspective. If the beginning student undertakes a seemingly exhaustive study on movement and space they instinctively begin to manipulate memory, anticipation and the dynamic present. This paper will present a series of projects carried out in first and second year studios to reinforce the idea that time and space are easily manipulated, each student is not really a separate entity but part of the environment, they are not the center of the universe, and context is relative to their viewpoint.

Through the study of neuroplasticity, we now know that ninety percent of what our brains process is unconscious, and perception can be manipulated depending on past experiences and context.<sup>2</sup> This perception can be enhanced by paying more attention to nonverbal cognitions, since those are usually ignored. It is our natural inclination to store these memory schemes and apply them to future events, so that subconsciously we are reminded of another event or group of events. Meanwhile, the small bit of information we are aware of makes us believe that we are in control and we are making conscious decisions.<sup>3</sup> Simultaneously we naturally seek out legibility, and ways we do this are amusing: our brains compose our views, and we subconsciously believe that we are the center of the universe and that it moves around us, rather than the fact that we are also moving (or we are being moved by the earth).<sup>4</sup> And it is not just the external world, but our bodies that influence our thought. Most importantly, we are environmentally embedded. In the book *Welcome to Your World* Sarah Williams Goldhagen writes, "...our minds and bodies-actively, constantly and at many levels engage in active and interactive, conscious and nonconscious processing of our internal and external environments."<sup>5</sup> These observations are the first steps to the student becoming more aware of space, objects, bodies and movement, and how they can be orchestrated to create a rich experience.

---

1 Gibson, J.J. November 2014. *The Ecological Approach to Visual Perception*. London: Psychology Press. p. 42.

2 Rugnetta, M. (July 2008). *Neuroplasticity*. Available at: <https://www.britannica.com/science/neuroplasticity> (Accessed October 15, 2017).

"By the time an infant is two or three years old, the number of synapses is approximately 15,000 per neuron. This amount is about twice that of the average adult brain. The connections that are not reinforced by sensory stimulation eventually weaken, and the connections that are reinforced become stronger. Eventually, efficient pathways of neural connections are carved out. Throughout the life of a human or other mammal, these neural connections are fine-tuned through the organism's interaction with its surroundings."

3 Goldhagen, S.W. 2017. *Welcome to Your World: How the Environment Shapes Our Lives*. New York: Harper Collins. Pg. 47

4 Lynch, K. 1964. *Image of the City*. Boston: MIT Press. P. xxx

5 Goldhagen, S.W. *Ibid.*

One of our typical techniques of memorization is a mnemonic system employed to remember things (and also to forget things), called the method of loci, also known as the memory palace.<sup>6</sup> It directly associates items with place, and this is effective because memory is almost always tied to place. If there is no context the event becomes meaningless. In the film, *North by Northwest*, Cary Grant literally becomes embedded in the cornfield as he moves from being a conspicuous object to becoming part of his environment. When we think of this scene we think of the cornfield. We understand that the place and time are intertwined and acting together and this is what makes the event significant. When students are given a site and begin to design space there are endless ways to manipulate the relationship such as forced perspective seen in Italian Baroque Architecture like Borromini's "forced" perspective gallery in Palazzo Spada, Rome; the light illusions as seen in James Turrell's installations; and phenomenal transparency, which makes us feel depth of space through implied layers. De Chirico's paintings illustrate how perspective can be manipulated with conflicting vanishing points and shadows to alter the sense of time and space and simultaneously give the viewer a feeling of uneasiness. All of these methods illustrate the power of design and how space is attached to time.

Many students have had experiences whereby time slowed down, either through extreme boredom or facing imminent danger, such as falling down or experiencing a car crash. We are hyper-aware of what is happening. This is the brain actually weighing options and that we can actually athletes who train challenging event.<sup>7</sup> This capable of controlling actually induce a sense directly tied to our body begin implementing this student is taken on a perception. The more the x,y and z directions The student is to design. They are on the visual to focusing we relate to the world of a larger system. Most introduction to design, temporal ambiguity of and anticipation.



Figure 1 Walking tour on the

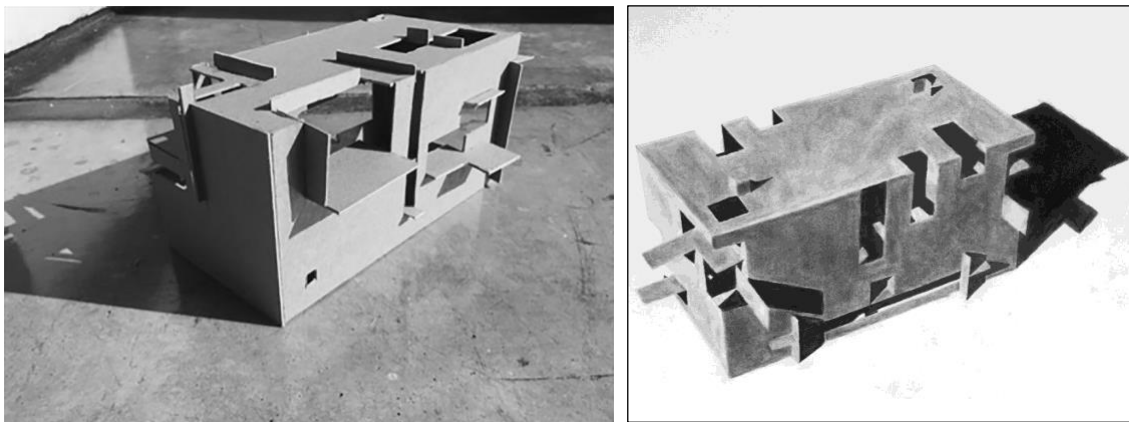
Building, May 2017

University of Tennessee Art & Architecture

<sup>6</sup> Zielinski, S. (2014). The Secrets of Sherlock's Mind Palace. <https://www.smithsonianmag.com/arts-culture/secrets-sherlocks-mind-palace-180949567/> (Accessed October 15, 2017). "Greeks and Romans, such as the orator Cicero, employed the mind palace technique to memorize speeches, marking the order of what to say within a complicated architectural space."

<sup>7</sup> Arstila, V. (2012). Time Slows Down During Accidents. *Frontiers in Psychology*. Available at <https://www.frontiersin.org/articles/10.3389/fpsyg.2012.00196/full> (Accessed October 15, 2017).

Coupling this exercise with a follow up exercise using eye-hand coordination by drawing and building models can enhance the experience in different ways: the activity can become so slow and tedious that time seems to nearly stand still. Ironically the student may crossover into a more meditative state where time is forgotten, and finally there is the impending deadline where time seems to speed up tremendously. Learning the patience required for model building and hand rendering brings on a new awareness of time. Ideally utter frustration eventually turns into the joy of being totally immersed in craft. Once the students get the idea that our sense of time and space are linked they can begin to manipulate their spatial design projects; they understand that memory and anticipation are the bookends of experiential events in architecture, and of course the present is a reference to these two things. This particular studio begins with the building of a cube or double cube and this is transformed three dimensionally using a simple proportional system. The exercise focuses on observation, composition, transformation and interplay with environmental conditions by dissecting a solid box so that the envelope becomes a three-dimensional entity that is part of its environment. The student is then asked to undertake scale and perhaps “occupy” the space. They learn, over time, that reality is not what it seems, and that perception is relative, full of illusions that our brains have collectively built over time. This is also an opportunity to talk about perspective and the technique our brains use to order space. There is often surprise at how important order is to human nature and that it is found in the natural environment as well as art, architecture, and music. Those students with a musical background are already aware of this and can immediately relate their knowledge to architectural ordering principles.

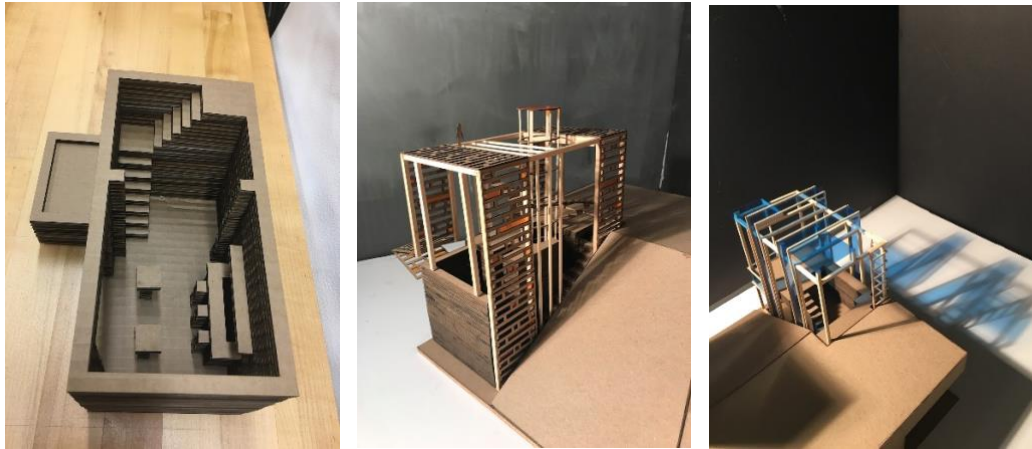


*Figure 2 First Year Studio Double Cube Project*

Toward the end of the first semester it is helpful to integrate some short lessons in figure drawing to introduce basic structure, skin and movement, and illustrate that our environment is directly linked to the mechanisms found in the human body. Again, students are reminded that they are embedded in the environment and part of a larger system; a web where everything interacts and influences the other to some degree. As the student progresses there is a need to do what has likely been discouraged in formal education because allowing time to slow down is to do away with efficiency and distraction and is an opportunity to encourage deep, slow thought. There is no multi-tasking; no shortcuts. Ideally revelation occurs that time cannot be rushed, put on hold or ignored. For example, a twelve-hour study of shadows demands attention, revisiting, observation and finally revelation. No technology or theatrics can imitate the nearly imperceptible faltering light when sunlight begins to disembark from the very matter it had been so keen to rest on, filling the space with tranquility and silence. Time is moving, relentless, and exquisite; if you do not pay attention you will miss its genius.

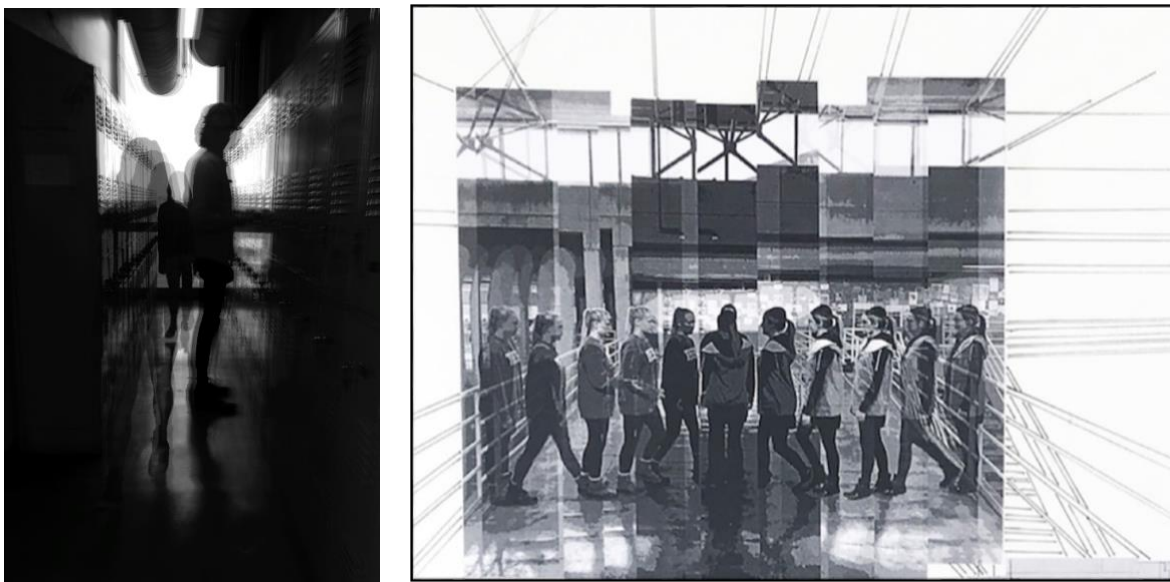
As the project progresses and becomes occupied and part of a larger context it is further animated with the idea of skin, bones and earth which correlate with envelope, structure and poché. The movement in the x,y and z

coordinates as it relates to space and objects becomes the narrative and finally a more in-depth discussion of memory and anticipation can begin.



*Figure 3 First Year Studio Projects: Skin, Bones, Earth: a Study of Envelope, Structure and Poché*

A subsequent second year studio incorporates many of the things that were introduced that first semester. In the spring semester there is a focus on an historical site that has a longstanding relationship with its community, but first there is a return to the basics of light, proxemics, movement and manipulating perception. In this first exercise the students are directed to choose an area of their own studio building to document space, movement, and light. They are then asked to introduce variables (time of day, quality of light, speed of movement density of occupation) one at a time. Finally, they are asked to make a collage to talk about the quality of a space and how it might change over time. This is a reminder to be aware of the relationship with the environment, with the understanding that they are embedded and not alien objects.



*Figure 4 Second Year Studio Projects: Proxemics Collages*

The final project was divided into two parts. Although this class is for interior architecture students the first study was focused on the site of the project using the Psychogeographical Map, a study of the psychological nuances of the site, an assignment borrowed from fellow coworkers and the Situationists.<sup>8</sup>

The main program is somewhat arbitrary, assuming that any historic structure has a relationship with the community, and some more than others, and the program will just introduce another layer to existing conditions. This is where memory comes into play more than ever because it is imperative that there is an understanding about perception and that perception is fully dependent on context and memory. This site in particular had a far more complicated relative isolation and the project morphed into preservation itself, as was the Candoro Marble an agricultural area in the industrial area in the was discovered and Marble Company opened in buildings. As the marble showroom was built as the marble industry died in and began using the collected and resold. He metal he collected and Commission at nearby Oak aided in the purification of



Figure 4

relationship than initially suspected due to its fantastic events over the last century, and so being more about relationships than originally intended. The site for this project facility in south Knoxville. The area began as eighteenth century and then became an nineteenth century. Tennessee Pink Marble quarried beginning in the 1880's and Candoro 1914 with several very large industrial industry expanded a Beaux-Arts style adjacent to it in 1923. Several decades later out after World War II, a new owner moved buildings for storage of scrap metal he owned several sites nearby and much of the resold came from the Atomic Energy Ridge, formerly a secret city with labs that uranium for the Manhattan Project.<sup>9</sup>

Second Year Studio Project: Psychogeographical Map

The impoverished neighborhood where the marble facility was located became contaminated as the neighborhood kids raided the scrap metal and burned whatever was flammable in their backyards. Housewives were employed to grind off the outer layer of scrap and pour acid on it to identify its content and at least one women died of radioactive poisoning. The few citizens of the area who were not transient formed a group of activists that spent over two decades pressuring the Federal Government to clean up the area, and a thirty five million dollar cleanup took place at property adjacent to our site about ten years ago.<sup>10</sup> It is not clear how much contamination is in the marble facility itself and if it was ever cleaned up, but the showroom was under different ownership and was thankfully exempt from the scrap industry. The surrounding site is now used for weddings and art festivals. This studio project had started out as a preservation project but turned into more of a discussion of just what meaning does the Candoro site have to its community and what kind of development could ever take place on a radioactive site. Fourteen teams of students had wildly different conclusions about how to treat this

9. Atomic Energy Commission, National Archives at Atlanta. (2012). Atomic Energy Commission and the Secret City of Oak Ridge. Available at <https://www.archives.gov/files/atlanta/finding-aids/atomic-energy-commission.pdf> (Accessed October 15, 2017). The website describes Oak Ridge: "This location was built from nothing in a secluded area of north Tennessee. Oak Ridge had three main facilities: Y-12, K-25, and X-10. The function of these facilities was mainly to purify the Uranium 235 and 238 isotopes that would later be used in the nuclear bomb. The existence of this city was a complete secret until the War was over. After the end of World War II, the Manhattan Engineering District handed over control of what had become a nuclear energy program, to the newly created Atomic Energy Commission."

10Morrone, M. and Buckley, G. ed. (2011). Injustice in the Handling of Nuclear Weapons Waste. In: Mountains of Injustice. Athens, Ohio: Ohio University Press. p. 128.

site, but all agreed it was an ongoing dynamic relationship that would continuously change over time. The preservation of the tiny Beaux Arts building was a catalyst for the project, but it turned out to be somewhat minor in the big picture. This became an amazingly complex project for second year students but it was the students who made the decision to take on the challenge. Although in this case the program called for a gallery and artist in residence space, the students concluded that what the community needed most was a tangible interpretation of the community's stewardship, and the assigned program was to support this need. Sustainable design became the focus of most of the students.

Typically, the students become emotionally attached to these projects, not because they are beautiful, but because they represent a moment when all attention was on the most valued assets: time and relationships. Suddenly they can find ways to visually represent time, manipulate perception of time, and most importantly narrate a relationship with time that becomes a primary factor in the architectural experience. In essence this project incorporated all the layers of time and the people who became involved in the site, ranging from the farmer, the entrepreneur, the employee, the opportunist, the victim, the activist, the rescuers and finally the student. Good students in good programs often say they were transformed, that design studio turned them on their heads and changed the world for them. Changing perception of time as it relates to space is one of the most direct methods to encourage students to question their perceptions and simultaneously change the way they use time. This leads to the conclusion that we, as designers, are able to manipulate perception and what it means to occupy the world. And it is the beginning design student that seems most open to embracing this.