

A Beginner's Mind

**PROCEEDINGS
21st National Conference
on the Beginning Design Student**

Stephen Temple, editor

**Conference held at the
College of Architecture
The University of Texas at San Antonio
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Situating Beginnings
Questioning Representation
Alternative Educations
Abstractions and Conceptions
Developing Beginnings
Pedagogical Constructions
Primary Contexts
Informing Beginnings
Educational Pedagogies
Analog / Digital Beginnings
Curriculum and Continuity
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Beginnings
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Cultural Pluralities
Contentions
Revisions
Projections

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Negotiating Between Self and Architectural Design

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Great architecture is always driven by a personal interest. However, beginning design students do not equate individual decisions regarding architectural design with personal preferences and passions that comprise their *self* definition. Instead, they engage in ongoing struggles which occasionally net unsatisfying results. How does a design instructor redirect the students' focuses and nurture the application of self in students' designs?

The foundational theories of both Kegan¹ and Piaget² explain a portion of the creative journey of both students and professionals. Kegan's theories center on meaning-making based on the relationship of *subject* and *object*. One of Piaget's theories concentrates on *equilibrium* and its influence on change as part of the developmental process.

Utilizing Kegan's and Piaget's theoretical frameworks, I examined the relationships between self and designs of several notable architects. From this investigation of theories and architects, I developed a design studio assignment for the students titled the *Self Project*. The students' responses to the Self Project and its subsequent affect on their architectural designs are offered for discussion.

Foundational Theories in Development and their Relationship to Architecture Education

The foundational theories of both Kegan and Piaget in the areas of cognitive development assist in defining the creative process in architectural design offices and académie. According to Kegan³, meaning-making is a component of self definition and how meaning occurs is the result of continuous renegotiations between the subject (self) and object (other). Piaget⁴ described renegotiation and its corresponding change as being driven by a need for equilibrium.

Understanding self is at the core of meaning making and a key component in both cognitive development and architectural design. Kegan perceived self understanding as more than just existing; it is defined by what people are and also describes their private worlds. Self is simultaneously a thing and an action. Self refers to the physical and intellectual person as well as his or her progressive movement toward new self forms through the incorporation of others. Other refers to anything outside of the self system. Therefore, meaning is created when judgments are made within the self system during the moments between an event and a reaction to it; it involves both self and other.

According to Piaget, an understanding of self promotes equilibrium. Equilibrium is a re-adaptive response to either the exterior world or internal thoughts. Achieving intellectual and emotional equilibrium involves a sophisticated balancing act. People must be willing to take detours and chances, and deviate from a self-expected path. They must be will to change their viewpoints, revisit old ideas and reverse their actions to achieve equilibrium. Piaget concluded that the highest form of equilibrium is intelligence.

In architecture schools, students make design decisions based on self whether they are aware of it or not. However, students need to be more deliberate in the understanding and application of self. To do this, students need to courageously incorporate new others and discard parts of the old self to instigate the development of an enriched palette of design choices. This ongoing swapping process is an inherent component of growth and movement toward equilibrium. It follows that the ability to firmly understand one's self and also be able to deviate from and alter known perceptions is a critical activity that ultimately contributes to a successful architectural design process for both students and professionals.

What precipitates the need for positive change in architecture students? In the architectural design studio, a project deadline encourages the design process to begin but it is the need for high performance that pushes the student to search for a solution of value. Piaget referred to reactions such as these as a search for balance or equilibrium. Piaget⁶ observed that actions result when individuals perceive an uneasy imbalance between themselves and their environment. In the design studio, the students are uncomfortable because they have a problem with no obvious solution. Additionally, students' instability is enhanced when they encounter internally defined limits that block the search for unique solutions. Design projects with numerous and open-ended variables create an intellectual imbalance that challenges students beyond their existing limits⁷. However, students need ways of expanding their limits. Also, the problem remains that students find that it is easier to look to the external concrete world around them for answers.

Self in the Profession of Architecture

There is a myriad of evidence regarding self as it permeates the designs of notable architects. Self-preferences and self-understanding evolve over a lifetime, thus the expression of this understanding in architecture also demonstrates mutations within individual design processes. The designs of Frank Gehry, Frank Lloyd Wright and Santiago Calatrava provide perspicuous representations.

Gehry⁸ translated his childhood memories of fish into motifs for numerous building designs and details. A fish shaped bath and dressing area appears to swim between the walls and columns in the conservatory of the design process model for the Lewis Residence. A fish lamp wiggles on an apple green wall in the Weisman Museum in Minneapolis. Yet the fish metaphor is suggestive of a deeper passion for Gehry, that of movement. Sketches are an indigenous part of Gehry's design process, and their interpretation parallels the blur of speed and frozen motion exhibited by still drawings of cartoon characters for film. Gehry's fascination for motion in architecture appears when one is cognizant of the increasing intensity of swirling motion displayed by several Gehry buildings. The University of Toledo Center for the Visual Arts, completed in 1992, demonstrates Gehry's earlier fascination with motion in plan and elevation but the geometries are carefully positioned as to respect the effects of gravity. In the Frederick R. Weisman Museum, completed in 1993, the curved and angled planes are tossed about in defiance of gravity, and motion is more evident. The Guggenheim Museum Bilbao, completed in 1997, more closely mimics the movement of Gehry's sketches as the warped planes defiantly suspend themselves above the ground. The architecture of Frank Gehry demonstrates specific preferences based on his personal experience and self-discovery.

Frank Lloyd Wright adapted his fascination with geometry into an architectural grammar. In his autobiography, Wright revealed his mother's discovery of *gifts*: soft brilliantly colored papers, smooth shapely maple blocks and cardboard shapes with scarlet faces that became the subject of play and study⁹. The wooden stacking blocks he played with were designed by German educator, Frederich Froebel, who pioneered the concept of the kindergarten in the late nineteenth century. Anna Lloyd Wright instructed her children in the Froebel method. The domineering rectilinear planes of Fallingwater, built in 1937, and the concentric curves of the Solomon R. Guggenheim Museum in New York, completed in 1959, attest to Wright's lengthy experience with geometry and the Froebel blocks. Additional childhood experiences affected Wright's designs. Wright's description of what constituted livable residential spaces manifested itself in his 1954 book, *The Natural House*¹⁰. He eschewed false useless spaces and redefined the meaning of the wall. Architectural elements became integrated and the recognition of human proportion, essential. Once again, Anna Wright's influence is suspect. She created a plain and honest environment for her family. Desserts were minimal, nutrition essential and many times, fashion trends were shunned; she found beauty in the simplicity of nature. Anna's simplicity affected

Wright's designs. Wright's mother was an early and strong influence in his self-development. Her training presaged Wright's architectural designs and became part of his self-definition.

Santiago Calatrava's animal sketches are liaised to architectonic form¹¹. His demonstrative black line drawings of animals transformed themselves into bridge elevations and section details. Calatrava envisions his designs as living structures. His interest in organic form and detail can be traced back to his experiences at an arts and crafts school in a neighboring Valencian village in Spain. There, young Calatrava studied with engravers, glass craftsmen and carvers who were themselves trained in 19th century traditions. Incorporating the skills of drawing and observation learned in his early years, he developed them into components of a viable architectural design process. As an architect, Calatrava continues to sketch in pencil, charcoal and watercolor, depicting favorite organic forms and transforming them into architecture. The section design for the bridge over the River Guadiana was inspired by the sketch of a bull's head. Sketches of a ram's head inspired the columns and connections in the entrance of Escuela Cantonal. Santiago Calatrava demonstrated that he has purposefully chosen favorite objects and mediums to incorporate self into his designs.

It is apparent that a building's visual identity is many times the result of delicate negotiations between the subject (the architect) and the object (the architectural design). In each of the above examples, the architect had a clear awareness of self and acted upon those preferences to create designs. Sometimes distant memories made significant contributions to a building's design; on other occasions, the design process itself became a catalyst. A third perspective involves a quest to give life, in the form a design, to a vision that is not yet part of self. Both the actions of architects as they engage in the design process and the research of theoreticians in the area of cognitive development suggest a pedagogical approach for design students in architecture schools that involve self. At the beginning of each semester, my sophomore design students are assigned the *Self Project*.

The Self Project and Students' Responses

The purpose of the Self Project is to have each student recognize and define their own unique preferences and become aware of the differences existing among their peers. Ultimately this awareness was applied to architectural designs in class. The Self Project was initiated in my class through a handout that blends graphics, cognitive development theories and project instructions for the students' consideration. To clarify the intent of the Self Project to students, I utilized quotes by theorists.

The graphics in the handout provided an easily understood introduction to the project. The ambiguous figure of an old/young woman, originally drawn by W. E. Hill and published in 1905, was observed by my students in the upper right-hand corner of the sheet. There was a soft murmur in the class as the students realized that there were differences in perception as some saw only the older woman while others saw the younger woman. The upper left-hand area of the handout displayed 32 different fonts; all spelled out the same word, Self. I explained to the students that I could not identify one font that was an accurate depiction of the meaning of self and decided that I needed many fonts to convey the diversity of selves that comprised our class. The remainder of the handout partitioned the more complex information regarding self-understanding into four categories: 1) where we want to go, 2) how we do it, 3) defining self and, 4) our objective. Each category contained a quote by a cognitive development theoretician so that students would more clearly understand each phrase. Lastly, students were instructed to collect artifacts that reflect their memories, preferences and experiences, and place them in a 9"x12" envelope called the *Self Folder*.

An open discussion of the four categories clarified the Self Project's objective. The first category, 'Where we want to go', utilized the work of Sternberg and Spear-Swerling¹². Students' needs in developing personal navigation through the identification of goals; direction, flexibility

and the ability to overcome obstacles are requisite characteristics for intellectual growth. The contents of the self folder may reveal an important personal goal or direction important to each student. The need for movement to achieve equilibrium is supported by Piaget's theories. The second category, 'How we do it', depends upon Perry's¹³ sage observation that human beings organize meaning. The students learn that they internally create meaningful relationships that are unique to themselves when considering people, objects and experiences. The ability to fold an understanding of relationships with self and transpose them into an architectural design has powerful consequences. Kegan's concept of self and others reinforces the relationship component of development. In the 'Defining Self' category, Bruner and Kalmar¹⁴ rationalized that self-development occurs in an environment of a person's own making and is continually being reshaped by his or her own perceptions of self. Students become aware that they have willfully made choices, yet these choices do change over time. Kegan's theories about self support this meaning-making in development. The fourth category, 'Our objective', contemplates self-authorship as defined by Baxter Magolda¹⁵ and the outcome of the journey for self understanding as described by Kegan and Piaget. Baxter Magolda stated, "Self-authorship . . . is a complicated phenomenon. It is simultaneously an ability to construct knowledge in a contextual world, an ability to construct an internal identity separate from external influences, and an ability to engage in relationships without losing one's internal identity". Developmentally, many students are not ready to accept this complex statement of personal growth but it is nevertheless offered for their consideration and to challenge their current boundaries. Self-authorship is the final stage of development in Baxter Magolda's Epistemological Reflection Model, a cognitive development model for college students. Self-authorship does not typically appear until the graduate years of study or beyond. Nevertheless, my goal was to challenge each student beyond his or her self system so they may grow.

With the project under way, the students continued to share their insights in class discussions throughout the semester and were asked to review their envelopes' contents when they were flustered and did not have ideas. During open discussions, some students were reluctant to share personal information. Others filled their envelopes but wanted to share only specific objects. Still others energetically spilled the contents of their envelopes onto the conference table and launched into monologues of sad, funny and sensitive stories. Later in the semester, the students were requested to give each other *gifts* in the form of contributions to their peers' self folders. This project twist generated a renewed excitement in the self project and provided insights into self that were previously ignored.

From the sophomore design studio in the spring 2005 semester, Jen and Jon volunteered the contents of their folders and provided descriptions of their personal interests. Each student also indicated that they needed to further contemplate the application of what they had selected with relationship to architecture.

Jon was gregarious and an excellent communicator. While in architecture school, Jon held a service-oriented job that he clearly enjoyed. The identification badges from his folder were periodically updated by his company and Jon's favorites included "Go Home Happy" and "I Love My Customers". Jon had saved every movie ticket he ever acquired. His favorite book was "TV Sets: Fantasy Blueprints of Classic TV Homes" that included the homes of The Beaver, Mr. Ed, and The Jetson's, to name a few. Jon's reaction to the relationship between his self folder and architectural design is as follows:

I guess whether we know it or not, everything that happens in our lives forms the way we design. In my case, I had tickets and nametags to show that I keep everything. That explains parts of my personality, but I don't know what it says about my design. I guess my folder shows that I have a love for older buildings. The Sears homes, the classic TV floor plans . . . all show that I am fond of classic nostalgic designs. The problem is that

you couldn't guess that from anything I have designed; everything I make looks contemporary. I guess maybe I should think more about that in future designs.

Jen's self folder included a stack of family photographs, primarily of her posing two younger sisters. She held out a black and white illustration of a dragonfly and remarked, "I love bugs! I love the curved shapes". A tiny white jewelry box from Mackinac Island sheltered several small objects including a sorority pin, a piece of green beach glass and a U.S. postal stamp depicting Edward Hopper's 1942 painting, 'Nighthawks'. This is Jen's reaction to the self folder and architectural design:

The contents of my self folder apply to architectural design by showing life influences. My family influenced me. My parents' creation of a triple bunk for three daughters in a small room shows that they are creative in solving space problems. The beach glass shows my preference for texture and color. I think that you need to know who you are and why you choose the things that you do to convey your ideas to others and to help understand why others may perceive things differently. Keep this in mind when designing for others.

The application of the Self Project began with a small design problem. The following design solutions and personal narratives from the Drive-Thru Donut Shop project revealed the students' individual understandings and applications of self into meaningful architectural design solutions.

Self and Studio Design Projects

Jen and Jon participated in the Drive-Thru Donut Shop project. This was the first design project in which the students were able to incorporate information from their self folder. The project statement read, "You have been commissioned by the owner of a local strip shopping center to design a unique and distinctive building for a drive-thru donut shop to be located in the middle of a mall parking lot".

Jon made the following statement regarding his final donut shop design solution:

The building's concept is a reaction to present day strip mall culture. The mall buildings are plain and lacking any architectural interest. When designing, I tend to start with very simple geometry and then evolve it to create a complex composition while maintaining the geometric foundation. Using the same simple geometries and rectilinear forms as the surrounding buildings, I created an architecture rather than a box.

While Jon's earlier analysis regarding his self folder and his design solution for his donut shop seem to be unrelated, the oral presentation that Jon made to the class regarding his self folder did reveal a relationship between the two. The object from his folder that Jon spoke of most often was the TV Sets book given to him by his parents when he was younger. He told the class of the endless hours he spent analyzing the floor plans. This activity translated itself into an understanding of the importance of usage, adjacency and relationships in architecture. Jon created a tightly and efficiently organized floor plan.

Jen reflected on her final donut shop design solution, "When I think of donut shops, I think of old diners. The sleek silver looks of a diner lends itself to the concept of motion and the speed of drive-thru. I appreciate contemporary views on older styles; the mixing of old and new".

When Jen described the contents of her self folder, she pointed to an ink drawing of a dragonfly and eagerly commented that she loved curved shapes. During the presentation of her design project, she referred to the Streamline travel trailers of the early 1960's as an inspiration for her design. The connection between how she defined herself and her design project were undeniable. While the trailer proportions were not utilized, certainly the aerodynamic nature of the design, as well as Jen's fascination with curved geometries, was clearly present. Both Jen and Jon utilized elements of their self folder; some usages were more cryptic and others foretold of future self understandings.

Jen and Jon's peers also thought about self as they designed their buildings. Saraya's building had swirling geometries with bulging windows adjacent to the dining space and small triangular planes jutting out of the roof to form skylights. She reflected, "The main idea behind the execution came in the form of a delicious breakfast. I enjoy the essence of the donut, the jelly, and I did not throw out the napkin". Joe selected softy curving geometries with low interior spaces and cozy niches for his design. While he cited the beauty of nature and the outdoors for inspiration, his last statement was more revealing and rationalized his comfortable spaces, "Donut shops should be places where we can take a small break from our stressful lives". Additionally, Hannah observed that the roof planes swooping at ninety degrees to each other in her design indicated the contrast and conflict in her life. Melina also observed that there were twists and turns in her own life but interpreted them with rough edges and extreme angles in her design.

Conclusion

The Self Project did not present any startling revelations. Instead, the Self Project seemed to set in motion a curiosity for self awareness and an understanding of others. The curiosity was not equally demonstrated by every student, but that does not necessarily mean the students were not considering the information presented in the Self Project. All of the students engaged in different levels of meaning-making while the courageous students struggled to understand the implications of the Self Project and the challenge to incorporate self into their designs. Some students become especially appreciative of the concept of self when they realized that the contents of their self folder changed during one semester. Other students were not aware of how the self project impacted their design projects and did not see the relationship to personal growth. However, at the conclusion of the semester, two students admitted that they felt their architectural designs had progress significantly. One student thoughtfully offered, "I wouldn't have thought about designing like this last semester".

NOTES

1. Robert Kegan, *The Evolving Self* (Cambridge, MA: Harvard University Press, 1992).
2. Jean Piaget, *The Psychology of Intelligence* (Paris: Armand Colin, 1947).
3. Kegan, *The Evolving Self*, 109.
4. Piaget, *The Psychology of Intelligence*, 4.
5. Kegan, *The Evolving Self*, 104.
6. Piaget, *The Psychology of Intelligence*, 4.
7. *Ibid.*, 7.
8. Mildred Friedman, *Gehry Talks* (New York: Universe Publishing, 2002).
9. Frank Lloyd Wright, *An Autobiography* (New York: Horizon Press, 1947).
10. Frank Lloyd Wright, *The Natural House* (New York: Horizon Press, 1954).
11. Richard C. Levene and Fernando Marquez Cecilia, "Monograph on Santiago Calatrava", *El Croquis* 38 (October 1992).
12. Robert J. Sternberg and Louise Spear-Swerling, *Perspective of Learning Disabilities* (Boulder, CO: Westview, 1999).

13. William G. Perry, Jr., *Forms of Ethical and Intellectual Development in the College Years* (San Francisco, CA: Jossey-Bass, 1968).
14. Jerome Bruner and D. Kalmar, "Narrative and Metanarrative in the Construction of Self", in Ferrari and Sternberg (Eds.) *Self-Awareness* (New York: Guilford, 1998).
15. Marcia Baxter Magolda, *Creating Contexts* (Nashville, TN: Vanderbilt University Press, 1999), 12.