

# 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  
24-26 February 2005**

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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  
Interdisciplinary Curricula  
Beginnings  
Design / Build  
Cultural Pluralities  
Contentions  
Revisions  
Projections

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***The Black Box Projects:  
Ways to Reintegrate Sense Experiences in the Design Process***

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*A young man talks on a cell phone while walking across the University of Virginia campus. It is a beautiful spring day, yet his eyes stare blankly ahead and his brows wrinkle. He is evidently engaged in a heated conversation – so engaged that he fails to notice the telephone pole blocking his path. He crashes into it. His body reels backwards and he nearly falls. The cell phone lands with a crack on the sidewalk. Notebooks fly from his backpack. Loose papers glide through the air...*

This humorous encounter raises serious questions. Aside from practical dangers (for example, an increased number of car crashes due to cell phones), what are the subtler yet no less dire aesthetic and ethical consequences of our incessant use of devices such as cell-phones, television, or computers? While connecting the young man with a distant voice, technology also diminished his awareness of his immediate environment. His perceptions of the intense blueness of the sky, the smell of grass, the rhythmic shadows of trees across the sidewalk, as well as the silhouette of the telephone pole, were compromised. This simple observation gives me pause, making me wonder about my work and role as “visual” artist and design teacher. Am I, like many of my students, becoming less likely to perceive deeply and attentively? Does my carelessness amount to an ethos or way of life that privileges utilitarian goal-oriented actions (such as decoding of phone signals or reading e-mails) over complexly layered, multi-sensory experiences? As perceptual nuances matter less, am I still able to inhabit a particular place, or do I live by merely traversing sense-less, generalized domains? While I may “know” where I am, often I do not simultaneously “sense” this awareness. Either narrowly focused or muted, my perceptions are severed one from another: what I see is disconnected from what I hear, smell, touch, or taste. I have become skilled at separating my consciousness into distinct, isolated compartments. Habitually, I disconnect my “senses” from my way of “making sense.” Logical thought or what the ancient Greeks called “nohta” (immaterial things that cannot be apprehended by the senses) is severed from “aisqhta” (material things directly related to sense experience or “aesthesia”). As intellectual concepts become remote from sense experiences, I am inclined to pursue design ideas (or ideologies) that have little to do with the process of making or the aesthetic experience. With no serious counter provocation, I may engage in intellectually sophisticated theory for theory’s sake. Conversely, I may over-aestheticize the making process, stressing glamorous visual impact or flashy manipulative surface at the expense of critical thought. Unchecked, the sense of sight becomes dominant—a kind of “visual candy” with no tactile or other sensory reverberations and no balancing critical or ethical development. Unchallenged in its hegemony, sight itself is impoverished. I “lose sight.” I forget that the plastic arts (painting, sculpture, architecture) are richest when they are simultaneously felt and understood, when aesthetic forms parallel intellectual and ethical functions.

My work with beginning design students seeks to redress this situation and test ameliorative, constructive solutions. A series of related Black Box Projects are a response to the young man’s cell phone experience: primitive antidotes to daily activities that suppress and isolate our senses, or overemphasize the visual and sever aesthetic experience from intellectual

content. Perceiving fully takes time and requires concentrated, sustained attention. The Black Box Projects slow down and focus observation. Black Boxes often involve the most mundane of subjects and events: listening to bird songs with one's eyes closed, touching and re-touching the contours of ordinary household objects, describing a walk across campus as a linear sculpture whose smallest increments represent footsteps. Through such exercises students discover the richness and complexity of everyday experiences. The process of discovery resides not in seeking new landscapes but in having "new eyes," which of course means "new skins, noses, ears, taste buds...." In working with black boxes students act as scientists, proposing hypothesis, testing relationships, building and re-building models. The studio is just as much about visceral emotions and immediate perceptions, as it is about sustained, systematic study. The Black Box Projects nurture habits that transcend the boundaries of visual art and architecture. They cultivate patience, self-awareness, and reflection—a desire to imagine disparate phenomena as interrelated. How we see something is connected to how we might touch it, as well as how we might mentally organize it. Perception and conception are not locked in immutable, irreconcilable conflict, but exist as overlapping, transparent planes of consciousness.

While exploring the phenomenology of perception, Black Box Projects are never purely formal. Their fundamental premise is that aesthetic qualities can emerge from ethical choices—that, although conceptually distinct, our cultural, aesthetic ideas of beauty and our notions of ethical harmony or appropriateness can on occasion overlap and enrich one another. Students test ethical implications of aesthetic choices; they construct personal metaphors linking issues of "ethos" (the daily habits and patterns of their lives) to issues of "aesthesis" or formal composition. Students consider how the selection of certain forms or materials can suggest particular ethical meanings, for example the conservation or waste of resources. Purely ethical choices, such as the use of discarded or recycled materials, can lead to exciting aesthetic ideas. Certain fabrication techniques, for example gluing, weaving, or stitching, can either celebrate or suppress the process of making. Results are not always successful. Links between ethics and aesthetics remain individual as well as situational and cannot be rendered prescriptive or universal. Students learn that a worthy ethical process does not automatically guarantee a successful formal composition, or the other way around.

The following Black Box projects represent work from three courses I developed at the University of Virginia: *Lessons in Making* (a first-year introductory design course), *Drawing as Ethical Metaphor* (an upper-level art seminar), and *Painting and Architecture* (a fourth year architecture studio). While the last two are conventional studios of 16 to 20 students, *Lessons in Making* is a larger lecture course including 150 students (about 60 architecture majors and 90 liberal arts students). Twenty teaching assistants lead individual weekly sections as part of an upper level *Teaching Experience Seminar*. My collaboration with these talented and dedicated assistants is an essential, enriching component in the development of this course.

### ***Touch Boxes***

"A blind man can make art," writes conceptual artist Sol LeWitt, "if what is in his mind can be passed to another mind in some tangible form."<sup>1</sup> Although sometimes interpreted as a dismissal of visual perception, LeWitt's statement is not a simple argument for art's mental rather than physical apprehension<sup>2</sup>. The word "tangible" suggests instead a radical emancipation of all

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our senses. For LeWitt, just as conception becomes equal to perception, so the “tactile” rises to the level of the traditionally dominant “visual.” The idea that blindness (literal or imagined) can have exciting visual consequences did not originate with conceptual art. Kimon Nicolaides’ classic manual The Natural Way to Draw<sup>3</sup> features a sculpture by Clara Campton, an artist blind since birth. Although sculptures by Constantin Brancusi are often accompanied by “Do Not Touch” museum warnings, we nonetheless “touch” them in our mind’s eye. Brancusi exhibited his Sculpture for the Blind inside an opaque sack with sleeves through which viewers would pass their hands to feel the form within.<sup>4</sup>

By foregrounding our sense of touch and its essential connection to vision, *Touch Boxes* suggest that to isolate or privilege vision is an inaccurate way of describing real, lived experience.<sup>5</sup> Since they cannot see their drawing subjects, students are less likely to follow visual clichés or preconceived, hence limiting notions of visual beauty or accuracy. In this exercise, each of two *Touch Boxes* contains a teapot: Graves’ conical *Alessi* design, and the squatter, rounder *Nova* pot. Alternating vertical and horizontal slits in layers of cloth lined with feathers form apertures through which students pass their hands to the interior of each box. Unable to see, they become meticulous detectives uncovering clues. They touch contours; feel textures and temperatures; assess relative weights; measure dimensions with palms and fingers; test musical possibilities. Students note their discoveries first as written text, then as preliminary outlines superimposed across the dominant field of words. Words and contours are written, partially erased and re-written again, a process that involves patient, repeated rubbings of the paper. Inspired by the Greek “palimpsestos,” combining “palin” (again) and “psen” (to rub), drawings become palimpsests of written and drawn layers. While drawing the same contour several times, students touch and re-touch the paper in different ways: lines are smudged, scratched, and marked with various hand pressures.

Since *Touch Boxes* have no privileged viewpoints, representations from a singular perspective are not necessary. Students are free to depict not one but many “views” and details imagined from different “observer’s locations.” Multiple views fill the page, the drawing becoming a layered imprint of temporal experiences. Repeated cross-sections describe overlapping “views” (in this instance top and side). The same outline is drawn several times, each new take a bit more detailed. *Black Boxes* require repetition, students having to touch the same contour many times before gaining even rudimentary “insight.” Drawings have the look of sketchbook pages, of studies rather than definitive presentations. Occasionally, accumulations of writing and drawing convey an atmosphere of murkiness, an inadvertent analogue to the visual obscurity of the Black Box. Repetition can also suggest certain characteristic representations, in this case a top view for the round pot, and a distorted “bird’s eye” perspective for the conical pot.

Gaining insight through touch is a perpetually unfinished process (colors, for instance, remain unreachable). Drawings themselves become open-ended, ambiguous, unpredictable. After much scoring and rubbing, this student re-affirms the overall shape through erasing, a carving out of drawing deposits that render the pot at once bold and ghostly flat. In contrast, another student’s bellowing, many-spouted teapot takes on a fantastic specificity. Unlike the previous bellowing pot, these two drawings have a cool, precisely calibrated touch, resulting from patient, meticulous observation. *Touch Boxes* lead to a wide variety in the temperament (or temperature) of drawings. Un-encumbered by a visual picture or the need to replicate visual constancies, students are less self-conscious and more instinctive. They focus on ways of touching or marking the paper, and on the sounds they hear while drawing. Less mimetic, drawings become analogues or metaphors to multi-sensory experiences.

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### ***Microscopic Landscapes***

*Aspects of things that are most important for us are hidden because of their simplicity and familiarity.* Wittgenstein's phrase applies to our dulled, impatient perceptions, to our difficulties in perceiving the beauty of familiar things. To illuminate the complexity and richness of modest, mundane subjects, students design and build primitive microscopes: portable chambers that focus and intensify vision. These simple, self-contained vision chambers include eyepieces fitted with magnifying lenses, light filters, apertures, and baffles. They take time to build and adjust; perhaps in part because of this, students draw with more patient, sensitive eyes. Common surfaces and objects (a straw matt, a piece of bread, an egg) are seen with uncommon intensity.

Having themselves constructed the interiors of black-box microscopes, students pay particular attention to negative spaces. This drawing is composed entirely of modulated background grays, while figures are left as entirely unmarked paper. Students compose with light, orchestrate dark to semi-dark sequences, and refine the shape of views. In this process, small adjustments matter. This lesson carries over to the drawing process: students work with delicate qualities such as paper texture. Black Boxes can become complex objects. Brilliant surfaces collect ambient light. Translucent screens filter interior light. Mirrors double perceived distances. In this example, the egg is placed right next to the eyepiece at the narrow end of the funnel shaped box: we see not the egg, but its mirrored reflection at the far end.

Illuminated in particular ways, common rubber bands become an intricate set of spatial relations. Sometimes the rubber band is barely recognizable, a pretext for studying light and shadows. At other times, the subject insists on remaining the recognizable, familiar object. Occasionally, the rubber band becomes a piece of calculated abstraction. In the end, the subject hardly matters: curved paper, discarded fragments or odds and ends serve equally well. What matters is the intensity of perception.

### ***Colored Light***

In the late 1850's James Maxwell built a "portable light box" to prove white light is a combination of three primaries (red, green, blue). Maxwell's box showed the existence of three color fundamentals, refuting Newton's earlier suggestion that each portion of the spectrum is unique. In fact both Maxwell and Newton are correct. For the physicist each color has a unique wavelength that cannot be re-created by other wavelength combinations. In this sense, there are infinitely many color-fundamentals. Yet, from a perceptual, physiological standpoint, Maxwell is right. Our eyes have only three types of retinal cones, each with its distinct wavelength sensitivity. To most human eyes, appropriate combinations of only three fundamentals can mimic any color. Similar to Maxwell's "light box," these *Colored Light Boxes* employ mirrors, controlled light apertures and eye-pieces fitted with color filters. Inside students place colorful fruits and vegetables. Magnification and carefully cropped views transform these fruits and vegetables into landscapes of crevices and gullies, peaks and plateaus. In some boxes, sequences of removable filters modify light. At times, intensely radiant colored light brings intimacy. Students study the same formal arrangement under sequences of related color conditions. They discover that in a darkening interior chromatic perception diminishes at different rates for different colors: greens fade very quickly while reds persist longer. Students experience the perceptual pre-eminence of black/white contrasts, they experience the fact that compared to our 120 millions rods, our human retina has only 7 million color sensitive cones.

After drawing (as well as smelling, touching, and tasting fruits), students focus on color alone. For convenience, simple rectangles replace complex curved forms. We ask ourselves whether color by itself can suggest tastes, smells and textures. Readings from the history of color informs our work. Aristotle believed proper mixtures of black and white paint can produce any

hue. This outrageous idea does not seem quite as irrelevant after working with *Colored Light Boxes*, which suggest such things as absolutely neutral blacks or whites are perceptual impossibilities. Aristotle's black ("melas") is not quite black, but the dark essence of *blood, freshly plowed earth, the sea and wine*. Similarly, his white ("leukos") is not an abstraction, but a perceptual distillation, the essence of *blond hair, sand, snow, ivory and clear water*.

It is possible to move from two-dimensional color explorations to three-dimensional form making. This idea goes back to a simple numerical coincidence: both color and volumetric forms have three degrees of freedom (Maxwell's three color fundamentals, and Munsell's value/chroma/hue are the x, y, z axes of color space). Students can invent principles whereby a chromatic composition generates a three-dimensional solid. Based on earlier color studies, students make white unfolding constructions. While the earlier introverted boxes belong to Aristotle's "melas" of the dark sea, the latter suggest the "leukos" of clear water. Like drawings, they are logically "drawn out" or derived from earlier more empirical and emotional experiments. Inside these cerebral boxes students discover compelling perceptual events: radiant rooms seen from dark antechambers, alcoves and balconies, walls reflecting pools of light.

### ***The Black Box as Experience***

The design of optical instruments leads to an appreciation for the poetic possibilities of function. With movable or hinged panels, spy-glasses, handles, and rotating platforms *Black Boxes* can themselves become a subject. In this architecture design studio I asked students to transform their original optical boxes into sculptural compositions. The spiky exterior of Kirsten Deegan's box contrasts with its planar, closed chamber. Her prickly box is difficult to hold and touch. Yet, its single view to the interior has a soft, floating quality: light is filtered through transparent blue cloth over tiny star-like apertures. Susan Meisner's box became an abstract representation of a walk. Each layer of corrugated cardboard represents one footstep along the way. Photos and text comment on the sequence of walked-upon surfaces: concrete, earth, brick, stone, and asphalt. A drawing documents the progression of sound intensities (reds), and degree of spatial enclosure (greens). This information in turn determines how individual "footstep" pieces are cut and positioned.

In this design studio, students designed walled chambers to display specific literary texts. Selena Linkous chose an essay by Brenda Ueland on the importance of listening to children. The box, closed at first, then opening, is Selena's metaphor for listening. Her wall is a large, unfolded box. Smaller, also box-like compartments may be opened to reveal finger-painted text. Kafka's short story *The Law* inspired Brian Brook's introverted wall. The text is stenciled on interior surfaces and may be partially glimpsed through various apertures. Parts of the wall pull out and become footstools or chairs. Narrower at one end, Brian's monolithic wedge accelerates perspective. It is simultaneously plane and object: a surface with vertical rhythms and horizontal eye-level cornice, and an enclosed, box-like chamber.

Although at times compelling sculptural forms, *Black Boxes* are primarily important as experiences, not objects. This is why the efficient, modest, and commonly available form of the box seems most appropriate. Hidden inside one chamber of Bettina Scheidt's double box are identical lumps of wax, iron, wood, and plaster. You are asked to feel them then make sand-drawings of each texture. In Marissa McInturf's box hand apertures lead to invisible grids of strings. Taught and dense at one end, strings get progressively looser and sparser towards the other end. Hand movements cause powdery graphite from strings to drip onto sheets of paper creating visual imprints. Nicole Triden's boxes explore differences between the left and right hands. In the first box, your right hand experiences a field of sharply pointed cones, while your left touches curved, soft spherical shapes. The second box reverses left and right fields and provides a mirror experience. Alissa Ujie's sound box contains a collection of mechanical and digital clocks, suspended behind a flexible opaque screen. Through a listening cone you hear a

cacophony of ticking, overlapping sounds. As the cone moves, some clocks come into listening focus while others sink into the background. Ink markers fitted to the cone trace an automatic drawing onto removable paper. To experience Erin Hannegan's foot boxes you must take off your shoes. Through black stockings, your feet touch a wide variety of materials: sands, mosses, pebbles. Some sands or soil mixtures feel cooler than others revealing that our feet, more than our hands, are sensitive to minute temperature changes. Ulla Sepaneen's project is perhaps most tantalizing. Each box contains a different seed: poppy, fennel, sesame, rice, mustard, and pepper. Openings accommodate one finger only. Because the seed is so tiny the finger does not immediately find it, and we are likely to think the box is empty. The shock of experiencing something so small and subtle, yet, once discovered, so pronounced is thrilling.

I will end with a few projects that do not directly involve black boxes yet show their effects. These two collages by a first year design student imply a sense of touch, the memory of surfaces felt, rather than seen. After working with *Black Boxes* students no longer ignore common, everyday materials. Plastic drinking straws become a sculpture; pitted concrete inspires ways of cutting recycled cardboard. Hana Kim understands vision as an accumulation of overlapping sensations. Her palimpsests of transparent, acrylic paint layers, some painted, others drawn, scratched or dripped, are a metaphor for the way we see. Like faint smells, Hana's subtle whites (bluish, golden, and lavender white) are at the edge of our ability to perceive, recalling Aristotle's "clear water, blond hair and snow." Kate Snider develops her palette by dyeing her canvases with tea, wine and molds. She stitches cloth with thin threads, also died in tea or wine. After pouring wine onto an assortment of household objects, Kate placed her painting in a cellar, letting molds make an imprint. Everyone wants to touch Kate's field of straight pins arranged in meticulous progression. Moving your hand downwards along hundreds of pins produces a cool, gently rippling sensation.

The *Black Box Projects* can lead to sensitive artwork. Yet their most important, long-lasting effects go beyond the art and architecture studio. They encourage students to reflect on ways in which simple art activities (such as making a drawing or building a cardboard model) can broaden our understanding of ourselves and the ways we live. *Black Boxes* reveal perception as a layered, complex experience interconnected with our conceptual, and even ethical ways of imagining the world. They caution against perceptual isolation and lack of sensory awareness in everyday life. Students take more joy in discovering subtle threads linking sight to touch, smell, hearing or taste. They begin to write and make in more disciplined and nuanced ways. When reintroduced to the world in this way, students may become more patient and empathetic with even the most common, neglected aspects of our physical environment.