

The Captured Gesture: Studio Performance at the Intersection of Thinking and Drawing

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ABSTRACT: Gestures are inevitable and invaluable acts of expression that occur throughout the architectural design process. Students struggle at times to put complex ideas in drawings and words. Without fail, gestures telegraph this struggle; they are fleeting yet momentous links between thinking and drawing and between one's personal design sensibility and the complex social and physical realm of architecture. This paper seeks to develop insights about the role and value of gestures in architecture by investigating their frequency, form and influence in the design studio. A proposed framework draws insights from sources such as psychology and art theory to speculate about the role of gesture in architectural design thinking. It assimilates different disciplinary perspectives in order to consider ways gestures as simultaneously personal and inter-subjective acts promote designers' heightened intentionality and awareness. The framework is then applied to a design exercise that encourages the theatricality of gestures as living diagrams that bring haptic shape, motion and meaning to design dialogue.

KEYWORDS (5 word max): Gesture, Communication, Design Process, Sensibility Representation (?)

"When thought overwhelms the mind, the mind puts thoughts into the world." Barbara Tversky - Tools of Thought" Lecture, University of Oregon,

"Creative work calls for a double perspective... simultaneously on the world and on oneself, the external space and one's inner mental space." Juhani Pallasmaa - The Thinking Hand

1.0 INTRODUCTION

A significant body of research points to the importance of gestures in communication and creative processes. Yet despite these scholarly contributions and pervasive use of gesture in the design studio setting, the topic has received little attention in architectural scholarship and education. This paper endeavors to enrich understandings of the multiple roles of gesture in the design studio environment.

This paper (1) affirms the ubiquitous use of gestures in the architectural design studio setting; (2) introduces and scrutinizes literature and research on gesture developed in disciplines other than architecture; (3) and develops, through comparative analysis and an ethnographic perspective, a preliminary theoretical framework for analyzing how architectural designers use gestures (intended to complement the larger body of research that exists on the topic and give some form and structure to the ways architects deploy gesture: how, how often, and to what purpose). Lastly it (4) describes intentions and outcomes of an assignment in a design course – the first of many intended to test this framework - that explores the ramifications for a learning community in a design setting when gestures are made explicit and where theatricality is encouraged.

1.1 DESIGNERS USE GESTURES

Frequently a mismatch exists between a designer's drawings and words: sometimes drawings carry the thinking and the verbal expressions are halting; sometimes a verbal presentation is more sophisticated than graphics (at other times, both narrative and drawings are unintelligible, but that is a topic for another paper). As has become increasingly evident to the authors from sustained observation of student 'performance' during studio reviews, the designer without fail fills the gap with gestures (they make diagrams with their limbs), spontaneous acts more often than not sophisticated and nuanced and that go some distance

in reconciling intention and execution/expression. Hands act as invisible chalkboards, helping the designer imagine and bring shape and meaning to an emerging idea. One thinks for example of Frank Lloyd Wright describing the inspiration for the design of the Unitarian Church in Madison Wisconsin by placing “his hands in prayer, illustrating ‘the expression of reverence and aspiration’” (Sekler 1965, 94).

By pointing out the clarity and potential significance of these acts, the educator/critic can help the designer direct subsequent inquiry with greater purpose and vigor. There is an opportunity to enrich the architectural curriculum and create a more mindful, critical and collaborative learning environment. As important as making the actor/author/designer aware of use of gestures, the effort to make public this dimension of design communication offers encouragement to the larger learning community to pay attention to the body language of others in order to help them clarify ideas and intentions (part of the larger obligation and opportunity to point out what may be obvious and overlooked and yet potentially meaningful and catalytic).

It warrants pointing out that there are those who are less articulate and animated gesturers. Just as there are designers who struggle with drawing or speaking, some seem less communicative with gestures and are more reserved. As one can improve facility with sketching or oration through formalized practice, the persuasive and effective use of gestures in the field indicates potential for instruction to improve the communicative capabilities of those with less skill.



Figure 1.1: Designers use gestures: instances of use gestures in the architectural design studio

2.0 EXISTING RESEARCH

Barbara Tversky, Professor of Psychology at Stanford University, has produced some of the most influential and original research on gesture. She describes gestures as “depictive expressions of thought” that predate written and oral language (Tversky 2011, 499). In discussing ways they both express and *transform* thought, she organizes hand gestures in five types (Tversky et al. 2009, 121; Tversky 2013):

Emblem (thumbs up):	“...conventional meanings like words...waving, goodbye, O.K.”
Beat (first, second):	“...advance the discourse”
Deictic (a referent):	“...point to or indicate things in the environment.”
Iconic (resemblance):	“...resemble what they are meant to convey.”
Metaphoric:	“...metaphoric relations to the things they convey.”

It is not immediately obvious how one applies these five gestural typologies to ‘live’ design settings where intricate cultural and social factors and associations add complexity and possibility. Much of Tversky’s work on spatial mediums addresses tasks most frequently expressed in straightforward categories such as navigation (to direct) and construction (to build), but does not embed them within a social milieu – nor are the recordings (representations) of the captured gestures analyzed beyond their self-informing value (performers are separated from observer). Architectural design projects acquire meaning through a complex interaction of the actants and involve matters beyond mechanics of space and action. How subjects **interpret** other subjects in the theater of the studio is of particular concern.

Another dimension of Tversky's research, one highly relevant to architectural designers, pertains to ways meanings expressed verbally may be counteracted or reinforced by other means such as prosody, facial expressions, and gestures of the hands and other parts of the body. This perspective provides contrast to presumptions that meanings are neatly packaged by and best expressed through words. Designers continually move between mediums of communication, each providing a different form of support. Drawn diagrams and gestures are interrelated communicative phenomenon in that "diagrams can be regarded as the visible traces of gestures just as gesturing can be regarded as drawing pictures in the air" (Tversky 2011, 527). They are of complementary purpose and together allow for fuller comprehension and retention. Gestures provides a "second way of encoding information" that supports memory (Tversky et al. 2009, 121). This reinforces and parallels familiar discourse on media within design: modeling, sketching, and drafting are mutually supportive inscriptions and encodings of the world around a designer that facilitate ability to retain, analyze, discuss, prioritize, discriminate and act.

Tversky et. al. coin a hybrid term, "spractions," that refers to ways people manipulate expressions as a three-way interaction between space, action and abstraction. Spractions are "actions in space...that create abstraction in the mind and patterns in the world, intertwined so that one primes the others...(unlike language) they do so silently and directly" (Tversky 2011, 528). Gestures as spractions may be thought of as acts of network creation, interchanges that facilitate feedback between thoughts and actions and forms perceived in the outside world. Gestures help us circulate within this triangular relationship (space, action, abstraction) and in this way are deeply consequential in design.

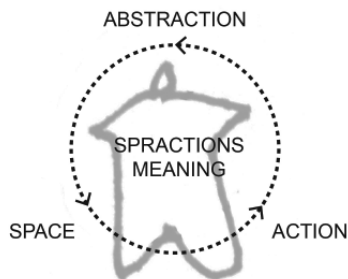


Figure 2.1: Diagramming Tversky's "Spractions"

Focusing on "pointing" figures in pre-Renaissance paintings, philosopher and art historian Claude Gandelman provides an historical perspective on gestural demonstration. He introduces two broad functional categories, illocutionary (direct influence) and perlocutionary (indirect influence), akin to Tversky's deitic and metaphoric types respectively. Each contains subcategories summarized here (Gandelman 1991, 21-27):

Illocutionary (direct)

- Distancing: Relating the immersion into a painting "a presentation, not a representation"
- Indexing: Relating the indexed object (emphasis)

Perlocutionary (indirect)

- Gaze Directing: Toward a narrative trajectory, a "scan-path" (reading directionally)
- Ideological Directing: Toward a message (an agenda)
- Empathizing: Toward a sympathetic (relational) response

One can situate Gandelman's taxonomy within a rich philosophical discourse – linked to and building from Alois Riegl, Descartes, Merleau-Ponty, and Berkeley – that endeavors to deepen understandings of visual interpretation of the world. Riegl's semiotic categories point to a fundamental division between "optics" and "haptics." Gandelman writes: "The optical eye merely brushes the *surfaces of things*. The haptic, or tactile, eye penetrates in depth, finding its

pleasures in the texture and grain.” (Gandelman 1991, 5) It is these two perceptions of the world that structure the categories of demonstration (illocutionary and perlocutionary) mentioned above. With regard to the haptic and because emotional experiences are involved, observing an image is to engage a deeply meaningful conversation with the painter pertaining to a message or agenda. This pointing (direct and indirect) *in the direction of* and as what is significant is relevant in understanding the generation of architectural meaning.

Architectural theorist Juhanni Pallasmaa offers echoes of Gandelman’s haptic sensuality and notes its absence in contemporary architectural discourse. Pallasmaa describes the gap in representational thinking presented by the “flatness of surfaces and materials, uniformity of illumination, as well as the elimination of microclimatic differences” that remove the designer and create “sensory impoverishment” (Pallasmaa 2000, 321). Pallasmaa addresses the deficiency by attending to and reasserting the value of expressions (the ‘experience’) of the hand. He writes, “the intelligence, thinking and skills of the hand also need to be rediscovered” (Pallasmaa 2009, 21).

For Pallasmaa, the agenda or role of architecture is to mediate between the world and ourselves, the “horizon of understanding the human condition” (Pallasmaa 2009, 148). In a recent text, “The Thinking Hand,” Pallasmaa describes architectural thinking embodied in the hands that manufacture objects (or facsimiles of objects). The designer’s ‘workmanship’ centers on the hands; it is as though embedded in the hand is the entirety of the craft of architecture. The hand of a seasoned designer is not merely generating representations but constituting “a fully haptic and multi-sensory reality of imagination” (Pallasmaa 2009, 59). Pallasmaa endeavors to translate the haptic wisdom of the experienced and well-seasoned designer to the learning environment and to the unseasoned designer.

Pallasmaa introduces an important yet underappreciated dimension of architectural education. While he places emphasis on the craft of drawing in considering the central role of the hand, one could build on this and emphasize the hand as a locus of gestural competency and indicator of capability in other realms important to the designer (words and drawings). To what extent and in what ways are gesturing hands the source and symbol of haptic wisdom?

3.0 A THEORETICAL FRAMEWORK FOR CONSIDERING USE OF GESTURES IN ARCHITECTURAL DESIGN

Tversky theoretical work and Gandelman’s research points to a gap in knowledge created by two very different systems of inquiry (analytic/qualitative). Our proposed framework, the basic outlines of which are suggested in Table 3.1, combines benefits of the two orientations.

Table 3.1: Comparing Gestural Frameworks

	TVERSKY	+	GANDELMAN	+	AUTHORS
FRAMEWORK	<u>Taxonomy</u> <ul style="list-style-type: none"> · Emblem · Beat (first, second) · Deictic · Iconic · Metaphoric <u>Synthesis</u> <ul style="list-style-type: none"> · Spraction 		<u>Illocutionary</u> <ul style="list-style-type: none"> · Distancing · Indexing <u>Perlocutionary</u> <ul style="list-style-type: none"> · Gaze Directing · Ideological Directing · Empathizing 		<u>Unification</u> <ul style="list-style-type: none"> · Process/Activity · Space/Physical · Significance/Meaning
BENEFITS Advantage for designers	<ul style="list-style-type: none"> · Clear Taxonomy of the fundamental components · Understanding relationships between physical objects and spatial locality · Beginnings of temporal and conceptual integration, i.e. “spractions” 		<ul style="list-style-type: none"> · Interpretation of qualitative meaning and significance · Responds to designers need to incorporate visually haptic responses (as promoted by Pallasmaa et. al.) 		<ul style="list-style-type: none"> · Simple and directly relatable categories · Apply directly to a studio/design environment · Performers (faculty, students, etc.) are part of shaping useful gestures · Accounts for performer's diverse ideological and cultural backgrounds
GAPS Limitations of Framework	<ul style="list-style-type: none"> · Laboratory data applied to complex social environment? · Too generalized to extract/apply meaningful design application 		<ul style="list-style-type: none"> · Correspondence of art theory to studio? · Too narrow: singular cultural reference (15th C. European painters) 		<ul style="list-style-type: none"> · Highly preliminary; requires testing, exploration and application · Dynamic process is difficult to record/analyze all the parts – not in laboratory

Tversky finds that the laboratory can “accelerate” the “natural testing cycle” in order to find “specific ends,” yet the categorical framework developed within the observational space of the lab does not translate seamlessly to more complex domains (Tversky 2011, 501, 527). The issue pertinent to design education is how to understand gestural acts directed toward multiple ends, as well as the value of those not entirely end directed. Observations in the studio setting over a prolonged period of time suggest more fluid categorizations, perhaps hybrids of Tversky’s deictic, iconic and metaphoric types. Multiple gestural types can be discerned within instances of expression; one can even recognize seamless sequences of type (transition from type to type) within one quick natural progression/movement (if what we are talking about are hybrids, they nevertheless exhibit sufficient structure to make communication, invitation, confirmation and the opening up of the space of dialog possible). Our idea is to build a framework organically, honoring the complex naturalness of gestures as they arise in a studio context (see Figure 3.1).

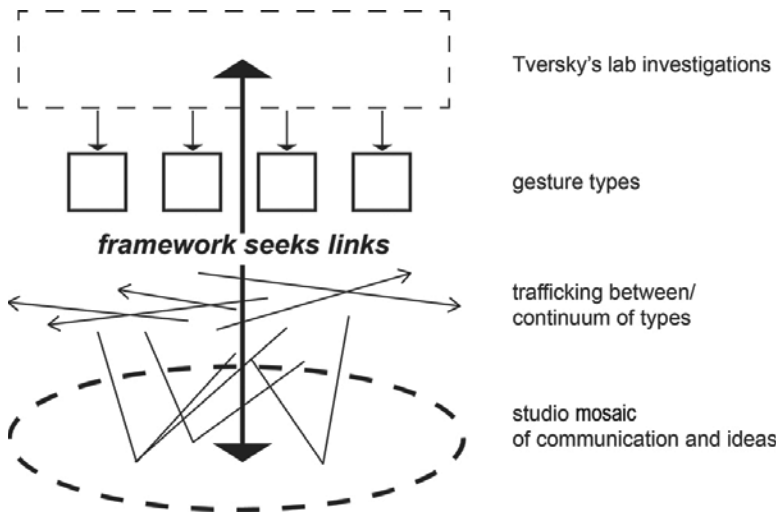


Figure 3.1: Diagrammatic Framework

We began a process of conceiving an integrative framework by capturing numerous gestural images in the studio environment. We then pinned them up on a wall and labored to find a pattern that explained their occurrence. We found a basic structuring and continuum of images based on broad categories of 'space/physical' and 'process/activity' as poles and with 'significance/meaning' operating as an intermediary (see Figure 3.2; note these categories translate the tripartite relationship embedded within Tversky's notion of spractions). A second continuum runs perpendicular and is based on scale with specific gestures (relatively contained – of the hand or close to the heart) on one pole and those more expansive (requiring full bodied expression and involving dialog between body and environment) at the other. The matrix of gestures described in Figure 3.3, built upon recordings and subsequent analysis, illustrates our basic framework (critically, the captions furnish the basic contexts in which gestural acts occurred).

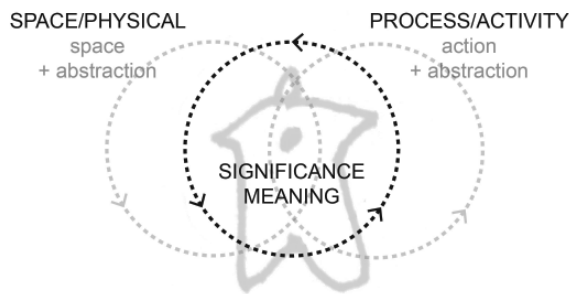


Figure 3.2: Meaning Gestures at the Intersection of Space/Physical and Process/Activity



Figure 3.3: Diagrammatic Matrix: Continuums of Use of Design Gestures in the Architecture Studio Environment

What follows is a descriptive elaboration of the ‘gestural tendencies’ deployed along the horizontal continuum of the matrix (‘space/physical,’ ‘process/activity,’ and ‘significance/meaning’).

Space/Physical: The top set of images in Figure 3.3 describes how people employ their bodies as measuring devices and use gestures for scaling and proportioning. ‘Specific’ or ‘near’ body gestures (left side of continuum) involve use of fingers, hands, or arms in delineating planes, spheres, boxes, and the like. These embodied measures operate at a relatively high level of precision; the thumb and forefinger index a shape. Of a more open nature are those gestures relating posture of limbs and the presenter’s eye that invite the viewer to imagine the presenter’s visual projection. Whether the gaze is directed toward virtual objects above, below or directly ahead, it presents to others a measure of an imagined object in space, enabling them to fill out an implied shape. Most expansive are those gestures taking up the entire body – as gestural form, as being – in relation to objects and conditions at a distance. Forms are outspread wings arcing to a far horizon.

Process/Activity: The bottom set of images depict gestures of dynamic motion, ones that attempt to relate phenomenon such as emerging, upwelling, stepping, dissipating, other. Common in an architectural design setting are construction-related gestures that involve building and placement of structures. Also of frequent occurrence are animate process gestures pertaining to the social logic of a design undertaking (how to gather together a community to engage in complex design process, for instance) or to ecological/physical processes that deserve acknowledgment and that might have formative influence. Examples of process/activity gestures include water filtering, earth mounding, people and ideas meeting, walls barricading, settlements relocating, sun shining, etc. In all cases the designer *becomes* a dynamic medium communicating dynamic phenomenon.

Significance/Meaning: Images in the middle set operate at the intersection between space/physical and process/activity tendencies. Such gestures are ‘live’ diagrams that often reckon with and possibly assimilate both these dimensions while striving to go beyond in search of architectural meaning. These kinds of gestures are often less precise than others and attempt to grasp, uncover or discover one’s stance and motivation in approaching a design problem. They involve risk, exposure, disclosure, authorship and a level of theatricality in order to create a space for others (i.e. to arrive at inter-subjective agreement or approval or to invite controversy and debate). Significance/meaning gestures demonstrate the very

continuums of manipulation of instruments (including parts of the body as instruments) and images and the usefulness of a given sequence. 'Virtual reality' in this context would seem to include gestural acts that place students at once in the studio and out into the landscape.

This recording and explicit consideration of gestures allowed for higher levels of both self-reflection and inter-subjective awareness. Students who chose the same ecological conditions ended up with decidedly different sequences of stills. Haptic personalities seemed more pronounced as students "looked" at their colleagues work with their hands – mimicking sensations and shapes. This led to valuable discussion about differing sensibilities, insights and perceptions of the physical world. Most importantly this exercise produced products (images) that inspired students' subsequent design investigations. Future studio centered assignments will build from this goal of finding variation and engaging discussion about creative impulse within a bracketed structure.

5.0 GESTURING TOWARD LARGER CHALLENGE IN ARCHITECTURAL EDUCATION

A significant opportunity exists to better understand the role of gestures within architectural education in supplementing and trafficking between (other) mediums of design communication. While investigations of the design process often emphasize a sequence - first designers create, then they communicate - gestures are notable occasions when creativity and communication unfold simultaneously. To capture the act, to freeze emergence, is to shed some light on the contribution of the nonverbal and non-graphic. Gestures rupture a quiet emotive surface in order to relate, convince and seek consensus. Gesturing students become diagrams and dialogic subjects. They are the roof opening, the occupant gazing, and builder channeling the afternoon sun in order to make a case about a space's importance. In response to context, they are the sedges filtering, the land cupping, and an onlooker enjoying nature's unfolding.

Such thoughts on gesture point to a larger tension pertaining to emphasis in architectural education. Is architectural education primarily about gaining skills in dealing with preset (timeless) issues in the world 'out there,' or is it about gaining insight into one's bearing in the world, what Mark Johnson would describe as one's embodied mind? Should the focus be a rules-governed approach or ascertaining one's design sensibility, so one can contribute more effectively? Obviously architectural education is about both, and yet gesture makes us think more directly about the value of attending to the latter. Gaining insight into one's inclinations will help improve 'performance' in the social realm of architectural design. Further research will clarify the developmental stages from gestures to structures and the meanings that take shape within individualized design processes – particularly with regard to application in more speculative design inquiries, i.e. ecology, sustainability, etc.

The public act of architecture requires prolonged, sustained and tenacious effort. The particular nature of one's stake at a given moment in the project is clarified by paying attention to gestures that are diagrams of one's motivation as the possibility of architecture. Not unlike metaphors, embodied in their own way, gestures come so freely that they strike us as hardly warranting scrutiny. And yet because they seem to guide tenacious effort in ways we only begin to understand, they deserve further study. The intense, impassioned commitment of architecture students toward their work and the world is something to admire; critical, transitional moments in this process also warrant our careful attention.

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