Urban Fabrications

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Contemporary experience is marked by nonlinear, nonsequential, multivalent interferences, operating within and shaping dispersed incongruent networks. Information courses through and around us, at once connecting us and separating us from the local topographies we inhabit. We find ourselves occupying an alternative terrain, one where simultaneity subverts and collapses spatial dimensions. The concept of time, which gave such definition to 20th century experience, has been vanquished by go-go digitalisms and on-demand services.

Fringe and center alike, the urban condition has been transformed through this change. It has become "a space of spontaneous self-organization and emergence, it is inherently dynamic, connected, interactive, a messy assemblage of networks, systems, ecologies, all competing with and contaminating, each other."[1] It is marked by fluid discontinuity and dissonance, producing new seams and tears for occupation. It creates spaces of movement, shaped primarily—and in some instances, solely—by their propensity for change. We occupy these in-between spaces: evolving ambiguities marked by episodes of clarity, connection, or coincidence.

This changed urbanity has provoked wildly divergent responses. Operating within a cloak of traditional veils and historical iconography, those at one extreme seek to accommodate social and technological change while concealing and/or displacing the underlying structural changes at work. They aspire to reify the "corporeality" of the city, restoring and/or fabricating a seamlessness, homogeneity, and consistency, deployed with familiar shapes applied to unfamiliar programs.[2]

As Gudrun Hausegger has suggested, "attempts to preserve these values through commercial developments and the ersatz urbanities of the entertainment industry, or the endeavors of the new urbanism, constitute one end of the spectrum. The other end announces the dissolution of this kind of city, and, in the face of digital networks and global markets, even conceives of the city as completely disengaged from any spatial ties." Hausegger continues, "It is this unresolved tension between the fictive nature of the former, and the projective quality of the latter, that gives rise to the creative friction that will define a distinct urbanity of the future."[3]

While this "friction" between dueling urbanisms is persistent in practice and in academia, it is important to note that both sides recognize that the urban condition is changing, motivated in part by non-visual structural changes. "As cities and urban regions are increasingly traversed by nonlocal, including notably global, circuits, much of what we experience as the local because it is locally sited is actually a transformed condition in that it is imbricated with nonlocal dynamics or is a localization of global processes."[4] Whether celebrated or denounced, the urban condition is marked by "flows of capital, flows of information, flows of technology, flows of organizational interaction, flows of images, sounds, and symbols."[5]

Manuel Castells takes it one step further, announcing that this "informational city is not a form but a process, a process characterized by the structural domination of the space of flows."[6] The physical topography of the city is displaced by its constituent processes, flows, and non-physical motivators,

allowing precisely these things to become the embodiment of urbanity.

If we are interested in understanding this emergent and evolving cultural construction of "the city," it is necessary to define and map the structures operating within and through it. But the conventional tools for urban analysis are centered more on mapping the physically present forms, and are not particularly well-suited to mapping non-physical phenomena. Classical plan-based mappings, in particular, are inadequate.

MAPPING ABSENT MOTIVATORS

Rather than focusing on the still residual objects within an urban environment, we can pursue the fluid, moving, and changing aspects at work. One strategy is to consider the moving body, within a moving context. This suggests ways of understanding this complex and shifting urban terrain by bridging between the local topography of the city and the topological space of flows. Itinerary becomes a critical operative term.

In the opening of his treatise *Image of the City*, Kevin Lynch reminded us that "moving elements in a city, and in particular the people and their activities, are as important as the stationary physical parts. We are not simply observers of this spectacle," he wrote, "but are ourselves a part of it, on the stage with the other participants. Most often, our perception of the city is not sustained, but rather partial, fragmentary, mixed with other concerns."[7] For Michel de Certeau, the people of the city "follow the thicks and thins of an urban 'text' they write without being able to read it." He notes that "the networks of these moving, intersecting writings compose a manifold story that has neither author nor spectator, shaped out of fragments of trajectories and alternations of spaces: in relationship to representations, it remains daily and indefinitely other."[8] For him, the city experienced in this way becomes "the imaginary staging ground for the working of culture, the process of meandering that is, within social, political, and local constraints, a deeply personal process … The mobility and flexibility of a ground-level perspective is key to a life that's (actively) written and not merely read: meaning is not disseminated; it is accumulated."[9]

The body in motion was an early subject of chronophotography, especially in the work of English photographer Eadweard Muybridge. Muybridge's seminal images of "The Horse in Motion" (1878) brought together sequential serial imagery to record and analyze movement. This work was widely distributed, and influenced the subsequent work of Étienne-Jules Marey, Georges Demenÿ, Ottomar Anschütz, Thomas Eakins, and Harold Eugene Edgerton, amongst others. These experiments in chronophotography led to the development of the motion picture camera and projector in the 1880's.

There were parallel studies underway in painting, where there was an emergent interest in capturing, fabricating, recording, and transmitting phenomena, experience, and emotion.

> At the beginning of the twentieth century the perception and experience of the world was in a period of rapid change. As scientists such as Albert Einstein quietly overturned the traditional view of the universe, technological developments like radio communication, powered flight and the petrol engine had an immediate, public impact, making distances seem smaller and time more concentrated. Wild speculation was rife and there were attempts to investigate the possibility of communication with Mars and even to discover the weight of the human soul. Philosophers, too, were forging new visions of the world: the Frenchman Henri Bergson suggested that intuition, rather than reason, was the proper means for attaining understanding. Central to his thought is the concept of duration, the indivisible, mental experience of time, which he opposed to the artificial, segmented definition of it used by science. According to him, the whole stream of time is simultaneously active in the human mind; psychologically, the past impinges on the present through memory, while the future enters the present through anticipation.[10]

Within this context, the work of Pablo Picasso, Georges Braque, and Juan Gris aimed to capture the charged dimensions of time and movement. Their studies involved moving around subjects, recording multiple perceived views and scales as experienced by the artist. They also addressed the movement of the subject through multiple traces superimposed on one another within the fixed frame of the canvas.

Marcel Duchamp's "Nude Descending a Staircase No. 1" (1911-12) and his definitive Nude Descending a Staircase No. 2" (1912) bring together a number of these themes. The latter of these, in particular, is noted for "its remarkable aggregation of avant-garde concerns: the birth of cinema; the Cubists' fracturing of form; the Futurists' depiction

of movement; the chromophotography of Étienne-Jules Marey, Eadweard Muybridge, and Thomas Eakins; and the redefinitions of time and space by scientists and philosophers."[11] Duchamp describes the work as follows: "Painted, as it is, in severe wood colours, the anatomical nude does not exist, or at least cannot be seen, since I discarded completely the naturalistic appearance of a nude, keeping only the abstract lines of some twenty different static positions in the successive action of descending."[12]   Muybridge's *Animal Locomotion*, published in 1887, "included a sequence of twenty-four images of a naked woman descending a flight of stairs [and] possibly served as a source for Duchamp's landmark painting."[13]

Within these works, the movements of an animate figure are recorded within the relatively fixed frames of the stairway and canvas. In a broader sense, the work of the cubists fragments singular objects through multiple images to construct new representations of experience and movement. But they continue to rely on an external reference, serving to represent physical objects, people, and places.

What we are interested in, however, is that which is not physical. Umberto Boccioni wrote that "what needs to be painted is not the visible but what has hitherto been held to be invisible."[14] Later he would elaborate on this by suggesting that "instead of the voice, we will paint the echo. Colored gases of the future. Intensity and velocity of life. Future vision, geometrical, chemical. Relation between our time and gothic architecture. Preponderance of voids over solids."[15]

Boccioni also points to the importance of experience in shaping the work:

> The simultaneousness of states of mind in the work of art; that is the intoxicating aim of our art.

> Let us explain again by examples. In painting a person on a balcony, seen from inside the room, we do not limit the scene to what the square frame of the window renders visible; but we try to render the sum total of visual sensations which the person on the balcony has experienced; the sunbathed throng in the street, the double row of houses which stretch to right and left, the beflowered balconies, etc. This implies the simultaneousness of the ambient, and, therefore, the dislocation and dismemberment of objects, the scattering and fusion of details, freed from accepted logic, and independent from one another.

> In order to make the spectator live in the centre of the picture, as we express it in our manifesto, the picture must be the synthesis of WHAT ONE REMEMBERS and of WHAT ONE SEES.

> You must render the invisible which stirs and lives beyond intervening obstacles, what we have on the right, on the left, and behind us, and not merely the small square of life artificially compressed, as it were, by the wings of a stage." [16]

The means that Boccioni and his fellow futurists deploy are force lines (*linee-forze*), which describe relationships between objects and fields. He notes that "we do not wish to observe, dissect, and transfer onto images: We identify ourselves with the thing itself—which is something profoundly different. For us therefore the object has no a priori form, and only the line is definable, marking the relationship between its weight (quantity) and its expansion (quality)."[17]

Boccioni is not looking to describe an object or experience more fully, as we see with Duchamp, but rather to describe absent motivators and the relations between things. While physical objects are still deployed in the image, they are beginning to splinter, taken apart and/or replaced by force lines. The images move further from depictions of things and closer to images of phenomena, idea, or emotion. We see this in Boccioni's "The Street Enters the House" (1911), "The Force of a Street" (1911), "Matter" (1912), and "Lancers Charge" (1914-15).

Even in Boccioni's mature works, there is a certain reliance on the fragments of physical objects to both discern and represent the underlying forces and their respective force lines. The continuous and moving images that form the fabric of cinema, however, are able to move beyond the limits of the singular fixed image.

VARIANT CINEMATIC URBANISMS

"The cinema in its current efforts," Baudrillard writes, "is getting closer and closer, and with greater and greater perfection, to the absolute real, in its banality, its veracity, in its naked obviousness, in its boredom, and at the same time in its presumption, in its pretension to being the real, the immediate, the unsignified."[18]

Cinema can serve as a tool for mapping and understanding contemporary experience. That said, cities are fundamentally different from cinema.

Cinema has a clear lineage and authorship. It is assembled with careful purpose and intent. The sequence of cuts, pans, and fades is orchestrated and manipulated to convey an often singular or preferred set of images, ideas, and experiences. It is a fixed and certain construct. Even in emergent interactive experiences and gaming, the parameters of engagement are explicitly defined, though often not apparent to the player.

The physical artifact of the city, by contrast, is defined by spatial constructs made by many hands, shaped over time, and experienced with the full body in motion. It consists of additive marks, and erasures, revealing the scars of time or neglect or changing socio-economic structures. It has a plural authorship and plural experience. The city is in a constant state of change.

It is, in fact, the differences between the phenomena of the city and cinema that draw them nearer to one another. The artifact of the city, having evolved over many years, is complicated, layered,
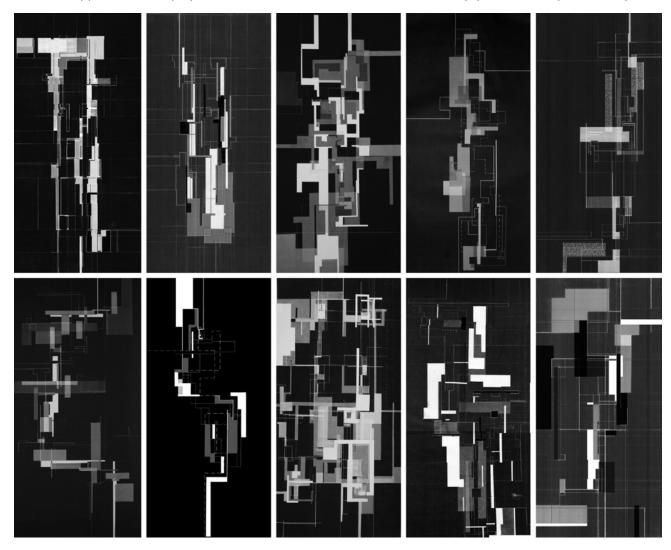

Figure 1. Cinematic Mappings of *Run Lola Run*. Mixed-media fabrications, consisting of digital lines, hand-drawing lines, collaged regions, text, paint, and graphite. Each measures 18" x 42". Images clockwise from top left: Carmine D'Alessandro, Brad Brogdon, Zachary Fine, Amber Atkinson, Hana Bittner, Ian Svilokos, Daniel Harper, Anas Chehab, Yadira Jerez, Michael Woodcock.

ambiguous, and often confused. In response to Baudrillard's lament that "we live in a world where there is more and more information, and less and less meaning"[19], we can look to the structure of the cinematic production as a way of distilling ideas from or instilling meaning within complex urban conditions. Thus, while the "city" and "cinema" remain distinct, the attributes of the "urban" and the "cinematic" begin to merge, allowing the one to clarify and/or obfuscate the other.

The 1998 film *Run Lola Run* (original German "Lola rennt,"), by German screenwriter and director Tom Tykwer, engages many of these themes. The construction of the film uses complex and unconventional means of storytelling, weaving together live action, stills, and animation. The narrative is marked by its fast pace and numerous intersections between characters, plot lines, and possibility.

The film engages the viewer with its peculiar mix of straight-forward narrative, action, psychological wanderings, and fantasy. The construct of the film itself allows these various forms to co-exist, overlapping and merging with one another.

Time is challenged by the narrative structure of the film. The film is organized in part as a series of cyclic repetitive loops, each approximately 20-minutes in length. But the loops are not discrete; there is learning and cross-contamination between them. This is a variant on 1993's Groundhog Day by Harold Ramis, and related to 1994's Pulp Fiction, where Quentin Tarantino constructed non-linear narrative sequences that shuffled and re-ordered time. In writing of the urban condition in 1996, Manuel Castells notes that

> linear, irreversible, measurable, predictable time is being shattered… But we are not just witnessing a relativization of time according to social contexts or alternatively the return to time reversibility as if reality could become entirely captured in cyclical myths. The transformation is more profound: it is the mixing of tenses to create a forever universe, not self-expanding but self-maintaining, not cyclical but random, not recursive but incursive; timeless time, using technology to escape the contexts of its existence, and to appropriate selectively any value each context could offer to the ever-present.[20]

Based on individual readings of *Run Lola Run* and differential interpretations, a series of fabrications were constructed, each aiming to embody the film's

structure as a spatial sequence. Two-dimensional hybrid constructs were crafted, seeking to employ point, line, and plane to construct a series of relationships, distilled from the film, without resorting to representational pastiche (Figure 1).

This process of making is important in translating the ideas across media. The emergent logic, structure, and/or syntax of these constructions, once annunciated and clarified, can be used to inform a study of specific spatial moments.

From these, physical frameworks are constructed, isolating the issues of the framework from other formal/spatial considerations. These models establish an initial order, rhythm, and spatial sequence. They also imply scalar relationship and hierarchy. Following the framework studies, a series of planar studies are made, in this case deploying only planes, independently of frameworks, solid masses, or other material formal operators. Finally, these separate studies are consolidated into models that incorporate both the linear frameworks and the planar systems, now individually legible but also working together to create interdependent spaces (Figure 2).

Subsequent models at larger scales further develop specific spatial moments, and emerge as Door / Window / Stair (DWS) assemblages. Each addresses materiality, as well as spatial / scalar detail and itinerary / program / occupancy. Emerging from the film's structure, the programming and spatial sequences of the DWS offer a way to translate from the media of the cinema into spatial architectures. The linkages between the film analysis and DWS constructions are critical.

Building on these analyses of cinema, the structures of film and video can be considered as tools to more directly engage the city, the emergent urban condition, and, most importantly, ideas of the city.

To remain focused on processes of ideation and translation, we begin by looking at cities that are remote and preclude site visits. We are interested in "ideas" of the city, especially those inflected with mystery, fantasy, individual readings, misreadings, and socio-political and/or historical traces. Because the emphasis is on distilling and understanding ideas imbedded within the city, all of these carry equal merit. Parallel studios considered Ber-
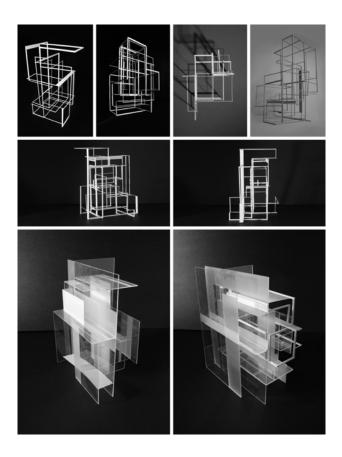
Figure 2: Frameworks and Planar Assemblages. Images top row left to right: Yadira Jerez, Anas Chehab, Ian Svilokos, Zachary Fine. Middle row and bottom row: Brad Brogdon.

lin, Beijing, Stockholm, and Venice. This particular study considered Hyderabad, India.

Hyderabad is the capital and most populous city of the Indian state of Andhra Pradesh. It is one of the fastest developing cities in the country and a modern international hub of business process outsourcing, particularly in the field of Information Technology. Home to one of the world's largest film studios and the national film industry, Hyderabad has a rich history, culture, and architecture representing its unique character as a meeting point for North and South India.

We begin by viewing a series of YouTube videos to understand the place, the time, and the terrain. These were specifically selected because they engaged a diverse global community of, much like the place itself.[21]

Using two of these videos, we constructed drawings that map the movements and spatial experiences

embedded within them. "India Driving" was shot from a camera that remained more or less stationary, recording the movements of pedestrians, motorbikes, scooters, automobiles, and buses below. "Pedestrian Crossing a Road" recorded many of these same conditions, but from the perspective of a hand-held camera being carried by someone moving through the moving streams of traffic.

In both studies, we generated registers capable of recording multiple fields of movement. In the "Pedestrian Crossing a Road" video, we sought to record not only these disparate fields of movement but also to address the problem of a moving viewer and many changing vanishing points. This was a particularly provocative and challenging aspect of the work.

In these studies, the constancy of movement creates the field, within which we define seams and tears, record interruptions, and identify moments of continuity. We identify relations within the moving fields, and relationships between different views or fields of activity. The itinerary and role of the spectator / viewer / occupant was explored within the constructed narrative that they created.

We specifically allowed for urban mythologies to creep into the analytic mappings, occupying and affecting/infecting these interpretations of the place in both its generic and specific senses. The intent is to create the fluid "idea" of the city. Constructs embed and record conditions of change within the urban field.

The projects emerge as translations, or *simulacra* in some senses of the word. As we fabricate the ideas themselves, we are able to move between the urban and cinematic, constructing relationships and making physical the experience of the one in/of the other.

Moving beyond Hyderabad and the objectives of this project, we are deploying these ideas to construct analytic readings of the natural landscape through cinematic memory maps.

As a mode of studying and documenting a series of conditions within the natural landscape of north central Florida, the studies are episodic, linked, connected, and sequential. They are structured in part by a narrative, one in which linear and nodal experiences of field conditions are rendered as
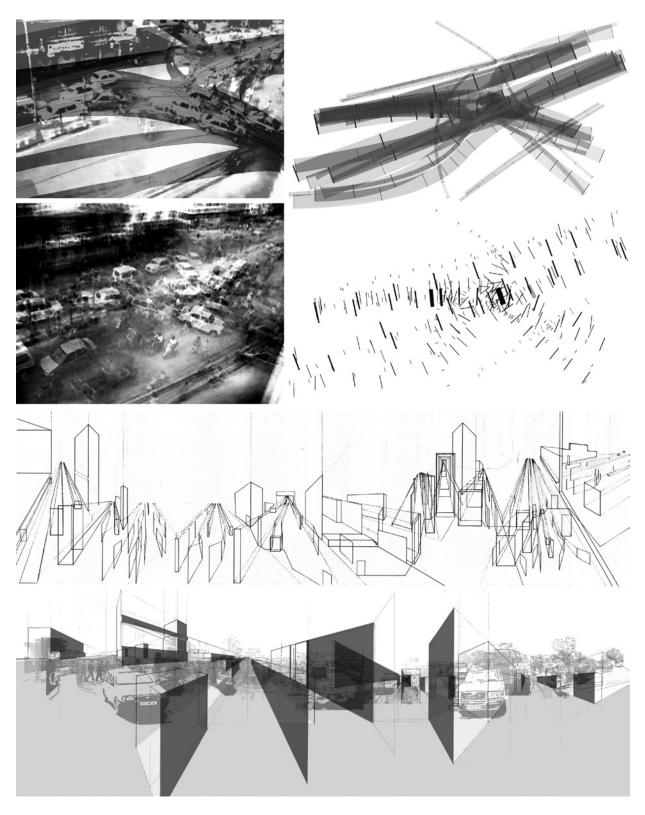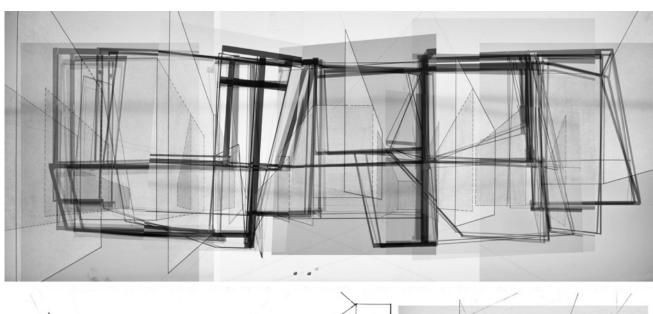
Figure 3: Mappings focus on trajectories and traces of objects in motion. Multiple perspectival views map sequential movements and interrelations between them. Images top left: Hana Bittner; middle left: Yadira Jerez; top right: Ian Svilokos; middle: Daniel Harper; bottom: Carmine D'Alessandro.
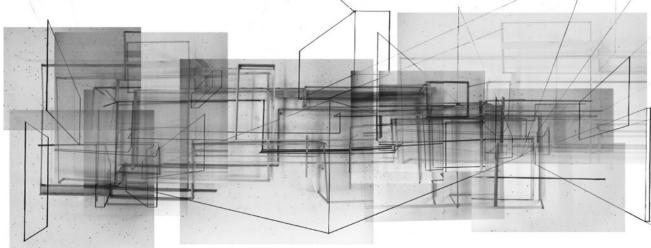
Figure 4: Hybrid model/drawing analyses. Low-relief sectional models are collaged into initial drawing studies. Image top: Michael Woodcock; bottom: Katie Davis.

and allowed to become a field. The focus of the current study is on experience as a mode of understanding and describing landscape, with the "cinematic" understood here as narrative structure operating within and shaping the constructed fields.

And moving further afield, we are using these cinematic concepts as a way of creating projective urbanisms on a site in New York, NY. Like the analytic work, these are episodic, connected, sequential, and narrative-based. Linkages across and between experiences are constructed, with the "cinematic" serving to shape both the narrative structure and the episodic experiences.

CONCLUSION

The cinematic and urban both participate in constructing this *full space*, a condition charged by relationships, by meaning, and by matter. Localized interruptions, events, overlaps, sequences, and connections are constructed, shaped by motivating narratives, sequences, loops, codas, and refrains. The grain of the space is distilled.

The challenge throughout is in finding ways to situate and/or create precision, legibility, and meaning within these somewhat chaotic, unstable, and variable terrains. It requires a way of looking, thinking
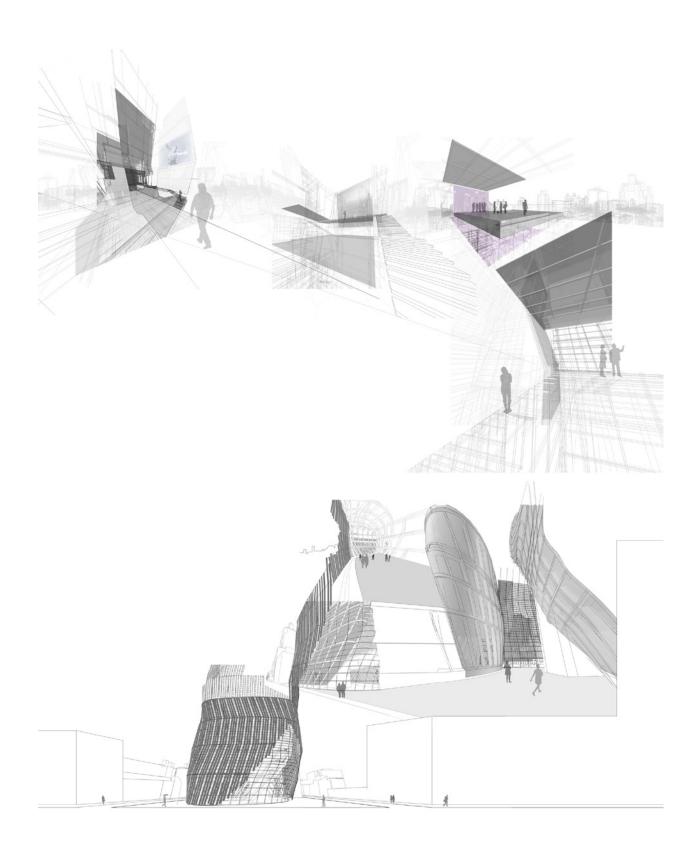
Figure 5: Projective Urbanisms, New York, NY. Top series of vignettes: Katie Chu and Melissa Hurcomb; Bottom series: Enrique De Solo and David To.

and making that neither romanticizes the noise nor obliterates it through foreign orders, redaction, or idealized abstractions. And it takes clarity both in process and its realization.

The cinematic offers ways of examining the urban condition that move successively further and further from plan-based mappings, revealing and probing aspects of the urban condition that do not rest solely in static objects, but rather in whispers and echoes of absent motivators.

ENDNOTES

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The essay builds on certain themes and project work initially explored in "Knots and Nurbs: Relational Spaces in Variable Fields," presented at the National Conference of the Beginning Design Student (Baton Rouge: Louisiana State University, 2009).

1. Helene Furján, "Cities of Complexity," in *Models: 306090 11*, ed. Emily Abruzzo, Eric Ellingsen, and Jonathan D. Solomon (New York: PA Press, 2008), 52.
2. "Corporeality" here refers to Gudrun Hausegger's "corpus of the city." See *Crib Sheets: Notes on the Contemporary Architectural Conversation*, ed. Sylvia Lavin, Helene Mary Furján, and Penelope Dean (New York: Monacelli Press, 2005), 118.
3. Gudrun Hausegger, in *Crib Sheets: Notes on the Contemporary Architectural Conversation*, ed. Sylvia Lavin, Helene Mary Furján, and Penelope Dean (New York: Monacelli Press, 2005), 118.
4. Saskia Sassen, "Reading the City in a Global Digital Age: Between Topographic Representation and Spatialized Power Projects," in *Global Cities: Cinema, Architecture, and Urbanism in a Digital Age*, ed. Linda Krause and Patrice Petro (New Brunswick, N.J.: Rutgers University Press, 2003), 27.
5. Manuel Castells, "The Rise of the Network Society," Vol. 1, *The Information Age: Economy, Society and Culture* (Malden, Mass./Oxford: Blackwell, 2000), 411-412.
6. See Castells, "The Rise of the Network Society," 398.
7. Kevin Lynch, *The Image of the City* (Cambridge, Mass: Technology Press, 1960), 2.
8. Michel de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984), 93.
9. Tasha G. Oren, "Gobbled Up and Gone: Cultural Preservation and the Global City Marketplace," in *Global Cities: Cinema, Architecture, and Urbanism in a Digital Age*, ed. Linda Krause and Patrice Petro (New Brunswick, N.J.: Rutgers University Press, 2003), 64.
10. Philip Cooper, *Cubism* (London: Phaidon Press Limited, 1995), 7-8.
11. Ann Temkin, *Philadelphia Museum of Art: Handbook of the Collections* (1995), 307, available online at http://www.philamuseum.org/collections/permanent/51449.

12. Marcel Duchamp, as quoted by Philip Cooper, *Cubism* (London: Phaidon Press Limited, 1995), 18.
13. *Twentieth Century Painting and Sculpture in the Philadelphia Museum of Art* (2000), 27, available online at http://www.philamuseum.org/collections/permanent/51449.html, accessed 30 November 2009.
14. Umberto Boccioni, in "Selected Notes" prepared for his lecture on "Futurist Painting" delivered at the Circolo Artistico, Rome, 29 May 1911, as edited by Ester Coen in *Umberto Boccioni* (New York: The Metropolitan Museum of Art, 1988), 239.
15. Umberto Boccioni. See Coen, *Umberto Boccioni*, 239.
16. Umberto Boccioni, "The Italian Futurist Painters and Scuptors: Initiators of the Futurist Art" (English text from the catalogue for the "Panama-Pacific International Exhibition," San Francisco, 1915) as included by Ester Coen in *Umberto Boccioni* (New York: The Metropolitan Museum of Art, 1988), 251.
17. Umberto Boccioni, "What Divides Us from Cubism" from *Pittura, scultura futuriste*, 1914, as published by Ester Coen in *Umberto Boccioni* (New York: The Metropolitan Museum of Art, 1988), 248.
18. Jean Baudrillard, *Simulacra and Simulation*, The Body, in Theory (Ann Arbor: University of Michigan Press, 1994), 46.
19. See Baudrillard, *Simulacra and Simulation*, 79.
20. See Castells, "The Rise of the Network Society," 433.
21. The following videos were studied: *Campus Hyderabad* (http://www.youtube.com/watch?v=39gNGEJMFiY), *A Vision of Students Today* (http://www.youtube.com/watch?v=dGCJ46vyR9), *Amazing Hyderabad* (http://www.youtube.com/watch?v=491HMSj9xGE), *India Driving* (http://www.youtube.com/watch?v=RjrEQaG5jPM), and *Pedestrian Crossing a Road* (http://www.youtube.com/watch?v=Y9DLlMMXhKg). The last two of these, *India Driving* and *Pedestrian Crossing a Road*, were used as the principal bases for the work.

SELECTED REFERENCES

Baudrillard, Jean. 1994. *Simulacra and Simulation.* The Body, in Theory. Ann Arbor: University of Michigan Press.

Castells, Manuel. 1996. *The Rise of the Network Society.* Malden, Mass: Blackwell Publishers.

Certeau, Michel de. 1984. *The Practice of Everyday Life.* Berkeley: University of California Press.

Coen, Ester, ed. 1988. *Umberto Boccioni*. New York: The Metropolitan Museum of Art,

Conversi, Daniele. 2009. "Art, Nationalism and War: Political Futurism in Italy (1909-1944)." *Sociology Compass* 3/1: 92-117.

Cooper, Philip. 1995. *Cubism*. London: Phaidon Press Limited.

Fear, Bob. 2000. *Architecture + Film II.* London: Wiley-Academy.

Krause, Linda, and Patrice Petro. 2003. *Global Cities: Cinema, Architecture, and Urbanism in a Digital Age.* New Directions in International Studies. New Brunswick, N.J.: Rutgers University Press.

Lamster, Mark. 2000. *Architecture and Film.* New York: Princeton Architectural Press.

Lavin, Sylvia, Helene Mary Furján, and Penelope Dean. 2005. *Crib Sheets: Notes on the Contemporary Architectural Conversation.* New York: Monacelli Press.

Lynch, Kevin. 1960. *The Image of the City.* Cambridge [Mass.]: Technology Press.

Marey, E.J. 1895. *Movement.* Translated by Eric Pritchard. London: William Heinemann.

Ott, John. 2005. "Iron Horses: Leland Stanford, Eadweard Muybridge, and the Industrialised Eye." *Oxford Art Journal* 28.3: 407-428.

Penz, François, and Maureen Thomas. 1997. *Cinema & Architecture: Méliès, Mallet-Stevens, Multimedia.* London: British Film Institute.

Pérez Gómez, Alberto, and Louise Pelletier. 1997. *Architectural Representation and the Perspective Hinge.* Cambridge, Mass: MIT Press.

Petrie, Brian. March 1974. "Boccioni and Bergson." *The Burlington Magazine*, Vol. 116, No. 852, Modern Art (1908-25): 140-147.

Rainey, Lawrence, ed. 2005. *Modernism: An Anthology.* New York: Wiley-Blackwell: 1-38.

Stillman, J.D.B. 1882. The Horse in Motion. Boston: James R. Osgood and Company.

Toy, Maggie. 1994. *Architecture & Film.* London: Academy Editions.