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Materialism

Masthead

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Editorial Note

Materialism continues the commitment of our first two issues on Property and Service to examine foundational yet overlooked concepts in architecture and landscape architecture. In our estimation, these disciplines are haunted by materialism. We see its specular presence invoked in design research's emphasis on large-scale flows and sites of material production, in the renewed focus on 'performance' and the rehabilitation of functionalism, in the centrality of 'material' as an expressive layer of tectonics, and through the import of non-human actors into discussions about spatial design.¹ Each of the above invokes matter as its base.

While matter and materials are at the center of both study and practice, designers rarely call themselves materialists. And, while discourses of materialism have tended to focus on humans, when 'materials' are discussed within architecture and landscape architecture practice, they typically refer to that which isn't human. As such, materialism's philosophical and political economic legacies, not least of which would include the inquiry into the nature and condition of freedom and autonomy, are silenced. This issue of Scapegoat analyses the cost of this forgetting as it conjures the ghosts of materialism.

The materialist problem of human labour is buried in design practice. All buildings and designed landscapes are, of course, made by someone, somehow, somewhere, and under certain

conditions. This connection to the materialist tradition has been systematically occluded through the emphasis on "fabrication," where questions of the organization and meaning of labour have succumbed to the capitalist necessity for technological innovation. In so doing, radical histories of labour within the cannon, such as the collectivist experiments of modernism, or extradisciplinary practices amongst squatters, dropouts, and vernacular traditions are erased.² We contend that the radical re-organization of the built environment occurs through human labour: how something is made determines what is made.

Designers have been grappling with the nature and effects of the globalization of urbanization on the built environment since the 1990s. Today, this preoccupation continues through the fascination with chains of material production and consumption, networks, and logistics: the presence of every local thing is linked interminably to global processes. Within the building industry, this tracing of material flow has manifested in the name of resource and cost efficiency and is formalized through exhaustive analytic tools which account for energy spent, contaminants released, water processed. The social forms of material production are absent from these analyses.

A perspective that includes the material and social dimensions of production necessarily departs from

the privileging of site and instead distributes the potential for design praxis across sites and into networks themselves; consequently, real intervention is inconceivable without a political economic analysis of the actual engines of urbanization. Architects and landscape architects have access to a bundle of trajectories, connections, and routes by way of the materials they select. *Which* material gets selected is indeed significant, but well-informed, proactive consumption cannot be the final conclusion of materialist inquiries. Furthermore, the fatigue produced by the tangle of connections unearthed through these mappings are not an alibi that could somehow excuse the necessity of social struggle. Instead, Scapegoat asks: how can material practice in design become the driver of anti-capitalist forms of social organization?

While we are committed to engaging the materialist tradition, we are likewise interested in how the study of horizontal relationships among humans and other species, and different constituencies of 'matter,' might productively destabilize our assumptions about design praxis. The arrogance of human agency is tempered through investigations of how the biophysical traits of particular materials, species, and extraction sites (for instance, their decay-resistance, hardness, or elasticity) shape our practices. These investigations help determine how materials resist,

interrupt, and constrain the seamless production of commodities, and are thus instructive for building a contestational practice composed of heterogeneous, complex assemblages.³

An interest in materials might begin with actually present, extensive, and dimensioned things: a painting, a role of Tyvek, a single insect. Through a materialist practice of inquiry these apparently discreet 'things' very quickly become local symptoms of multi-scalar agents such as networks, institutions, or power centres. The material becomes a portal to global complexity. The return to materialism in this issue of Scapegoat calls our attention to the dynamic relays between humans, materials, and the political economic dimensions that condition them across multiple scales and social registers. 

Notes

- Influences include Bruno Latour's Actor-Network Theory, writers affiliated with the "speculative turn" and brought together through the journal *Collapse: Philosophical Research and Development*, and the body of work gathered in Diana Coole and Samantha Frost, Eds. *New Materialisms: Ontology, Agency, and Politics* (Durham: Duke University Press, 2010).
- See, for example, Dolores Hayden, *The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods, and Cities* (Cambridge Mass.: MIT Press, 1982); Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960* (Cambridge: MIT Press, 2000); and, Alan Smart, "Sex in the Socialist City or How the Party Ends Up in the Kitchen," *Jan Van Eyck Academie, jve-design.posterous.com/sex-in-the-socialist-city*.
- Karen Bakker and Gavin Bridge, "Material worlds? Resource geographies and the 'matter of nature,'" *Progress in Human Geography* 30.1 (2006), 5-27.

Matter's Most Modern Configurations: Rivera, Picasso, and Benjamin's Dialectic Image

by AK Thompson

Human history is like paleontology. Owing to a certain judicial blindness even the best intelligences absolutely fail to see the things which lie in front of their noses. Later, when the moment has arrived, we are surprised to find traces everywhere of what we failed to see.

—Karl Marx
(*Letter to Friedrich Engels*, March 25, 1868)

When engaging in materialist analysis, conventional wisdom instructs us to pay attention to bread and butter, bricks and mortar. This is no doubt important; however, a more nuanced understanding of the precise attributes of "matter" demands that we come to terms with the fact that solid objects are—for the most part—empty spaces bound together by energetic relays. Such relays are at play in history as well. There, people struggle to assemble material fragments so that they might actualize the desires with which they've become infused through the course of the struggle for freedom. Foregrounding such relays does not put us at odds with materialist analysis. Quite the opposite: when properly understood, they reveal themselves to be constitutive of it.

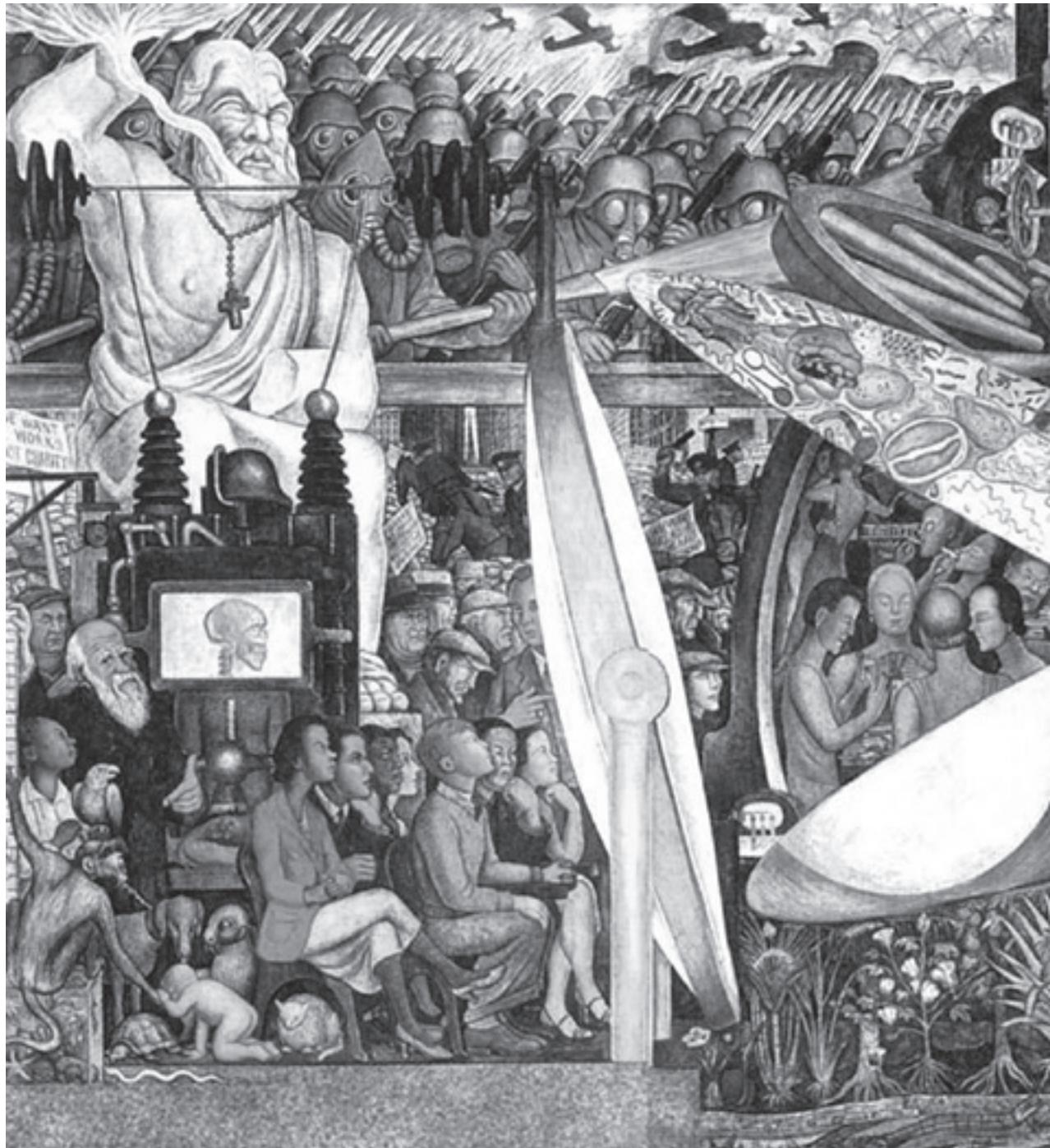
II

In Convolute N of *The Arcades Project* and in his essay on the concept of history, Walter Benjamin provided a brief but compelling account of the dialectical image.¹ According to Benjamin, images became dialectical when they produced a moment of historical cessation in which a viewer could come face to face with "a revolutionary chance in the fight for the oppressed past."² By constellating the fragments of historical memory, these images enjoined the viewer to consider what would be required to act upon history as such. Here, the promise of finally fulfilling the desire for happiness and the means by which that fulfillment might be achieved become visible all at once.

For Benjamin, dialectical images reveal how the unrealized promise of the past—a promise often conceived in mythic or religious terms—might come to fruition through action upon the profane conditions of the present. And, as Susan Buck-Morss has pointed out, such a vision of reconciliation is "an ur-historical motif in both Biblical and classical myth." However, unlike other forms of engagement with mythic anachronism, dialectical images do more than rediscover past themes "symbolically, as aesthetic ornamentation." Instead, by impelling profane reckoning, they enjoin the viewer to actualize unrealized promise by forging a constellation between the past's wishful motifs and "matter's most modern configurations."³ Thus it was that Neil Armstrong set foot on the moon under the sign of Apollo.

In what follows, I consider Diego Rivera's *Man at the Crossroads* (1933) and Pablo Picasso's *Guernica* (1937) to highlight how they intuitively gave Benjamin's conception a concrete visual form.⁴ To be sure, these images did not produce the cessation of happening that Benjamin had hoped for. Nevertheless, from the standpoint of formal analysis, they are coherent visual approximations of the dialectical image. As such, they are useful reference points for those seeking to illuminate—and thus to make vulnerable—the properly architectonic dimensions of late capitalism's ersatz depthlessness. And, once this has been accomplished, we can begin to directly consider how an image worthy of Benjamin's concept might be produced *today*.

The need for such a production arises not solely from the fact that—as Frederic Jameson has noted—it is now easier to imagine the end of the world than it is to imagine the end of capitalism.⁵ With the dialectical image, the very conception of "anti-capitalism" reaches a point at which the habit of positing resistance as a merely logical negation of the constituted world is repudiated once and for all. Because it forces us to recognize the extent to which everything is already present (the extent to which the problem is not one of "matter," but of its configuration), the dialectical image enjoins its viewers to confront the decision demanded by politics from a point wholly intrinsic to their own desires for freedom. Here, the collective subject of history finds its nominating "we" first and foremost through the encounter with an experience of lack that—though experienced individually—remains universal right up until the moment of its dissolution.



III

Man at the Crossroads was an enormous mural that stood nearly 5 meters tall and 11.5 meters wide. Gathered on the right side of the image are the forces of socialist revolution. Workmen look on from the bottom quadrant. Marx, Trotsky, and others gather behind a banner exhorting the workers of the world to unite. Immediately behind these figures, the viewer confronts a statue of Caesar holding a broken column emblazoned with a swastika. The statue's head has come off and the workers are using it as a stool.

In the top right quadrant of the image, peasant women line up alongside workers carrying red flags as they march in procession.⁶ In the space behind the statue, demonstrators confront soldiers in gas masks. Suspended mid-ground, a group of athletes looks leftward with determination and élan.

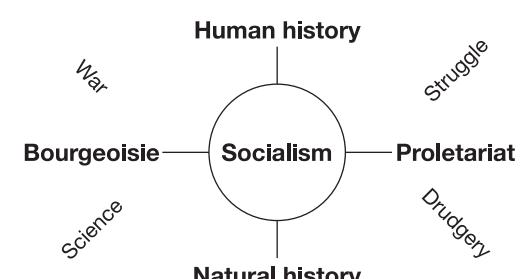
In the bottom left quadrant of the mural, seated spectators gaze into a kind of looking glass. Behind them sits a statue of Jupiter with its hands cut off. The lightning that these hands once wielded has been channeled into a machine displaying an x-ray image of a human skull. Beside the x-ray stands Charles Darwin surrounded by animals. Congregated on the same mid-ground as Jupiter, a group of men stand about pensively. Behind them, a conflict unfolds between demonstrators and police riding horses. A line of soldiers wearing gas masks consumes the top left quadrant of the image. Above their heads flies a squadron of bombers similar to those that will destroy Guernica in 1937—three years after Rivera's mural was itself destroyed.

In the middle of the image stands the time machine. Evoking the liberating potential of technology, the time machine also calls to mind Ezekiel's Old Testament vision, in which the development of productive forces is anticipated in dream form. According to Ezekiel, "when the living creatures moved, the wheels beside them moved; and when the living creatures rose from the ground, the wheels also rose." This was because "the spirit of the living creatures was in the wheels."⁷ Under capitalism, this dream would find a perverse—but potentially liberating—concretion.

The time machine is set in a circular form bisected by two ellipses that divide it into four quadrants. In the bottom quadrant, plants from different parts of the world reach roots into the exposed geological substratum of natural history. The top quadrant comprises the bulk of the time machine's machinery. It appears to be assembled from components derived from different technological phases in the history of production. Occupying opposite poles, natural history is counterposed to the "new nature"⁸ of human history while simultaneously being connected to it through the mediating figure of Man. In the left quadrant, representatives of the idle rich play cards and sip martinis. Opposite these figures, workers representing different races gather together with Lenin.

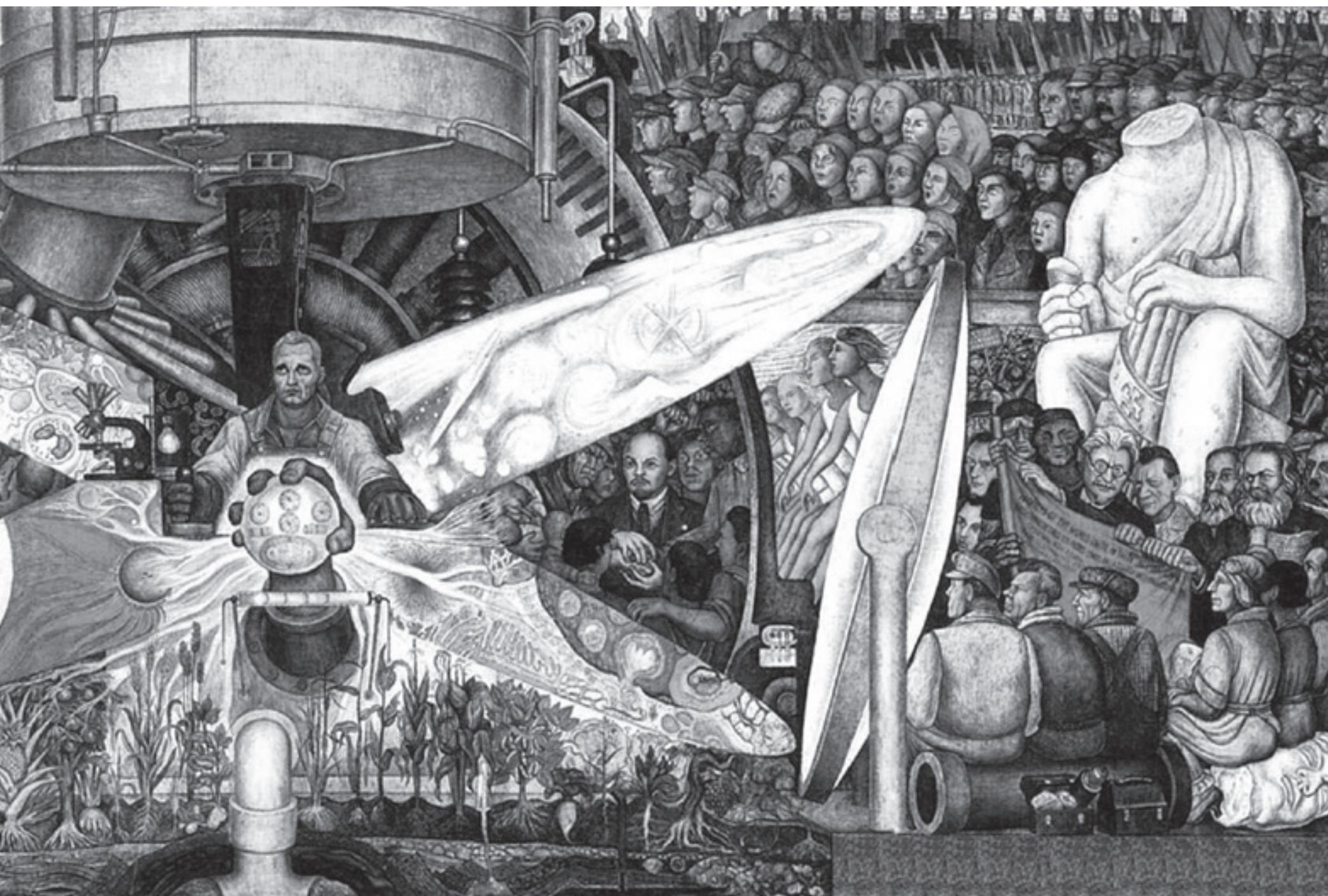
The ellipsis bisecting the image from top left to bottom right contains the microscopic elements of the world. Near the bottom of the ellipsis, a human fetus gestates inside a

cell. In the ellipsis bisecting the image from top right to bottom left, a telescopic view replaces the microscopic one. The viewer is confronted with the enormity of the universe and its celestial bodies. In the centre of the image sits a worker with hands on a set of controls. Wearing overalls and heavy gloves, he turns his eyes upward and assumes a posture that suggests devotional painting, socialist realism, or both. Caught between the poles of natural and human history, the telescopic and microscopic expanses of the universe, and the antithetical terms of the class struggle all contracted to a single point, Rivera's Man occupies a space of absolute tension and non-resolution. Rendered in its bare schematic form, the mural looks something like this:



Considered in this way, *Man at the Crossroads* abides by the dialectical image's defining characteristics. For Buck-Morss, such images "can perhaps best be pictured in terms of coordinates of contradictory terms, the 'synthesis' of which is not a movement toward resolution, but the point at which their axes intersect."⁹ The image's accumulated tensions cannot be resolved by teleological fiat. Instead, the task falls to the viewer who comes to realize that the moment of reckoning cannot be suspended indefinitely.

But while the formal confluence between Rivera's image and Benjamin's conception is striking, the mural's initial impact owed less to its composition than to the fact that it was denied an audience in the lobby of the Rockefeller Center. "Rockefellers Ban Lenin in RCA Mural and Dismiss Rivera," announced *The New York Times* on April 10, 1933. Almost immediately, diverse sections of civil society began to mobilize. According to historical journalist Pete Hamill, responses included "protests, picket lines, fiery editorials," and "press conferences." For his part, "Diego made an impassioned speech at a rally in Town Hall" while "liberals drew parallels between the brainless censorship of Stalin's 'socialist realism' and that of the Rockefellers."¹⁰ On June 15, 1933, the socialist newspaper *Workers' Age* ran a photo of the mural along with an article by Rivera. At that moment—and as Benjamin predicted a dialectical image might—Rivera's mural threatened to



Diego Rivera, *Man at the Crossroads* (1933)

disappear irretrievably.¹¹

For several months, the unfinished work lay beneath a heavy cloth that had been hung to conceal it. Then, under cover of darkness on February 9, 1934, Rockefeller had the mural destroyed. The image, however, did not disappear. For months, it remained an important point of discussion in Left and liberal circles both in New York and elsewhere. Later in 1934, Rivera reproduced the mural in the *Palacio de Bellas Artes* in Mexico City. Renamed *Man, Controller of the Universe*, the image began to find resonance amongst new audiences. No longer simply the focal point of a fight around artistic expression and no longer just an impressionistic trace caught by snapshot, the image began to come into its own. Around the same time, the liberal façade of the Rockefeller enterprise began to crack.

IV

From the standpoint of the present, the conflict between Rockefeller and Rivera appears inevitable. Why did a captain of industry imagine that a communist artist would produce an image appropriate for his building's lobby? In order to answer this question, it's useful to consider the circumstances that led to the conflict itself. On November 7, 1932, Rockefeller assistant Raymond Hood sent a telegram to Rivera requesting that he paint a mural in the Rockefeller Center. According to Rockefeller, the mural was to depict "Man at the crossroads" as he looked "uncertainly but hopefully towards the future." Rockefeller further indicated that the mural was to depict "human intelligence controlling the powers of nature."¹²

In a written submission for the project, Rivera described how he would address the theme: "my painting will show human understanding in possession of the forces of nature, which are expressed by a bolt which cuts off the fist of Jupiter and is transformed into useful electricity which helps to cure man's illnesses, unites men through radio and television, and gives them electricity and motive power." Further into his description, Rivera described how the right side of the image would be given over to "workers coming to a real understanding of their rights in relation to the means of production which has resulted in a plan to do away with tyranny, personified by a statue of Caesar which is disintegrating and the head of which lies on the floor."¹³ Mesmerized (and already rebuked by Picasso and Matisse), Rockefeller allowed the plans to proceed.

By February 1934, the mural was destroyed. Justifying his decision, Rockefeller pointed to the image of Lenin that Rivera incorporated into the mural after the commission had been approved. And Rockefeller may indeed have felt duped. But even though Lenin was never explicitly mentioned in the written submission, it's hard to imagine how a mural that set out to depict proletarian cooperation and the liberating potential of electricity could have yielded anything else. After all, Lenin had proclaimed in 1920 that communism

was "government by the Soviets plus the electrification of the whole land." For anyone taken by historical details, his appearance in Rivera's mural seems as inevitable as Rockefeller's bewilderment seems incomprehensible.

The conflict becomes clearer when considered from the standpoint of the dialectical image. Both Rockefeller and Rivera knew what it meant to be at the crossroads. Both knew that the relationship between labour and nature was of central importance when traversing the gulf between present and future. Agreement ended, however, when considering the precise *means* by which that gulf would be traversed. If Rockefeller had envisioned "human intelligence controlling the powers of nature," he could not envision how, at its logical conclusion, this control needed to extend to the "new nature" of technological forces—the means of production—as well.

V

Like *Man at the Crossroads*, *Guernica* is an enormous canvas, standing nearly 3.5 meters tall and nearly 8 meters wide. And, like Rivera's mural, *Guernica* is divided into three sections and cut into four quadrants by lines that seem to emanate from its center. On the right, a figure with arms outstretched screams from an open window. Flames engulf the building. Another figure stretches a long arm into the middle of the canvas. Holding an oil lamp, the figure illuminates the scene below. Moving from right to left across the bottom of the canvas, a woman hobbles along the ground. Her breasts are exposed and her knee is painfully contorted.

On the left side of the image, a woman holds a dead infant close to her chest. Its eyes are slits. Evoking Michelangelo's *Pietà*, the woman's head is thrown upward in a cry of anguish. Her eyes are frantic. Behind the woman stands a placid bull staring into the space occupied by the viewer. To the right of the bull, a bird flutters in agitation on top of a table that's barely distinguishable from the background against which it's set. Beneath the woman with the dead infant, the viewer confronts the outstretched hand of a fallen soldier. Moving toward the center of the canvas, the arm gives way to the soldier's head. His eyes are frozen. His mouth is a scream. Moving still further rightward, the viewer discovers that the soldier's head has been severed. He is a statue. His other arm has likewise been severed. In his hand, he still clutches a broken sword.

A horse takes up the center of the image. Pierced by a lance and about to fall over, it's depicted with its head thrown back, mouth open, and eyes staring wildly. The woman crawling right to left across the bottom of the canvas has the horse's head in her sightline. The figure staring with arm outstretched from the window looks down upon the same scene in horror. Distinct from all the other figures in the image, the horse is covered in vertical brushstrokes. Nearly uniform in their execution, they occupy a connotative space caught somewhere between horsehair and ledger marks tallying the dead. Above the horse's head glows an incandescent light.

Both visually and connotatively indeterminate, the light is a blazing sun, an explosion, an eye, a suspended bare light bulb.

Although the arrangement of *Guernica*'s contents suggests a plausible foreground, mid-ground, and background, the image itself remains nearly completely flat. Prying its figures from the scene in which they find themselves is difficult. One is left with the impression that there is no space to breathe. For Robert Hughes, this kind of visual organization was a defining characteristic of early cubism. During this period, Picasso's images had "very little air in them."¹⁴ And though *Guernica* was not cubist in any conventional sense, its reiteration of certain cubist representational strategies nevertheless manages to give the whole scene an airless, claustrophobic, and "topographical" quality. For art historian Frank D. Russell, *Guernica* "brought Cubism into the open and evoked a broad concern with the language of modern art."¹⁵ Practically speaking, this meant that the viewer was drawn into an indeterminate zone in which distinctions between inside and outside, content and context, began to fall apart.

The institutionalization of the avant-garde during the postwar period made *Guernica*'s topographical perspective commonplace. And, as Frederic Jameson has noted, Picasso's work now tends to strike postmodern viewers as more or less "realistic."¹⁶ Nevertheless, when it first appeared in 1937, *Guernica*'s claustrophobic topography was shocking. Describing the scene at the Paris World's Fair, Spanish Pavilion architect Josep Lluís Sert recalled that, when confronted with *Guernica*, "the majority didn't understand what it meant." Nevertheless, "they did not laugh...They just looked at it in silence."¹⁷

As its title affirms, *Guernica* is a historical painting; however, the depicted events stand in relation to the history they refer to in an indeterminate way. For John Berger, *Guernica* is striking because "there is no town, no aeroplanes, no explosion, no reference to the time of day, the year, the century, or the part of Spain where it happened." Moreover, there are "no enemies to accuse" and "no heroism" to admire.¹⁸ But despite this indeterminacy, Berger is convinced that even an uninitiated viewer would know that *Guernica* was a work of protest. How?

It is in what has happened to the bodies...What has happened to them in being painted is the imaginative equivalent of what happened to them in sensation in the flesh. We are made to feel their pain with our eyes. And pain is the protest of the body.¹⁹

Although Berger goes on to recount a number of misgivings about the work, his assessment of *Guernica* coincides with Benjamin's conception of the dialectical image in several important respects. This is so not least because, in *Guernica*, the title (which refers to a concrete, profane reality) becomes a kind of caption that turns the image as a whole—an image



Pablo Picasso,
Guernica (1937)

that, for Berger, was "a protest against a massacre of the innocents at any time"²⁰—into what Benjamin would have understood as an allegorical emblem, "a montage of visual image and linguistic sign, out of which is read, like a picture puzzle, what things 'mean'."²¹ Illuminated in this way, the unique event provides passage into the realm of a more universal meaning. The fragment becomes metonymic, and decisive action becomes action on history as such.

Even though the specific details it recounts have begun to recede from memory, *Guernica* has continued to speak to people. This resonance no doubt owes to the fact that its illuminated fragments contain traces of a more universal experience. According to radical arts collective Retort, "the experience and preserved memory of blast and firestorm is one of the central strands of 20th-century identity." Consequently, by depicting this scene, *Guernica* stimulates "the repressed consciousness of modernity's ordinary costs."²² April 26, 1937 thus becomes constellated with our own catastrophic present.

VI

How did Rockefeller—the man who destroyed Rivera's mural—end up donating *Guernica* to the UN? Recounting how he came to buy a tapestry reproduction of the image in 1955, Rockefeller remained silent on the question of political content and instead weighed in on the merit of reproductions. Having learned from architect and collaborator Wallace Harrison "that a huge tapestry...had been made from a maquette which Picasso had designed after the original painting," Rockefeller could not help but to respond in conventional bourgeois fashion:

When I saw the tapestry, I bought it immediately. [Art historian and first director of the Museum of Modern Art] Alfred Barr was disturbed by my purchase of what he had heard was just a distorted copy of one of the greatest paintings of the 20th century...However, when Alfred actually saw the tapestry for the first time, he completely changed his mind.²³

In 1985, Rockefeller's estate bequeathed the tapestry to the United Nations. Hung outside the Security Council chambers in New York, the offering was no doubt meant to be emblematic of Rockefeller's commitments. Those commitments were idealistic. But they were material, too: the Rockefeller family had been directly responsible for financing both the Museum of Modern Art (which housed the *Guernica* canvas between 1958 and 1981) and the Wallace Harrison-designed United Nations

compound, which was built on the ruins of a slaughterhouse worthy of Upton Sinclair. Reporting on the area in the real estate section of *The New York Times*, Jerry Cheslow recounts how, "by the turn of the 20th century,"

Turtle Bay had become a seedy, overcrowded warren of tenements and deteriorating row houses, many of them homes to German, Irish, Polish and Italian immigrants. Many of the residents toiled in the stock pens, garages, coal yards and slaughterhouses on what is now the site of the United Nations.²⁴

In this way (and in truly Benjaminian fashion), Rockefeller's "cultural treasures" cannot be contemplated without horror. "They owe their existence not only to the efforts of the great minds and talents who have created them, but also to the anonymous toil of their contemporaries."²⁵

On February 5, 2003, Colin Powell presented U.S. plans for war on Iraq at a press conference outside the United Nations Security Council chambers. Instead of *Guernica*, however, the backdrop for the event was a blue shroud that could not help but announce what it concealed. As with the veiling of *Man at the Crossroads*, the veiling of *Guernica* brought the image to the attention of millions.

As before, people responded with outrage and incredulity. In the February 5, 2003 edition of *The New York Times*, columnist Maureen Dowd commented that Mr. Powell couldn't "seduce the world into bombing Iraq surrounded on camera by shrieking and mutilated women, men, children, bulls and horses."²⁶ The problem was no less evident to activists on the street. Scanning the anti-war scene, Retort took note of how "many a placard on Piccadilly and Las Ramblas rang sardonic changes on Bush and the snorting bull."²⁷ Shrouded and in danger of disappearing irretrievably, *Guernica* flashed up at a moment of danger like *Man at the Crossroads* had before it.

VII

Investigating *Man at the Crossroads* and *Guernica* together in this way highlights a number of important points concerning materialist analysis. First, it shows how these two works, although rarely considered together in the literature of art history, are nevertheless bound to one another through an intriguing historical relay. Even at their inception, both works lived a double life caught somewhere between original and reproduction. Both mediated controversy and both became tied in various ways to the legacy of Nelson Rockefeller. As part of this legacy, both works were also shrouded at a moment of danger. In both cases, the act

of shrouding led to significant political commentary and mobilization.

In addition to these biographical connections, the works also share a number of significant compositional features. Most evident among these is the significant role that scale plays in their perceptual organization. Here, the viewer is immediately confronted with the fact that both images approach dimensions akin to those of the cinema's famous silver screen. This is no small matter since, as Berger has noted, film was the dominant art form of the early 20th century.

Technically, the film depends upon electricity, precise engineering, and the chemical industries. Commercially, it depends upon an international market...Socially, it depends upon large urban audiences who, in imagination, can go anywhere in the world: a film audience is basically far more *expectant* than a theatre audience... Artistically, the film is the medium which, by its nature, can accommodate most easily a *simultaneity of viewpoints*, and demonstrate most clearly the *indivisibility of events*.²⁸

If there's anything that can be said about *Man at the Crossroads* and *Guernica*, it's that they are cinematic in precisely these ways. As popular monumental works conceived for presentation in the Rockefeller Center and at the Paris World's Fair, both engaged with sites designed to foster mythic identification with the promise of the commodity form. These sites owed their existence to the integration of world markets and the advent of the mass urban audience. Epistemologically, both images convey the simultaneity of viewpoints and the indivisibility of events. Finally, both images place the viewer in a position of unbearable tension and expectation.

However, unlike in cinema (which has temporal duration), the cessation of happening engendered by the images' single frame execution places responsibility for resolving this expectation squarely on the viewer's shoulders. Because there is no "after" to which the viewer can orient except the one that she herself creates, cinematic expectation gives way to expectation of one's self.

But Rivera and Picasso did more than reiterate cinematic gestures. Had they restricted themselves in this way, their efforts would likely have remained quaint but fruitless attempts to refurbish easel painting and its supernova outgrowths in the face of their inevitable decline. But this is not what happened. Instead, Rivera and Picasso fused cinematic conventions with those of the medieval triptych. By holding the two forms in tension, they discovered (as Benjamin did around the same time) that "the materialist presentation of history leads the past to bring the present into a critical state."²⁹

In other words, by finding traces of contemporary desires for self-realization buried in the refuse of the mythic past, and by showing how these desires might at last be actualized through matter's most modern configurations, Rivera and Picasso discovered the trick of contracting historical time to a single, decisive moment. Here, the religious is not an antithesis to the material (as is normally assumed) but rather its wishful anticipation.

The triptych was popular in European religious art during the 14th and 15th centuries. As with religious art more generally, it fused the devotional with the instructive. During the early 20th century, surrealist identification with Dutch painter Hieronymus Bosch (1450–1516) revived interest in the form. Painting at the end of the 15th and beginning of the 16th century, Bosch depicted the human struggle with sin. In contrast to other Renaissance thinkers, he did not see earthly struggles leading to angelic ascent. Instead, Bosch saw corporeal desire lowering people to the level of beasts. In his work, sinners occupy the same plane as demons.

Bosch's work—and especially his *Garden of Earthly Delights*—resonated with the surrealist desire to explore the dark side of human experience. And since this desire occasionally led Bosch to depict judges, clergymen, and the propertied classes in a critical fashion, his work remained open to radical interpretations. In the *Garden's* "hell" panel, the seven deadly sins directly embody the failing that defeated them. Sitting amidst the condemned, greed shits coins, gluttony is forced to throw up again and again, and pride

Hieronymus
Bosch, *Garden of
Earthly Delights*
(1503-1504)



becomes transfixed by her reflection (supplied by a mirror affixed to another figure's ass).

Neither Rivera nor Picasso produced triptychs in the conventional sense; nevertheless, both drew heavily on the form's structure and thematic organization. Commenting on Picasso's understanding of the triptych's significance, Russell recounts how "a hinged panel is by its nature a sort of dismemberment, a planned rupture."

In *Guernica*, this aspect of triptychs is brought to the surface in theme as well as in form, the one panel hinged at the pinched neck of the lightbearer, the other at the shrunken and hacked-off neck of the warrior—neither personage permitted to cut across the boundaries, the painter preferring to lop heads rather than cover over the formal clarity of his plan, part of the plan being of course these acts of mutilation.³⁰

Proceeding in a somewhat different fashion, Rivera's use of the triptych is no less deliberate. In *Man at the Crossroads*, the partitioning of the picture plane allows for a formal and spatially coherent organization of the image's key antagonisms. But despite these novel strategies for realizing the simultaneity of viewpoints and the indivisibility of events, what remains most significant about these formal citations is that by invoking the triptych both Rivera and Picasso managed to infuse their images with significant (though significantly profaned) religious connotations.

Indeed, it's hard to ignore the extent to which both *Man at the Crossroads* and *Guernica* are saturated with the Passion. As ambassadors of the Christian mystery of death and resurrection, Rivera's Man and Picasso's horse (figures occupying the central "panel" of their respective images) are illuminated by a kind of stereoscopic process. The "old" sacred is enlisted to fill the "new" profane with consolidating meaning. In the process, both reach a point of unbearable tension. It is the point at which a materialist analysis capable of grasping the energetic relays that coarse between the constellated fragments of historical memory inevitably deposits us—whether we're ready or not.

VIII

Describing Rivera and Picasso's works in theological terms may seem fanciful, an unfortunate side effect of trying to find a common interpretative basis for wildly divergent subject matter; however, a broader appraisal of their work confirms that they were no strangers to religious citations. For Rivera, the origins of this affinity can be traced back to Mexico's Chapingo chapel where, in 1927, he painted what many consider to be his greatest work. According to Rivera biographer Patrick Marnham, the reasons for such a characterization are self-evident: "The ingenuity of Rivera's blasphemy is due to the way in which...he adapted the technique of Renaissance devotional art to the desecration of a religious building and its transformation into a place of anti-religious devotion."³¹

Although Marnham doesn't mention Benjamin, he nevertheless reveals the extent to which Rivera's work approximates Benjamin's "messianic" materialism. Here, the dream forms of an unfulfilled past discover the means by which they might be actualized through matter's most modern configurations. At Chapingo, Rivera "came closest to recreating the medieval function of religious art: art as an instrument of conversion, the highest form of propaganda..."

Rivera's images in Chapingo were...intended to remind people of their past, to direct their conduct in the present, and to describe their future. If, in the Middle Ages, the past was evoked in legends and visions, the present was divided into virtuous and vicious behaviour, and the future contained punishments and rewards, in Rivera's art the same pattern was applied, but the visions were moved from the past to the future since the system he was advocating was Utopian rather than Arcadian.³²

Drawing deep from the archive of mythic symbols, Rivera forged a bond between religion—what Marx, in his critique of Hegel's *Philosophy of Right*, called the "general theory" of the world—and the profane means by which the promise of that "theory" might be actualized. God thus gives way to man, who comes face to face with his "weak Messianic power."³³ But no *telos* will guarantee the outcome. Because figures like Rockefeller remain invested in mythic resolutions (since these underwrite the logic of the commodity form), the very promise of the "new nature" must itself be wrested from myth through decisive action.

Rivera made his understanding of this dialectical relationship explicit in 1932's *Detroit Industry* murals. There, an infant's inoculation is depicted in a style reminiscent of Renaissance-era Nativity scenes (complete with three wise men—now medical scientists—in the background). On the south wall's "automotive production" panel, Rivera incorporated another mythic citation by rendering an industrial stamping press in the likeness of the Aztec goddess Coatlicue. In Aztec mythology, Coatlicue nurtures humanity even as she demands sacrificial victims. From the vantage of the assembly line, it's hard to not recognize her as a mythic anticipation of the brutal contradictions of industrial production. Like Benjamin—who was fascinated by the "correspondences" that arise "between the world of modern technology and the archaic symbol-world of mythology"—Rivera seized upon figures like Coatlicue to illuminate the dangers (but also the promise) trapped in matter's most modern configurations.³⁴

Like Rivera, Picasso did not shy away from mythical citations. Along with his regular recourse to Greek mythology, he also drew both directly and indirectly on Christian themes.³⁵ Russell fully grasped the significance of these citations when he described *Guernica* as a "modern Calvary...detonated by sudden entrances and exits."³⁶ Here, the old and the new enter into an explosive admixture. Consequently, "the picture in its episodes is timeless, archaic. The timetable of the Spanish Republic is here widened to include all time."

Furthermore, it's "in certain Biblical outlines" that *Guernica* is to be "uncovered."³⁷ It therefore follows that the image is "a dedication to the past and to the future."³⁸ Russell concludes by observing that *Guernica* might be best understood as "a structure salvaged carefully from the rubble of the past, dedicated to the idea of a resurrection and to a future."³⁹ An assessment more in keeping with Benjamin's insights would be difficult to produce.

IX

Concurrent with their remarkable synthesis of the cinematic and the religious, *Man at the Crossroads* and *Guernica* also resolve the antithetical terms of the early 20th-century conflict between the "formalist" strategy of montage and the narrative conventions of socialist realism.

By forcing relationships between discrete and discontinuous objects, montage highlighted social relations that might otherwise have gone unnoticed. Skeptical of its potential, Georg Lukács nevertheless conceded that montage could, on occasion, become a powerful political weapon.⁴⁰ Nevertheless, Lukács doubted that the mere organization of fragments could ever yield a clear conception of the social totality. At best, montage was an epiphenomenal expression of the *experience* of fragmentation that seemed to define capitalism at the advent of consumer society. In contrast, and because it was specifically concerned with reflecting social relations, Lukács felt that realism avoided succumbing to whatever manifests itself immediately and on the surface.⁴¹

These tensions are not easily resolved, and it's beyond the scope of this investigation to work them out in any detail. However, it's important to note that Rivera and Picasso's images suggest a plausible means of overcoming the impasse. Although mobilizing different representational strategies, both works successfully incorporate formalist and realist attributes into singular, unitary constructions that nevertheless remain replete with tension.

In Rivera's mural, figures occupying different historical moments and discontinuous geographical spaces are brought into improbable proximity. Similarly, the figures populating *Guernica* look like outcasts from the morning paper. For art historian Ellen Oppler, these figures are "paper cut-outs, posterlike, resembling the stark images of news photos or flickering newsreels."⁴² In both cases, discrete fragments are filled with new significance as a result of relationships established between nodes in the constellated whole. But alongside these experiments in montage, both works achieve the kind of narrative cohesion favoured by realists.⁴³ In order to understand how, it's necessary to move beyond the picture plane to consider the means by which the viewer becomes implicated in the depicted scene.

Here, it becomes evident that—though neither work has a protagonist in the conventional sense—both achieve narrative coherence by forcing the viewer to assume "protagonist" responsibilities. In other words, by outsourcing resolution, they induct the viewer. Whether confronting the absolute non-resolution of the world's accumulated contradictions or witnessing the catastrophic aftermath of aerial bombardment, the viewer is given nothing with which to identify except her own *weak* Messianic power. Expressed synchronously with montage's fragmentation, realism's encapsulating anthropological narrative seems to move the scene toward a cessation of happening that can only be resolved through the viewer's decisive action on history itself.

Of all the attributes conspiring to make these murals dialectical images, the viewer's placement before the depicted events is perhaps most significant. In his consideration of *Guernica*, surrealist artist and Picasso biographer Roland Penrose gives us a sense of why this might be the case; in his estimation, Picasso had found a "universal means of conveying the emotions centered around a given event" and "arrived at a timeless and transcendental image."

It is not the horror of an actual occurrence with which we are presented; it is a universal tragedy made vivid to us by the myth he has reinvented and the revolutionary directness with which it is presented.⁴⁴

As a description of profane illumination, Penrose's account highlights the point at which the depicted event opens onto the universal and makes history itself the object of a redemptive labour process. Both the challenge and the possibility of redemption fall solely upon the viewer. Nothing in the image itself can resolve the tensions it unleashes. The demand is unsettling. It explains the tremendous resonance that *Guernica* continues to enjoy. It also explains the denunciations that began circulating even before the paint had dried.

In *Man at the Crossroads*, natural history and human history confront one another at a moment just prior to their potential resolution. Overlying this temporal synchronicity is a spatial one. Antagonists in the class struggle are brought to the point of inevitable confrontation. As "controller of the universe," the Man in *Man at the Crossroads* must resolve the tension. However, because he is caught at a point of absolute historical arrest, he can only fulfill this mission if you, the viewer, intercede.

X

As I've made clear, Rivera and Picasso's murals closely approximate aspects of Benjamin's dialectical image. For this reason, they are central reference points for anyone interested in producing such an image today. However, despite the fact that they became important rallying points in the struggle against constituted power, the murals themselves never prompted the "leap in the open air of history" that Benjamin had hoped for.⁴⁵ In other words, if the murals were dialectical images from the standpoint of analysis, they did not yet constitute such images from the standpoint of politics.

Based on this assessment, it may be tempting to conclude that Benjamin's conception—though provocative—

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is ultimately unsuited to the unforgiving world of *realpolitik*. However, since the proverbial moment "when the chips are down" underlying Benjamin's philosophy is not yet upon us (and since, in Benjamin's estimation, that final instance would have "retroactive force"), it remains more fitting to see these images as *one more ruin, one more fragment, one more* unrealized promise in need of actualization. What, then, in matter's most modern configurations, would allow us to rise to the occasion?

Notes

1. The term "dialectical image" does not appear in "Theses on the Philosophy of History." However, terms like "monad," "true image of the past," and "constellation" are used to denote the same thing. In line with Michael Löwy's reading of the "Theses"—where he points out that "in a first version of [Thesis XVII] to be found in the *Arcades Project*, in place of the concept of the monad there appears that of the 'dialectical image'" [Michael Löwy, *Fire Alarm: Reading Walter Benjamin's 'On the Concept of History'* (London: Verso, 2005)], I treat these terms as synonyms; see Walter Benjamin, *The Arcades Project* trans. Howard Eiland and Kevin McLaughlin (Cambridge, MA: Harvard University Press, 2003), 462. For the sake of clarity and convenience, I restrict myself here primarily to the term "dialectical image," which I feel most closely captures what Benjamin was aiming at.
2. Walter Benjamin, "Theses On the Philosophy of History," in *Illuminations*, ed. Hannah Arendt (New York: Schocken, 1968), 263.
3. Susan Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project* (Cambridge, MA: The MIT Press, 1991), 46.
4. There's little evidence to suggest that either Rivera or Picasso were familiar with Benjamin's work. However, given the intellectual terrain within which they operated, and given the indirect connections they shared through mediating figures like Georges Bataille and Leon Trotsky, it's likely that Benjamin's ideas were at least partially available to Rivera and Picasso through the informal structure of feeling that pervaded the early 20th-century radical scene. Presenting artworks—actual painted images—as dialectical images is somewhat out of keeping with Benjamin's own eclectic use of the concept. However, while I acknowledge that dialectical images do not have to be images in the artistic sense, I have chosen to focus on artworks because they help to pose the question of operationalization most acutely.
5. Frederic Jameson, "Future City," *New Left Review* 21 (May-June 2003): www.newleftreview.org/?view=2449
6. These images were based on sketches that Rivera produced while attending the 1928 May Day Parade in Moscow. Abby Aldrich Rockefeller found these images so compelling that, while Rivera was working on *Man at the Crossroads*, she bought his sketchbook. See Andrea Kettenmann, *Diego Rivera: A Revolutionary Spirit in Modern Art* (New York: Taschen, 2000), 52.
7. Ezekiel 1:19-21 New International Version.
8. Susan Buck-Morss, *Dialectics of Seeing*, 70.
9. Viewing dialectical images in this way is justified on the grounds of a note Buck-Morss found in the Bataille Archive, in which Benjamin recounts his own thinking in the schematic terms of intersecting axes. See Buck-Morss, *Dialectics of Seeing*, 215.
10. Pete Hamill, *Diego Rivera* (New York: Harry N. Abrams, 1999), 166.
11. The only one known to exist, clandestinely shot by assistant Lucienne Bloch after Rivera's dismissal (Frida Kahlo ran interception). The image presented above is a reproduction of *Man, Controller of the Universe* (1934). See also Benjamin, "Theses on the Philosophy of History," 255.
12. Irene Herner De Larrea et al., eds. *Diego Rivera: Paradise Lost at Rockefeller Center* (Mexico City: Ediciones, 1987), 42.
13. Ibid.
14. Robert Hughes, *The Shock of the New: Art and the Century of Change* (London: Thames and Hudson, 1991), 29.
15. Frank D. Russell, *Picasso's Guernica: The Labyrinth of Narrative and Vision* (London: Thames and Hudson, 1980), 3.
16. Frederic Jameson, *Postmodernism or, The Cultural Logic of Late Capitalism* (Durham: Duke University Press, 1991), 4.
17. Quoted in Ellen Oppler, *Picasso's Guernica* (New York: W.W. Norton & Co., 1988), 199-200.
18. John Berger, *The Success and Failure of Picasso* (New York: Pantheon, 1980), 169.
19. Ibid.
20. Ibid., 166.
21. Susan Buck-Morss, *Dialectics of Seeing*, 161.
22. Retort, *Afflicted Powers: Capital and Spectacle in a New Age of War* (New York: Verso, 2005), 191.
23. William S. Lieberman, *The Nelson A. Rockefeller Collection: Masterpieces of Modern Art* (New York: Hudson Hills Press, 1981), 17.
24. Jerry Cheslow, "If You're Thinking of Living In: Turtle Bay," *The New York Times*, April 26, 1992, 7.
25. Benjamin, "Theses on the Philosophy of History," 265.
26. Maureen Dowd, "Powell Without Picasso," *The New York Times*, February 5, 2003, 27.
27. Retort, *Afflicted Powers*, 16.
28. Berger, *The Success and Failure of Picasso*, 70.
29. Benjamin, *The Arcades Project*, 471.
30. Russell, *Picasso's Guernica*, 92.
31. Patrick Marnham, *Dreaming With His Eyes Open: A Life of Diego Rivera* (Berkeley: University of California Press, 2000), 192.
32. Ibid.
33. Benjamin, "Theses on the Philosophy of History," 254; Benjamin's "weak Messianic power" has been the subject of considerable debate and commentary—and for good reason. As with many of Benjamin's concepts, weak Messianic power is an allegorical profanation in which a category of religious thought finds its point of actualization in matter's most modern configurations. In the Judeo-Christian tradition, the Messiah was conceived as a redeemer who would make the shattered world whole. Extended to apply to materialist concerns, Messianic power takes our accumulated historic failures to attain happiness as its object. For this reason, rather than lullying us with visions of a utopian future (where all men are angels), Benjamin enjoins us to consider what must be done to save the dead from the ongoing deferral of their dreams or worse—from their induction into the triumphant processions of oppressive victors. In Benjamin's formulation, Messianic power is qualified as "weak" to make clear that it pertains to a material and not a mythic-religious phenomenon. As with Michael Gold, who concluded his autobiographical gem *Jews Without Money* with the realization that after endless searching and religious doubt—the Messiah was in fact none other than the "workers' revolution" [Michael Gold, *Jews Without Money*, (New York: Carroll & Graff Publishers, 1930), 309], Benjamin imagined that the claims of the past could only be settled through organized, decisive action.
34. Benjamin, *The Arcades Project*, 461.
35. Such recourse can be seen in his regular deployment of figures like the Minotaur in works like 1935's *Minotauromacy*, an obvious visual precursor to *Guernica*.
36. Russell, *Picasso's Guernica*, 10.
37. Ibid., 5.
38. Ibid., 9.
39. Ibid., 10.
40. Georg Lukács, "Realism in the Balance," in Adorno et al., *Aesthetics and Politics* (London: Verso, 2002), 43.
41. Ibid., 33.
42. Oppler, *Picasso's Guernica*, 47.
43. It's solely on this basis that we can understand how—despite its cubist inflections and claustrophobically topographical character—some early commentators went so far as to conceive *Guernica* as a work of "social realism." See Roland Penrose, *Picasso: His Life and Work* (London: Gollancz, 1962), 277.
44. Ibid., 277-278.
45. Benjamin, "Theses on the Philosophy of History," 261.



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Queering the Green Man, Reframing the Garden: Marina Zurkow's *Mesocosm* (Northumberland UK) and the Theatre of Species

by Una Chaudhuri

Current attitudes towards climate change are ruefully captured and skewered in the title of an ongoing solo performance series by California-based performance artist Heather Woodbury. Riffing on the title of a long-running, though recently cancelled, daytime soap opera, Woodbury's work is called "As the Globe Warms." The title captures the disturbing way that one of the greatest catastrophes our species has ever faced is transmuted into yet another contentious and indecisive aspect of "the new normal," a vaguely unsettling yet instantly normalized account of social and political reality, produced and sustained by the mass media. Acknowledging the looming crisis while also characterizing it as inevitable, this discourse turns climate change into yet another weapon in the arsenals of biopower, the exercise of the state's control over the biological lives of its increasingly disempowered citizens. Like the programmatically endless "war on terror," the idea of an unavoidable drift towards climatic extremes helps to normalize events like state-mandated evacuations, removal of populations, increased monitoring and surveillance of public spaces, and mass medical interventions—all unfolding in the name of "protection" and "caution."

Within the mechanisms of biopower, the contested and mystified idea of climate change plays out not only on human bodies, but also on the vital links between human bodies and their physical environments, and more specifically on their modes of experiencing, thinking, and feeling those environments. To use a term with new traction in recent animal studies, climate change is played out on the human *umwelt*. A key term in the biosemiotics of Jacob von Uexküll, the *umwelt* consists of those aspects of an organism's environment that the organism responds or reacts to.¹ It is the organism's *experienced* world, and is located neither within the organism nor outside it, but rather streams between the two in a process of perpetual co-creation and mutual generation. Therefore, as a concept, *umwelt* resists the operations of biopower that divide organisms from their environments through binaries such as inside/outside, self/other, and subject/object.

The rejection of binaries also makes the *umwelt* a useful site for the elaboration of a new orientation towards the environment that is unfolding under the banner of "queer ecology." This discourse links queer theory's cultural critique of heteronormativity to recent scientific studies that challenge the ideological fiction of a heteronormative natural order by documenting the vast array of reproductive mechanisms and sexual and gender behaviours found in the natural world.² Queer theory's historic interest in unsettling established categories finds a congenial ally in the taxonomic anti-realism of Michel Foucault's account of the production of scientific knowledge, which throws the very idea of stable systems and fixed categories into question. Transposed into the realms of biology and ecology, queer theory's emphasis on "fluidity, über-inclusivity, indeterminacy, indefinability, unknowability, the preposterous, impossibility, unthinkable, unintelligibility, meaninglessness, and that which is unrepresentable"³ initiates an ecocritical project that stresses the non-deterministic and non-essentialist implications of Darwinian theory. As critic Timothy Morton puts it: "Evolution means that life forms are made of other life forms. Entities are mutually determining: they exist in relation to each other and derive from each other. Nothing exists independently, and nothing comes from nothing."⁴ Adapting queer theory's program of "undo[ing] normative entanglements and fashion[ing] alternative imaginaries,"⁵ queer ecology proposes a post-Romantic view of nature that vigorously deconstructs the nature/culture binary of traditional environmental thought and assumes an interdependency among life-forms, rejecting the view of organisms as bounded, holistic entities. Most importantly, it sets a new goal for the ecological imagination different from the synoptic and sentimental one symbolized by the "blue planet" icon of earlier ecological thought: "Instead of insisting on being part of something bigger," Morton writes, "we should be working with intimacy."⁶

Intimacy and *umwelt* are two key components of an ecological art practice I call "theatre of species," which aspires to unsettle some of the assumptions upon which biopower rests. The practice exists at the intersection of several fields: Ecocriticism, which studies how environmental realities and discourses are reflected in literature, art, and the media; Animal Studies, which explores the vast array of cultural animal practices that human beings are involved in; and Theatre and Performance Studies. While the latter may seem to be the odd one out, the first two have also, until recently, been disconnected. What has finally put them into the conversation is the looming spectre of climate change and the long-overdue recognition that humans are one species among many that are facing unprecedented threats to survival. Climate change transforms familiar sites into landscapes of catastrophe, or at least into landscapes of

risk and uncertainty. Those are the landscapes that the theatre of species wants to acknowledge, create, examine, and inhabit.

An extraordinary example of such a landscape, Marina Zurkow's animated "landscape portrait" *Mesocosm* (*Northumberland, UK*), exemplifies several strategies of the theatre of species, the two most important being the *relocation* and *mobilization* of artistic experience. In this work, the former occurs through one of the richest of archetypal sites, the garden. The latter occurs through an engagement with the *frame*, a feature of visual art that recently received a powerful new Deleuzian theorization by Elizabeth Grosz. Its emergence, she writes, "is the condition of all the arts" because "the frame is what establishes territory out of the chaos that is the earth."⁷ *Mesocosm* activates its own frame and presents a riposte to a long tradition of alienated and anthropocentric art, thereby participating in the movement of artistic exploration that Grosz characterizes as follows:

If framing creates the very conditions for the plane of composition and thus of any particular arts, art itself is a project that disjars, distends, and transforms frames. [...] In this sense the history of painting, and of art after painting, can be seen as *the action of leaving the frame*, of moving beyond, of pressing against the frame, the frame exploding through the movement it can no longer contain.⁸

Though the temporality of *Mesocosm* is relaxed and capacious, its rendition of the human *umwelt* is founded on a conception of life as volatile, capricious, random, and unpredictable.



Marina Zurkow, still from *Mesocosm* (*Northumberland UK*), autumn (2011)



Marina Zurkow, still from *Mesocosm* (*Northumberland UK*), spring (2011)

Mesocosm is a video animation representing the passage of one year on the moors of Northumberland, UK.⁹ One hour of world time elapses in each minute of screen time, so that a complete cycle lasts 146 hours: "Seasons unfold, days pass, moons rise and set, animals come and go," around a centrally located and almost omnipresent human figure. The figures that appear suggest an open, even infinite, set of beings and phenomena, unconstrained by taxonomic limits: there are cows, owls, ravens, squirrels, foxes, men, women, children, humans in animal costumes, butterflies, refugees, caterpillars, swarms of insects, bats, rabbits, dumpsters, trucks, steamrollers, vans, calves, dogs, hares, fairies, dragonflies, inchworms, midges, spiders, hikers, bikes, horses, ponies, sheep, lambs, swallows, clouds, smokestacks, fog, pollen, shadows, garbage, leaves, petals, pollen, snow, rain, sleet, and wind. This is indeed, as the artist says in her notes on the work, "an expanded view of what constitutes 'nature.'" It is also a capacious rendition of *umwelt*, staging the endless communicative events and interactions that shape the experience of human and other animals.

No cycle is identical to the last, as the appearance and behavior of human and non-human characters, as well as changes in the weather, are determined by a code using a simple probability equation. This built-in indeterminacy is one of several features that align the work with queer ecology, which emphasizes the emergent, non-deterministic nature of evolution. In tandem with the work's long duration (to see a whole year unfold takes almost a week), this indeterminacy implies and encourages a special kind of spectatorship: more casual and peripheral than concentrated, more peripatetic and mobile than fixed. It is a spectatorship that accommodates the rhythms of everyday life, and construes the work as a frame and context for those rhythms as much as a repository of images, events, narrative, and ideas. Experienced as a frame for the spectator's ongoing lifeworld rather than as an alternate reality that is set against, intervenes in, or interrupts that lifeworld, *Mesocosm* functions like the landscape it depicts: a garden, that ancient and universal cultural framing of "nature" as a space for pleasurable visitation and temporary habitation.



Green man.
Pembroke St.
Cambridge, UK
photo: Rex
Harris

Nature is made better by no mean
But nature makes that mean: so, over that art
Which you say adds to nature, is an art
That nature makes. You see, sweet maid, we marry
A gentler scion to the wildest stock,
And make conceive a bark of baser kind
By bud of nobler race: this is an art
Which does mend nature, change it rather, but
The art itself is nature.¹⁰

The special kind of enjoyment offered by gardens makes them particularly rich sites for ecologically oriented cultural theory, because the recreation they offer involves contemplating the *re-creation* of the natural world. The garden is the site of a complex—and potentially queer—circuitry that links human creativity to organic growth and, as such, a space and practice that challenges the ideologically influential nature/culture binary. One classic formulation of the debate around this binary (in its “nature vs. art” version) appears in *The Winter’s Tale*, where Shakespeare’s characters argue about whether horticultural practices like grafting are natural or otherwise. Perdita’s characterization of the cross-bred “gillyvors” in her garden as “nature’s bastards,” is challenged by her father Polixenes, who argues that:

The interplay between art and nature that Polixenes asserts is nowhere better seen than in the garden, which also makes it a site for trying out, testing, or simply indulging—briefly and safely—new, non-normative identities. The central figure in Zurkow’s work is, I suggest, engaged in this experiment, and invites spectators to try out—or try on—an unaccustomed ecological role. Presence is a part of that role, but it is a strangely self-displacing, non-assertive presence, open to having the traditional boundaries of the individualistic self challenged and breached. This is a mobilized, aleatory, and queer presence, performing a new mode of species habitation.

One way to apprehend the key elements—as well as the creative potential and affective challenge—of this new role is to read it as a postmodern or queer version of the Green

Man, another archetypal figure for the interdependence of art and nature. A common decorative motif of medieval sculpture, the foliate faces of this human-vegetable adorn the walls, doors, pillars, and windows of hundreds of churches, cathedrals, and secular buildings dating from the Middle Ages. Branches, leaves, and vines surround the faces of these figures, and often sprout from their mouths, noses, and ears. Figures of fertility and unbounded—not to mention boundary-breaching—growth, these species-crossing vegetable men were inherited from pre-Christian and pagan traditions of nature-worship. But they are equally at home in the contemporary, non-deterministic, and anti-essentialist biologies that inspire queer ecology, where boundaries are, as Morton writes, “blurr[ed] and confound[ed] at practically any level: between species, between the living and the nonliving, between organism and environment.”¹¹ The human figure at the (de-centred) centre of *Mesocosm* is a living, moving Green Man for our age, a queer response to the increasing threat of biopower in the Anthropocene. He is the protagonist of a new theatre of species.



Charles Atlas.
The Legend of Leigh Bowery.
USA/France, 2002.
88 min.



Seeing *Mesocosm* as a theatre of species begins with noticing a seemingly simple structural feature of the work: the ever-changing scene depicted in the work is bordered on two sides by an expansive black area. This area functions as a frame, but one that can be entered, crossed, and occupied—though not, it seems, inhabited. When animals walk or run into the black space around the narrow band landscape in the middle of the screen—and also when the human figure himself lumbers or strolls into or out of it—that space transforms into something like the wings of a proscenium theatre, and momentarily turns the landscape into, as Zurkow writes in her description of the work, “a stage.”

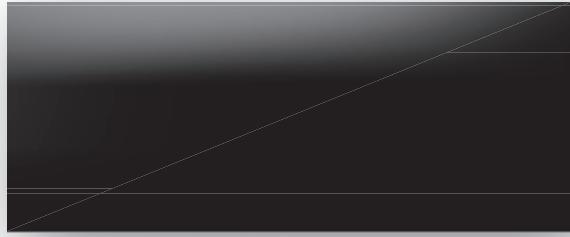
Mesocosm’s landscape is haunted by the mode of theatrical representation that has dominated western theatre since Sebastiano Serlio introduced the principles of single-point perspective drawing into scene design in the 16th century. The theatrical aesthetic that developed soon after—illusionism—was greeted with great enthusiasm and launched a centuries-long love affair with realism that flourishes to this day.¹² I have argued elsewhere about the realist theatre’s complicity with anthropocentric and anti-ecological world views,¹³ and recently Adam Sweeting and Thomas C. Crochunis have argued that the conventions of naturalist staging—especially its “rigidly dualistic conceptualization of space”—have shaped our experience of wilderness, and drastically limited the range of our imagination about nature and consequently our relationship to it.¹⁴ This is exactly the limiting structure that *Mesocosm* addresses through a playful engagement with some of the most powerful and entrenched conventions of theatre.

This “gift” of illusionism was actually a costly exchange; with the illusion of depth now available to it, set design could supply astonishing effects of reality, but only—and always—with the confines of the picture frame, the proscenium arch. Pushed outside this frame, banished from the life-art dialectic that is the soul of theatrical process, the theatregoer went from being a participant to being a viewer. This new spatial order recast the spectator as a potential sovereign by suggesting an ideal position from which the perspectival effects are seen to perfection, known as the Duke’s seat. Not merely a spatial site, the Duke’s seat also modeled a new ideal of individuality, centrality, and authority for the ordinary theatregoer. But the bargain was a Faustian one: the average spectator’s chances of actually sitting in the “Duke’s Seat” were just as bleak as his or her chances of actually “mastering” the social world.

The psychology of perspectival spectatorship is as obfuscating as its ideology. In his 1996 book, *The Experience of Landscape*, Jay Appleton famously related various sub-genres of landscape painting to a set of biological needs and urges derived from animal habitat theory.¹⁵ These genres, Appleton argued, are organized around certain strategic locations—prospect, refuge, and hazard—that are available to the predator or prey animal whose survival depends on successfully negotiating the various features of the land and its other inhabitants. Appleton singles out the picturesque genre as being especially pleasing because it places the viewer in a protected position, viewing the scene from a partially hidden and pleasantly shaded spot, the “refuge.” Any framing of a natural scene that confers such a position of safety on the onlooker is an instance of the picturesque, a guarantee that it is “only a picture,” and that the viewer is safely removed: “outside the frame, behind the binoculars, the camera, or the eyeball, in the dark refuge of the skull.”¹⁶ Proscenium staging is a similar instance of constructing the “picturesque spectator,” the threatened or threatening human animal temporarily enjoying a moment of safety.

But as Gordon Rogoff puts it, theatre is not safe—or rather, its special power is squandered in producing illusions of distance, separation, and protected privilege.¹⁷

That spatial configuration supports both a theatre of isolated individualism as well as an anthropocentric theatre, framing the exemplary or heroic human figure and transforming everything non-human into mere scenery. Zurkow's theatre-haunted landscape suggests ways to unseat the secure spectator and plunge him into the unpredictable terrain of life understood ecologically. The keys to this revisioning, or queering, of stage space are the position and behavior—and the astonishing art-historical lineage (from performance art, to painting, to video animation)—of the large human figure that dominates the foreground.



The main figure in *Mesocosm* is based on the Australian performance artist, designer, and drag queen Leigh Bowery, who helped to catalyze an extraordinarily interdisciplinary experimental art scene in London and New York in the 1980s. In Charles Atlas's documentary film, *The Legend of Leigh Bowery*, a colleague of Bowery's describes him as the "the greatest of the great outrageous Australians of the modern world," a man utterly committed to challenging every assumption, breaching every boundary, and destroying every artistic or social convention he could lay his gigantic hands on.¹⁸



Lucian Freud, *Naked Man, Back View*, 1991-1992. Oil on canvas. 183.5 x 137.5cm
Image copyright © The Metropolitan Museum of Art. Image source: Art Resource, NY

In his lifetime, Bowery's "legend" was keyed to the extraordinary costumes he designed, built, and wore—vast, moulded carapaces of bright fabrics smothered in sequins and feathers. But, in a reversal that he himself would have relished, Bowery's posthumous image is likely to be resolutely unclothed. This is thanks to the surprising role that Bowery played toward the end of his short life, as muse and model to one of the greatest of modern painters, Lucian Freud. Atlas's documentary provides a delicious account of the moment this transformation occurred, this metamorphosis of a monstrously over-coded cultural icon into a mountain of flesh: Bowery had been invited to sit for Freud because his over-dressed style posed such a challenge to the renowned painter of disturbing, challenging nudes. But, while they were getting ready to start working, and while Freud's back was turned, Bowery took off all his clothes having assumed Freud would be painting him naked.

The central figure of *Mesocosm*, then, is an incarnation of Bowery who has escaped the "too, too solid flesh" of Freud's canvas to inhabit an eternity of jittery animation in a rural landscape. From his earlier life he has brought along another feature even more subversive here than it was in Freud's painting: he turns his back on us. In a recent article entitled "The Seated Figure on Beckett's Stage," Enoch Brater shows how the absurdist master completes and deconstructs a historical process in which the seated figure on stage went from being an emblem of authority in the public sphere of Renaissance drama to a symbol of inwardness in the private worlds of 19th-century psychological realism.¹⁹ The posterior view of the figure in *Mesocosm* initiates what I read as his challenging dialectic with anthropocentric stage presence, and thus as one strategy—though admittedly borrowed from painting—for the theatre of species he anchors. The strategy involves a kind of insistent embodiment: foregrounding biological presence, "backgrounding" psychological being.

Notes

- See Jacob von Uexküll, "An Introduction to Umwelt," *Semiotica* 134 (2001): 107-110.
- See Bruce Baganihl, *Biological Exuberance: Animal Homosexuality and Natural Diversity* (New York: Stonewall Inn Editions, 2000) and Joan Roughgarden, *Evolution's Rainbow: Diversity, Gender, and Sexuality in Nature and People*, 2nd ed. (Berkeley: University of California Press, 2009).
- Noreen Giffney and Myra Hird, eds., *Queering the Non/Human* (Aldershot: Ashgate, 2008), 4.
- Timothy Morton, "Guest Column: Queer Ecology," *PMLA* 125, No. 2 (March 2010): 273-282.
- Giffney and Hird, *Queering the Non/Human*, 4.
- Morton, "Guest Column: Queer Ecology," 278.
- Elizabeth A. Grosz, *Chaos, Territory, Art: Deleuze and the Framing of the Earth* (New York: Columbia University Press, 2008), 11.
- Ibid., 17.
- Marina Zurkow, *Mesocosm* (Northumberland, UK), 2011, accessed on 10/18/2011, <http://www.o-matic.com/play/friend/mesocosm>.
- William Shakespeare, *The Winter's Tale*, in *The Norton Shakespeare*, ed. Stephen Greenblatt (New York and London: W.W. Norton, 1997) Act 4, Scene 4, lines 89-97.
- Morton, "Guest Column: Queer Ecology," 275-276.
- Notwithstanding the fact that Brechtian and other avant-gardes spent the last century exposing its complicity with essentially conservative (though ostensibly progressive) humanist ideologies and individualist psychologies.
- Una Chaudhuri, "Land/Scape/Theater Theory," in *Land/Scape/Theater*, eds. Elinor Fuchs and Una Chaudhuri (Ann Arbor: University of Michigan, 2002).
- Adam Sweeting and Thomas C. Crochunis, "Performing the Wild: Rethinking Wilderness and Theatre Spaces," in *Beyond Nature Writing: Expanding the Boundaries of Ecocriticism*, eds. Karla Armbruster and Kathleen R. Wallace (Charlottesville: University Press of Virginia, 2001), 325-340.
- Jay Appleton, *The Experience of Landscape* (London, New York: Wiley Print, 1996).
- W.J.T. Mitchell, *Landscape and Power* (Chicago: University of Chicago Press, 2002), 16.
- Gordon Rogoff, *Theatre is Not Safe: Theatre Criticism, 1962-1986* (Evanston, Ill.: Northwestern University Press, 1987).
- Charles Atlas, Director, *The Legend of Leigh Bowery*, 2002.
- Enoch Brater, *Ten Ways of Thinking About Samuel Beckett: The Falsetto of Reason* (London: Methuen Drama, 2011).
- Andil Gosine, "Non-White Reproduction and Same-Sex Eroticism: Queer Acts Against Nature," in *Queer Ecologies Sex, Nature, Politics, Desire*, eds. Catriona Mortimer-Sandilands and Bruce Erickson (Bloomington: Indiana University Press, 2010), 149-172.
- Gosine cites the large number of reports of arrests of gay men in parks that explicitly mentioned the "trash" found at the sites of arrest—specifically condoms, condom wrappers, and tissues.



Marina Zurkow, still from *Mesocosm* (Northumberland UK), summer (2011)

However, the two things that most surprise us about Zurkow's Bowery are also those that distinguish him from Freud's: First, as already mentioned, he gets up and walks out of the frame. Second, he allows various small creatures not only to climb on him and sit on him but also to feed on him, producing the only specks of color—blood red—in the work. This scandalous symbiosis, based on a novel intimacy, suggests a queered updating of the ancient motif of the Green Man in the context of an anti-essentialist, relational ecology. The queer Green Man of *Mesocosm* contributes a personal and artistic history that is deeply relevant to his role in this "expanded apprehension of what constitutes nature," a history that makes him the ideal protagonist for a post-anthropocentric, post-picturesque theatre of species. His travels between genders and genres have prepared him for the more challenging transit ahead, the journey between species.

The confidence with which Zurkow's Bowery occupies this rural landscape represents the defeat of a long and contradictory cultural construction of the relationship between homosexuality and nature. As Andil Gosine writes in a recent article,

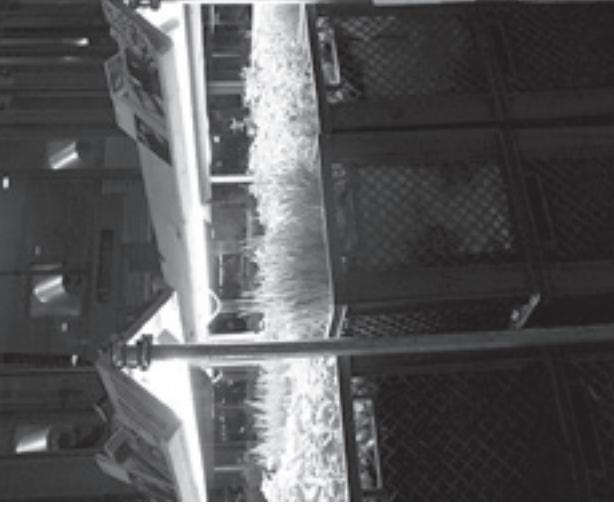
"Homosexual sex has been represented in dominant renderings of ecology and environmentalism as incompatible and threatening to nature. [The construction of this prejudice is related to the fact that] In its early incarnations, North American environmentalism was conceived as a response to industrial urbanization. As homosexuality was associated with the degeneracy of the city, the creation of remote recreational wild space and the demarcation of 'healthy' green spaces inside cities was understood partly as a therapeutic antidote to the social ravages of effeminate homosexuality."²⁰

Ironically, these very spaces began to be used by gay men looking for sex. When the gay practice of "cruising" forged an uncomfortable connection between homosexuality and public parks, it incited a new punitive discourse that sought to re-exclude homosexuals from nature, this time by equating their presence there with pollution, contamination, and danger to the community and its "family values."²¹

Seated centre-stage yet unconcerned with the anthropocentric voyeurism, self-consciousness, and self-display of traditional stage presence, the Green Man of *Mesocosm* dwells in a theatre of species—all species—and nonchalantly performs a scandalous form of species companionship and ecological intimacy. The transgressive ethos and outrageous aesthetics of Leigh Bowery's performance art and the extravagant physicality of Lucian Freud's figures come together to queer the fragile landscape of the Anthropocene.

Una Chaudhuri is Collegiate Professor and Professor of English and Drama at New York University. She is the author of *No Man's Stage: A Semiotic Study of Jean Genet's Major Plays* and the award-winning *Staging Place: The Geography of Modern Drama*, editor of *Rachel's Brain and Other Storms: The Performance Scripts of Rachel Rosenthal*, and co-editor, with Elinor Fuchs, of *Land/Scape/Theater*. She was Guest Editor of a special issue of *Yale Theater Journal* on "Ecology and Performance," and of *TDR: The Journal of Performance Studies* on "Animals and Performance." Her current research and publications explore "zoësis," the discourse and representation of species in contemporary culture and performance.

MATERIALS
 bicycles, time, sleep, Landwehr air, sun, water, coffee and other intoxicants, plant based diet, Dave Hickey's introduction to *Air Guitar: A Political Ecology of Things* (Jane Bennett), *Cultivation of the Bohemian Upas* (Patricia Ellis) *How High Is the City, How Deep Is Our Love* (Jeff Darken), *Human, All Too Human* (Nietzsche), 14 meetings, over 3000 emails, skype, texts, and cell phone transmissions, water, soil, compost, nitrogen, potassium, mint, chives, lemon verbena, basil, cilantro, parsley, 166 grey, brown, blue, yellow and red plastic bread crates, 21 europelettes, 20 sheets of No. 405767 20mm 24x122cm Elliot Pine C+C grade plywood cut 45 times, 12x240cm bio lights, 21 lengths of scaffolding, 100 metres of AC cable, covers, 2 truckloads of plants, crates, soil, fridges, espresso machine, booze, honey, milk, cutlery, plates, lumber, tools, 33 crates full of recently published film and video monographs, anthologies, critical theory books, DVDs, journals, etc....



**a bar IST a garden IST a café IST
a reading room
Prinzeßinnengärten, b_books,
Kika Thorne
Forum Expanded, Berlinale Film
Festival, February 10 – 20, 2011**



The point is not to imagine utopias; the point is to enact them.
— Slavoj Žižek

Žižek is a DJ.
— Althea Thauberger

A bar IST a garden IST a reading room began with an invitation from Forum Expanded to produce an installation for the lobby of the Kino Arsenal during the Berlinale. The atrium is an empty steel envelope and is part of the Potsdamer Platz complex designed by American architect Helmut Jahn. b_books, a publisher and buchhandlung collective near Skalitzer Straße, has an annual presence at the Berlinale. Books are typically sold on collapsible tables off to the side of the featured installation. I asked b_books and Prinzeßinnengärten, a nomadic, organic urban farm collective and café, to collaborate with me.

Plastic crates were stacked two-high on europallettes, and packed with soil, nitrogen, potassium, compost, water and plants—for this is the basic unit at Prinzeßinnengärten. They were also flipped on their sides and filled with books or flipped again and clad with raw

plywood for seating and counters. Crates filled with Farocki, Douglas, Biemann, Julien, Hanke, Bruce, Ottlinger, Cheap, Herzog, Godard and Marker monographs reflected a thriving industry of critical media discourse. Many are published by b_books, including Stefanie Schulte Strathaus & Florian Wüst's edited collection, *Who Says Concrete Doesn't Burn, Have You Ever Tried? West Berlin Film in the 80s*.

Over 50,000 viewers drank, relaxed, read, and ate at the space, sauntering through the bookstore and experiencing the garden—oxygen infused with the volatile oils of mint, verbena, herbs, parsley, chives, coriander and basil. These herbs were free to pluck and sniff and chew. While they were used in the fresh organic soups, teas, and on sandwiches or tarts, they also induced a microclimate, accelerating joy.

Events can produce excessive waste. We spent our 1500 budget on materials that would be repurposed for other projects. For instance, Prinzeßinnengärten used the bio-lights to catalyze the construction of a small greenhouse. Each material carries with it the question of a future potential. Like the hidden mass of an iceberg, the materials list for this project implies a vast assemblage of processes, substance, and networks.

At the next Berlinale, a bar IST a garden IST a reading room will be installed without me, without my flight, its carbon expenditure and unnecessary expense. The project will change, according to the participants, released from this artist's control.

Angelika Ramlow, Frauke Neumann, Nora Molitor, and Susanne Hinrichsen.
Sponsored by Holz_Possling, Zarf Umfüge, The Canada Council for the Arts, Nomadisch Grün, Adrian Blackwell, Katrin M. Frick, Diplom Psychologin (DE), Michael Michel Bartosik, Klön, Eileen Sommermann, Galerie ZK Moritz Gaede, Team Project, and the labour of love.

Kika Thorne lives in Toronto, loves Berlin, misses Vancouver.

Curated by Stefanie Schulte Strathaus, Nanna Heidenreich, Bettina Steinbrügge, Anselm Franke. Assistant Curator: Uli Ziemons.

Bruno Derksen, the Zarf Umfüge, Handelsvertretung, and Holz_Possling staff, the staff of the Berlinale and the Arsenal including Forum Expanded Technical Director Angela Anderson, and Arsenal crew



THEY WILL
COME ON
EARTH
UNARMED.

THEY
WILL SET
THEIR OWN
STANDARDS.



THEY WILL HAVE
NO CHOICE EXCEPT
TO SUBMIT OR
TO RULE.
THEY WILL
CHOOSE TO RULE.

THEIR BRAIN
WILL BE
THEIR ONLY
WEAPON.



THEY WILL
JUST REMIND
YOU OF WHAT
THEY ONCE
PREDICTED.



THEY WILL BE
DENOUNCED SO
MUCH, IT WILL
NOT BOTHER
THEM ANYMORE.

THEIR REWARD,
THEIR PURPOSE,
THEIR LIFE WILL
BE THE WORK
ITSELF.
THEIR WORK DONE
THEIR WAY.



THEY WILL
KNOW WHAT IS
TO COME BY THE
PRINCIPLE ON
WHICH IT IS
BUILT.



THEY WILL
BUY FROM YOU
THE PLANS, THE
SITE, AND THE
RUINS OF IT.



THEY WILL
DESIGN IT,
THEY WILL MAKE
IT POSSIBLE,
THEY WILL
DESTROY IT.

THEY WILL COME
HERE TO BE HEARD
IN THE NAME OF
EVERY MAN OF
INDEPENDENCE STILL
LEFT IN THE WORLD.



THEY WILL WANT TO
STATE THEIR TERMS.
THEIR TERMS WILL
BE THEIR RIGHT
TO EXIST FOR
THEIR OWN SAKE.



Société Réaliste *Commonscript*, 2011

In 2010, Société Réaliste released its first full-length movie, *The Fountainhead*, based on the 1949 capitalist propaganda screenplay and 1943 novel written by Ayn Rand, arch-priestess of American libertarianism and author of some of its most potent cultural myths. From the original movie, the story of a Promethean modernist architect fighting against collective decadence in the name of his personal genius—a character based on Frank Lloyd Wright—Société Réaliste has removed the sound and

deleted all human presence to reduce the film to its decorum, its ideological architecture.

Société Réaliste has recently designed *Commonscript*, a series of 48 panels extracted from *The Fountainhead*. They depict views of the central location of the original film—a locus of power, the top floor office of a Capitalist tycoon—surrounded by skyline views of New York. Interspersed among these are ideological statements from the hero, extracted from the original 1949 screenplay. In this work, however,

Société Réaliste has systematically and radically transcribed them, turning a discourse of autonomous individualism into a generalized and plural one.

Significantly, there is a typographical dimension to the work: the inscriptions are made in a new font designed by Société Réaliste called Falling Haus (2011). This centaur font is the hybridization of Frank Lloyd Wright's font Exhibition and Josef Albers' global-abstract font known as Universal.



THEIR TRUTH
WILL BE
THEIR ONLY
MOTIVE.

THEY WILL
SERVE NOTHING
AND NO ONE.
THEY WILL
NOT GIVE OR
ASK FOR HELP.



THEIR
SELVES WILL
BE THEIR
SPIRITS.



THEY WILL
ASPIRE TO
ANY VIRTUE
WHICH CANNOT
BE SHARED.

THEIR IDEAS
WILL BE THEIRS.
NOBODY ELSE WILL
HAVE A RIGHT TO
THEM EXCEPT ON
THEIR TERMS.
IDEAS WILL BE
THEIR PROPERTY.



THEY WILL NOT
WANT TO BE TIED
TO ANYTHING.
THEY WILL BE THE
ONES WHO WILL HAVE
EARNED THE RIGHT
TO DESPISE YOU.



THEY WILL BE
LEARNING SO MANY
THINGS THEY NEVER
EXPECTED TO FEEL.
THE WONDER OF
OWNERSHIP.

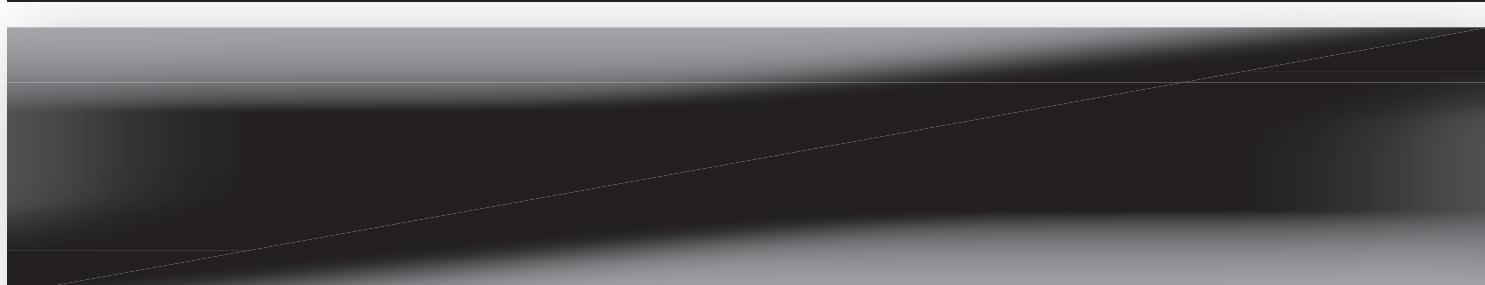
THEY WILL NOT RECOGNIZE
ANYONE'S RIGHT TO ONE
MINUTE OF THEIR LIVES,
NOR TO ANY PART OF THEIR
ENERGY, NOR TO ANY OF
THEIR ACHIEVEMENTS.
NO MATTER WHO MAKES
THE CLAIM.



THEY WILL
DEAL WITH
MEN BY FREE
EXCHANGE AND
VOLUNTARY
CHOICE.



THEY WILL BUILD
A MONUMENT TO THAT
SPIRIT WHICH IS
THEIRS AND COULD
NOT HAVE BEEN OURS.
AFTER THEY ARE GONE,
THAT BUILDING WILL
BE THEM.



Société Réaliste is a Paris-based cooperative working in the field of political design, experimental economy, territorial ergonomy and consulting in social engineering. In 2011, Société Réaliste presented its work in solo exhibitions entitled "Empire, State, Building" (at Jeu de Paume, Paris), "The City Amidst the Buildings" (at Akbank Sanat, Istanbul) and "Archiscriptons" (at Mosseri-Marlio Gallery, Zurich). More information: www.societerealiste.net.

Philosophy in the Wild: Listening to 'Things' in Baltimore

by Jane Bennett and Alexander Livingston

This summer we went for a walk around Baltimore to explore the city and catch a glimpse of the fugitive power of "things" at work. Baltimore, a.k.a. 'Charm City,' is located on the Amtrak line between New York City and Washington D.C., and yet it feels very off the grid. The deepest inland port on the U.S. east coast, Baltimore was once an industrial giant and an important transit hub for the rest of the continent by way of the Baltimore-Ohio railroad. With its population peaking at nearly a million residents in the 1950s, Baltimore has since grappled with the flight of population and capital that accompanied the implosion of the American industrial economy. Its population today is around 600,000.¹ What this means is that Baltimore is a city where a great deal of material things—homes, factories, storefronts, and highways—remain largely undisturbed by human agents. We had plans to conduct something like an interview about what it's like living here. What happened, however, was that things kept interrupting our best attempts at narration. They insisted upon being part of the conversation.



1

We took as our inspiration something that Thoreau once said about an encounter with "the Wild": it is a tonic against conformity, a challenge to our default ways of seeing, feeling, judging. Thoreau found in Nature a source of "perpetual suggestions and provocations," in contrast to "the trivialness of the street."² Affirming the spirit if not the letter of Thoreau's sojourns, we experienced a certain "wildness" in the lively (nonhuman) materials of the city: fire hydrants, piles of bricks, discarded furniture, weed trees, etc. The "street," it turns out, is not at all so trivial. It is in this sense that we think of our walk as doing "philosophy in the wild."

Henry David Thoreau proposed walking as a practice of opening oneself up to the "subtle magnetism in Nature."³ He found that his own daily walk produced a style of perception especially attuned to the specificity of things. This "technology of the self" was used to cultivate a sensibility that was awake to the world, to its claims and calls: "Morning is when I am awake and there is dawn in me. Moral reform is the effort to throw off sleep...To be awake is to be alive."⁴ Thoreau chose beautiful nature as the partner for his sojourns. We chose Baltimore, and rather than plants, animals, or stars to catalogue, we are on the hunt for garbage. We start our walk in Hampden, a neighbourhood that once prided itself on producing North America's finest "duck": the heavy, woven cotton used for postal-delivery bags and the sails that brought ships in and out of Chesapeake Bay. We forgo the roads and move by alleyway in search of trash.

What's the appeal of garbage? Garbage can tell us something about ourselves, about our consumption practices; it is the all-too-durable trace of human activity in the world. As we tramp through alleyways liberally scattered with diverse bits of refuse, we encounter bits of ourselves, evidence of our own trashy existence. Confronting the amazing volume of garbage that we continually produce makes us think of our own finitude: this junk will, quite literally, out-live us. And yet, trash can't so easily be reduced to a marker of human agency. It also displays a certain independence as it blows down the street to collect in piles and lumps that become dense points of obstruction for sewage systems and colonies for bacteria, or giant continents of plastic in the Pacific and Atlantic oceans. Garbage has a life of its own we discover as we explore its habitat in the alleyways of Baltimore. It exceeds whatever use or meaning we assign to it.



2

Hampden is a neighbourhood that has been defined by sudden waves of migration twice over. The first wave was formed by Appalachian workers who arrived in the mid 19th century to sell their labour in the mills. The second hit in the 1990s, when empty mill buildings became attractive studio spaces for artists. The two cultures of Hampden—inter-generational working-class families now marginalized in the neoliberal economy and a more mobile "creative class"—live side by side. New residents eat on the patio of an expensive Italian restaurant on Chestnut Avenue, while across the street people buy and sell crystal meth.

What did digging through and associating with the garbage of this neighbourhood do to us on our walk? How is it an occasion for an experience of materialist wonder akin to the sense of the wild Thoreau felt walking in the woods of Concord or atop Mt. Katahdin in Maine?⁵ This is a question of what powers (human and nonhuman) bodies have to affect one another and be affected by them in turn. Here we are invoking Spinoza's definition of a "body" as that which is simultaneously a *source* of action and susceptible to being altered or "affected" by its encounters with others, and thus also a *recipient* of action. Wondering at trash has a levelling effect: we look at it as it looks back defiantly at us. "It is never we who affirm or deny something of a thing; it is the thing itself that affirms or denies something of itself in us."⁶ It can also enable a fleeting connection across divides of race and class. It is an affective-aesthetic exercise, but not an "aestheticism." It requires only a willingness to expose oneself to the sensuous materiality of stuff.



4

It is not normal today to *think* of inanimate objects as possessing a capacity to do things to us and with us—even though it's quite normal to *experience* them as such. Every day we encounter the power of possessions, tools, clutter, toys, commodities, keepsakes, trash. Why do we then overlook the creative contributions of nonhumans and underestimate their calls? One source of the tendency is a philosophical canon based on the presumption that man is the measure of all things; another is a default grammar that diligently assigns activity to subjects and passivity to objects; another is what Henri Bergson identified as the action-bias built right into human perception—sensory attention is continually directed pragmatically toward the potential *utility* of external bodies, rather than toward their non-instrumentalizable aspects or thing-powers.⁷ We are all good moderns.⁸ And yet, for the better part of human history the notion that there is vitality in things was widely affirmed. We think that even today there is an underground intuition, despite the great disenchanting power of modern rationality, that human and nonhuman bodies engage in some kind of communication. We know that we are all matter, all the way down: why then shouldn't there be some resonance between the molecules of me and the molecules of stuff? There is a sense of this in Thoreau's walks. Where archaic thought sought enchantment by humanizing plants, Thoreau and many "new materialists" like us want to "plasticize" (mineralize?) humans. There is always some element of the non-human quality of the world at the core of whatever it is that we call human. We can think of what it means to humanize a stone, but let's push that further and think about the stoniness in the human.



3

On the other side of Hampden, past the highway, we find a small, seemingly forgotten neighbourhood of stone row houses between Woodberry and Television Hill. The neighbourhood strikes us as both beautiful and abrupt. It seems cut off from the rest of Charm City life. There's an enormous concrete overpass which a planner decided to plunk down right in the middle of a once-quaint stone village. One ambitious native tree seems to have made peace with this concrete foreigner, as it snakes its way up out of its shadow into the light. We hope to find some exciting garbage underneath it, but it's surprisingly tidy. (This reminds Jane of a sign that was common in the 1990s in windows on "The Avenue," Hampden's main shopping street: "Please keep Hampden Tidy.") Perhaps the humans too have made their peace with it.



5

Baltimore seems to be in a constant state of incomplete repair. You can't really tell if businesses and construction projects are on their way in or out, up or down. But whereas urban repair in the U.S. and Canada often issues in dramatic real-estate speculation, Baltimore's on-going rehab conforms more to a model of temporary *bricolage*. As Elizabeth Spelman writes in *Repair: The Impulse to Restore a Fragile World*, "Bricoleurs collect and make use of pieces of the past but do not try to return them to an earlier function."⁹

We head west to see the I-170, Baltimore's famous "highway to nowhere": an ambitious urban development project proposed by Robert Moses that would have stuck a four-lane highway right through west Baltimore in order to connect the city to the transcontinental I-70. Construction of the highway began in 1975, but the project, which cut through a vibrant African-American neighbourhood and displaced hundreds of vulnerable first-time homeowners, was thwarted by citizen opposition and lack of funds. What remained for a while was a sunken, two-mile stretch of highway dramatically terminating in a concrete wall. The highway is, one could say, the single biggest piece of garbage in the city. By the time we visited it, the city had begun tearing out the highway's dead end in order to replace it with a park. We get no good photos. The park will change things a little, but it can't erase the violence of this two-mile concrete scar.

**6**

The materialist mood of our walk isn't anything fancy or dreamy—it's everyday, a conversation starter. It makes us think about the consequences of our consumption practices, but also about the effects initiated by the "products" themselves as they live on after we've abandoned them. Plastic bags are everywhere. Why are people so committed to using them? Despite multiple attempts by the city of Baltimore to pass a bylaw that charges money for them, the measure never passes. Avoiding plastic bags is one simple and effective way of reducing pollution in the bay, keeping litter off the streets, and encouraging people to think of goods as durable rather than disposable. But despite these sound reasons, citizens don't seem to feel it. Maybe these tactics need to be pluralized: they not only need to give good reasons, but also try to alter the senses to encourage citizens to be more awake to thing-powers. Perhaps "vital materialism" could help here.

**7**

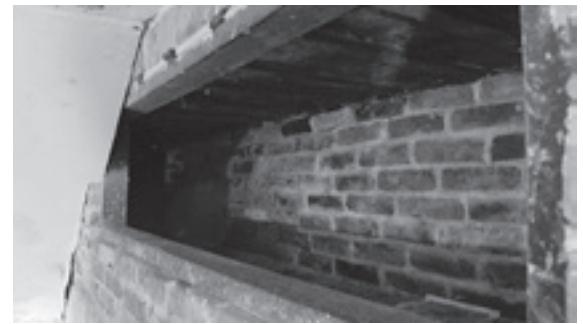
In a city like Baltimore it's hard to make connections with people across the stark lines of class and race. We go to Lexington Market and are struck by the experience of something like what Walt Whitman called democratic "comradeship": it "is to the development, identification, and general prevalence of that fervid comradeship...that I look for the counterbalance and offset of our materialistic and vulgar American democracy, and for the spiritualization thereof."¹⁰ Lexington Market is the oldest and most active of Baltimore's traditional seafood markets. Weaving our way through the crowd of human bodies shopping, chatting, waiting for the bus, selling drugs, and meeting with friends, we think about how the material constitution of the space enables the surprising encounters going on around us. We find a sopping wet thing under the table that we decide is gross. It looks like an eel, or a severed arm. We are told that it is some sort of sponge used to collect the runoff from the refrigerated cases of fish.

**8**

Ideas, like things, are dangerous because their effectivity is indeterminate—you know they're going to produce effects, but you don't know what effects. If "vital materialism" can have some positive eco-political potential, it has to counter the idea of vitality that is also at work in the neoliberal, capitalist practice of endless economic "growth." We've organized our entire society around a vitalistic understanding of political economy, with disastrous consequences: perpetual growth, unending streams of consumer "goods," over-stimulated desiring selves, mountains of poisonous garbage. As Deleuze and Guattari have said, "Capitalism is at the crossroads of all kinds of formations—it is neocapitalism by nature."¹¹ This materialism is ultimately unsustainable and self-defeating, as it undermines the activity of repair and the restorative capacity of the ecological systems that sustain it. Why do we keep on this way? Is it the thrill of endless immortality? But this is just one vision of vitality, and not the most desirable one. Renaissance humanists also thought about the vitality at work in history, but theirs was an organic vitalism that stressed the interdependence of growth and decline. Vital materialists also think that the world engages in real creativity, but its processes of growth and decay don't have to be channelled in a single capitalist direction. Instead they affirm the plurality of vital systems and their diverse forms of interdependence. The market is not a privileged site of vitality, and the vitality on display is actually plural—in distinction to the false choices posed by free market evangelists and their oligarchical backers.

9

Being a materialist means being open to surprises. We walk north from the market, past an abandoned restaurant on Eutaw that was the site of one of the city's most important civil rights sit-ins, and arrive at Seton Hill, a neighbourhood of renovated row-houses, public housing, and warehouses of unidentified purpose, surrounding an English garden park. We find a church we like on Orchard Street and decide to go in. On a plaque in the entrance we learn that we are in the oldest standing structure built by African-Americans in Baltimore. While Maryland didn't secede during the Civil War, it was the northern-most southern state and an active hub in the North American slave trade. The port of Baltimore was home to five slave pens near the inner harbour where human beings were bought and sold. In his speech "What to the Slave Is the Fourth of July?" Frederick Douglass mentions the terrible sound of "the piteous cries of the chained gangs that passed our door," as slaves were brought from the pens past his house on Pratt St. on the way to the harbour.¹² As we are leaving the woman in the Baltimore Urban League office (in the same building) suggests we check out the basement, telling us that there's a tunnel that was part of the Underground Railroad, the network fugitive slaves used to escape from the south to New York or Boston. We are both drawn to touch the bricks of the tunnel wall, where the material overcomes the semiotic: the slave was HERE, his or her hands left their mark on these bricks that we now touch. There is no plaque to celebrate the tunnel; only the baked clay stands witness.

**12**

Jane Bennett is Professor of Political Science at Johns Hopkins University, where she teaches political theory and American political thought. Her most recent book is *Vibrant Matter: A Political Ecology of Things* (Duke, 2010). She is a founding member of the journal *Theory & Event*, and is currently working on a project on over-consumption and practices of hoarding.

Thinkers like Graham Harman have recently been trying to articulate an "object-oriented ontology." This is a valuable project, but not the same as the one going on in our rubbish walk. Our aim has as much to do with politics (polemics) as metaphysics. Of course, "nature" lends itself to a variety of metaphysical accounts. Like Deleuze and Dewey, vital materialists are also pragmatists. For us today, living in the wealthy and profoundly unequal democracies of North America, vital materialism is a strategy for sensing the visceral dimensions of our destructive political culture and discovering alternatives to it. It is a way of opening ourselves to things so our minds and bodies can be changed by them, as well as a theory of agentic material assemblages. We lose sight of what a philosophy is good for when we lose sight of the very real problems that provoke it.

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10

Edified by our contact with these bricks, we are set to open ourselves up to what's next. We find some grass strewn with litter that reminds us of mushrooms we found earlier in the day in Druid Park. We were so very pleased, enchanted really, with the line of fungus we found in the park. But we don't care much for the line of trash in this park. Why? No materiality is ever really available to us as something utterly divorced from its cultural effects. But still, we value the useful fiction of the thing-in-itself, which still sometimes affords us a tiny glimpse of a material agency, which is indeed at work around and within us.

**11****Notes**

1. See en.wikipedia.org/wiki/Baltimore
2. Henry David Thoreau, *Walden, in A Week on the Concord and Merrimack Rivers, Walden, Maine Woods, and Cape Cod*, ed. Robert F. Sayre (New York: Library of America, 1985), 403.
3. Henry David Thoreau, "Walking" in *Collected Essays and Poems* (Library of America, 2001), 233.
4. Thoreau, *Walden*, 394.
5. See Thoreau, *The Maine Woods*.
6. Benedictus de Spinoza, "Short Treatise" in *Complete Works*, trans. Samuel Shirley (Indianapolis: Hackett, 1991), 82.
7. Henri Bergson, *Matter and Memory*, trans. Nancy Margaret Paul and W. Scott Palmer (London: George Allen and Unwin, 1911), 28-29.
8. See Max Weber, "Science as a Vocation" in *From Max Weber: Essays in Sociology*, eds. H.H. Gerth and C. Wright Mills (London: Routledge, 1952).
9. Elizabeth V. Spelman, *Repair: The Impulse to Restore in a Fragile World* (Boston: Beacon 2003), 5.
10. Walt Whitman, "Democratic Vistas," in *Walt Whitman: Poetry and Prose* ed. Justin Kaplan (New York: Library of America, 1982), 1005.
11. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: Minnesota, 1987), 20.
12. Frederick Douglass, "What to the Slave Is the Fourth of July?" in *The American Intellectual Tradition* vol. 1, eds. David A. Hollinger and Charles Capper (Oxford: Oxford University Press, 2001), 453.

"technology." It is from a lab, the result of propriety knowledge and production that belongs to a corporation, DuPont. But obscured by stories of Tyvek's immaculate conception within a technical ecology of research, innovation, and patenting is the fact that all materials in one manner or another need to be extracted from the earth. Their roots in the petrochemical industry emerge, and we can begin to understand the countervailing risks for a society completely wrapped up in Tyvek. Thinking of Tyvek as a process allows us to see how two contradictory registers of concern—both target and countervailing risks—enter contemporary architecture practice through the same material. Tyvek is not alone in this regard; contemporary practitioners are repeatedly faced with such contradictions. To reveal them we cannot continue analyzing architectural objects—as wholes. Despite critical ambitions, the whole remains inscrutable; it is only when examining sub-systems, component parts and constituent materials that we glimpse a more complete picture of our contemporary materiality and its ethical entanglements.

Notes

1. Paul Fiset, "Housewraps, Felt Paper and Weather Penetrating Barriers," Building and Construction Technology program in the Department of Environmental Conservation in the College of Natural Sciences, bct.eco.umass.edu/publications/by-title/housewraps-felt-paper-and-weather-penetrating-barriers
2. See the IECC website: resourcecenter.phl.gov/cocoon/morff/ResourceCenter/article/161
3. Peter Sloterdijk, *Terror from the Air* (New York: Semiotext(e), 2009). 20. For a more complete elaboration of his spatial philosophy, see Peter Sloterdijk, *Bubbles* (Los Angeles: Semiotext(e), 2011).
4. Ibid., 16.
5. "Homewrap" is a term that has come to denote Tyvek and its competitors. The term itself is indicative of the limitations of the product. It is not a full weather barrier, and the literature on the product takes care to avoid creating that expectation. See also, "Making sense of Housewraps," *Fine Homebuilding*, February/March 2006, 66.
6. Tychem is a related product that uses Tyvek by DuPont. See, among others, Outbreak, *Contagion*, *Breaking Bad*, *Back to the Future*, *The X-Files*, *The Andromeda Strain*, and *12 Monkeys*.
7. For product specifications for DuPont TY12S WH lab coat made of Tyvek, see safespec.dupont.com/safespec/productDetail.action?sessionID=9CA069A63D19FD1RC7C1
8. See: www2.dupont.com/Tyvek/Different_Protection/en/tyvek/story/index.html
9. In other forms of wall construction, a single material will perform several of these tasks at once. A monolithic masonry wall will provide all three functions with one material. A curtain wall, a modern and lightweight assembly technique, will use glass and metal (steel or aluminum) frames to provide structure, aesthetics, and insulation (although as a system it is not a great insulator).
10. William Morris and Catherine Brown, "Infrastructure for the New Social Compact," in eds. Douglas Kellogg and Kit Kranzel McCullough, *Writing Urbanism: A Design Reader* (London: Routledge, 2008), 138.
11. See www2.dupont.com/Tyvek/en-US/index.html
12. See www2.dupont.com/Tyvek/en-US/products/about_pgs/history.html; see also "DuPont (TM) Tyvek(R) Marks 40 Years of Energy Efficiency and Protection: Innovative Applications Help Protect Buildings, People, Products and Critical Documents," *PR Newswire*, www.prnewswire.com/news-releases/dupont-tyvek-marks-40-years-of-energy-efficiency-and-protection-58160667.html.
13. John D. Graham and Jonathan Baert Wiener, "Confronting Risk Tradeoffs," in eds. Graham and Weiner, *Risk Versus Risk* (Cambridge: Harvard University Press, 1991), 1.
14. James G. Seight, *The Chemistry and Technology of Petroleum* (New York, Basel: Marcel Dekker Inc., 1999.), 503.
15. Bruno Latour, *The Politics of Nature* (Cambridge: Harvard University Press, 2004), 22.
16. Ibid., 23.
17. Ibid., 23.
18. John D. Graham and Jonathan Baert Wiener, "Confronting Risk Tradeoffs," in eds. Graham and Weiner, *Risk Versus Risk* (Cambridge: Harvard University Press, 1991), 1.
19. Ibid., 2.

on the inside) are the visible face of the assembly. These heterogeneous layers are laminated together into a functional envelope. This material sub-specialization has brought speed and lightness to building, and with it a new relationship between construction and the market, with each layer being produced and developed independently by corporations. As these materials drifted into separate corporate spheres, new interfacing problems arose on the building site when the delaminating of envelopes into discrete layers created new fissures and voids where dampness could penetrate and mould grow. These are the concerns Tyvek addresses.

Tyvek shields a building's structure from water, while allowing humidity and moisture trapped in wall cavities to escape. Its performance is neither subject to taste, nor is it a political agent. It demands our trust because its production is so complex. It protects us from vapours at a molecular level invisible to human eyes—guardless of whether they belong to architect, engineer, or contractor. It fails due to micro lesions and capillary effects that can't be monitored, and its failure cannot be predicted; they can only be diagnosed.¹⁴

Tyvek does not fit into any of architecture's traditional material categories. It is neither ornament nor structure; as a "non-woven material," it has no place in Gottfried Semper's four elements of architecture. Because it is un-categorized, or perhaps because it is unseen, it remains absent from disciplinary discourse and theoretical speculation.

This condition of invisibility, coupled with the fundamental ways it relates us to our environment, allow us to liken Tyvek to infrastructure. Transportation infrastructure, such as freeways or subways, establishes the extent of our accessible environment as well as our mobility within it. Tyvek establishes the thermal and atmospheric conditions of our interiors. Urban infrastructures, "those utilitarian functions which merely support the economic productivity of the community," and Tyvek both belong to the realm of technological and engineering determinism.¹⁵ They are conditioned by criteria of performance and efficiency. They are buried and buffered out of vision and away from aesthetic, social, and political discourses.

Molecular Risk

Developed in the 1970s, Tyvek was the first synthetic vapour-permeable barrier, or "homewrap," and currently holds 70% of the market, having displaced felt papers in lightweight frame construction and building codes.⁵ Tyvek is an element in lightweight building envelope construction. In a typical wall section, it is on the exterior side of the envelope's framing and insulation, inside its sheathing. Based on its performance, it has been likened to a windbreaker, but Tyvek is actually more like a building's boxer shorts. During construction, Tyvek is visible for a short period of time before it is covered—Tyvek gets its fifteen minutes of fame.

Its application is not limited to homewrap. Understanding these other applications will clarify how it performs and how it has redefined the idea of "house." Tyvek and its associated materials have been tailored into a range of lab coats, coveralls and Level A and B protective suits.⁶ In the wake of catastrophic events, television cameras relay images of anonymous technicians, garbed in bright Tyvek overalls, goggles, and boots cleaning up disaster sites, although these images have also become familiar tropes in disaster and dystopian cinema.⁷ These suits protect against dirt, dry agricultural pesticides, asbestos, dry chemicals,⁸ radioactive dust, lead particulates, and other toxic dust.⁸

Tyvek slows the passage of vapours. Its felted structure allows for the passage of clean air, allowing its occupants' bodies to breath, but snags other particles in its fibers, slowing their progress toward the skin. Tyvek manages risks, but just as a homewrap does not promise to keep all water out of the house, these protective suits do not completely eradicate the possibility of exposure. They can, however, protect against certain contingencies by slowing the progress of airborne particles to a considerable degree.⁹ For a suit to completely block off the passage of dangerous particulate matter it would have to hermetically seal its occupant from the passage of all air, which would create the highly uncomfortable situation of slow suffocation. Tyvek suits offer a balance between protection and functionality by elongating the window of time before dangerous levels of exposure are reached—it's performance criteria are not absolute rules, but relations of probability.

Material as Infrastructure

Since Tyvek is thin and light, it has no inherent rigidity and must be tacked to other materials to assume its place within an assembly. Unlike sheet metal or wood veneer, Tyvek isn't a thin iteration of a material that we know by its more common and substantive form. And unlike a sheet of paper that can be made rigid through creasing, Tyvek's particularly lithe ductility resists any kind of folding; it is formless.

Lacking in structural, insulating, and aesthetic properties, it nevertheless takes its place among other materials in a wall assemblage. Tyvek didn't emerge to play a singular performative role; rather it came to fulfill a need that arose when the construction of building envelopes became foliated into a series of layers. Building systems such as platform framing and rainscreen have moved the industry away from monolithic or homogeneous construction techniques.¹⁰ In current practice, framing and sheathing materials provide structure, rigid or batt insulation provide thermal insulation, and siding, panels and veneers (on the outside, with gypsum board typically

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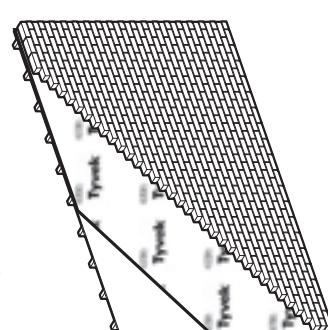
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Suits and Wraps



Tyvek Applications: Building weatherization (left). Protective garments (right).

Wrapping Homes

At least three contemporary building codes mandate the use of a water-resistant barrier, or house wrap, in wall assemblies. The Building Officials and Code Administrators International (BOCA) Code (1998) requires house wrap behind stucco, brick, stone, and other porous veneers. In this code, wrapping generally refers to tar-impregnated felt paper. Similarly, the International Residential Code (IRC) mandates that a layer of number 15 asphalt felt be installed outside of the house's stud structure (the water-shedding number 15 asphalt felt dates from the 19th century). In both cases, "other approved water-resistant barriers" are permissible if they meet performance criteria. The International Energy Conservation Code (IECC) specifically mandates the installation of a vapour-permeable barrier.¹ (Vapour-permeable barriers protect from bulk water and, through their specific materiality, manage the flow of air, vapours, and particulate matter.) They condition how a house breathes.) The IECC, created in 1989 and since adopted in 41 states, "contains energy efficiency criteria for new residential and commercial buildings and additions to existing buildings; it covers the building's ceilings, walls, and floors/foundations; and the mechanical, lighting, and power systems."²

These codes serve different purposes, which explains their differing requirements for house wrap. The IRC and BOCA primarily address structural concerns in construction, and house wraps are specified to protect a building's primary structure from the degradation caused by exposure to the elements. The IECC addresses environmental conditions by establishing standards for environments within a building, as well as responsibilities that buildings have toward the environments in which they are situated. The ascendency of house wraps indicates a shift in our image of the house, moving from an assemblage of bricks and mortar toward an environment delineated by membranes and foams; this shift has also brought with it new kinds of risk. These three building codes legally define a house as an interior, air-conditioned environment that, as Peter Sloterdijk summarizes, "consists in disconnecting a defined volume of space from the surrounding air."³ As with all human environments, this conditioned interior must maintain "ecologically dependent vital functions: respiration, central nervous regulations, and sustainable temperature and radiant conditions."⁴ This distinction produces differential conditions of temperature and humidity inside and out, which in turn produce condensation, mould growth and air quality issues that can affect the constitution of a house and its inhabitants. Building codes address these concerns by specifying materials with mandated behavioral and performance criteria; placing limitations on the amount of energy that can be consumed to maintain the interior environment; and recognizing that a barrier acts in concert with other materials and has responsibilities towards their protection.

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Wrapped up in Tyvek by James Khamsi



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Erasing Environment: The Soldier of the Future and Utopian Smart Textiles

by Kirsty Robertson
pg. 17 illustration by Femke Herregraven and Henrik van Leeuwen



1

Invitation in hand, I made my way to the blue “Wedgwood” conference rooms at the Chateau Laurier in Ottawa for the Soldier of the Future workshop to which I had (accidentally) been invited.¹ I had dressed carefully, a scholar of contemporary art camouflaged as a civil servant. As it turned out, my cotton shirt, pleated skirt, and flat shoes were all wrong. The workshop was all polyester, rayon, microfiber, cheap suits, cotton, and wool army uniforms. I stood out, first drawing curiosity: “Who did you say you were?” To which I vaguely replied “an academic,” and then the dismissal as I sat at tables with representatives from Lockheed Martin, Rheinmetall, General Dynamics, and numerous Canadian start-ups. They were there to get in on the generous funding the government was investing in promoting an integrated system of communication technology and support for the needs of Canadian soldiers.²

Participants volunteered to try on Canadian field uniforms and describe the experience of standing in the gear for ten minutes: “The weight! I can’t believe how heavy this is,” “imagine wearing this in the heat of Afghanistan.” The exercises, brainstorming sessions, and presentations all emphasized a need for lighter and more efficient uniforms and backpacks. They also demonstrated the vast gulf between the focus of critical humanities scholars, activists, and journalists covering the military, and the great sums of money pouring into that sector. It was not so much that perspectives critical of such investment were erased or suppressed, as they were completely irrelevant to the flow of materials from laboratory to procurement to conflict. Any space for critical interruption was relegated decisively outside of that seamless system.

This is not to suggest that the participants in the workshop didn’t have very real concerns. They did, clustering around how to protect soldiers from heat stroke, injury, permanent maiming—and from death. Throughout, troops were treated with reverence and respect. Meanwhile, “the enemy,” whether Taliban or otherwise, was constructed as a threat to “Canadian values,” manifested through the vulnerable bodies of Canadian soldiers. A series of presentations contrasted Taliban soldiers—young men in white robes and sandals holding outdated automatic guns—with Canadian personnel kitted out in the latest high-tech equipment. One might expect an advantage for Canadian soldiers. But instead, one presenter asked, “How can we compete?”

The presenter continued, illustrating his argument with an image showing a Canadian soldier carrying an enormous backpack, bent over on the side of the road, exhausted and very hot. “The Taliban have such an advantage,” he said, “they are mobile, they don’t overheat, and they can move quickly.” The question of the workshop was thus: How can we create smarter textiles, technologies, and equipment that can outdo guerilla soldiers who wear cotton robes and sandals?³ In other words: how can we create a militarized and shielded human-architecture hybrid with the ability to both survive in and be protected from a hostile environment. There was no discussion of reducing the amount of clothing or equipment that the soldiers would carry.

Soldiers, while treated with reverence, were also clearly sources of profit. A laboratory that could find a way to ease the burden of weight while providing everything from bullet-proof underclothing to an integrated system of video

cameras, food, water, bedding, ammunition, changes of clothing, and power source stood to secure a lucrative government contract. The Future Warrior needed to be both walled-in and able to interface with the outside world. Thus, the terminology of the workshop narrowed in focus: “how can we erase environment?” The term ‘environment’ was used to cover everything from weather to IUDs, from suicide bombers to overbearing civilians. Answers lay in smart textiles and advances in nanotechnology, exterior skeletons, and integrated soft communication systems. What was being asked for was the creation of the ultimate, arm(our)ed nomad.

Though answers could have come from farther afield—for example, more drone aircraft or long-distance intelligence—at the Integrated Soldier System Project, the focus was on how bodies could be protected and become weaponized entities by communicating remotely, seeing at night, filming, and remaining cool while doing so. Participants listened to presentations on innovative processes of electrifying cloth by weaving electrical circuits directly in to cotton, wool, and polyester; the use of solar power to alleviate battery weight; shoes complete with GPS devices that could “find their way home”; and uniforms equipped with thin tubes through which cold water could pass, creating microclimates to cool down overheated infantry. The proposals stretched from projects already used in war to the highly speculative, but the ultimate goal was for one proposal: an integrated system, the contract for which would be undertaken by a single bidder.

At the time of the 2010 workshop, the Canadian government was part of NATO operations in Afghanistan and fond of referring to military procurement as an important part of the national economy. Thus, hundreds of millions of dollars had been made available for the innovation of the Future Warrior.⁴ The workshop imagined conflict in terms of a kind of soft escalation: the Taliban had greater mobility, therefore Canadian soldiers required a more flexible and better integrated armour system. In turn, the production of this system required public investment and private enterprise that together would allow Canadian soldiers to “bring peace” to troubled environments (from which they would be utterly protected). Canadian companies would profit not only from designing the integrated systems of the Future Warrior but also from intellectual property rights and patents.⁵ In these equations, the material and immaterial were tightly interwoven.

The Canadian Integrated Soldier System Project is something of a latecomer to the Future Force Warrior strategy. The strategy originated in the United States in the 1990s and is now heavily funded and operational in more than 20 NATO and allied countries.⁶ The goal of this program, as noted on the MIT Institute for Soldier Nanotechnology’s website, is “to help the Army create a 21st-century battle suit that combines high-tech protection and survivability capabilities with low weight and increased comfort.”⁷ The project crosses boundaries, bringing together multinational corporations and military personnel with the work of engineers, artists, designers, and architects, such as Neri Oxman. Her work at

MIT’s Material Ecology Lab to produce bio-inspired armour functions at the imaginative limits of the project.⁸ By the 2030s, it is hoped that the Future Soldier will be introduced, using the latest technologies, pushing the limits of smart textiles and other integrated systems. And, of course, a soldier system needs a war.

2

Apparently far removed from front-line war zones, smart textiles are cast in much more utopian projections and are often renamed: electronic textiles, wearable technologies, fashionable technologies. They are seldom directly supported by military investments, though materially they are deeply connected. If the integrated soldier systems are focused on “erasing environment,” many research-creation projects appear to do the opposite. Consider, for example, the well-known “Hug Shirt” developed by CuteCircuit (London), which allows wearers to “send hugs over distance.”⁹ The garment, embedded with sensors, measures strength of the touch, skin temperature, and the heartbeat of the sender, and then recreates those sensations (and emotions) using actuators to translate them to the wearer of another Bluetooth-enabled shirt.¹⁰

The prize-winning Hug Shirt is just one example among many, but it clearly demonstrates the way that “civilian” smart textiles are often not about protection and erasing environment but about creating connections in a world that is perceived to be individualistic and anti-social. Seemingly different from the concerns of the Integrated Soldier Systems, wearable textile technologies sometimes delve into the connected histories of textiles and computing,¹¹ or the comforting properties of fabric, material, and the intimacy of clothing.¹² They draw on the metaphorical possibilities of textiles, on an etymology of networking built directly into the language of textiles—the material, the interwoven, the connective, the tissue.

One finds projects that capture both the imagination and the headlines: Fabrican’s spray-on fabric clothing, Maggie Orth’s playful soft light dimmers and musical jackets, Hussein Chalayan’s technology-enhanced fashion designs.¹³ One finds similar aims and goals in responsive environments that make use of smart or technologically enhanced textiles. In the introduction of one typical text on responsive textile environments, the authors write of the artists, scientists, and engineers involved: “Whether their focus is clothing or immersive environments, their aim is to make textiles that interact with their users not only in visual or tactile terms, or even by being mobile, but which use digital interfaces to respond in all of these ways.”¹⁴ According to Lucy Bullivant, the impact of these textiles “is phenomenological, meaning that the body is able to directly experience its environment in a very direct and personal way.”¹⁵ High-tech membranes, skins and tensile architectures create mobile or static structures that interact with their visitors and inhabitants to create new communities and affects. These textiles are spoken about with great reverence—it is not a question

of if they will lead to new communities and social benefits, but when.

There are a number of examples that illustrate this reverence. Surface Kinetic Integral Membrane (SKIM), for example, is a responsive textile composite that monitors the mood of human occupants in a room and adapts accordingly. Though the material was never manufactured, the work re-imagines architectural and domestic space as deeply and emotionally imbricated in the lives of its inhabitants and occupants.¹⁶ The London-based design firm Loop.pH provides a second example of this in their ephemeral textile and living environments: delicate walls woven with living plants, light-reactive photosynthesizing window blinds, and glowing, flocked wallpaper that responds to ambient sound by changing colour.¹⁷ Sweaterlodge, a tent made from fleece manufactured from recycled plastic bottles designed by the architecture firm Pechet and Robb, is another example. Here the environment created is both claustrophobic and womb-like, as diffuse light filters through the orange fleece into an open space where visitors can ride bicycles to power films and lights. Though relatively low-tech in comparison to some of its counterparts, Sweaterlodge raises issues of resource use and community-building, suggesting the two cannot be separated. There are hundreds of examples that use new and smart fabrics to encourage interaction and celebrate the "virtues of the transitory," the ease with which fabric structures can be dismantled and moved.¹⁸ SKIM, the Loop.pH pieces and Sweaterlodge, along with the work of a number of other architects and designers, suggest ambient spaces with untapped possibilities for creating communities of sentiment that might offer the radical potential for rethinking both space and social connections.

These high-tech and often mobile structures are part of a much wider application that Bradley Quinn calls "textile futures"—faster, lighter, stronger textiles that can stop bullets, hoist satellites into orbit, and withstand temperatures hot enough to melt steel.¹⁹ Tiny fibres, writes Quinn, will rebuild the world. Truly exciting projects are currently being imagined that cross the boundaries between art, experimentation, and architecture, and offer endless unfettered possibilities. A September 2009 issue of the magazine *Fabric Architecture*, for example, showcased flexible and provisional housing proposals that can be easily transported and quickly assembled in post-disaster scenarios.²⁰ Another issue from September 2011 focused on the application of high-tech fabric solutions to environmental catastrophe and questions of sustainability (for example, sophisticated, technologically enhanced awnings that provide natural shade instead of air conditioning).²¹ Quinn also points to the numerous advances in medical textiles, high-tech solutions to problems of mobility, communications, and, again, post-disaster relief. In these scenarios, the infinite potential of smart textiles is writ large.²² But at the same time "textile futures" remain essentially that: imaginative propositions that may change the future, but largely exist only in theory. Is it possible that the speculative nature of many of these projects allows them to push the limits of imagination, but forecloses their actual critical potential?

At first glance, this appears not to be the case, although closer examination suggests otherwise. The emphasis of civilian projects is quite different from that of the Integrated Soldier System workshop, where smart textiles rarely venture to the limits of the imagination but are immediately slotted into existing frameworks for funding, invention, and distribution. Nevertheless, outside of the workshops and defense industry exhibitions, Future Warrior projects are recycled as fascinating, science fiction-like developments. Recently, the Future Warrior was shown in the Bruce Mau-curated exhibition *Massive Change*, which looked at how design could improve the welfare of humanity. According to Mau, the Future Warrior was included because it has led to decreases in soldier casualties, at least on one side of the conflicts.²³ Similarly, a project from Nexia Technologies (Montreal) to create bullet-proof undergarments from spider silk collected from transgenic goats, can be read in terms of this kind of fascination.²⁴ The Nexia project (which ultimately proved too expensive) was picked up by Margaret Atwood in the post-apocalyptic genetic modification novel *Oryx and Crake* (where it appears as the spout-gider), and also by artist Jalila Essaïdi, who, collaborating with the Forensic Genomics Consortium Netherlands, transplanted transgenic spider silk into human skin to create bulletproof skin (for artistic consumption only).²⁵

Essaïdi's work and the Future Soldier's appearance in *Massive Change* at the Vancouver Art Gallery and the Art Gallery of Ontario, appear to blur boundaries between art, design, and military R&D in a manner that was simply not present at the Integrated Soldier System Project. These artistic contributions make this research appear imaginative and exciting. However, in many projects commenting on conflict and safety, the proposed solutions aestheticize the problem, creating visibly powerful answers that elide the underlying causes. Thus high-tech textiles are often proposed as housing solutions for the millions displaced by war, conflict, and resultant famine. In 2006, the United Nations High Commission for Refugees released a report on "humanitarian design," which argued that high-tech textiles had a significant role to play in the protection of refugees, including anti-malaria blankets and tents that use nano-technology and micro-encapsulation to prevent mosquito bites, and tents and fabrics fitted with solar cells and intelligent polymers that provide an electrical circuit. The UN report imagines a future in which tent cities are not associated with exceptional circumstances, squalor, and protracted waiting, but with small ecological footprints, comfort, and community.²⁶

But the UN's call for a idyllic tent city won't come to fruition—the report notes that it is too expensive. Paradoxically, refugee camps are also produced by the same

logic that demands better soldier systems and the soft or hard escalation of conflict. Theorists have, over the past decade, talked about the globalization of war—showing how war is no longer a "state of exception" but everyday reality, diffused through both discursive and material registers in a series of apparently unending and un-stoppable conflicts: the War Against Terrorism, the War Against Drugs, the War Against Poverty.²⁷ Conflict is the new norm, inexorably changing the political economy of the social.

As noted above, there is a deep chasm between the way textile futures are imagined and the number of projects actually brought into being. Smart textile projects remain in large part imaginary, prototypes for what the world could be. Such projects are occasionally the innovative public face of companies that make their profits in much more mundane ways—such as through the collection of IP rights and technology transfer—and are thus much more about publicity than projects to be realized.²⁸ Though some projects, such as the Hug Shirt, Maggie Orth's work, and Sweaterlodge, make it beyond the prototype, many come into being through the sort of military-led cooperation seen at the Soldier of the Future workshop. Thus, if textiles are to rebuild the world, they will do so in a very particular order—from military design down.

3

Walking in to the workshop, I should not have been surprised by the microfibre and polyester-blend suits. Polyester remains one of the most popular textiles used and worn around the world, and it was vital in the development of nanotechnology and smart textiles. Often described as the textile equivalent of fast food, polyester was invented during the Second World War as an alternative to natural fibres; it didn't wrinkle and could be easily washed and cared for. But polyester, like most synthetic fabrics, is a petroleum-based product. Ethylene, which is derived from petroleum, is the principle ingredient of polyester.²⁹ As Luz Claudio writes in an article on waste and the fashion industry, the demand for polyester doubled between 1992 and 2007. She investigates the energy-intensive manufacturing of polyester and other synthetic fabrics, taking note of the large amounts of crude oil used in the process, not to mention the release of emissions including volatile organic compounds, particulate matter, and acid gases such as hydrogen chloride.³⁰

This is true of the textiles discussed here, from nanotechnology and the carbon used in fire-retardant textiles to, on a seemingly opposite scale, the quantities of pesticides, fuel, and waste water used in making cotton. As 'fast fashion,' or over-buying cheap clothing, becomes increasingly the norm, secondary and tertiary markets for textiles and apparel have also blossomed as clothing is "recycled" and donated, thus destroying smaller localized production operations (in Africa and elsewhere) and increasing the consumption of fossil fuels through the global transportation of huge amounts of used clothing.³¹ The environmental impact of textiles has been well documented.³² Less so the overlapping systems at work—for instance, the relationship between polyester production, extraction method patents, and conflict in oil-rich regions. Conflict, in turn, begets the need for new, higher-tech soldiers to combat cotton-wearing guerrillas. In the meantime, the environmental destruction wrought by the textile industry leads to more conflict, climate change, and increasingly unsustainable life-styles. The polyester suits at the workshop told a story of their own.

4

In a recent art intervention, designer Christien Meindertsma created *One Sheep Cardigan*, a project that followed a single, named sheep from birth to sweater. Each finished sweater came with the information about the sheep, a merino breed raised on an organic farm.³³ The *One Sheep Cardigan* and *One Sheep Sweater* projects followed from Meindertsma's work *Pig 05049*, where she traced each part of a particular Dutch pig (no. 05049) after it had been slaughtered. Though *Pig 05049* might seem far removed from the Integrated Soldier System workshop, they have much to say to one another. The integrated system planned for Future Warriors is based on a model that brings various components together into a seamless whole—a process that, as I argue above, needs to be carefully unraveled and revealed as a strategy of critical inquiry. It is this process of unraveling that underlies *Pig 05049*. In a write-up on the project, it is noted:

After slaughter, bits and pieces of the Dutch pig travel around the world. Gelatin from its skin ends up in liquorices and gums, and even cheesecake and tiramisu. In the weapon industry the gelatin is used as conductor for bullets. Pork fat is one of the ingredients of, amongst others, anti-wrinkle cream and shampoo, information that producers are not too keen on admitting. The glue made from pig bones makes matches sturdier and porcelain is manufactured from its ashes. Protein from pigs' hair contributes to making bread soft. Every part of a pig is either eaten or processed. Should anything be left over, it is converted into green electric power.³⁴

All of a sudden, the pig is no longer a pig, but a mapped and quantified package of commodities. The *One Sheep Cardigan*, in response, does the opposite—refuses the process of division and instead creates a cardigan, socks, and other knitted goods from a single, well-cared for, and (most importantly) known living entity. In doing so, Meindertsma's work provides a model for critiquing the military projects described above. Textiles, clothing, and apparel are almost always thought of as cut off from their processes of production.

Bruce Robbins suggests we focus on the opposite—the shocking moment when one realizes that one's clothes have been made by people, cultivated from the soil to become the finished garment in one's hands through hundreds of

others and systems of manufacture, transportation, and commodification.³⁵ Robbins calls this moment of realization the 'sweatshop sublime,' the moment, for example, where the whole system exposed by Meindertsma in *Pig 05049* is revealed and made accessible. The *Pig 05049* project refuses to consider that environment could be erased, presupposing instead that this is an impossibility. Read in this way, what the Future Warrior project's integrated systems attempt to do is not erase environment, but refuse to understand it in all but the most superficial terms. Despite thermal performance, light-weight technology, and all the rest, integrated systems cannot escape their own evasiveness, their own weightiness, their own anchoring in new and old formations of capital.

At the Integrated Soldier Systems workshop, and in the utopian smart textiles laboratories run by artists, designers, and engineers, high-tech textiles are drawn upon to solve pressing problems: death and injury to soldiers in the field, as well as questions of sustainability, community-building, and caring. Often they are successful. But just as often such projects and workshops refuse or erase critique. At this workshop, critical engagement was unimaginable in the closed circuit of military procurement. In the civilian examples, the utopian impulse of the projects often forecloses further questioning. Textiles can't solve what the humans making, inventing, distributing, and profiting from them also can't solve—that the very materiality of new fabrics depends on the same exhaustible commodities. Ignoring these links means making projects that offer only surface or symbolic solutions. On the other hand, applying a kind of material criticism to smart textiles means admitting that what on the surface may appear utopian is layered, fallible, and compromised, but nevertheless still laden with potential and possibility.

Kirsty Robertson is a professor of contemporary art and museum studies at the University of Western Ontario in Canada. Robertson's work focuses on the study of textiles, wearable technologies, and immersive environments. She considers textiles within the framework of globalization, activism, and creative industries. At present, she is working on her book *Tear Gas Epiphanies: New Economies of Protest, Vision and Culture in Canada*.

Femke Herregraven is a graphic designer based in Amsterdam. Her work deals with issues where design, (information) politics and economy collide. Through research and speculative design projects she aims at deconstructing the role of design in maintaining power structures and reflecting on possible alternatives.

Henrik van Leeuwen is a graphic designer/researcher and media artist with an interest in global phenomena where technology, design and power structures intersect. Henrik currently works as a freelance designer and media artist in Utrecht and Amsterdam, and is always interested in meeting and working with (inter)national partners and clients.

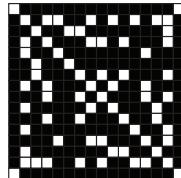
Notes

- I say accidentally because I certainly did not fit the bill of most academic participants. All of them that I met worked in laboratories developing textiles and applications. I spent some time trying to figure out how I was invited and eventually decided that the workshop must have required a quota of academics and someone did an Internet search, found an abstract I had written which may have had key words (such as military and textile) and invited me without actually looking into my research.
- The program set aside CDN \$310 million. See David Pugliese, "Firms battle to build future warrior," *Ottawa Citizen*, 21 July 2008, A1.
- As a note of clarification, I use "we" here because it was repeatedly used in the workshop, creating a self-contained system where there was simply no room for critical engagement.
- Mike Blanchfield, "\$60B in Defence Spending Rolls on Despite Recessions; New Equipment Purchases Good for Economy," Defence Minister Says," *Edmonton Journal*, May 28, 2009, A4.
- See the WIPO (a UK company who were present at the Ottawa workshop) webpage on Intelligent Textiles to see how this works: "Digitize Your Clothes: Look Smart in Intelligent Textiles," World Intellectual Property Organization, accessed on 1 October, 2011, www.wipo.int/ipadvantage/en/details.jsp?id=2610.
- Mike Hanlon, "Future Warrior Suit 2020," *gizmag*, accessed on 15 May, 2010, www.gizmag.com/go/3062.
- See "Enhancing Soldier Survivability," Institute for Soldier Nanotechnologies, accessed on 1 October, 2011, web.mit.edu/isn/aboutus/index.html.
- Neri Oxman, "Home Page," accessed on 13 September, 2011, web.media.mit.edu/~neri/site/projects/armour/armour.html
- CuteCircuit, "Hug Shirt," accessed on 15 May, 2010, www.cutecircuit.com/products/thehugshirt.
- Ibid.
- See Sadie Plant, *Zeros and Ones* (London: Double Day, 1997).
- See the work of Joanna Berzowska, <http://www.berzowska.com>
- For descriptions of many of these projects see Sabine Seymour, *Fashionable Technology: The Intersection of Design, Fashion, Science and Technology* (Vienna: Springer Vienna Architecture, 2008) and *Functional Aesthetics: Visions in Fashionable Technology* (Vienna: Springer Vienna Architecture, 2011).
- Sarah Bonnemaison and Christine Macy, "Introduction," in *Responsive Textile Environments*, eds. Sarah Bonnemaison and Christine Macy (Halifax: Tufts Press, 2007), 7.
- Quoted in Ibid.
- Nimish Bilaria, "Adaptive Corporate Environments," (2007), accessed on 12 May, 2010, repository.tudelft.nl/assets/uuid...de3e...arc_biloria_20071009.pdf.
- Loop.pH, "Home Page," accessed on 2 October, 2011, loop.ph/bin/view/Loop/WebHome.
- Christopher MacDonald, "SweaterLodge: Curatorial Essay," www.pechetandrob.com/sweaterlodge/curator_essay.html.
- Bradley Quinn, *Textile Futures: Fashion, Design and Technology* (London: Berg Publishing, 2010).
- See *Fabric Architecture Magazine* fabricarchitecturemag.com.
- Ibid.
- There are projects that do investigate the juncture of military with smart textiles, playfully reworking armour into aesthetically pleasing technologically enhanced shells. For example, see Amy Thompson's Plastic Analogue collection or XS Lab's Sticky, Stiff, and Itchy dresses, which draw on urban paranoia and security, but do so in a lighthearted way (and also function as a way to convert human kinetic energy into electric energy): captain-electric.net/site/dresses.php; Seymour, *Functional Aesthetics*, 29.
- Bruce Mau Design and the Institute Without Boundaries, "Massive Change," accessed on 15 October, 2011, www.massivechange.com.
- "GM Goat Spins Web-based Future," *BBC News*, accessed on 14 June 2008, news.bbc.co.uk/2/hi/sci/tech/889951.stm
- Jalila Essaïdi, "[2.6g 329m/s](http://jalilaessaïdi.com/2-6g-329m/s)," jalilaessaïdi.com/2-6g-329ms.
- Bradley Quinn, "UN report on Future Refugee Camps" United Nations High Commission on Refugees, 2006, cited in Quinn, 2010, pp. 1-10.
- See, for example, Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life* (Stanford: Stanford University Press, 1998); Michael Hardt and Antonio Negri, *Multitude* (London: Penguin Press, 2004).
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- Claudio Luz, "Waste Couture: Environmental Impact of the Clothing Industry," *Environmental Health Perspectives* 115, no. 9 (September 2007): 450.
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- Regine Debatty, "PIG 05049, A Conversation With Christien Meindertsma," *We Make Money Not Art*, accessed on 12 August, 2011, www.we-make-money-not-art.com/archives/2008/08/christien-meindertsma-what-is.php.
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conflict couture

speculative textile
SPIDER ADAPT

Google Labs



UN Research Institute for Textile Development

speculative textile
MEMORY POLYMER

National Textile University Faisalabad, Pakistan



The World Bank Unesco Rockefeller Foundation



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TECH TEX

Business Coordination House, TechTex India magazine

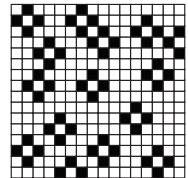


Teijin Group, Osaka, Japan

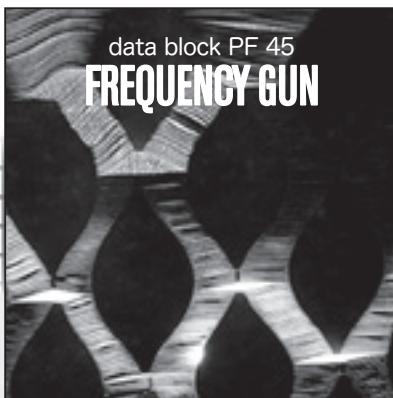


speculative textile
KAMELEO•TEC

Berlin Zoological Garden, Vogue

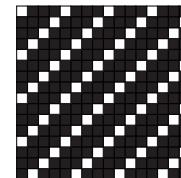


National Institute of Science and Technology



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PRÉT•À•TRONICS

Karl Lagerfeld, Jimmy Choo



Lockheed Martin Defence Research and Development Canada

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SELF•HEALING COATING

High Impact Technology National Defense Association



Pentagon Pacific North West Defense Coalition

research archive
INTANGIBLE SECOND SKIN



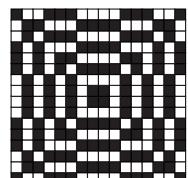
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speculative textile
CARBON NANOTUBING

Darpa E-textile Program



NIKEiD MIT Center for Bits and Atoms

speculative textile
SMART SHIRT

Smithsonian Institution

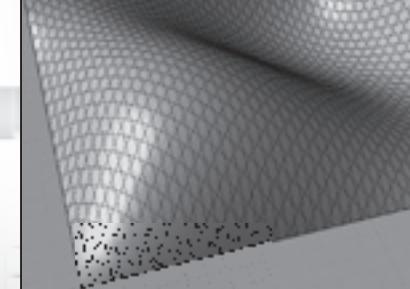


Georgia Tech Research Corp.



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FARADAY SKIN



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GEL ELECTRO SPINNING

Clemson University MIT



US Army RDECOM

speculative textile
BOMBYX E•SILK

Moscow Biennial 2011

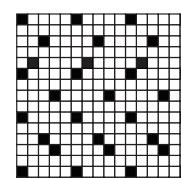


Dubai Infinity Holdings US Army Natick Soldier R&D Center



speculative textile
STRATEGIC SOLAR SKIN

Norwegian Micro and Nano Laboratories



Mediamarkt, Walmart

What's the Matter with Materialism?

by Andrew Payne

The following is an excerpt of a seven-day email dialogue between two speakers on the contemporary meaning of matter. The speakers are named here **S1** and **S2**, what follows is the first day of that conversation. The complete text of the seven-day dialogue is set to be published in full at a later date.

DAY 1: WHITHER MATERIALISM?

S1: So what's the matter—with materialism, I mean?

S2: Your question of course alludes to a conversation we had some months ago in which I cast suspicion on contemporary claims to the materialist position, and suggested that, through too wide and habitual a use, the term "materialism" was in some danger of bursting at the semantic seams. Though no doubt rashly dismissive of the claim that "matter" and its cognate terms (materialism, materiality) continue to make on our intellectual attention, the questions I posed to you and the suspicions I expressed were intended, among other things, to point to the increasing importance of the "immaterial" in discussions of the epistemo-ontological, technological, and political-economic disposition of the present.

S1: Can you say a little more concerning what you imagine this crisis of materialism—if we can call it that—to imply?

S2: An important indication that something might be shifting in our conception of what the materialist position entails in view of contemporary realities was Jean François Lyotard's "Les Immatériaux," an essay that was first circulated in 1983 before being published in *Art & Text* in 1985, the same year in which it became the basis for a major exhibition organized by Lyotard at the Pompidou Centre. In this work Lyotard develops certain themes from his earlier discussions of the dominance of techno-scientific thinking within what he was then attempting to describe as a postmodern condition. Citing the neo-Leibnizian turn in contemporary thought and the postmodern preoccupation with complexity, Lyotard argues that these are symptoms of an ongoing dissolution of the mind/matter distinction that had organized the Cartesian trajectory in modern thought. According to this account, postmodernity would amount to a Leibnizian counter-modernity in which mind and matter are conceived on a continuum, for which the term "Immatériaux" would serve as the name. As Lyotard puts it in a paper he gave at a conference sponsored by the London ICA in that same year:

What is remarkable (to me, at any rate) in the so-called 'new technologies' is that

the machines involved are not substitutes for mechanical operations, but for certain mental and/or linguistic operations. For example: calculation; storage and circulation of information; storage and availability of rules, or literary compositions, and so on. These sorts of machines assume a high level of analysis, not only of the mind, but also of matter: that is to say a merging of hard sciences (or sciences of matter generally) and soft sciences. An effect of that merging is that the principle that mind and matter are two different substances (as conceived in Descartes' philosophy for instance) is less and less convincing.

The overlapping of mind and matter in contemporary techno-science is the aspect we were particularly concerned to emphasize in the exhibition *Les Immatériaux*. We were trying to exhibit, not the unrepresentable, and to that extent it is not a sublime exhibition, but the retreat of the traditional division between mind and matter. Maybe the human mind is simply the most complex combination of matter in the universe... Maybe our task is that of complexifying the complexity we are in charge of. Perhaps this is a materialist point of view, but only if we see matter not as substance, but as a series of invisible elements organized by abstract structures. So we can be materialists today and in a sense maybe we must be. But within this horizon, the development of techno-science induces a slow but profound transformation of our conception of the relationship between man and nature.¹

The "immaterial" has been understood by any number of thinkers following in Lyotard's wake as a useful term for describing the new modalities of labour and consumption that follow from the techno-scientific developments he associates with postmodernism. For instance, In *L'Immatériel* (2003), André Gorz, drawing on a burgeoning literature on the new "post-material" economy, links the concept of immaterial labour to both the Lyotardian theme of the "postmodern" and the emergence of a new "knowledge economy":

Modern capitalism, centred on the validation of large quantities of material fixed capital, is increasingly giving way to a postmodern capitalism centred on the valorisation of so-called immaterial capital, which is also termed 'human capital,' 'knowledge capital' or 'intelligence capital.' This change is accompanied by new transformations of work. The simple abstract labour which has, since Adam Smith, been regarded as the source

of value, is giving way to complex labour. Material productive work, measurable in units of output per unit of time, is giving way to so-called immaterial work, to which the classic standards of measurement are no longer applicable.²

Antonio Negri and Michael Hardt have offered similar prognostications on the dematerialization of the labour process that has occurred with the shift from a Fordist economy based on heavy industry to a post-Fordist "service economy," a shift in which computation is again seen as having a crucial role to play:

Since the production of services results in no material and durable good, we define the labour involved in this production as an *immaterial labour*—that is, a labour that produces an immaterial good, such as a service, a cultural product, knowledge, communication... Even when direct contact with computers is not involved, the manipulation of symbols and information along the model of computer operation is extremely widespread. In an earlier era workers learned how to act like machines both inside and outside the factory. We have learned (with the help of Muybridge's photos, for example) to recognize human activity in general as mechanical. Today, we increasingly think like computers, while communications technologies and their model of interaction are becoming more central to labouring activities.³

As Negri observes in his response to Derrida's *Spectres of Marx*, these political-economic transformations have ontological and epistemological preconditions and corollaries. Hence dematerialization, or, at any rate, immaterialization (but let us not be too quick to assume that they are equivalent phenomena) involves not merely a political-economic transformation, a new calibration of the relationship between use, exchange, and surplus; it also implies a new understanding of Being itself, an understanding informed by the idea of the spectre or *revenant* that would be paradoxically prior to and a condition of the Thing of which it is putatively the ghostly remainder or trace. What Negri stresses, pointing to what he imagines to be the political limits of deconstruction, is the relationship between this spectralization of Being and new modalities of "exploitation":

In reality, in Marx's work in both *The German Ideology* and *Capital*, the non-spectrality of the productive subject opposed the conditions for constructing capital's spectrality: the former was indicated through the activity of demystification and was expressed in the will to reappropriation, each and every time the movement of exchange-value clashed with the irreducible independence of 'use-value,' therefore with a heterogeneity capable of generating an alternative. But where can heterogeneity be found? Where can use-value and subjectivity be found at present? Today, the labour paradigm has greatly changed (in particular the division between intellectual and manual labour and the alternatives linked to different projections of forms of value). In as much as it concerns labour, the post-modern is not simply an ideological image, but the recording of a deep and irreversible transformation in which all traits of the Marxian critiques of value—more precisely, that theory of spectres—stop short. 'These seismic events come from the future, they are given from out of the unstable, chaotic, and dis-located ground of our times. A disjointed or dis-adjusted time without which there would be neither history, nor event, nor promise of justice.' Derrida's first conclusion is powerful. It introduces us to the new phase of relations of production, to the world of change in the labour paradigm...

If the law of value no longer works in describing the entire process of capital, the law of surplus-value and exploitation is, in any case, constitutive of the logic of production. The fact that some commodities occupy productive space and articulate its order (more so than do the masses of commodities) does not remove the other fact: that these discursive sets are themselves the products of industrial capitalism, both cause and effect, circularly, of a general exploitative device. Taking this situation into account therefore means recognizing that... human labour, both mental and manual, is increasingly implicated in exploitation, prisoner of a world of ghosts producing wealth and power for some, misery and discipline for the masses. Together, in an indistinguishable manner, both exploitation and discursive universes travel the Internet, constructing themselves through commu-

native networks while fixing expropriative dividing lines therein. Accumulation nowadays consists in that kind of acquisition of knowledge and social activity taking place within these communicative horizons. At the same time, if those mechanisms of expropriation do not follow in the footsteps of the exploitative devices of industrial labour's old ontology, then they suppose new ways—immaterial and ghostly ones. On the one side, we have communication and the wealth that accumulates therein; on the other we have solitude, the misery, the sadness, the exodus and the new class wars that define this exploitation of labour in a world of immateriality and spectral production.⁴

So from these few scattered indications (Lyotard, Gorz, Negri, Derrida) a composite portrait of our age begins to emerge, one in which techno-scientific and political transformations (resulting from the prevalence of mnemotechnical aids within the processes of production and consumption) affect massive transformations in the concepts of labour, value, and, indeed, Being itself. These are all subject to a process of immaterialization in which entrenched divisions between material and mental regimes start to collapse. Here we enter a world in which the solid difference between something and nothing, reality and its simulation, appears to give way; it is the world of the spectre or *revenant*. Of course, a claim such as this begs all kinds of questions concerning the relationship between its historical and ontological dimensions, and in all of these accounts of the present we can observe a certain slippage between historical and ontological registers. That is, on the one hand we are told that Being is, and has always been, "hauntological," to borrow Derrida's nonce term; on the other hand, we are told that this hauntological character of Being is the product of, or at least only fully reveals itself in, the present, and in response to the techno-scientific and political-economic transformations that affect the dis-jointure specific to our time. In Derrida's interpretation of Shakespeare avec Marx, the time that is out of joint in Hamlet's famous phrase is not this time or that time, it is time as such; what is "out of joint" is time in general and each time out.

S1: Could you say a bit more about the ontological implications of this shift?

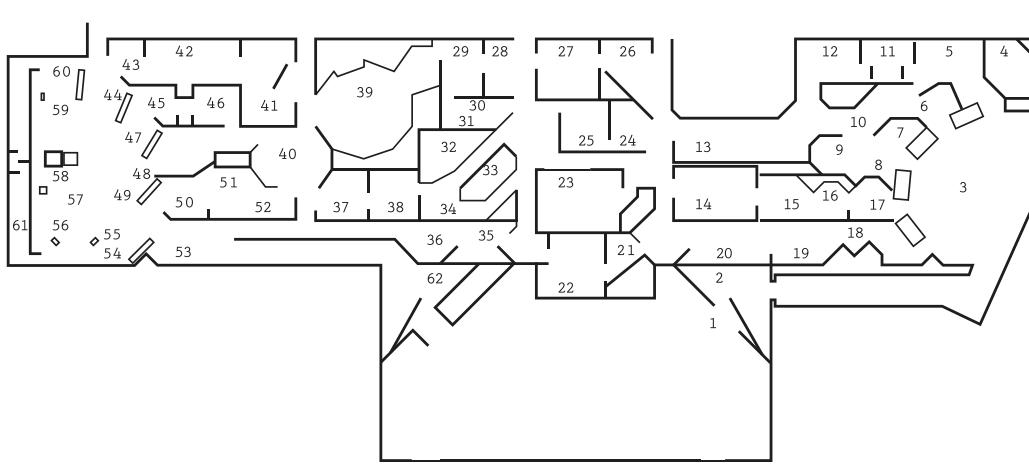
S2: Well, using Negri as our guide, we have already observed a degree of affinity between Lyotard's figure of the "immatériaux" and Derrida's "revenant." To these two notions we could no doubt add Deleuze's concept of the "virtual" and Baudrillard's description of "simulation." In the cases of Lyotard, Derrida, and Baudrillard, it is, all differences aside, a question of a fundamental torsion within and intensification of the processes of de-realization that Marx anatomizes in his description of commodity fetishism and capitalist exploitation of the superabundance of the human subject's labour power with respect to its needs. The case of Deleuze's "virtual" is more complex. But your question is one about the ontological implications of this torsion. What would a materialist ontology look like on the other side of Lyotard's re-conception of matter "not as substance, but as a series of invisible elements organized by abstract structures?" Over the next several days I want to suggest—with specific reference to the work of Jacques Lacan, Alain Badiou, and Jacques Derrida—that such an ontology must be an ontology of the letter. I would then like to propose Gilles Deleuze's ontology of life, whose fundamental gestures I will undertake to unpack, as the only serious rival to this ontology of the letter. In our final conversation, I would like to link my discussions of the ontological perspectives of these four thinkers (Lacan, Badiou, Derrida, Deleuze) to the various speculations on the "immaterial" reviewed above. In addition, I would like to say something about the implications of these critical engagements with the materialist legacy for the cultural disciplines generally, but for architecture most especially.

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Notes

- Jean-François Lyotard, "Complexity and the Sublime," *ICA Documents 4: Postmodernism* (London: Institute of Contemporary Arts, 1986) 10.
- André Gorz, *The Immaterial: Knowledge, Value and Capital* (London: Seagull Books, 2010).
- Michael Hardt and Antonio Negri, *Empire* (Cambridge: Harvard University Press, 2000) 290.
- Antonio Negri, "The Specter's Smile," *Ghostly Demarcations: A Symposium on Jacques Derrida's Specters of Marx* (London: Verso Press, 1999) 7-8, 10-11.

plan de l'exposition



Philippe Delis, architecte DPLG

- | | | |
|-------------------------|------------------------------|-----------------------------------|
| 1. Accès | 22. Négoce peint | 43. Toutes les copies |
| 2. Vestibule d'entrée | 23. Musicien malgré lui | 44. Logique artificielles |
| 3. Théâtre du non-corps | 24. Langue vivante | 45. Architecture plane |
| 4. Nu vain | 25. Jeu d'échecs | 46. Petits invisibles |
| 5. Deuxième peau | 26. Corps éclaté | 47. Mémoires artificielles |
| 6. Tous les peaux | 27. «Intra-mince» | 48. Volées d'escaliers |
| 7. Habitacle | 28. Surface introuvable | 49. Jus d'orange |
| 8. Homme invisible | 29. Indescernables | 50. Référence inversée |
| 9. Mange pressé | 30. Variables Cachées | 51. Profondeur simulée |
| 10. Ration alimentaire | 31. Matricules | 52. Visites simulées |
| 11. L'ange | 32. Auto-engendrement | 53. Mots en scène |
| 12. Corps chanté | 33. Irreprésentable | 54. L'objet perdu |
| 13. Tous les bruits | 34. Images calculées | 55. Trace de voix |
| 14. Lumière dérobée | 35. Terroir oublié | 56. Les mots sont des objets |
| 15. Espace réciproque | 36. Tous les auteurs | 57. Contes et chansons modulaires |
| 16. Trace de trace | 37. Arôme simulé | 58. Epreuves d'écriture |
| 17. Ombre de l'ombre | 38. Odeur peinte | 59. Texte dématérialisé |
| 18. Vite-habilé | 39. Matériaux dématérialisés | 60. Machines Stylistiques |
| 19. Les trois mères | 40. Creusets stellaires | 61. Temps différé |
| 20. Préparé/Frécuiseiné | 41. Peinture luminescente | 62. Vestibule de sortie |
| 21. Monnaie du temps | 42. Peintre sans corps | |

Exhibition plan, *Les Immatériaux*, Paris: Centre Georges Pompidou, 1985

is interested in new forms of the urban, who is open towards new articulations of social conditions in the public realm. That is, a client who takes risks. That's the strongest political statement a client can make today, and the public immediately reacts to that!

Let me give one example. If the skater community, a marginalised group that is exiled to anonymous outskirts of our cities, suddenly populates the central square of the city with their vehicles, something has changed. The situation is new. The "regular" users are not familiar with the topographical square, but they, like the new invaders, do not want to give up territory. Negotiations have to take place, with the client and architects serving as temporary mediators. We take it as a good sign that the youngsters have appropriated the space first. The ensuing public discussion proved that no form is dedicated to a single function.

LAAAC Architects | Stiefel Kramer Architecture
The project was conceived in collaboration with artist Christopher Gruener.

LAAAC Architects was founded 2009 by Kathrin Astre and Frank Lüdin. Recent realized projects include a communal multifunctional building in Tyrol and the widely published and multiply awarded mountain-top viewing platform "Top of Tyrol." Using concepts like "New Environments," "Active Landscapes," and "Built-in Velocity," LAAAC designs contemporary architectural solutions for urban and landscape challenges. Their work is widely published (e.g. *Architectura Now: Detail*) and received numerous awards (e.g. Detail Award; Alpine Interior Award). Kathrin Astre teaches at the University of Innsbruck, Austria and at the University of Liechtenstein. Frank Lüdin taught at the University of Innsbruck, Austria.

Stiefel Kramer Architecture, founded in 2003 by architect Hannes Stiefel and publicist Thomas Kramer, explores the role of observation and description as a constitutive component in the production of space, thus understanding users and observers as creative co-authors of built environments. The firm has participated in numerous exhibitions (the Biennale di Venezia 2006 and 2010), received many awards (the Austrian Award for Experimental Architecture; the Promoting Award of the City of Vienna) and writes regularly (such as in *Architettura 5/2011*). Stiefel has taught around the world, notably at the University of Applied Arts in Vienna, as the McHale Fellow at the University at Buffalo, NY in 2009–2010, and recently as the Azrieli Visiting Professor at Carleton University in Ottawa, Canada. He currently teaches at the Lebanese American University in Beirut, Lebanon.

Austrian national holiday ceremony, two annual celebrations of the Jewish community, and the activities of those societies who regularly parade in the historical uniforms and weapons of 18th-century Tyrolean freedom fighters—a folkloric spectacle hardly to be understood by foreigners (and even myself).

Our design seeks to engage this history in such a way that it shifts the function of the square within the city so that it reformulates its emblematic and political significance. The intervention serves as a stage for a transformation which its form seeks to enable, but the potential alteration is up to the user. We tried to formulate a square that enriches the users' ability to interpret and appropriate its elements and functions. The liberation memorial is now embedded in an oblique surface that is part of the same continuous "floor sculpture" that forms the base for the menorah. This surface is simultaneously the stage for public events and everyday life, and at the same time it functions as a major transitional space for pedestrians, cyclists, and other "slow traffic"; this memorial will inescapably alter its function within the city, and also in the square. Programming a public square is a highly social and political act—new forms enable new programs.

SS: How does the square function as a political space today? In what way does the choice of concrete as a material help facilitate this use?

HS: Concrete is concrete! Every architectural intervention is a political statement. And concrete is a material for concrete formulations. Concrete allowed us to create a continuous (and simultaneously inconsistent) surface that contrasts with its surroundings, while combining the multifaceted elements of the square. Furthermore, the usage of stone in the form of this very particular, smoothly shaped concrete casts a new light on the similar coloured stone cladding of the rigid liberation monument. The square's political function today lies beyond the impact of the liberation monument and the National Socialist architecture of the Landhaus. The square's major function as a political space is an ongoing process. An endeavour that was installed at the beginning of the architectural competition was then established through the planning and realization and is now open to the plaza's users. I have to mention here that such a project would never be possible without a client who

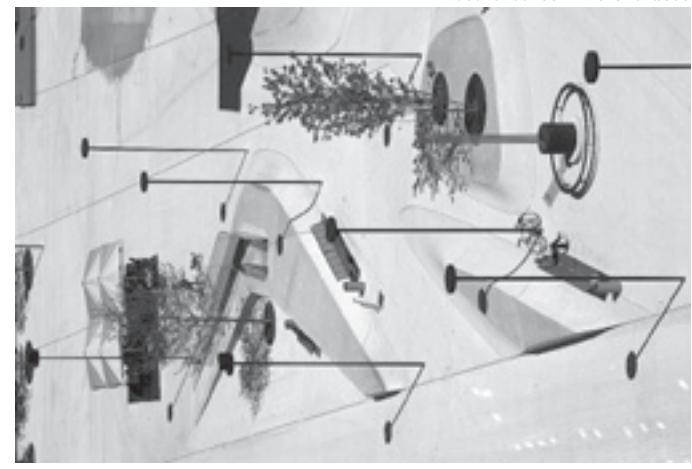


Photo © Günter Richard Wett

the facing façade of the Tyrolean provincial government building constructed during the National Socialist period, and by a large scale memorial that looks like a fascist monument but in fact commemorates the resistance against, and liberation from, National Socialism. The current intervention aims to expose existing misconceptions and reinforce the monument's historical significance. The new topography of the square offers a contemporary and transformative base for the memorials and makes them physically accessible for new perceptions. Access and movement are guided by the modulation of the surface, which accommodates spatial constraints, functional requirements, and morphological considerations.

Passersby, users, and memorials act as protagonists on this new city stage, creating an operative public space and open forum between the main train station and the old town. Both time of day and year are powerfully dramatized on this backdrop. The bright surface of the square functions as a three-dimensional projection screen on which the protagonists and trees produce a dynamic play of light and shadow during the day, while indirect light reflected from the floor sculpture directs the scene at night.

In the northern part of the square, the spacious flat area in front of the Landhaus was conceived as a generous multi-purpose event space, and it incorporates the required infrastructure. A large-scale fountain creates the expanded field and cools the space in the summertime. South of the liberation monument the topography is varied for manifold uses. The texture of the concrete surface changes according to its geometrical configuration. Beneath many trees, the floor continuously folds into seats with a terrazzo-like finish. The surface of the square is formed out of modulated slabs of in-situ concrete, connected by bolts to accommodate shear forces. Infrastructure is deployed across the surface in slab-fields of no more than 100 square metres, so that events can take place anywhere on the square. Drainage of the whole square, including the fountains, is located at open joints between the individual fields. There are no drains visible on site. A cistern system allows all surface water to be accommodated on site and re-circulated, despite the existence of a subterranean garage.

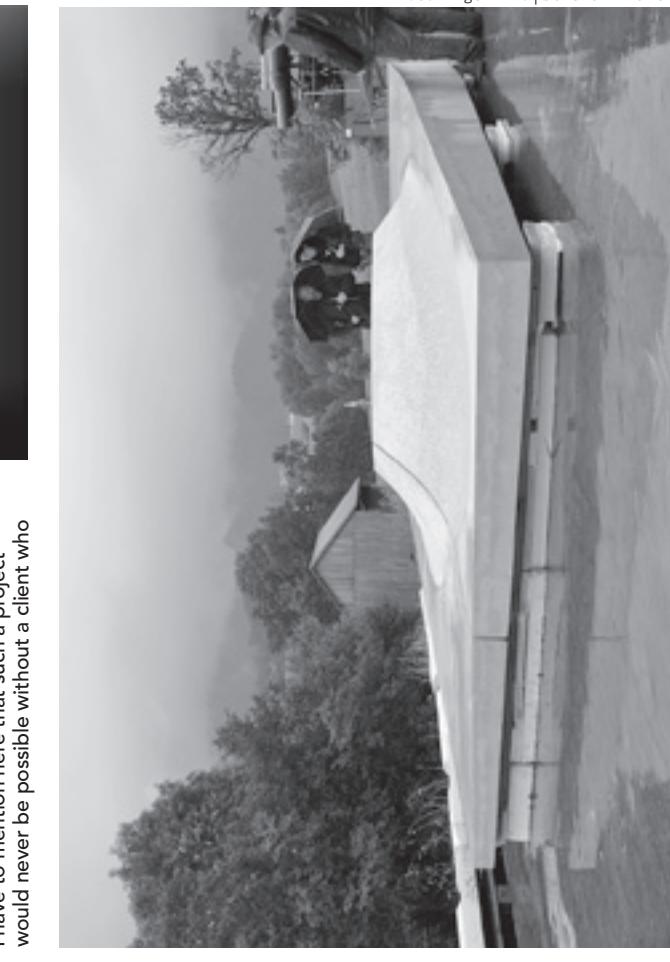
Scapegoat Says: The square is radical in its simplicity. Why did you design it to be built from only one material, concrete?

Hannes Stiefel: I assume that you use the term simplicity to refer to the square's general impression and the visual appearance of its details, because the construction's geometry is not that simple at all; a multitude of constraints and requirements led to a complex geometric configuration. As the square was supposed to serve as a base and stage for a diversity of objects and events we were looking for a unifying gesture. While we aimed to reflect the site's ambiguities through form, so material and colour were unified to hold the space together. The efficacy of mono-materiality in this place was the only thing that was very clear at the beginning of the project, before we found a precise form for it, and long before we made a decision for in-situ concrete.

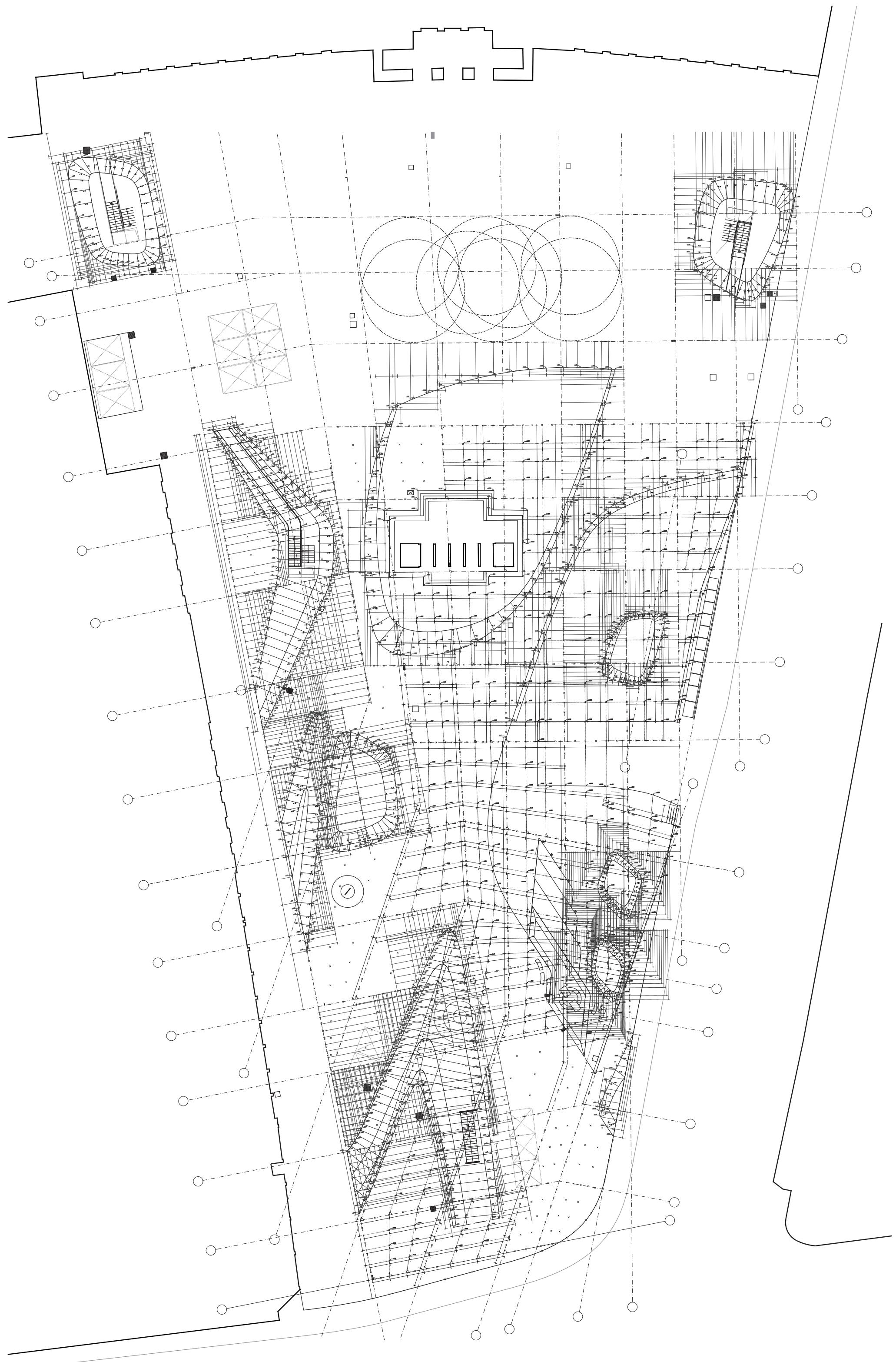
SS: The location is historically charged. Can you outline the important events in the 20th-century history of the square and explain how you see your design engaging this history.



The goal of the intervention at Edvard-Wallnöfer-Platz (Landhausplatz) was to create a contemporary urban public space that negotiates the contradictory conditions and constraints of the existing site while establishing a stage for a new mélange of diverse urban activities. The realized project consists of a 9,000-square-metre concrete floor sculpture. Despite its status as the largest public square in Innsbruck's city centre, Edvard-Wallnöfer-Platz was a neglected space, and in 1985 a subterranean garage was built beneath it. The site nevertheless retains some symbolic significance because of the four memorials positioned there. Before its most recent transformation, the square's atmosphere and spatial appearance was dominated by



historical relevance in relation to these events: the menorah that recalls the assassination of four Jewish citizens of Innsbruck during "Kristallnacht" in 1938 was installed in 1997. Today, the square in front of the province's government building is the site of political demonstrations of all types, including the





*with the shutter speed you can see
that some photos turn out very
beautifully. most difficult was the photo
on which something had to be
captured still and the rest of the image
had to be moving, because before
you realize, the whole image is blurred.*

here is a photo of jaimy:

Coinage and Code: A Conversation with David Graeber

What does it mean that a bank robber will “steal” money at gunpoint, and then later spend it in the market? In his recently released book, *Debt: The First 5,000 Years*, anarchist and anthropologist David Graeber examines assumptions about debt, the origin and nature of money, and the role they both play in the arrangement of social relations. It is a lucid, erudite, and jargon-free study of the development of the culture, morality, and politics of debt. Perhaps in some future moment of retrospection, one might claim that Graeber’s work here has significantly influenced and informed the critique and actions popularized by the on-going global Occupy movement.

Debt moves towards destabilizing the traditional spectrum of positions in political thought and discourse (left-right/state-market) and allows us to ask: What kind of new social-economic arrangement can be imagined and built? What forms of struggle will this entail? Could this allow for a radically new trajectory of theory and practice? *Scapegoat* interviewed Graeber to see how his findings about debt’s relationship to power, violence, the materiality/virtuality dichotomy, and conquest might react with the theoretical and practical concerns of design and architecture.



Scapegoat Says: Your book *Debt: The First 5,000 Years* is an epic myth-busting effort. What do you see as some of the most problematic assumptions or myths that we have about debt and money?

David Graeber: Where to start? I suppose the key myth I take aim at is the “myth of barter.” This is the assumption that before there was money, people used to swap things—for example, “I’ll give you twenty chickens for that cow”—but since that was inconvenient, they naturally invented money. This is absurd for all sorts of reasons; for instance, it assumes that two neighbours in a Neolithic village dealt with each other through what economists call “spot transactions”: I have X, but if you don’t have anything I want, no deal, we both go home. If your neighbour wants your cow, or extra pair of shoes, and he doesn’t have anything you want right now, well, he’s your neighbour—of course he’ll have something you want eventually. Such a situation would lead to a broad, open-ended credit system. Anyway, the most startling thing I found is that the progression we’re all taught—first there was barter, then money, then credit—is actually backwards. Credit comes first. Money in the sense of coinage only emerges thousands of years later. When you do see “barter economies,” it’s usually when you have people who typically use money, but are in a situation where there is none, as in Russia in the 1990s, or in prisons everywhere.

It is obvious why economists don’t like to admit this, despite the overwhelming evidence. Credit always brings in a social element. Economists want to start with a fairy tale about isolated individuals who care only about the material stuff to convince people that there is something natural about all this. The reality is that they are describing behaviour created by the market itself.

The other big discovery is the degree to which actual cash, systems of coinage, and cash markets come about historically and largely as a side effect of military operations. Markets—impersonal markets—are products of government above all else. This is actually very crucial. For centuries, most political arguments have been founded on the assumption that state and market are two opposed principles.

SS: Can you elaborate on how markets are related to military operations?

DG: It might help to re-frame the question. If you are speaking of large-scale, impersonal markets with large numbers of strangers who have no prior social or moral relations and no desire to develop any, who are exchanging goods with an irrelevant ownership history, then where, in the ancient world, is such a situation likely to happen? Well, armies needed to be fed, and there is only so much food you can steal before marauding becomes a full-time job. It is easier to loot things that are already considered highly valuable, like gold and silver, and then exchange them for provisions and the good things in life. In particular, the movement of armies tends to foster impersonal cash markets more than traditional credit arrangements because no one would want to extend credit to a soldier, a man who is heavily armed and probably just passing through.

The first coinage in Lydia, India, and China alike seems to have been put out by non-government money-changers, who were probably dealing with soldiers, mercenary or otherwise. The idea was quickly snapped up by governments who start demanding taxes in coins. Taxation became an ingenious way to turn what had been an *ad hoc* means of disposing loot into a system for provisioning armies. After all, if gold and silver coins and markets just emerged spontaneously from the needs of trade, then why wouldn’t ancient kings just have grabbed the gold and silver mines? Then they’d have all the money they wanted. Why take the gold and silver, stamp a pretty picture on it, distribute it, and then demand that everyone give it back to you again? If you think about it, this logic does seem a bit circular. By giving coins to your soldiers, and then demanding everyone in the kingdom give one back again, you are employing them all to provide the soldiers with provisions, and creating markets by doing so. And markets are convenient in any number of other ways; for instance, your officials don’t have to make or requisition anything, from flamingo tongue to ship’s tackle—they can just go buy the stuff.

Similar things happened in the European Middle Ages; European colonial governments in India, Africa, and Southeast Asia also used tax policy to create markets. These too were regimes based purely on conquest and maintained through military force.

SS: Can you explain the material and geographic origins of money? How did debt (promise) become money (property)?

DG: We can’t know for certain, but it’s important to understand that this is the real question, *not* “How did money arise from barter?” Rather, how did that broad sense of “I owe you one” that neighbours might have with one another become quantified? How, in particular, was it known that 12 copper plates were worth exactly two healthy calves or so many furs, or what have you? This is something of a mystery. After all, in many parts of the world, if someone praises something of yours, it’s still impossible not to offer it to them. If they show up later with a gift for you that’s woefully inadequate, you might make fun of them as a cheapskate, but you’re unlikely to come up with a mathematical formula for exactly how cheap they are. The evidence we have points, instead, to the primacy of violence. This plays out in many senses, but is most obviously the case when you look at legal systems. Even where there are no markets, there are often elaborate systems of what is equivalent to what is used for determining fines. So, if someone is cheap, you might mock them, but if they then take offence and kill you, or you lose your eye or some such, then there’s a very exact system of compensation: 12 copper plates for an eye, and if he doesn’t have copper plates, that’s when people are maximally likely to stickle and demand exact equivalents—because they’re really just looking for an excuse to come to blows. This also seems to be how what I call “social currencies”—things like wampum, bead money, Solomon Island feather money, etc.—is most likely to get converted into money that can be used for market transactions. If you pay “bride wealth” to a woman’s family to compensate them for their sacrifice in giving her up for marriage, well, you’re not buying a woman, and you certainly can’t resell her. Instead, you’re recognizing that you owe a debt that you can’t really pay. However, once slavery enters in, when it’s possible to literally buy a woman as a wife or concubine, all this gets more ambiguous. We’re not talking about phenomena limited to faraway exotic islands, either. Early Medieval Welsh and Irish law codes provide some great examples. The Welsh codes map out the precise value of every object to be found in a typical house, from the cauldron to the rafters, even though almost none of that stuff was for sale in markets at the time. It was all for calculating compensation for insults or injuries. In the Irish code, the highest denomination of currency was the slave-girl.

SS: Your book outlines 5,000 years of a cyclical pattern between the dominance of virtual credit money and “real” money. First, can you describe what these categories mean and what drives this cycle? Also, where are we now and where do you see it all going?

DG: Well, I should emphasize that money always hovers somewhere between commodity and promise, between a thing and a social relation. It’s just that at some times, one aspect predominates, and at other times the other one does. In Mesopotamia we clearly had a system dominated by virtual credit money; most transactions were not being carried out through a medium of exchange, but in reference to money that didn’t actually change hands (most gold and silver just sat around in temples). This seems to have been the common pattern until coinage was invented, and coinage pops up in the East Mediterranean, the Ganges valley, and Northern China almost simultaneously. Gradually, over the course of what I call the Axial Age, roughly 600 BCE to 600 CE, you have the first economies where everyday transactions were done via cash. The basis seems to be military, though; coinage rises with a new sort of empire based on standing armies, the mass use of war captives as slaves (often to mine the metals to make the coins to pay the soldiers), etc. When the empires dissolve at the beginning of the Middle Ages, coins vanish, widespread use of credit instruments reappears, chattel slavery largely disappears, and you end up with the widespread assumption that money is just a social convention, a promise, an IOU. Around 1450, with the Spanish and Portuguese expansion into the Americas and Indian Ocean, suddenly you have a flood of bullion, not to mention a return of vast empires, professional armies, and chattel slavery again. One might say that period, which of course also brought us capitalism, is only ending now. The usual cut-off point is given as 1971, when Nixon unhooked the dollar from gold, and it’s good enough. Since then, we’ve been moving back again to a period of virtual credit money, but oddly, we are all acting as if this is something new.

SS: You argue that the state and the market emerged symbiotically. Can you sketch out the role money plays in the relationship between coercion, conquest, and debt? What do you believe it takes to establish something like money?

DG: This relation is complex and multi-faceted. The one thing that’s very obvious is that our standard narrative that emerges in the wake of the French Revolution—where you have militaristic states with their aristocracies on the one hand, and the humble merchant with his markets gradually subverting the feudal order and creating a new world based on contractual freedom on the other—is all nonsense. The idea of state and market as opposed principles just doesn’t work for almost any period of human history, even our own. What you actually see is either markets emerging as a side effect of war, or being directly created by state tax policies (and this can be documented anywhere from ancient China to European colonial empires in India and Africa). It is interesting to note that the first place you find something that looks like a recognizable free-market populism—the idea that markets are good, states are bad and shouldn’t interfere with them—is in Medieval Islam, when contracts were enforced not by governments, but by Sharia courts. It was all made possible by the forbidding of interest-taking, which enabled the creation of markets based on trust, rather than any recourse to coercion. It turns out Adam Smith got many of his best ideas, lines, and examples from Medieval Persia. The difference, though, is that Islamic free market thought held that markets were ultimately

an extension of mutual aid; competition had its role, but it wasn't the central element. When such ideas were adopted in Western Christendom, things became quite different because this was a place where trade, war, and conquest had never been completely distinguished from one another.

SS: What are the benefits and pitfalls of virtual money versus hard currency? Do both operate with the logic of scarce commodities? Is scarcity a feature of money that allows it to function as such? If so, how is scarcity maintained in the case of virtual money, especially considering the possibility that its "existence" is contingent on infinitely reproducible graphic representations—from writing on clay tablets to printed treasury bills to account balances on screens?

DG: The danger of a virtual money system is obviously inflation—if money is just a promise, what's to stop people from promising all sorts of things, without regard to what's there or realistically might be. Some have estimated that 98% of all dollars circulating now don't seem to reflect the value of anything that exists now, but is rather speculative, based on the value of things that we assume might exist in the future. So yes, there has to be some mechanism to keep things from getting out of hand. I suspect this helps explain capitalism's otherwise peculiar inability to imagine its own eternity. From the 19th century to halfway through the 20th, most capitalists seemed to assume they'd all end up hanging from trees in some great revolutionary uprising. The moment that didn't seem plausible, in 1945, they came up with nuclear war. The moment that wasn't a threat, it was global warming. It's a very dangerous tendency in capitalism because the threats are perfectly real. But could the reason be that once you have an endless future, there's no limit to the amount of future value you can imagine, and the result will necessarily be crazy bubbles?

The physical limits always exist, yes, but with debt, they are harder to make impersonal. Conquerors and thugs of every sort prefer bullion because it's very difficult to steal a credit arrangement. The limits are thus less physical than social. Once you are using money, you understand that money is just a promise, an IOU, and it becomes difficult to justify why it is treated as fundamentally different from any other sort of promise. But that's a very real limit.

SS: Can you think of ways in which architecture becomes an instrument of debt? Or, how do you see debt manifesting itself spatially or architecturally?

DG: An interesting question. Well, let's think about what I've said about stages of history, some dominated by virtual credit money, others by bullion. The latter tend to be accompanied by periods marked by materialist philosophies of one sort or another, the former are marked by a fascination with metaphysical abstraction—this was particularly true of the Middle Ages. This is pretty clearly reflected in architectural preferences: Mesopotamian or Egyptian monuments try to ascend into the air, the Axial age temples can be graceful and airy to our eye, but they hug the ground and are very material places, essentially functioning as slaughterhouses where animals were killed and butchered. Medieval cathedrals once again want to be structures made of air and glass. There's a reason that banks have always gone for the Greek and Roman temple look rather than the Medieval ones: they are temples of materiality, or see themselves as such, even if they are creating abstract financial instruments (that role is always considered a tiny bit scandalous, even though it's the very basis of the system). Of course, Modernism—and Postmodernism, which is just a variant—goes back to the spirit of the cathedral, as befit structures that begin to anticipate moving towards a new age of abstract credit money. I think there are definite spatial and architectural implications to the feeling of creation ex nihilo that is a bit of a scandal in periods dominated by "hard currency." Though, it is nonetheless the core of the system, where central banks that create credit money are essentially circulating government war debt. Meanwhile, all the architectural forms surrounding the debtors, even when they don't involve bars and chains, are about as material as can possibly be, since debt is always experienced as a weight pressing down on you (it was literally that in Sanskrit) in the exact same way credit systems are about dissolving into air.

SS: I'm reminded of the example from your book of the Mesopotamian temple-complex economies, and the parallel suggestion that the architectural forms surrounding debtors, including jails and courts—maybe even housing projects and schools—can be read as constituent elements of what could be called a 'bank-complex.' Can you elaborate on the relationship between markets, the built environment, and perhaps even processes of subjectification? Taking an example from your book, is the venerated merchant figure of Islamic free-market society the product of the mosque-bazaar axis, or vice versa?

DG: I think they arose together. Under the Caliphate, the palaces of the ruling class were "secret gardens" where no one else could enter. This emphasized the degree to which they weren't seen as part of civil society, which was built around the twin poles of mosque and bazaar. I argue in the book this was the result of a class realignment. The merchants, who for several thousand years of Middle Eastern history had been the money-lenders who appropriated everyone's goods and took their children into debt peonage, basically switched sides. They signed onto a religious order where they were forbidden to do these things, but thereby became the pillars of their communities, over and against the government. The result was the world's first genuine free market populism, since the abolition of interest itself allowed the creation of complex credit relations built on trust. It's a long story but the physical

organization of communities always reflects these very fundamental shifts and alliances.

SS: What does it mean that a bank robber will steal money at gunpoint, then go buy something with it later on?

DG: Physical cash is without a history. Gold and silver are partly so useful as a money-stuff because they can be melted into any form; they are physical, material, but otherwise sheer potential. You can't tell where a piece of gold has been and you can't tell where it's going. Thus it can act as the physical equivalent of the drug dealer's suitcase full of hundred dollar bills.

SS: How would you account for the material and design features of coinage? What do you think about the possibility of numismatics becoming a type of "political forensics?"

DG: Coins, when they originated, were all different. The Indian ones were flat pieces of metal, counter-stamped like cheques by each major money-lender that accepted them—pretty clearly they derived from some sort of financial instrument. The Chinese ones seemed to derive from what I've called "social currency" of the sort that are mainly used to rearrange relations among people: they're all different, some look like axes or knives, others like jewellery or cowrie shells. The Greek ones are remarkably beautiful. They are treasured nowadays as works of art, but the beauty of the art had nothing to do with their value—as Moses Finley put it, "no money-changer gave a better rate for a four-drachma Syracuse coin because it was signed by [the artist] Euainetos."¹ It's almost as if they're trying to stamp some sort of spectacular visibility on an object whose power comes from its very lack of determination, its hidden power. Marc Shell and Richard Seaford have both argued that many of the problems of Greek philosophy seem to have emerged from contemplating the strange dual nature of coins, which are simultaneously physical objects (matter, body) and social convention (idea, soul)—the dual nature of the coin becomes a key to imagining the soul as separate from the body, the very materialist paradigm that lies behind the great transcendental religions.²

SS: Can you explain what you mean by "human economies" and why the circuits that underpin these seem to wither away when they encounter market economies?

DG: By "human economies" I mean economies where there is some kind of circulating money-stuff—like, say, wampum, or woodpecker skulls, or whale teeth—that's used not to buy or sell things, but rearrange social relations (arrange marriages, resolve disputes, pay initiation sponsors or curers, pay respect to your visiting uncle, etc.). Social currencies seem to come first. And they don't really wither away when they encounter market economies. But they can be subverted, especially when, as is so often the case, the commercial economy has superior weapons. This happened, for instance, in both Southeast Asia and most of Africa in the days of the slave trade; the same system by which people used to assemble entourages of clients, pay fines, and get married suddenly became subverted, usually by complex systems of commercial debt, into ways of extracting people as slaves. People don't realize now just how much the Atlantic slave trade operated by the manipulation of debt. It wouldn't have been possible without superior European firearms, and the utterly merciless proclivity to use them, but the actual day-to-day operations were based on extending credit and intentionally tricking both local African merchants and rulers—and ultimately, ordinary villagers—into debt traps.

SS: What kind of "direct actions" do you think can be engaged to address the problems of debt?

DG: There are all sorts of suggestions being bruited about. There's the idea of a debt strike, which could actually be effective. Since so many CDOs and other securitized derivatives are based on debt, the threat of even 10-20 per cent of mortgage-holders or student loan-holders simultaneously defaulting could be extremely effective. But these always prove hard to coordinate. There are all sorts of moves to create alternative credit systems, or at least to pull one's money out of investment banks and place them in credit unions, co-ops, and so forth. There are anti-eviction and anti-foreclosure campaigns, which of course were huge in the 30s, and are beginning to start up again today. And, of course, the occupation movements themselves, which started in Greece and Spain but are now reaching America, are really about debt more than anything else. As I like to say, in 2008, we learned that debts are not sacred, they don't have to be honoured if the holder is AIG or any of the similarly big players. Trillions in debt can be made to disappear if those running the system want it gone. People are insisting on creating defiant forms of direct democracy and saying: "Look, now that we understand that money is just a promise, an arrangement, a set of IOUs, it makes sense that promises can always be renegotiated...but if democracy is to mean anything, it means that everyone gets to weigh in on this process. Not just the 1%."

Notes

1. Moses Finley, *The Ancient Economy* (Berkeley: University of California Press, 1974), 167
2. See Marc Shell, *The Economy of Literature* (Baltimore: Johns Hopkins University Press, 1978) and Richard Seaford, *Money and the Early Greek Mind: Homer, Philosophy, Tragedy* (Cambridge: Cambridge University Press, 2004).



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Since the 1970s and the rise of environmentalism, most forestry operations have moved from the Pacific Northwest to the South

form.² In contrast, American forests, strictly associated with the rationale of form, are massively scaled, designed environments with distinct material imprints. As such, they make a case for an urban physically irreducible to a single economy and can, almost paradoxically, acquire once again the status of a prototype for contemporary cities.³

Notes

- Sources: Canada Wood Council (1999), American Forest & Paper Association—now afspa.org (accessed 2011), ABIMCI-Brazilian Association for Mechanically Processed Timber (2003) & SPECX-Brazilian Bureau of Foreign Trade (2005)
- Instances of this line of argument, associating the autopoeisis of networks with the erosion of agency through designed form, are many and include Charles Waldheim's take on the American city, where it is understood as the provisional material expression of formal relations between property ownership, speculative development and mobile capital in *Stalking Detroit* (2001) or James Corner's call for the design of landscapes as an ecological process in "Ecology and Landscape as Agents of Creativity," included in Thompson and Steiner, *Biological Design and Planning* (1997). Earlier examples can be traced in Manfredo Tafuri and Francesco Dal Co's texts in *The American City* (1979). The theoretical infrastructure for the network argument was provided by Manuel Castells' "The Information City" (1989). As was the case with Marc-Antoine Languier's 1753 proposition to design the "town as a forest."

unnoticed by design scholars and professionals alike. This blind spot is due in part to the often covert operations of capital interests in industrial frontiers, but is most significantly due to the "natural" appearance of the forest industry, suggesting an ambivalent entanglement of nature and resource.

Overcoming this disciplinary distance would involve acknowledging forests as artificial environments, planned and managed with the same degree of spatial design attention given, say, to cities. This acknowledgement entails a conscious abandonment of the mystification of nature that typically envelops the subject. Attempts by architects at literal expression through the design of structures that resemble forests, or the design of actual forests for pure aesthetic appreciation do nothing to clarify this situation. In addition, recognizing that most of the forest areas harvested throughout the continent are not old growth, but rather recently afforested landscapes foregrounds an ecological history tightly linked with resource extraction. Once the issue of representational fidelity to nature is cleared out of the way, we have to tackle one more preconception: the assumed triumph of postindustrial society and its underlying networked organization, which have become a hegemonic metaphor of contemporary design discourse and an alibi for a broad assault on discrete architectural and urban

Institution, forestry is a striking manifestation of the rift between developing and post-industrial countries, replete with socio-economic inequality across a range of scales. Canada's \$74-billion forest product industry, the United States' 450 million acres of private forestlands, and Brazil's 6.5 million forestry jobs, have created substantial imprints on development patterns in these countries.¹ And while forestry constitutes a massive spatial enterprise, it remains largely

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Counter-plots Dan Handel & Justin Fowler

From British Columbia down to the American Pacific Northwest, from the Deep South to the Brazilian coast, the American continent is saturated with forest environments. Looking at forests, however, is quite different from looking at forestry. This distinction applies on both visual and structural levels: with the former, a sensitive gaze is required to distinguish between closed and fragmented forests, between state-owned and privately managed environments, and monocultural plantations. In the case of the latter, prime importance are political climates, material differences between hard timber and soft pulp, and accessibility to a cheap labour force.

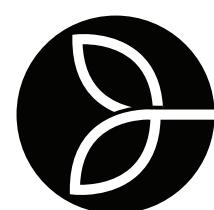
Involving an array of spatial configurations, forestry is a striking manifestation of the rift between developing and post-industrial countries, replete with socio-economic inequality across a range of scales. Canada's \$74-billion forest product industry, the United States' 450 million acres of private forestlands, and Brazil's 6.5 million forestry jobs, have created substantial imprints on development patterns in these countries.¹ And while forestry constitutes a massive spatial enterprise, it remains largely

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closed forest
fragmented forest
low density forest

The new pulp and paper projects in Brazil will represent a demand increase for timber of approximately 13 million m³/year.

greenwood-management.com



Material Movement: Cement and the Globalization of Material Technologies

by Curt Gambetta

Architecture moves. Architectural ideas, technologies and institutions travel along routes of global and regional circulation, while construction materials create conduits and physical pathways for their movement. These routes, however, are not empty or neutral spaces between cultures, as anthropologist Elizabeth Povinelli has recently argued; they are subject to the volatilities of change and disruption.¹ Materials travel through infrastructures ranging from transport vessels to electronic data to cultural forms, encountering social and technical friction as they circulate. In this respect, routes are not benign agents of transport, but rather active agents that shape how materials are represented, manufactured and put to use as objects of knowledge and architectural design.

In the span of a century, a number of basic construction materials attained near-hegemonic status in the otherwise heterogeneous world of construction technologies and expertise. The proliferation of architectural materials such as cement, steel, and masonry followed a map of cultural space and historical development that to this day issues more often than not from an origin point in the West. What of notions of space, culture, and difference are embedded in this map of architectural globalization?

In my own observation of the social and technical life of materials in India, I have long been dissatisfied with the image of historical progress and architectural modernity that this map proposed, both within and outside India. Modern architecture in India and elsewhere in the post-colonial world remains hopelessly tethered to a powerful centre and origin in the Western metropole. The globalization of materials is used by many critics as evidence to confirm cultural processes of Westernization. Indeed, architecture is produced with a standardized and often reproducible repertoire of components and materials of construction that trace their origins to 19th-century Europe and America. Still, differences are tangible to even a casual observer. Mumbai does not look like Houston, nor is it constructed in the same manner, whatever the common material DNA. Rather than accept these differences as culturally determined, we might do well to consider the processes and circuits of material and social exchange through which difference is produced. How might attention to the conditions of material movement reconfigure the spatial and temporal relationships that are drawn between architectural materials and the cultural experience of modernity?

1

Gayatri Kumaraswamy and I walked through a small lane in Siddapura, a village that was swallowed up by Bangalore after the planning of new, large-scale suburbs such as Jayanagar (said to be the largest in Asia, in its time) after Independence in 1947. The light was typically intense, setting in contrast even the shallowest relief work and surface blemishes such as cracking plaster. We stopped at a series of row houses in order to inquire about the diamond shape that was constructed in plaster above the door of a carpenter who lived on the lane, S.P. Krishnappa.

I anticipated that the quotidian icons above our head were clues to larger circuits of proliferation within Bangalore and abroad, and wanted to know more about their provenance. Plaster shapes, patterns, and surface textures are common to the roadside elevation of small-scale buildings in Bangalore and other cities and towns across India. Pattern, especially plaster relief work, exploded into common use on walls, windows, and doors during the 1950s and 60s. Portland cement was in part responsible, allowing for faster turnaround on building sites and encouraging flattened patterns over slower-drying and more sculpturally adept lime plasters. Cement was also embedded in a wider efflorescence of novel materials, joining a number of other globally circulating construction techniques and materials that were introduced to India during the 20th century.

Changes in material technologies coincided with broader transformations in urban life and architecture. In Bangalore, expertise about material manufacturing and construction was changing during the 20th century, as were forms of architectural patronage. Ideas about "city architecture" and urban spatial organization were re-imagined at the turn of the century and reorganized relationships between street, building, and community. New forms of life and labour emerged in this period with the rise of public sector industries and the reconfiguration of older manufacturing economies; in particular, a revamped and re-imagined industrial suburb was introduced. Cinema halls, hotels, and other new spaces of social friction proliferated around the city, along with new geometries and materialities of space and surface.

Novel materials were suited to the constructional demands of this new landscape, while at the same time transforming it. New architectural materials such as concrete and steel were celebrated by industry, planning, and architectural culture in mid-century India for their capacity to create new forms of domesticity and urban life. It was



Door carpentry,
Ulsoor, Bangalore, India.
Photo by the
author, 2006.



Mobile building
model, Mantri
Developers,
Brigade Road,
Bangalore, India.
Photo by the
author, 2003.



Roadside
temple, Lal
Bagh Siddapura,
Bangalore, India.
Photo by the
author, 2008.

also thought that concrete would create new experts, such as architects and civil engineers. Whatever its structural innovations, concrete was primarily touted as an image. It was promoted as a building block of society, supporting new ways of living and new forms of knowledge.

Industry publications, such as those published by the Cement Marketing Company and the Concrete Association of India, featured images of new concrete architecture that referenced global trends. During the 1930s and 40s, images of technological marvels and quotidian architecture in Europe and the United States stood side by side with images of concrete furniture, roads, and architecture in India. Progress was achieved by operating at the level of everyday urban aesthetics, retrofitting infrastructure and creating a new urban fabric through the scale of domestic construction, echoing the aesthetic bias of colonial urban improvement schemes. By the 1950s, concrete was expected to bring infrastructural cohesion to the imagination of a national economy. Advertisements and print media invested in concrete the potential to transform large scale infrastructural networks, such as transport and electricity, to "catch up" with the West.

Regionalism, discourses of low-cost construction and vernacular architecture, later turned this narrative on its head, portraying the introduction of concrete as leading to the disintegration of local building traditions. Beginning in the 1970s and 80s, architects in India such as Laurie Baker turned to vernacular architecture as a foil against new technologies of construction. Inspired by the Himalayan vernacular of Pithoragarh and Gandhian "ideals," Baker describes how the "ideal house" in an "ideal village" is constructed of building materials sourced within a five-mile radius of the building site.² In addition to cost effectiveness, Baker also argues that using local materials is a project of cultural mediation, noting that the "delightful dignified housing [of the Himalayan vernacular] demonstrated hundreds of years of building research on coping with local materials, using them to cope with the local climactic patterns and hazards, and accommodating to the local social pattern of living."³

Baker was keen to point out the cultural consequences of new technologies such as concrete. If concrete was seen by industry and professional design culture to function as an agent of infrastructural cohesion within the space of national culture, Baker understood novel constructional technologies as viral contaminants of traditional contexts of material use and their cultural milieus. He ruminates about what inhabitants of Pithoragarh think of their own houses, concluding that 'improvements' such as:

[P]roper kitchens, bathrooms, latrines, chimneys, smokeless chulhas, glass windows, brick walls, concrete floors and roofs...create problems worse than those which they are supposed to remedy, and...are rarely appreciated by the people who have to live with these 'advancements' and 'developments.'⁴

Baker implies that architectural materials not only represent but also affect the social worlds they interact with, attributing materials a similar agency to that of everyday domestic technologies.

Baker's perspective on building technology and culture exemplifies a longstanding problematic in design culture about globalization, space, and cultural difference. It assumes an isomorphism, writ large across not only architecture but the human sciences as well, between "space, place, and territory."⁵ In a systemic rethinking of anthropology's colonial inheritance in the 1980s and 90s, James Ferguson and Akhil Gupta critique an assumed spatial ordering of difference in the social sciences that understands the space of one culture as "naturally" discontinuous with another and ties "culture" to the boundaries of a particular territory. "It is so taken for granted," they write, "that each country embodies its own distinctive culture and society that the terms 'society' and 'culture' are routinely appended to the names of nation-states, as when a tourist visits India to understand 'Indian culture' and 'Indian society'.⁶

To this we can add how the imagination of society and culture is appended to particular building materials and techniques. Sigfried Giedion, for instance, imagined concrete architecture as the expression of a French "constructional temperament," drawing a line of epistemological continuity across history, in his book *Building in France, Building in Iron, Building in Ferroconcrete*, to imbue new materials with the spirit of world historical progress.⁷ In Giedion's image of history, concrete is the culmination of French architectural achievement, from cathedral architecture to the industrial sublime. Conversely, concrete today stands for cultural homogenization, Westernization, Americanization, and the destruction of tradition. Whether seen as an expression or destruction of culture, the idea of culture itself is defined by the fortification or contamination of particular forms of identity and their respective spaces of supposed origin (the West, France, America, etc.).

How does this image of culture hold up against the



Cement mold making, 80ft Road, Koramangala, Bangalore, India. Photo by the author, 2003.

S.P. Krishnappa's home, Lal Bagh Siddapura, Bangalore, India. Photo by the author, 2008.



Painted shutter, Ulsoor, Bangalore, India. Photo by the author, 2004.



proliferation of architectural materials? After all, common materials are subject to wildly different uses that seem to confirm their “acculturation” by particular national or regional contexts. During much of the 20th century, this was understood as a failure to catch up to new paradigms of construction and architectural design. Reflecting on his experience as an architecture student in late 1970s Italy, Mario Carpo recalls the lament of progress deferred. Describing his travels between Italy and Switzerland, he explains:

Why, given the same materials, techniques, and methods of construction, does it seem that on one side of the border it is considered normal that people should live in houses that are more or less identical, while on the other side it is not so, and everyone seeks to avoid as far and as conspicuously as possible the anonymity of a standardized architectural landscape? As anyone can tell you, despite an overwhelming number of building codes and community and condominium rules, in Italy an apartment house with forty balconies usually displays on its façade forty types and colors of curtains or blinds. Since it would be cheaper to purchase forty identical curtains in one lot, *this must come about by choice, not chance.*⁸

Carpo describes the frustration he shared with his peers over Italy's supposed backwardness (to Wilson and Kelling's broken window theory, we could add a theory of raucous blinds!). Modernism won out on one side of the border, whereas on the other side of the border, “the battle had yet to begin.”⁹

Carpo's lament over his youthful sentiments provides him an opportunity to undo the seemingly intractable bond between technological and historical evolution that is implied by the metaphor of a “battle” for progress. Carpo goes on to illuminate a period of architectural history in which architectural forms changed radically without corresponding innovation in materials or techniques of construction. The proliferation of printed treatises and images in the early Renaissance facilitated the reproduction of architectural forms without reference to their material composition or intended users. Print media became, like oral transmission before it, a circuit through which ideas about architecture traveled, disassociating the historical periodicity of building from the construction technologies and expertise that made building possible.

Notions of material circulation and cultural difference need to be revisited in our consideration of architecture as a fundamentally transient form. Tracing the journeys of architectural materials throws into relief how architectural design and its materialization have always been “hierarchically interconnected” to, rather than “naturally disconnected” from, cultural forms, traversing local and global circuits of industry, media, and people.¹⁰

In the contemporary world, printed media and orality are joined by a dense and interconnected web of circulatory forms. Circuits of movement require that materials and their representations be configured to fit their constraints. This process of infrastructural mediation has come under an increasing degree of scrutiny in fields such as anthropology.¹¹ The infrastructure of ships, trucks, publications and other forms of circulation constrain and mediate the materials they transport and represent, both in their physical makeup and in anticipation of how they will be put to work. Prefabrication of building construction, for instance, requires that prefabricated components fit within particular dimensions, weights and logical assembly in order to be transported and utilized on site. Furthermore, institutional forms such as professional bodies, international building standards, educational institutions, systems of patronage and other cultural forms ask that technologies behave according to particular standards and desires in order to be eligible for general use and experimentation.

In India, as with many settings in the postcolonial world, these infrastructures are notable for their instability and vulnerability to improvisation and appropriation by non-professional circuits of use. Infrastructural fragility is not a failure of socio-economic or cultural development, as is often claimed. The volatility of pathways is instead a terrain of cultural possibility, allowing for new avenues of circulation to be created. Through their networks of circulation and dissemination, cement and other materials have transformed urban and rural life, just not in the way imagined by industry and design culture.

2

Gayatri and I struck up a conversation with Krishnappa, who, joking that a young bystander was the owner of a local temple, made light of our bias towards the ordinary architecture of the street over the older architecture of the temple. Krishnappa's story, and the architectural landscape that surrounded our conversation, reinforced my suspicion

that the urban archive of architectural materials and technologies did not conform to the heroic narratives of progress and decline discussed above.

Krishnappa explained that the diamond protruding from his house was constructed around 1980 by *gare* workers who, by the time of its construction, were repositioned in a new cement-based economy of materials, know-how, and patronage. *Gare* was a basic construction material used for mortar and plastering that predated Portland cement in India, consisting of a mixture of lime, sand, water, and, occasionally, egg. Besides being a method of fabricating surfaces, it was closely associated with technologies of load-bearing walls and terraced or tile roofs.

Gare was a mixture of social forces and materials. Its production was familiar to urban residents; the mixture was ground in a large circular stone channel with an ox-driven grinding stone in small units throughout the city. The scale of production units and the materials used to manufacture it remain familiar to a mature generation of Bangaloreans, if only as a memory. Temporally, *gare* was slow both in its manufacture and its application on site, creating a culture of site relations that are said to have privileged skill over speed. Besides requiring a good deal of time to cure and cool before being used for construction, *gare* dried slower on application than cement, allowing relief work to be reshaped by artisans the following day.

Aspects of the *gare* assemblage were transformed by the introduction of new technologies, but were not extinguished wholesale in the manner envisioned by the building industry and the professional design culture. Cement displaced many qualities and consequences of *gare*. Cement manufacture and material composition was unfamiliar to laypeople and users, concealed in a new geography of far away factories. The slowness of hardening and labour was met with a temporal acceleration of site relations entailed by the arrival of the contractor and faster drying Portland cement. Nonetheless, the material and building culture of *gare* survived decades into the introduction of cement. Material admixtures and forms of expertise about *gare* persisted well beyond their anticipated death. *Gare* material and expertise, for instance, survived into the 1970s, and possibly the 1980s, as evidenced by the diamonds above Krishnappa's door.

Cement established a new assemblage of materials, knowledge and urban life, though its consequences on the ground were at odds with its imagined social and spatial role. Cement was considered a catalyst for new forms of expertise, such as professional architectural practice and civil engineering. Concrete design manuals stressed the centrality of the professional in the hierarchy of architectural knowledge, an authorship that was sanctioned at the municipal level with building bylaws that required the authorial signature of a professional on architectural drawings. A field of non-professional labour, ranging from unskilled to skilled workers and *maitri* (masons) flourished anew, encouraged by cement's ease of use in the domain of small-scale construction. Educational institutions solely dedicated to architectural training were late to arrive in the Bangalore region, and bylaws that required an architect for construction were undermined by a combination of lax oversight by municipal authorities and a shortage of architects based in the city. Design expertise was distributed unevenly between patron, architect, engineer and labourer, blurring roles and throwing into disarray the hierarchy of work anticipated by the entrance of professionals and new material techniques.

In Siddapura and other older neighborhoods in the city, discrepancies of old and new building practices are inscribed onto building surfaces. Layers of time are exposed along the crowded architectures of narrow lanes, conversing through plastered surfaces and paint. Thick masonry walls, gneiss blocks, and wood trim from the 19th and early 20th centuries occupy the scenography of the street alongside geometric patterns set in steel grill work and cement plastering that bear the mark of the post-Independence Indian city. Contemporary techniques of surface construction allude to the pre-fab materials used in interiors, such as the pink floral ceramic bathroom tile used to clad a roadside temple. This mass-produced unit of surface inverts its interior application, with the effect of converting a heavy masonry structure into something like a wrapped paper box, shrouding the age or time of the original structure in a contemporary, lighter garb.

Old and new forms of expertise are equally heterogeneous, resisting the easy distinctions of traditional/artisanal and modern/mechanized. Krishnappa explained that mechanized carving had been influential to his carpentry practice, dating the transition to mechanized woodworking to around 20 years ago, around the same time he began his own practice as a carpenter. Pointing to the carving on his door, he explained that its design was executed by a machine, seemingly confirming a familiar narrative of technology replacing handiwork and traditional craft. Despite mechanization and the propagation of new designs, Krishnappa noted that people continue to come to carpenters for work.

The work of the hand retains its value, however tenuously, in the presence of mechanical technologies, even if it is transfigured by its encounter with new conditions of patronage and production, as well as aesthetic demands. Knowing the experience of other carpenters in Bangalore, I will take the liberty to supplement his short story with the dilemma carpenters now face. The highly skilled carpentry of the past, particularly in furniture construction, is being increasingly eclipsed by the popularity of pre-fabricated, mass-produced furniture that is commonly known as “Ikea,” even though it is not manufactured by the Swedish furniture company. As well, skills have become more and more specialized, a trend not restricted to the practice of carpentry.

The turn to factory production may or may not prove

to be the death knell for artisanal practices and labour-intensive fabrication. Its consequences remain uncertain in contexts like Bangalore. Still, despite the de-skilling of labour, specialization of design knowledge, and mechanization of fabrication, site-based processes of architectural proliferation continue to thrive. Windows and door frames, household carpentry, window grills, walls, floor slabs and structural framing are all produced on site. Novel pre-fabricated building products are drawn into these larger regimes of circulation and site-based mimesis. In the traffic of borrowing, appropriation, and re-articulation of surface techniques, both handmade and industrial objects act as potential points of departure. For instance, imitation wood replaces real wood in the use of formica furniture and cabinetry. Additionally, imitation wood is itself imitated and transposed from furniture to architectural surfaces. Paint is used to achieve the look of wood, though the look is distinctly graphic in quality, like formica. Additionally, imitation wood is itself imitated and transposed from furniture to architectural surfaces. Paint is used to achieve the look of wood, though the look is distinctly graphic in quality, like formica. Or, common shapes such as diamonds are unhinged from any one material or dimension and rendered in different media, such as wood, paint, cement, or steel. New materials are also suitable to unforeseen or heretical uses, as in the example of the temple wrapped in bathroom tiles.

The city is not a quiet backdrop to these promiscuous transferences among media. Shapes and patterns wander the streets of Bangalore like spirits in search of a medium to temporarily occupy. Though cement industry publications were available from the 1940s onwards, they were printed in English or Hindi, rendering them inaccessible for those illiterate or not literate in either of these two languages. In the absence of widely available publications, the street served as a conduit for ideas about construction and design. Contractors frequently cite "experience" as the locus of their inspiration, an embodied knowledge of surface designs and spatial typologies forged through experience and, critically, a streetwise knowledge of architecture. Though printed media such as Indian design magazines and global remainders such as Ikea catalogues are now readily available through bookstores and roadside booksellers, the street remains an important conduit for the circulation of knowledge and forms.

The circulation of images also connects the local to the global. Cement industry publications were initially the venue for the dissemination of perspectival images, plans and elevations of novel building types in mid-century India. Other books published by engineer authors, such as R.S. Deshpande's *Modern Ideal Homes for India*, were in wide circulation from 1939 to at least 1982, and were authored explicitly to cultivate and transform modern home types and ways of living that directly or indirectly invoked European and American designs. Home planning books such as *Modern Ideal Homes* featured allusions to European modernist housing or direct appropriations of examples from architects such as Bruno Taut. These publications predated large-scale modernist projects in India such as Chandigarh (Albert Mayer and Matthew Nowicki, and later Le Corbusier) and the Delhi Master Plan (the Ford Foundation), challenging storied notions of modernism's temporal alliance with postwar economic development and its privileged "introduction" to India through these circuits.

In contemporary Bangalore, personal travel photographs have replaced industry publications as the entry point for images of foreign design. Kedar Diwakar, principal of one of the oldest offices in city, founded in 1966 by his father, L.P. Diwakar, suggested to me recently that the use of personal photographs and other media signaled a decline in the respect that clients accorded to architectural expertise. While his father would carefully illustrate drawings by hand, clients now come with photographs and measure the quality of a designer according to how faithfully she is able to emulate them. Photographs upend the ascendancy of the architect in the daily terrain of practice, deploying materials of construction as a speculative image on par with requirements of style and space. Impersonating a client, he described a typical demand: "I want a building, and I want to use granite everywhere."

As with home planning books in the 50s, these images are inserted into radically different economies of construction than their original referents of domestic life in the United States or Europe. However, in settings that rely on in-situ construction, similarity begets difference. Images are subject to the material contingencies of the site and varied levels of skill, and are notable for what they do not represent (depending on the angle or image resolution, for example). The reproduction of common trends relating to surface and space is desired by makers and patrons alike, but is altered as it moves through different circuits of material realization and constructional expertise.

Given its complicated status as an image, a technology and raw matter, what is a material, and what is its cultural agency?¹² The question has been asked in many ways of architecture proper during the 20th-century, revealing a productive and unresolved tension between the technical capacities of architectural materials and their status as images and cultural objects. In the Pre- and Postwar era, materials such as cement and steel were tied so closely to their representation that they were sometimes asked to function as a medium of communication. In his history of technology and avant-garde culture in post-revolutionary Mexico, Rubén Gallo positions cement alongside technologies of communication such as the camera, the typewriter, and the radio, suggesting that cement was co-opted alongside media technologies in order to communicate revolutionary political messages.¹³ In Mexico and other contexts such as Russia and India, cement was photographed, filmed, and even narrated in fiction in order to communicate its radical social potential

as both a medium of industrial production and architectural innovation. Mid-century American architects such as Eero Saarinen and Paul Rudolph distanced themselves from this social project, rendering the friction between representation and material in the formalization of surface and structure.¹⁴ Concrete was inscribed into the by the very techniques of representation through which it was rendered and speculated upon, as in the transference of Rudolph's textured pen and ink drawing technique to the corrugation of concrete surfaces in buildings such as the Art & Architecture Building at Yale.¹⁵

While images (and other forms of representation) carry these histories of material inscription and meaning with them, they can also be dislocated from them when they enter new contexts. Reyner Banham's account of the one-sided romance between European modernism and American industrial architecture, for instance, frames the friction between image and material in terms of circulation, where myriad misreadings of material innovation occurred along the journey of architectural images from North America to Europe. Banham's narrative is in part a critique of derivation, describing how Le Corbusier and other European modernists "picked and chose" from the supposedly objective photographic representation of American industrial architecture the elements that were appropriately primitive or mechanistic for their own modernist objectives.¹⁶

If in Banham's critique of derivation the reference point was the "ruins" of industry in the United States, in much of the colonial world, the reference point was the West and Europe more specifically. Gregory Clancey, in a brilliant reading of the complicated cultural dynamics of material technologies in late 19th and early 20th-century Japan, argues that the gaps and partial knowledge in the appropriation of "Western" techniques of carpentry and masonry seriously undermine historical narratives of cultural derivation and related models of "technology transfer" that all too often find their way back to a Western point of origin. For example, Clancey traces the emergence of what he calls, schematically, "Japanese Western Carpentry," a contradiction of terms only if we maintain our faith in the isomorphism of ethos and territory writ large across global histories of design.¹⁷

In the 1870s, the Meiji government hired a class of foreign experts such as Joseph Conder for its newly formed technical schools, entangling technologies such as masonry construction and knowledge-making about these materials in a cultural politics of progress. British and German texts circulated into design discourses through this framework but were transformed significantly when re-drawn and interpreted by Japanese authors. Rather than cultivate a historical consciousness about "Western carpentry," foreign texts were notable for their drawings of fragments and abstract principles without application to larger building or cultural context. Particular designs for bracing systems were evaluated by Japanese designers not for their cultural significance but earthquake resistance. The partial knowledge of European material techniques allowed for their flexible appropriation in emergent domains of technical expertise driven by geologic context. An idea of cultural derivation here is not very useful, since Western carpentry is not evaluated in this context in terms of its origin in the West, except perhaps within the larger framework of its introduction. Clancey offers the concept of inscription to describe the physical and material agency of these transformations, an effort to give language to cultural transformations that do not adhere to essentialist notions of cultural contact.¹⁸

It is in the context of this historical problematic that I continue to wrestle with the consequences of the circulation of materials in Bangalore. Though reference points to Western architecture and expertise are everywhere in the media landscape and architecture of the city, they are departed from in critical ways. Material origins are themselves unstable, shifting constantly between representation and raw matter. Wood and other materials are reified as materialities that are dislodged from their origins and intended uses, enabling the creation of knowledge networks, patronage, and urban spaces that necessarily respond to the limited means of an expanding middle class and, more recently, an increasingly mobile underclass. Material and cost constraints demand that qualities associated with a natural material (or its imitation) must alter and conform to the status of an image, such as hand-painted wood or formica, or industrially produced formica "stone." Architectural typologies are also subject to these conditions of circulation. In mid-century Bangalore, the idea of the concrete home circulated as an image long before many users were acclimated to concrete, meaning that designs of RCC construction that were portrayed in industry-published home planning books were realized in older technologies of gare or mud and stone. Similarly, images of wood framed homes from the suburban United States are replicated in contemporary Bangalore in RCC construction.

Complicated materialities such as cement or wood participate in a cultural efflorescence of matter, media and non-professional forms of expertise where mechanization and expenditure is significantly constrained, or is simply reconfigured to the demands of a labour-intensive building economy. Movement relies on common material and spatial types to achieve an endlessly differentiated set of material claims over urban space.¹⁹ Seen through a wider lens, everything from textures and shapes to spatial and tectonic typologies are subject to significant transformations in the course of their movement. Materials are unmoored from their origins; the vacuity of their referents facilitates an ease of translation and adaptation to the sometimes difficult conditions and conflicts of construction on site.

When tracking the circulation of concrete and other materials of construction, notions of an "Indian" way of building or an "Indian" urban vernacular may not do justice to the ways in which technological changes have unfolded

in relation to the cultural or social. An analysis of circulation redraws the map of material technologies and cultural change. Circulation is not necessarily global; it can also be urban in its extent, inviting a critical discussion of collective spatial forms that are not necessarily transnational. Removing the movement of materials from narratives of "cultural difference" also facilitates a re-reading of sites of architectural production that do not fit with already acknowledged centres of innovation.²⁰ Thinking a materialism of movement allows us to take into account forms and sites of circulation that are unacknowledged or willfully ignored, and understand how routes of circulation are constituted along axes of movement that do not necessarily coincide with powerful images of architectural modernity and its well-established networks of circulation.

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Notes

- Elizabeth Povinelli, "Routes and Worlds," *E-Flux Journal* 27 (September 2011): 1-12.
- Laurie Baker, "Building Technology in Pithoragarh," in Gautam Bhatia, ed., *Laurie Baker: Life, Works & Writings* (New Delhi, India: Penguin, 1991), 234.
- Emphasis mine. Ibid., 235.
- Ibid., 236.
- James Ferguson and Akhil Gupta, "Space, Identity, and the Politics of Difference," *Cultural Anthropology* 7 (February 1992): 7.
- Ibid., 6-7.
- Sigfried Giedion, *Building in France, Building in Iron, Building in Ferroconcrete* (Malibu: The Getty Center for the History of Art, 1995).
- Emphasis mine. Mario Carpo, *Architecture in the Age of Printing: Orality, Writing, Typography and Printed Images in the History of Architectural Theory* (Cambridge: MIT Press, 2001), 3.
- Ibid., 8.
- Ferguson and Gupta, "Space, Identity, and the Politics of Difference," 8.
- The anthropology of circulation encompasses an expanding body of literature in anthropological discourse. For the purposes of this article, three platforms of discussion were primarily referenced, including Elizabeth Povinelli, "Routes and Worlds," *E-Flux Journal* 27 (September 2011): 1-12; Elizabeth Povinelli, Response to Infrastructures of Circulation Panel, American Anthropological Association Annual Meeting (New Orleans, LA), November 17, 2010; and Dilip Gaonkar and Elizabeth Povinelli, "Technologies of Public Form: Circulation, Transfiguration, Recognition," *Public Culture* 15(3): 385-397.
- Rubén Gallo, *Mexican Modernity: The Avant-Garde and the Technological Revolution* (Cambridge: MIT Press, 2005), 168-198.
- Martin, "What is a Material" and Timothy Rohan, "Rendering the Surface: Paul Rudolph's Art and Architecture Building at Yale," *Grey Room* 1 (Fall 2000): 84-107.
- Rohan, "Rendering the Surface," 89-91.
- Reyner Banham, *A Concrete Atlantis: U.S. Industrial Building and European Modern Architecture* (Cambridge: MIT Press, 1986), 16-18.
- Gregory Clancey, *Earthquake Nation: The Cultural Politics of Japanese Seismicity, 1868-1930* (Berkeley: University of California Press, 2006), 202-211.
- Ibid., 7.
- This is a phenomenon not unlike the proliferation of the "original copy" that James Holston witnessed in the periphery of late 1980s São Paulo. See James Holston, "Autoconstruction in Working-Class Brazil," *Cultural Anthropology* 6 (November 1991): 456-462.
- Banham observed a particular geographic blindness implicit in the instrumentalization of American industrial architecture by Modernist design culture, noting how his analysis brought into historical critique the experience of American cities which then, as now, occupy critical blind spots for architectural culture at large (except, of course, as a ruin). Reyner Banham, *A Concrete Atlantis*, 107.

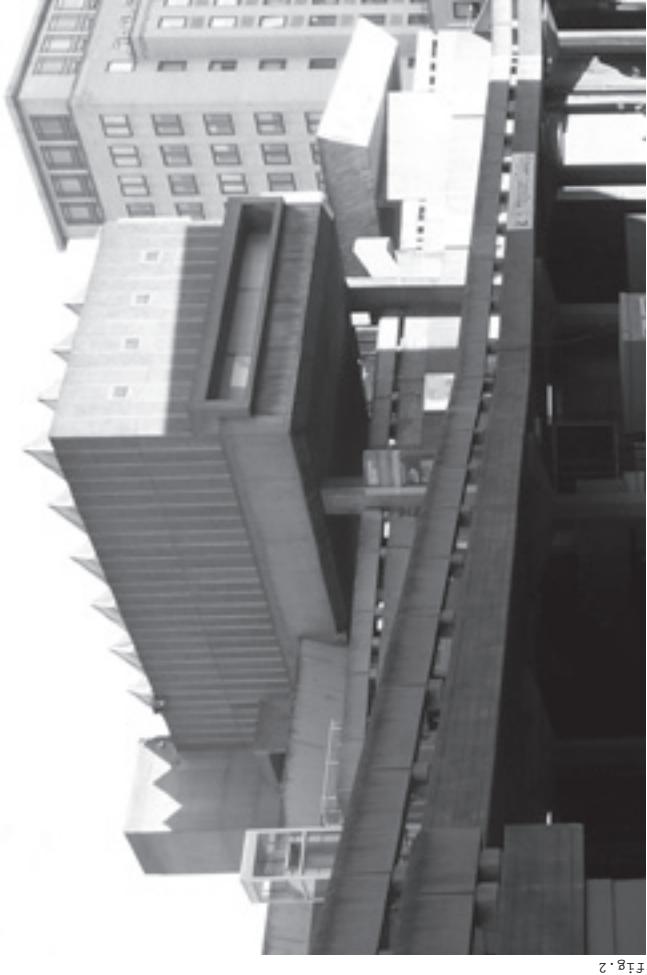


improbable combination. In the London buildings mentioned above, the concrete was similarly bare, although not always so flamboyant. At Ham Common it was the concrete frame left on display, with London stock brick inset; it didn't make such a display of its peasant roughness, as Stirling was unnerfed by the primal gestures of Le Corbusier's use of it in private flats. The Alton West blocks were more a matter of subtle texturing, the stones of the aggregate glinting in a variety of semi-accidental patterns. Here they seem to invite touch, have a particularly coarse physicality; when at school I was asked to make crayon or pencil rubbings of surfaces like these, to see the unexpected beauty of them when slightly abstracted. The Old Vic Extension is nearer to Le Corbusier, with the shuttering on clear display, with the imprint of the wood so clear that it looks considerably more "organic" than the bits of slatted wood stapled onto contemporary apartment blocks.

It has since been painted. These three very different approaches to the material were superseded by something much more extreme, visible at the Southbank Centre by the Greater London Council Architects Department (fig. 2), where in seemingly deliberate reference to the utilitarianism of the Atlantic Wall the concrete is bunker-like, devoid of charming gestures; it is, however, a tactile sensation, full of various kinds of different treatments to the surfaces, all of them different in pattern, in glint, and to the touch. It appears from a distance to be obnoxious—windowless, monochromatic. It's quite specifically not architecture designed to look good as a two-dimensional representation or even from a distance; it, and the many Brutalist buildings like it across the UK, from the Birmingham Library to the Preston Bus Station to the Ulster Museum, have to be experienced, demand involvement and physicality, and require more than a distracted glance. It is this physicality that explains their current unpopularity.

Brutalism meant concrete and concrete meant Brutalism. It somehow fused with a British architectural-moral tradition which went back to Arts and Crafts and the Gothic revival, based on a series of political/aesthetic identifications: honest constructions for an honest society, the marks of work being left for a society that favoured the worker, and the showing of a building's workings as a means to demystification. The style, too, was Gothic—huge spans, rough materials, a persistent hint of melody and drama and even the sinister, buttressing and vaulting—an angry, aggressive approach that scraped towards the clouds, and contrasted between shafts of bright, coloured light and crepuscular gloom. It was Pugin in ferroconcrete. Accordingly, it is a very different beast to the seemingly similar American Brutalism of the likes of Paul Rudolph, which had none of this moralist baggage.

The discovery Le Corbusier made at Marseilles was apparently accidental—he'd intended to design in steel, but concrete was cheaper. Corbusier had designed in concrete since the 1920s, and initially that material masqueraded; it did so for most of the first few decades of modern architecture, although the rhetoric of truth to materials was just as prevalent then. Concrete buildings looked, in their natural state, rough, as though their material was an uneven, sloppy aggregate. It was smoothed and rendered into surfaces which intended to look machine-made but actually required meticulous craftsmanship in order to convey their elaborate fib. Le Corbusier, perhaps consciously taking up efforts made by Latin American architects before the war, decided to make a fetish of what concrete really was—a slop, fixed rigid by shuttering and setting; the marks of the wooden shutters were invariably left on the surface as a testament to the labour that had gone into them. Sculptural motifs were set into the concrete afterwards. At Le Corbusier's various Unités, the effect is both cave-like and brightly optimistic, a rather



Not Concrete by Owen Hatherley

The most noticeable thing in British modern architecture as it has been practised since the mid-1990s is cladding. In cities where public housing was semi-privatised, that meant the attaching of tupperware to concrete towers of various kinds, but it was by far the most prevalent in new construction, especially in apartment buildings. The current orthodoxy—alternatively called CABEism,¹ neomodernism, pseudomodernism—disdains postmodernism's aesthetic of pastiche and irony, its apparent dishonesty, and its lack of truth to materials, but that hasn't impeded the craze for the clad one bit. There are certain materials that get applied to the in-situ concrete frames that form the skeleton of such buildings: red tiles, introduced in the late 90s by Richard Rogers at Potsdamer Platz and Battersea, where they alternate with wide expanses of glass; tresa, an industrially produced material produced to look vaguely like stone or wood; thin veneers of brick, red or yellow, often streaked or splashed with florescence; wood of various kinds, often applied as slats to balconies, which are themselves usually metal clip-ons onto the frame; and stucco, or render, which when made cheaply, has a tendency to flake. Alternately, glass panels, usually in a 'barcode facade' appear slightly closer to modernism of the mid-century Miesian mode.

That's a lot of different materials, and in many apartment blocks they will all be applied at once, as a rather naïve effort to hide the overwhelming and ungainly mass of very small speculative flats; "dovecots," as the blogger Penny Anderson calls them. It's also quite specifically English; elsewhere in Europe, a similar typology is built usually only with stucco on the façades or even with just painted concrete. An argument could maybe be made for all this on the basis of the excitement of multiple materials, but that would entail them having some particular tactile quality; but they never do, instead there is an almost imperceptible skin, with the flatness of a computer screen. The materials always want to be something else, but can't—the wood never looks as "warm" and "organic" as it wants to, the brick never looks even remotely load-bearing, the tresa panels are often instantly recognizable as such, irrespective of what might be printed on them. They're there simply to look good in the advert, but they also have a singular negative virtue—they are not concrete.

The United Kingdom has a weird relationship with concrete, where it has become a kind of swearword. It is applied as such to post-war buildings that are clad in mosaic tiles, or made from the same Portland stone as St Paul's Cathedral—either way, it's just a grey mass. It is strange, then, that this material was so prevalent in the UK in the 1960s and early 1970s, and especially strange that it was usually used in such a rough, forthright, and aggressive manner, so overpoweringly physical in its approach. It's as if British architecture became for a time just too present, too there—it had to be dematerialized, it had to somehow cease to be a three-dimensional object, lest it somehow offend.

The architectural term that encompassed this, originally self-proclaiming and then pejorative, was Brutalism. In fact, the earliest "New Brutalist building" was not concrete at all, but a steel-framed building with glass and stock-brick infill, the Hunstanton School in Norfolk, designed by Alison and Peter Smithson in the early 1950s. "Brutalism" here meant that Cromwellian fixation with "truth to materials"—things are visibly made of what they're made of—and a bloody-mindedness with respect to form. It is not, unlike the Lilliputian contemporary schools being designed from prefabricated kits in Hertfordshire outside of London, on a child's scale or even, to critics, on a human scale. Rather, it is largely two boxes, one of them immensely long, running linear across the Norfolk flatlands. Its material qualities are mostly more ethereal than pliginistic, especially in the amount of glazing—this is a seaside town, and the blasting it got from the winds led to several complete reglazings. Brutalism's nomenclatural similarity to Beton Brut, the raw concrete used by Le Corbusier in his Marseilles Unité d'Habitation, meant that this soon became the dominant Brutalist material, and later examples of the form from the late 50s and early 60s—Stirling and Gowan's brick infill, the Hunstanton School in Norfolk, designed by Alison and Peter Smithson in

¹ The term CABE ism was coined by Rory O'Carroll in the article, "A New English Architecture," *The Architects' Journal* 230, no. 11 (2009): 22–33. CABE stands for the Commission for Architecture and the Built Environment in the UK. O'Carroll states in a letter to the editor at the *Guardian*, Tuesday, October 19, 2010 that, "England has a new mode of architectural expression. It's called CABE-ism (by me, at least) and has taken ten years to perfect. It draws upon many sources: Gordon Cullen's *Townscape Philosophies*, Ian Sinclair's *Psycho-geographic musings*, public-private (usually develop-led) ideas about brownfield regeneration and transparent decision-making inspired by New Labour. Throw in a bit of old-fashioned modernism, concern around climate change and some mixed-messages about 'iconic' design. Finally, sprinkle liberally with branding concepts culled from 80s-style advertising culture, and what you have is CABE-ism."

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Notes

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**Canada's Oil Sands
Scales and Perspectives**
by Jeff Powers & Byron White

The ubiquity of Oil Sands coverage in the media today attempts to compress one of the largest industrial endeavours undertaken by man into sound bites and quotes. We are bombarded with politicized snippets of information—from environmental impacts to economic drivers. Many people are well aware of the plethora of arguments that surround the project, but an aspect that remains elusive

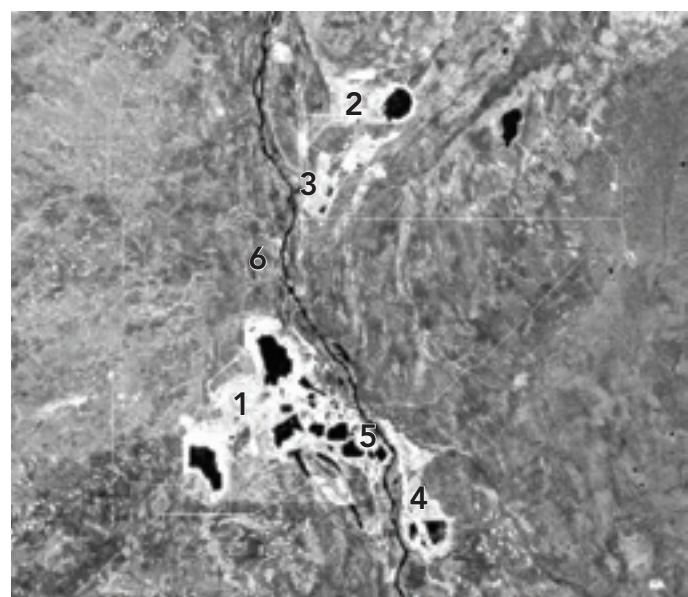
is the sheer magnitude of scale that the Oil Sands encompass. The following is an effort to gain some form of perspective of the Oil Sands, attempting in simple terms, to contextualize scales of land area, volume of oil, water and the economic reach into a wide-angle snapshot of the sprawling nature of the project.



**1.7 TRILLION barrels
of oil in the
Oil Sands**

(or 2700 km³)

8X The estimate
reserves of
Saudi Arabia



1. Syncrude—Mildred Lake
2. Syncrude—Aurora North
3. Shell Canada—Muskeg River
4. Suncor—Steepbank/Millennium
5. Suncor—Tailings Pond 1
6. Athabasca River

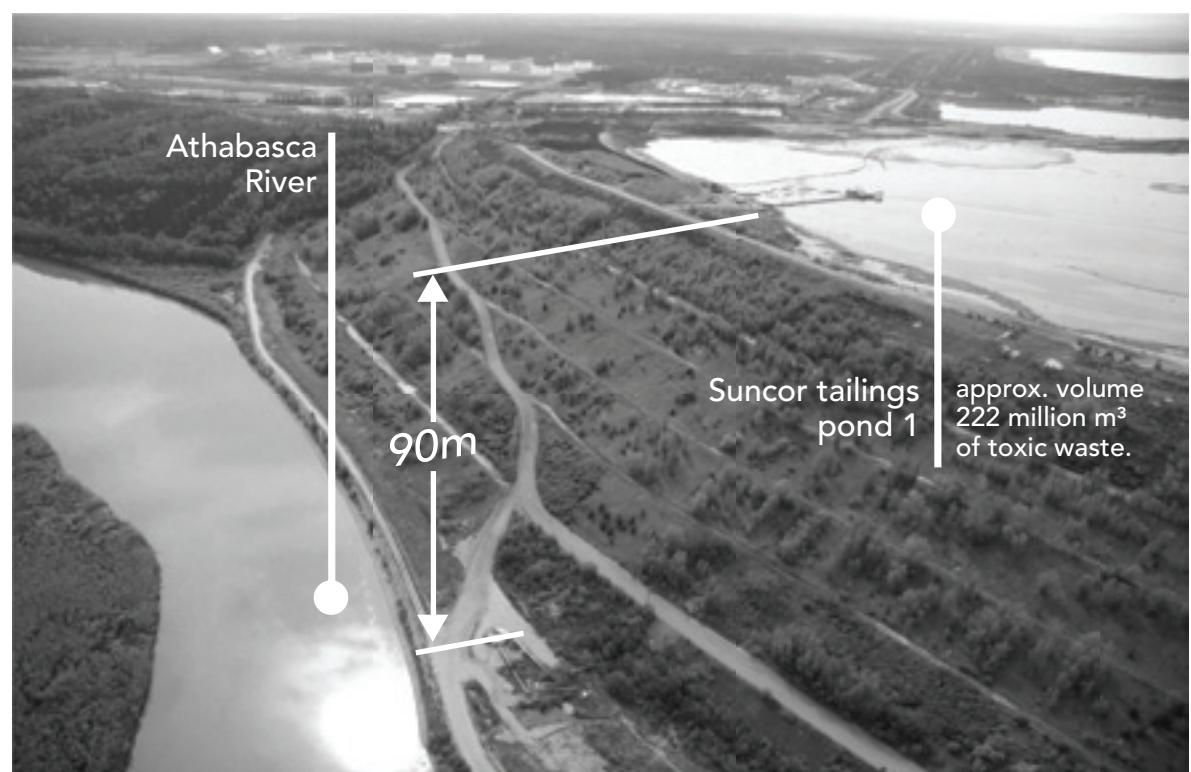


Photo: David Dodge, The Pembina Institute

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Byron White and Jeff Powers are recent graduates of the University of Toronto's Daniels School of Architecture Landscape and Design, and founders of the design consultancy and research group, Methods&Operations. Their research interests range from countrywide landscape and architecture systems analysis to the ergonomics of handrails—and various stops in between.
www.methodsandoperations.com



50% of the water in the Great Lakes would be required

That is, with current production methods, between 2–4.5m³ of water is required for every 1m³ of crude extracted. To extract the total oil sands reserves at this rate it would

require using 12,160 km³ of water—or 50% of the total volume in the Great Lakes or 10% of the Earth's total surface freshwater reserves.

90% of the fresh water used for extraction is held in toxic tailings ponds. Syncrude's tailings pond is considered the second largest dam in the world.



Current surface mining of bitumen at the Suncor Millennium Mine north of Fort McMurray, Alberta.

Photo:
David Dodge,
The Pembina Institute



Photo: David Dodge, The Pembina Institute



Possible affected spill area.

ENBRIDGE

TELUS



J Brian MacNeill

West Fraser



W Douglas Ford



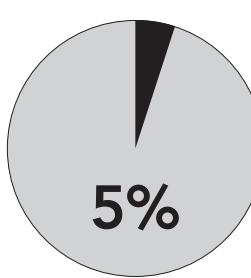
W Douglas Ford



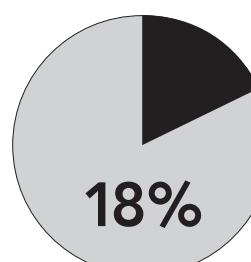
Petro-Canada



Maureen McCaw



Statistics Canada Values the Oil Sands at \$342 Billion of Canada's Worth



Other Estimates Put it Closer to \$1482 Billion of Canada's Worth

Andrew Sharpe. *The Valuation of the Alberta Oil Sands*. 2008



Semi-ology of a Disaster or, Toward a Non-Moralizing Materialism

by Eric Cazdyn

August is the month of *semi* (cicadas) in Japan. Unmistakable, electrical, unremitting. Like the beating of our own hearts, but externalized as if our hearts merged with our genitals to make a super-organ, charged and frequenced beyond any knowable human sensitivity. These inside-out creatures make a sound that turns your head. Makes you search the tree for the source. Or the rice field. Or the urban street where they scream from a crack in the wall. When you look for them you don't find them. They just show up. Next to your foot. On the hood of the car. Flying bat-like in the building. And once you see them they remain, motionless as you marvel at their form. How can such things make such a sound? It doesn't compute. They sometimes remain up to seventeen years underground before emerging for thirty starved days. We call it desperate. And hear Romeo in the full-blown drone. But this is our language speaking—our desire to sentimentalize, if not moralize, the unbelievable logic of this little machine.

This past August (only five months after the disaster), the sound of the *semi* felt different. Their audibility came as a relief. Like the electrical wires that criss-cross this country, or the smokestacks that dot the quiet neighborhood, or the train tracks that gently strangle the ground, these technologies remind us that things (sounds, power, people) come from somewhere and go somewhere else. They have a logic that we can follow, that runs a line. That ends. And dies. The buzz, the wire, the rail—follow it and you'll end up at the power company or the station or at the stilled carapace of the *semi*. No wireless transmission or CADed curve, just the line... exposed, with a nothing-to-hide affect, leading from here to there like an immigrant.

People like to talk about the hidden. Japan: country of the perfectly executed silence, of the elegant self-erasing gesture, of the restraint of the space not filled. But this schoolboy aesthetics misses the point. There is nothing hidden. There is no deep-hearted emotion ready to break through. Depth is not the opposite of surface, but its lining. And the same can be said about the invisible and the visible, the future and the present, as well as silence and the screams of the *semi*. The lining holds two terms together revealing that each term already contains the other, but also that each term has a certain autonomy from the other, and that the structural relation that ties the two terms together can always come undone...without a moment's notice. Each term, therefore, has a logic—runs a line—that is at once connected to and disconnected from the logic of other terms, other lines. This impossible doubleness of the line, the contradiction of the line, is figured by the lining, which (and now the circle seems to close) is not the opposite of the line, but its lining. In order to break out of this tightening circle, we must ask: What is the materiality of this lining?

Chris Marker gestures towards an answer in his 1982 film *Sans Soleil* when his protagonist writes, "I will have spent my life trying to understand the function of remembering, which is not the opposite of forgetting, but rather its lining. We do not remember. We rewrite memory much as history is rewritten." Ricocheting back and forth between Japan and the rest of the world, Marker's film begins with a

formal provocation: how does a single frame of light (in this case the white image of three children in Iceland) relate to another frame of light (U.S. fighter planes)? This is when Marker introduces a third frame, the black—the condition of cinema, not only in terms of narrative development (the black before the beginning (or as beginning) and the black after the ending (or as ending), but the black theatre (the historical space of consumption) and the materiality of the film stock (the black separating each frame). Black is the absent cause of all film and, more self-consciously, is the absent cause of *Sans Soleil*, even though this sunlessness is a direct reference to a Mussorgsky song-cycle that can be heard throughout Marker's film.

Black is also the absent cause of Marker's theory of history. Black is the relation, the abstract, that which connects one thing to another. There is a negativity, by which things do not mean in and of themselves, but only through their differential relations to other things. At the same time, Marker wants us to look at the children, to see their happiness. And he wants us to look at the U.S. fighter planes, to see their menace. "I've been around the world countless times, and the only thing that interests me now is banality," *Sans Soleil*'s protagonist writes. This is the impossible utopian dimension that Marker keeps alive in the film. He wants us to be flashed by the singular, discontinuous image (to cut it away from any totality, any otherness) and in this image sense various pasts and futures (to integrate it into a larger system of meaning). Marker attempts to have it both ways: to criticize a structuralist logic that refuses to recognize positive identity in any single unit; and to submit to this structuralist logic, to the work of the black: "If we don't see happiness in the children, at least we'll see the black."

This play of light and black is itself not an opposition; rather, one term lines the other. Or to put this in more dialectical language, this identity of identity and non-identity stands unveiled not as opposition but contradiction. And, as Fredric Jameson argues, "Contradiction then passes over into its Ground," into what he calls the "situation itself, the aerial view or the map of the totality in which things happen and History takes place."¹

This mention of the ground returns us to the disaster in Japan, to the problem of materialism, and, fingers crossed, to the *semi*. Did the earthquake destroy this ground? Is this ground something that can be broken, flooded, or irradiated? How might we represent the ground of disaster, the unspectacular materiality (if not the very logic) of disaster, the everydayness that seems untouched by the earthquake, tsunami and nuclear meltdown...but that necessarily mediates and is mediated by these heartbreaking events? How might we search not for ghosts or buried treasures, but for the banality that grounds everything? In fact, this is one way to pursue the problem of materialism: Rather than repeat the garden-variety understanding of it (opposing it to idealism and metaphysics or teaming it with nominalism, determin-

ism, or—horror of horrors—positivism), materialism is best mobilized today as the *non-moralizing critique par excellence*. By this I mean that materialism forces us not to fetishize the thing itself (the object, the event, the person, the line), but rather to focus on the relations of things, the lining of the line, which is nothing other than the ground itself. The ground is an absent materiality, which although lacking concrete form is the core of materialism.

If to moralize is to impose a post-political value judgment on something (to judge something based on its immediate effect—this corrupt policy, that admirable act), then to materialize is to mobilize a political critique that cares more about how something works, both in its singularity and in relation to a greater logic. To moralize the Japanese disaster, for example, is to focus on the bad leaders, or the failed technology, or the well-mannered victims waiting patiently in food lines, or even on the inevitability of the disaster itself. To materialize the disaster, in contrast, requires not only resisting such a moralizing critique, but also reframing the event in order to mobilize it toward a radically different future. Like resisting our temptation to anthropomorphize the cry of the *semi*, to materialize the most recent disaster in Japan is to resist our temptation to integrate it into a world of meaning that we already know.

It was precisely to this temptation that many critics submitted when making sense of the disaster. Less than three weeks after the earthquake, for example, Jacques Attali wrote a blistering attack on the incompetency and parochialism of the Japanese leaders, "The International Community Must Intervene—in Japan."² Comparing the nuclear crisis to the global economic meltdown in 2008, Attali implored the international community to intervene as he criticized the Japanese authorities for letting their "pride" and "arrogance," as well as their "penchant for secrecy and lack of transparency," endanger the world. Just as the international community should intervene in Libya or in any human rights violation, Attali reasoned, "the world has the responsibility to intervene when a sovereign nation cannot or will not protect its own people and when the danger extends beyond borders." Attali's criticism is the mirror image of the ubiquitous media celebrations of how polite and disciplined the Japanese people were following the earthquake. "Not a single act of looting," many western reporters repeated incredulously.

Offended by Attali's reproof of the Japanese, Shogo Suzuki responded with his piece "Fukushima and Cultural Superiority" in which he charged Attali for resorting to a culturalist argument about the uniqueness of "the Japanese" instead of recognizing that the nuclear accident could have happened anywhere.³ Suzuki writes, "No country is immune from human error, corruption, or complacency. With this in mind, and before we start painting with broad culturalist brushstrokes, other nations should examine their own nuclear safety...to try to ensure that the mistakes in not-so-unique Japan aren't repeated." Both Attali and Suzuki are right; but

both are as counter-productive as they are moralizing.

It's hard not to hear in the positions of Attali and Suzuki an older debate that defined Japanese studies during the heyday of the economic miracle. By the 1980s, Japanese economic growth was so spectacular that many analysts predicted that the next century would be named "Pax Japonica," a new era with "Japan as Number One" leading the way, as prophesized by the bestselling book by Ezra Vogel. But there were also the skeptics who refused to celebrate Japan's success and saw it resulting from unfair business practices, practices that were opportunistically rationalized by an appeal to Japanese cultural particularities that so many politically correct non-Japanese were too scared to question and that so many self-orientalizing Japanese were too ready to exploit. The skeptics were called the revisionists (sometimes, the Japan bashers) and the defenders were called the apologists. By the beginning of the Japanese recession in the early 1990s, however, the debate imploded, as did all of the enthusiasm and interest in the Japanese model. And then something on the order of a "Japan fatigue" set in, as so much scholarly and business interest expediently moved to China. The problem with the revisionist/apologist debate of the late 1980s was that both sides waged their opposing arguments in terms of a similar and unchanging view of the future. The idea that somehow the future might be radically different than the present (namely, that capitalism might not be the same, might not be dominant, or might actually end) was never considered. *Without leaving open the possibility of a radically different future, however, one cannot help but moralize the limits of the present. And one cannot help but forgo a materialist critique.*

Only five days after the earthquake, the well-known Japanese philosopher and literary critic Karatani Kojin wrote an essay about the disaster that rejects any moralizing and provides a glimpse into what a materialist critique might look like.⁴ Entitled "Earthquake and Japan," Karatani begins by comparing the recent Tōhoku disaster to the Kobe earthquake that killed 6,000 people in 1995. Right up until the Kobe quake hit, people still did not fully accept that Japan was in a full-blown recession and that the sluggishness of the high-growth economy was more than just a momentary stall. The 1995 earthquake, therefore, was immediately turned into a symbol of Japan's economic downfall. In response, Japanese leaders vigorously implemented various neoliberal policies, effectively destroying the Japanese welfare state (now no longer promising life-time employment or cradle-to-grave health care, and producing an extremely vulnerable, flexible labour force of young and old alike). In addition to bringing Japan in line with the principles of the global capitalist economy, in 2003 the ruling Koizumi administration also betrayed the post-war pacifist constitution by sending the nation's Self-Defense Forces to Iraq. Despite the neoliberal hope of recovery through privatization and economic austerity measures, by 2010 Japan's growing poverty rate had almost met the extremely high rate of the United States, making Japan the fourth-highest impoverished country among OECD's 30 member nations. As for the recession, it is now moving into its third decade. The point Karatani stresses in his article is that unlike after the Kobe earthquake, the 2011 Tōhoku earthquake did not come as a surprise shock to the economy. Rather, the recent disaster will only strengthen the already existing tendencies of economic decline and confirm that such accelerated capitalist growth cannot last long—a lesson that China, India, and Brazil will soon learn as well. Karatani ends his piece the following way:

For this reason, global capitalism will no doubt become unsustainable in 20 or 30 years. The end of capitalism, however, is not the end of human life. Even without capitalist economic development or competition, people are able to live. Or rather, it is only then that people will, for the first time, truly be able to live. Of course, the capitalist economy will not simply come to an end. Resisting such an outcome, the great powers will no doubt continue to fight over natural resources and markets. Yet I believe that the Japanese should never again choose such a path. Without the recent earthquake, Japan would no doubt have continued its hollow struggle for great power status, but such a dream is now unthinkable and should be abandoned. It is not Japan's demise that the earthquake has produced, but rather the possibility of its rebirth. It may be that only amid the ruins can people gain the courage to stride down a new path.

Regardless of how speculative and impractical Karatani's argument might appear, it represents a materialist critique of the Japanese disaster, one that holds within it the principles of what I want to call a non-moralizing critique of capitalism. Indeed, a proper materialist critique is at one and the same time non-moralizing. Before returning to the Japanese disaster, therefore, let's first try to establish what these non-moralizing principles are.

First, a non-moralizing critique of capitalism is not personally motivated.

Of course, every action is personally motivated insofar as it comes from an individual person and is necessarily fashioned by conscious and unconscious desire. In this case, a non-personal critique of capitalism means that one first recognizes that one is necessarily part of capitalism, necessarily wrapped up in its ideologies, and that one shares this necessity with others, both friends and enemies. There is no escaping capitalism, since capitalism is not only the production and consumption of commodities, but a certain mode of production with special forms of exchange, meaning-making, social relations, desire, communication, and thought that necessarily

insinuate themselves into our very beings, so much so that attempting to avoid them is like trying to avoid our deepest habits, from the way we hold our bodies to the way we think about how we hold our bodies. This inextricable relation to capitalism (which affects the very ways we understand and represent it) leads to the recognition that any critique of capitalism is necessarily social, necessarily part of something that exceeds the individual producing the critique.

Second, a non-moralizing critique is not personally directed.

The critique, rather, is directed toward the structure, system, and logic of capitalism, which requires less a scathing rhetoric against individuals and more an analytic understanding of how capitalism works. The capitalist system works to produce greedy and corrupt capitalists (ones who certainly deserve condemnation), but to begin with a criticism of them is counterproductive—not only because the dominant system of representation (media, mass culture, pedagogy) is based on a sophisticated defense of these very individuals and their practices (so that to engage in a shouting match in the contemporary mediascape is to risk neutralizing all critique), but because to go after the successful capitalists undermines the analytical skills required to understand the larger system. Capitalism is a tremendously complex system, which was proven once again during the financial meltdown of 2008, when the derivative schemes were so intricate that the only people who were capable of dismantling them were the very individuals who invented them in the first place.

To direct a critique at the system and not at the individuals who manage and defend it is to reaffirm a belief in the reality of the system itself. This is also to argue that there is a certain cause-and-effect logic that can explain capitalist crisis, and such events as war, poverty, and illness (surely these effects are products of other systems as well, but the specific configuration of war, poverty, and illness within capitalism is qualitatively different than their configuration within different systems). Without the recognition of a greater logic special to each system, one effectively abandons politics as such. A non-moralizing critique of capitalism reaffirms a belief not in "the system" (and certainly not in the capitalist system), but in the "system as such." Keeping the problem of the system in the foreground (and thus deemphasizing a moralizing critique) enables a consciousness of the historical fact that capitalism is a system that came into being at a moment in history and will go out of being in the future. Without this belief in the system of capitalism and, more importantly, in the very reality of the system, revolutionary politics is impossible.

Third, a non-moralizing critique is weary of false cures while always keeping open the space for a radically different (however unknowable) future.

Since there is always something within a system that escapes the systemic logic, something any critique cannot fully incorporate, one must be open to—and try to hold—the contradictions of capitalism, rather than immediately manage, resolve, or repress them. This is to say that capitalism can produce magnificent qualities while still causing heartbreaking destruction. To recognize this is also to recognize the history of capitalism, especially the unquestionable liberating effects that its founding revolution enabled. This simple fact sustains a non-moralizing critique, since it denaturalizes capitalism, opening up a comparative analysis with other social formations.

This comparative analysis (which also means comparing capitalism to other formations that do not yet exist) is based not on the ideological claims and desires of different systems (democracy and freedom, for example), but on what each system delivers, such as adequate health care, a healthy natural environment, opportunities to experience diverse pleasures, social equality, individual justice, nourishing food, and secure shelter. A non-moralizing critique, therefore, prioritizes outcomes and remains unconvinced by nonsocial and ahistorical justifications and arguments, such as the complacent recourse to the scarcity of natural resources, or the inherent greediness or goodness of human beings. This comparative impulse also inspires formal experiments with alterity, from social modeling to science-fiction narratives. Such exercises themselves should not be justified by any moralizing critique, but neither should they be discouraged by the constraints of practicality or impossibility. To make the impossible might very well be impossible, but the very act of imagining it can change the realm of possibility.

Fourth, a non-moralizing critique recognizes that crises occur in capitalism not because capitalism has gone wrong but because it has gone right, because it operates precisely as it is designed to operate.

If one appeals to evil or righteousness then these qualities and acts should be understood as symptoms, rather than causes, of the very system under question. Evil acts do not cause capitalism's crises and then recuperate these crises by dispossessing individuals of their wealth and dignity. This process of crisis and dispossession is built right into the system itself and, as in any machine, can do certain things but not others. Instead of anthropomorphizing capitalism with histrionic claims of how evil or righteous it is, a non-moralizing critique sees

it for what it is: a human-built machine that performs various functions based on specific rules and fundamental principles. Such a critique would generate a certain degree of respect for capitalism based on how capable it is at performing such tasks, even if they have such brutally cruel effects as allowing millions to die of treatable illnesses or of downplaying the dangers of a nuclear accident. Instead of incredulity and counterproductive anger, a non-moralizing critique generates a measured response (however poetic) in a clear voice (however angry) that does not retreat from the most painful and beautiful aspects of everyday capitalist life.

We are now in a position to test these non-moralizing principles in terms of the disaster in Japan and see what a materialist critique of the disaster would look like. At the outset, we must understand that our very ways of understanding and coming to terms with the disaster are mediated by the logic of capitalism. And here I'm not referring to the classic capitalist fundamentals such as the pursuit of profit or the necessity of market expansion, but to the more psychological aspects of capitalism—the dominant ideologies that shape how we fear, how we hope, and how we repress. These affective forms are not simply "natural," nor persist throughout human history. Rather, the way we hope for a safe resolution to the nuclear meltdown corresponds to the logic of late capitalism, just as socialist hope or feudal fear are organized in terms of those modes and are of radically different orders than capitalist hope or fear. A materialist critique of the disaster cannot separate the profound personal experiences of the event from the specific historical moment during which it occurs. Of course, the temptation to compare disasters is hard to resist—the way, for example, the 2011 disaster seems to echo the atomic bombs of 1945 or the great Kantō earthquake of 1923 or the Great Wave off Kanagawa in 1830 that Hokusai so ironically depicted in his famous woodblock print. But each of these disasters must be distinguished by the different subjective limits and possibilities of those living through them. The qualitative differences that Karatani distinguishes over the sixteen years separating the Kobe earthquake in 1995 from the Tōhoku disasters in 2011 are even more profound, if not incommensurable, when we contrast the subjective experiences of these disasters to ones that occurred centuries earlier.

We must also focus less on the deceptive, incompetent, or courageous leaders and more on the system in which these leaders act. In this sense we could argue that the practiced deflection of the Tokyo Electric Power Company spokesman or the earnest impotence of former Prime Minister Kan Naoto are not the opposite of the sincerity of the anti-nuclear activist or the indifferent disenfranchisement of the non-voter, but their lining. Likewise, alternative energy sources, such as thermal and solar, are not the opposite of nuclear energy, but its lining. When we only think about the minority emerging dominant within the same system (the dissident becoming prime minister or green capitalism replacing dirty capitalism), then we are still trapped. This is not to argue that we should not struggle for these reforms, but that this struggle must retain a revolutionary consciousness that is not afraid to "give it all away." From opposition to contradiction to ground, these individual and categorical relationships can only be disentangled by locating them on a different ground—on the ground of a different social formation, one that cannot yet be imagined save by the place-holder name, not-capitalism.

As for the logic of crisis that is internal to capitalism and how this relates to the disasters, we must attend to the key differences between what constitutes crisis and disaster, not to mention what constitutes the crucial third term, revolution. Disaster is that moment when the sustainable configuration of relations fail, when the relation between one thing and another breaks down. In finance (for a capitalist economy), disaster hits when goods cannot be related to markets, when idle capital and idle labour cannot be connected, or when currency bubbles burst, replacing so much cold cash with so much hot air. In ecology, the disaster of global warming hits when the emission of carbon dioxide no longer relates to the planet's natural capacity to absorb it. For those with HIV or cancer, disaster comes when cells overproduce so that they no longer relate to the logic of the living body, or when one is denied antiretroviral or chemotherapeutic drugs due to the inability to pay for them. In philosophy, disaster is that moment when thinking is cut off from history, while individuals experience psychological disaster when they are no longer able to relate to the world. As for political disaster, it comes when the relation is severed between those desiring representation and those authorized to grant it.

One thing we invariably learn when natural disasters strike (such as in Japan) is that such events are not natural, or at least the effects of such events are not natural. Their fallout, quite obviously, is social—products of human choices, political systems, even cultural assumptions. Extending this understanding to the limit, however, effectively evacuates the category of disaster itself. This is because although disaster is contingent (coming "from the stars," as its etymology suggests), its effects are almost always predictable and quite logical. Most people in power knew exactly what would happen if an 8.9 magnitude earthquake struck the Tōhoku region. Those in power simply crossed their fingers and hoped that such an event would not occur. When it did occur and its tragic consequences ensued, calling it a disaster is like calling a dying man a hypochondriac.

However much its effects may be completely predictable, the contingency of a disaster is what sets it apart from a crisis. Unlike a disaster, there is something necessary about a crisis, something true to the larger systemic form. In other words, systems are structured so that crises will occur that strengthen and reproduce the systems themselves. The boom-bust cycle of capitalism is only one of the more obvious

examples of this logical necessity. Both contingent disasters and necessary crises, therefore, are linked in the way that their breakdown in relations is built back up again by a different set of relations within the same system.

Revolution, in contrast, is that moment when a new set of relations takes hold within a different system. This crude distinction better explicates the new ubiquity with which disaster and crisis have been invoked over the past 20 years, while revolution has been driven underground, rendered not only unspeakable, but, moreover, unthinkable. This trend has everything to do with the political-economic situation of the post-Cold War era, a symptom of our own historical formation, which currently, for good or ill, goes by the name globalization.

Disaster and crisis have always been quick off the lips of those wishing to justify mishap and misfortune. If it were not for that earthquake, the town would not be in such disrepair. If it were not for the crooked officials or crony capitalists, there would be better public transportation, better health care, and more wealth to go around. If it were not for the new terrorists, we would be free from anxiety, sleeping comfortably on cushions bought by the peace dividend. Crisis and disaster are those props pulled out of the bottom of the bag when all other explanations lose operational force or cannot be spoken.

With the end of the Cold War, anomalous and non-systemic disaster and crisis (that is, events from the outside, like a meteor or a madman) have been even more likely to be employed to explain inequality and injustice. During the Cold War, for example, to speak the language of disaster and crisis was at once to speak the language of revolution: the discourse could easily slip into revolution. Disaster and crisis were truly dangerous. With "mutually assured destruction" the watchwords of the day, one crisis could accumulate into so many crises until the quantitative curved into the qualitative and the whole system was in tatters. We only need to think about the Cuban missile crisis or the oil crises of the 1970s to remember that crisis and disaster were a mere cat's step away from revolution. But with the transformed geopolitical situation following the Cold War, in which the United States remained the sole superpower and the "end of ideology" became the ruling ideology, it seemed riskless (not to mention utterly gratuitous) to call upon crisis and disaster.

Following the Cold War, crisis and disaster were as far apart from revolution as heaven from earth. What needs to be considered in the current post-post-Cold War moment is whether or not this is still the case. Is something changing so that crisis and disaster are becoming dangerous again, no longer the trump cards of those in power? Is something changing so that revolutionary discourse is creeping back into everyday consciousness, into the way we understand not only radical social change but the more banal ways we understand ourselves and think about the future? Indeed, this is why I find Karatani's argument so powerful. He is finally articulating the connection between disaster and revolution, or more specifically the connection between the Tōhoku disaster and the revolution of capitalism.

The earthquake and tsunami directly affected those living in the towns and villages in the Tōhoku region of Japan, compelling the survivors to deal with the tens of thousands who died (in some cases, nearly entire communities) and the extensive rebuilding process. Slightly differently, the nuclear meltdown has affected not only those in the immediate vicinity of the Fukushima nuclear reactors, but the whole country in terms of the potential contamination of the water and food supplies. Moreover, the temporality of the nuclear disaster is different from the temporality of the earthquake and tsunami—the danger and damage, for example, of the nuclear fallout will occur over the long-term with fewer immediate effects. These different but overlapping temporalities of disaster (short-term destruction and long-term threat) get at a fundamental logic that I have been calling "the ground": how, for example, one can directly engage the immediacy of an event (such as the practical destruction brought by the earthquake to both people and the physical landscape), while at the same time de-emphasizing the specific damage itself in order to attend to the various historical, future, and meta contexts of the immediate situation. The ground's materialism is both abstract and concrete, singular and general, the virtual future and the actually existing present, the line that leads somewhere and the lining that doesn't.



The ground is also the remarkable sound of the *semi* and its body—two things that seem to have nothing to do with each other, but are, in fact, one. When the *semi* were late to appear this year in the Tōhoku region, however, many feared that the physical ground had been so destroyed that the bodies of both the annual and periodical *semi* (billions of them) had been annihilated. But the delay had been due to an unseasonably cool spring. After the first warm spell, fortunately, the males were yelling again, leading one haiku poet to write: "The *semi* are finally here/ I'm sort of relieved/ As things aren't quite normal these days."⁵ But then a report revealed that over 20 per cent of the *semi* around Fukushima had physical mutations. Scientists quickly confirmed that this may not be due to radiation, but possibly to the tsunami-flooded soil. Radiation damage will take much longer to manifest, the scientists explained in an "I-have-some-good-news-and-I-have-some-bad-news" sort of way. This bad news is saddening for all those who will suffer from radiation effects and those who will be terrorized by the threats of radiation, but the news also turns out to be bad in a more profoundly political way. The threatened future is now tied even more tightly to the disastrous present so that a radically different future, a revolutionized future, is harder to imagine. The real damage of the disaster is that a future free from the logic of the present becomes even *more impossible* to dream and act toward, at least when we remain within the discursive limits of the present and allow these limits to colonize the future. But it is precisely this colonized future that a non-moralizing, materialist critique of the disaster attempts to liberate. This de-colonized future, one that has no name and will not look anything like what we now know or can imagine, can be sensed in the intense, urgent, steady, and collective chorus of the *semi*. A chorus that can be tracked back years and underground (like a line), but that is always set to stop, to disappear, to die for a *less impossible* future that in some a-temporal and non-linear way is already here.

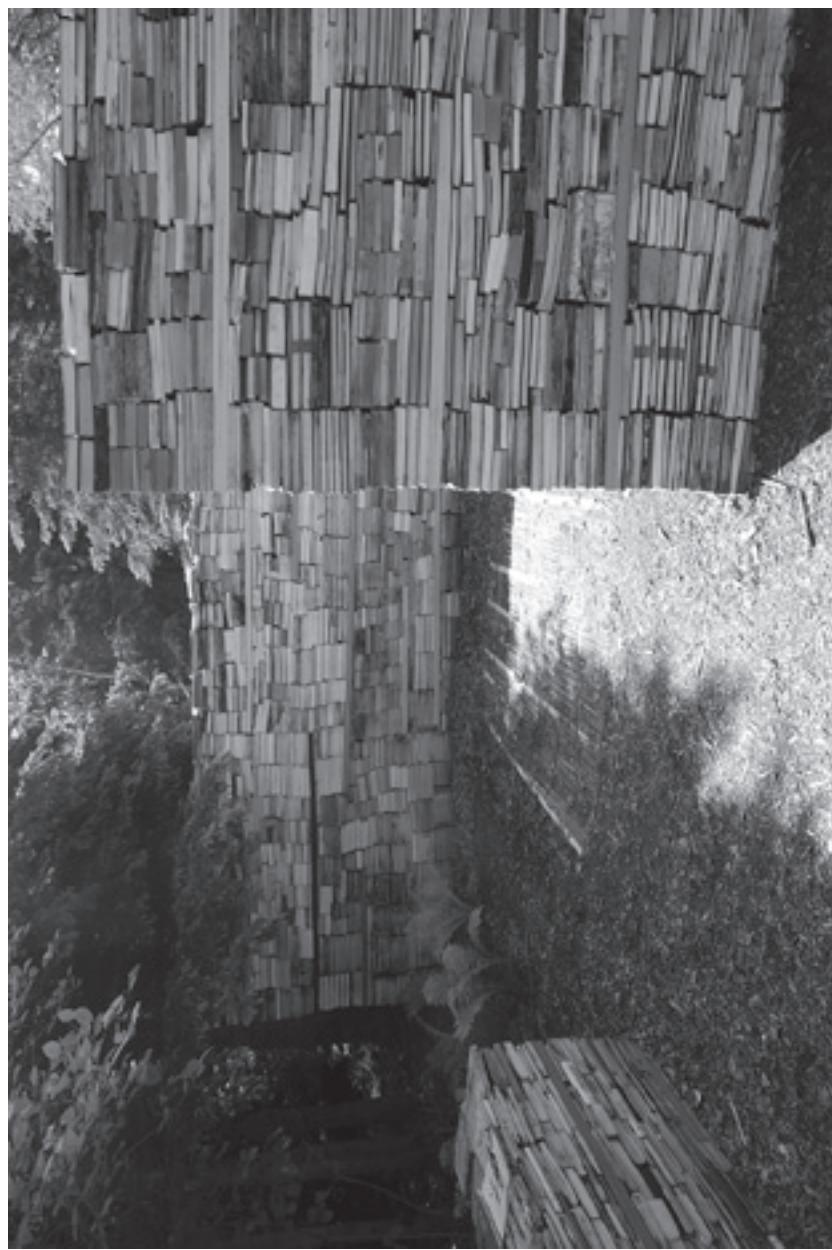
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Notes

1. Fredric Jameson, "Notes on Globalization as a Philosophical Issue," in *The Cultures of Globalization*, eds. Fredric Jameson and Masao Miyoshi. (Durham: Duke University Press, 1998), 76.
2. Jacques Attali, "The International Community Must Intervene-In Japan," *Christian Science Monitor*, www.csmonitor.com/Commentary/Global-View-point/2011/0330/The-international-community-must-intervene-in-Japan.
3. Shogo Suzuki, "Fukushima and Cultural Superiority," *The Diplomat*, the-diplomat.com/2011/07/15/fukushima-and-cultural-superiority.
4. Karatani Kojin, "Earthquake and Japan," trans. Seiji Lippit, www.kojin-karatani.com/en/article/earthquake-and-japan.html.
5. The *Asahi Shimbun*, "The Droning of Cicadas a Reassuring Sound of Summer," ajw.asahi.com/article/views/vox/AJ201108087833.





Jardin de la Connaissance 100Landschaftsarchitektur Thilo Folkerts + Rodney La Tourelle

The *Jardin de la Connaissance* is a temporary garden conceived for the International Garden Festival at Les Jardins de Métis.¹ It consists of multi-coloured wooden boards, a number of cultivated mushrooms, and some 40,000 books that form walls, benches, and carpets. Based on an open compositional principle, these elements are assembled to create a garden space that is integrated with both the site and structure of the forest.

Celebrating book culture as an ongoing process of shaping, aestheticizing, and distributing information, the *Jardin de la Connaissance* (or *Garden of Cognition*) does not illustrate the book's "return to nature" or attempt biblical reconciliation. It does, however, engage with the mythical relation between knowledge and nature integral to the concept of "paradise," which has been a primary reference for the garden throughout history. The "tree of knowledge" has today become a forest: a plenitude of multimedia and an overwhelming world of information. By using books as material in the construction of the garden, we confront these instruments of knowledge with the temporality of nature. Transformation and disintegration destabilize the supposed timeless value of the book.

The composition of the book-volumes is structured with brightly coloured wood plates, which bind the individual stacks together. Over time, the artificial colours of these elements will contrast the graying tones of the exposed paper in the books and the surrounding forest. Overall, the orthogonal organization is reminiscent of a typical Neo-Plastic composition from the early 20th century, invoking an optimistic orientation based on "primary" elements. And yet, this "utopian" notion is countered by the gradual decomposition of the paper material. We have tried to implement the concept of transformation as the garden's primary aesthetic structure. Several varieties of edible mushrooms are cultivated on the books. These accentuate the transformative process of the literally fixed knowledge, invoking the semantics of cultural and natural wisdom. By visualizing decay as a lifecycle segment, knowledge is exemplified as a process.

The books in the garden are surplus books, supplied by local public libraries and school institutions. There is a wide variety of sizes, formats and genres: from romance novels to religious texts, science to education books, thrillers, and encyclopedias. Most of the books have been waiting as recycling material in storage spaces in advance of an increase in paper pulp prices (which did not take place). The discarded and exposed books remind the visitor, sometimes surprisingly, sometimes painfully, that both natural processes and the book as medium are systems of reproduction. Knowledge is never to be had without effort and cultivation—it requires the preparation of a seedling ground to generate and be created anew. The *Jardin de la*

Connaissance could be seen as part of such cultivation: a library, an information platform, a dynamic realm of knowledge, a sensual and interactive reading room.

In the garden's second year the books have grayed, and mold now rivals the cultivated mushrooms. Visitors have eternized themselves and their loves with scribbles, tags, and other marks. "Marcel and Amanda," an aphorism, or the enthusiasm for a boy-band have been submitted to the garden's particular destiny of time.

14th Triennale di Milano 1968—Occupation of the Triennale.

Source: Archivio Fotografico Triennale di Milano

ideal testing grounds for the transition to post-Fordist forms of capitalism. Under examination are Russia, the Czech Republic, Romania, Croatia, and Turkey; future issues will be devoted to Africa and the Middle East. A first-hand analysis of the interconnections between the markets, exhibition institutions, education systems, and communication networks of each country is accompanied by actual maps visualizing these complex webs of influences and interests in a spirit somewhat reminiscent of the work of the late Mark Lombardi.

"Play Time," the magazine's central section, is in turn divided into three subsections. The first looks at the changing role of education under a regime in which "cultural production can no longer be separated from economic factors, and the economy cannot do without culture," as Andris Brinkmanis puts it in the introductory note. It includes a conversation between Alexei Penzin and Dmitry Vilensky on the role of theory in the production of contemporary art and subjectivity; a text by Stephen Willats reflecting on the relevance of "random networks" to art practices; and art-historian Ardit Schmidt-Burkhardt's study of George Maciunas's Learning Machines, the painstakingly hand-written paper-and-glue atlases of factual knowledge whose taxonomic obsession suggestively resonates with the maps and charts in "Time Zone." "Market," the second subsection in "Play Time," includes essays by sociologist Maurizio Lazzarato and economist Christian Marazzi, along with a compelling case study of the history of the Manifesta biennial by Marco Scotini. The third and final subsection focuses on current politics and practices of display; it includes contributions by Will Bradley, Roger M. Buergel, Société Réaliste and, again, Scotini, who here discusses the 2009 Istanbul Biennial as a successful "meta-exhibition" offering a much needed reflection on the conditions of exhibition-making under the current politico-economic regime.

The final section, "Time Machine," focuses on contemporary artists (including Evangelis Vlahos, Yervant Gianikian and Angela Ricci Lucchi, Rossella Biscotti, Eugenio Dittborn, Harun Farocki, and Peter Watkins) whose work, often in the mode of experimental documentary and alternative archival practices, engages with the past as a way of dialectically reflecting



No Order: Art in a Post-Fordist Society N° 1 / 2010 Review by Francesco Gagliardi

"What does the appointment of art dealer Jeffrey Deitch as director of the Los Angeles Museum of Contemporary Art have to do with the trend of global financialization restated at the Toronto G20 Summit in 2010? And how does the 25 percent attendance increase at the 2010 Gwangju Biennale fit in the picture?" In his editorial note to the first issue of *No Order: Art in a Post-Fordist Society*, a new annual "bookzine" published by the Visual Arts and Curatorial Studies Department of Milan's New Art Academy (NABA), Marco Scotini suggests that these events are among the symptoms of a global transformation of labour whereby knowledge, creativity, sociability, and ultimately life itself, are taking on the role played by machines in the Fordist era. The magazine's focus, as its tag line states, is the analysis of the role of art as a mirror of and catalyst for the transition to this new socioeconomic and political order. ("A country with human rights violations? Bring on the Gehry gallery!"

as Hito Steyerl quipped in a recent essay).¹

Over the last few years, the discussion of these topics has gained considerable momentum, as attested by the number of conferences on immaterial labour and cognitive capitalism, as well as the wealth of new publications devoted to these issues, such as the recent "Post-Fordism, Precarity, and the Labor of Art," e-flux collection.² *No Order* enters this discussion head-on: at nearly 400 pages (only one of which is occupied by a commercial advertisement), with a severe black-and-white cover image of the 1968 occupation of the 14th Triennale di Milano, and interspersed with artist projects reflecting an austere research aesthetic (maps, diagrams, grids, text), the new bilingual (English and Italian) publication makes for a dense, sometimes challenging, and often rewarding read.

The magazine is divided into three sections. The first, "Time Zone," tackles the issues at the magazine's core in perhaps the most direct way, providing an alternative cartography of the emerging artistic systems of countries whose belated embrace of a modern capitalist model has made them, in recent years, into

upon the present. Exploring the conditions that make representing history possible, the essays in this section try to articulate an account of the shifting role of time in a global scenario defined by the logic of the neoliberal information economy.

Overall, the first issue of *No Order* makes a compelling case for the need to turn our attention to the conditions of art's production and display; to art as a place of labour, conflict, and potential subversion. At the same time, its very size, the range of its coverage, and the star status of several of its contributors beg the question of the role of competitive theoretical overproduction under the current regime of cognitive capitalism—a question, incidentally, that Penzin and Vilensky explicitly raise in their contribution to the first section of the magazine. An additional, related source of uneasiness is the absence of any acknowledgement of the fact that some of the essays are reprints. Willats's text, for one, was originally published in 2003 by Artlab in collaboration with Control Magazine, the pioneering artist magazine published and edited by Willats himself since 1965. Similarly, Penzin and Vilensky's conversation is illustrated with reproductions of covers (designed by Vilensky) of the magazine *Chto Delat?* What is to be done?, but the latter is nowhere acknowledged as the text's original source (the conversation appeared in the March 2009 issue). Let's be clear: the issue here is not intellectual ownership, but the transparency of networks of cultural production—those very networks whose exposure is so convincingly positioned by *No Order* as one of the essential functions of art discourse in the present historical moment.

Francesco Gagliardi is an artist based in Toronto.

Notes

1. Hito Steyerl, "Politics of Art: Contemporary Art and the Transition to Post-Democracy," *e-flux journal* 21 (Dec. 2010), accessed November 7, 2011, www.e-flux.com/journal/view/181
2. Julieta Aranda, Anton Vidokle, Brian Kuan Wood, eds., *Are You Working Too Much? Post-Fordism, Precarity, and the Labor of Art* (Berlin: Sternberg Press, 2011).

Volker Sattel's *Unter Kontrolle*
Review by James Macgillivray

By the way, something I didn't mention: in Germany we have a unique "fourfold redundant" safety system. There must be four of all machine components, all the pumps, everything related to the nuclear reactor in the safety procedure.

—Tour guide at Grohnde Nuclear Power Plant, Lower Saxony



In 1978, Andrei Tarkovsky filmed *Stalker* in a bombed out hydroelectric dam in Tallinn, Estonia. The film takes place in the aftermath of an event—a meteorite or an alien visitation—that imbues a place, "the Zone," with certain invisible forces and a room at its centre that will grant the innermost wish of the person who enters. The title character, the *Stalker*, is hired to guide people through the now heavily guarded Zone to get to the room. The spatial diagram of a powerful nucleus (the Room) at the centre of a cordoned-off perimeter (the Zone) is complicated by the fact that the space between the perimeter and the centre is not monolithic, but highly differentiated. A benign-looking field of buckwheat must be deftly navigated with the help of trial and error projectiles; characters lose one another only to find each other again by staying still; in the *Stalker's* words, "I don't know what goes on here in the absence of people, but the moment someone shows up everything comes into motion."

The ambivalent power of the Zone's presence was perhaps indicative of the more banal menace that really did exist on the site of *Stalker* during shooting; upriver from the Jägala Falls dam, a chemical plant was draining effluents into the river water that permeated every shot of the film. Characters in the film are constantly in the presence of this water, drenched by it, wading through it, or lying down in it. In the years following the film's production, several of the people involved died of the same strain of lung cancer, including Anatoly Solonitsyn, Larissa Tarkovskaya, and Tarkovsky himself.

Eight years after Tarkovsky left the Zone, and months before his death, the 4th reactor of the Chernobyl Nuclear Power Plant experienced a catastrophic power increase that led to the explosion of its core. In the aftermath of the disaster, the Soviet government put in place a 30-km-radius exclusion zone around the plant. Although Tarkovsky's film doesn't reference nuclear disaster, his creation of the invisible presence of the Zone has served as an archetype, the formal depiction of nuclear disaster. Twenty-five years after the disaster, guides calling themselves "stalkers" offer tours of the nearby, abandoned town of Pripyat. But here, the Geiger counter takes the place of intuition in navigating the exclusion zone.

Volker Sattel's *Unter Kontrolle* (2011), filmed in working and decommissioned nuclear power plants between 2007 and 2010, cannot help but address the legacies of Chernobyl and Tarkovsky's Zone. The film provides a relatively unedited progression of footage through nuclear power plants, and other secondary and tertiary levels of the nuclear energy industry. Talking heads are kept to a minimum; technicians, officials, scientists, and regulators are only heard from when they give critical information or provide moments of dark, oblivious humour ("So it's the red button, Uwe?" says one, contemplating an espresso machine). Although it is a documentary, it inhabits the formal archetype of Tarkovsky's Zone. The dominant structure of the film is formed by the tectonics of the camera and the spaces created by its movement. Yet, while the movement of the camera in *Stalker* maintains a lack of smoothness, for example, on a diesel-run handcar travelling along a bumpy track or in the hesitating gaze of an unknown presence, *Unter Kontrolle* avails itself of machine-milled smoothness. The robotics that are shown in the film to smooth the movements of their human nuclear power plant operators could have been used as the apparatus for filming the longer shots. Whereas the long shots in *Stalker* serve to differentiate the otherwise unambiguous layout of the Zone—that between perimeter and centre—the camera movement in *Unter Kontrolle* becomes a pure expression of the variegated spaces and machines of the nuclear industry.

Nuclear technology and the mere existence of a nuclear industry would appear to be the radical application of materialist worldview: the confident materialist labours undaunted in the everyday application of physical laws towards a class of matter whose harmful aspect is invisible, eternal, and fatal. At the Institute of Risk Research in Vienna, an academic lays out the scale: "Plutonium, for example, has relatively weak emissions, but it can't be allowed to enter the body. The World Health Organization says a millionth of a gram can cause lung cancer. Extrapolating from that, one gram would give a million people lung cancer, a kilo a billion, and a few kilos all of humanity... There are substances that must be kept out of the biosphere for an unfathomable amount of time. There are certain isotopes, cesium isotopes, and others, that have half lives of 1.5 or even 15 million years." Radiating outward from the infinitesimal centre of active material are concentric offsets of protection. The centre-perimeter paradigm of Tarkovsky's Zone is re-enacted in the three-foot-thick, steel-encased concrete walls of the reactor, in the showering vestibules at the plant's



Still from *Unter Kontrolle*, 2010

entrance and in the metres of water that cover the fuel rods as they go from the reactor to storage.

Beyond the safety of this material offset, the human factor, either in threat or in error, comes to the fore as the protagonist of the film's disaster scenarios. In the face of a human threat, the notion of a buffer zone is taken to extremes. The zones spin off into myriad territories, spreading out until the threat is exhausted. Terrorism, for example, personified in an airborne, visually guided attack, has spawned the remarkable formal innovation of a ground-deployed smokescreen, a 300-metre-thick blanket of smoke that can be augmented with a so-called "GPS jamming/spoofer system" to obscure the target of the station from those approaching by airplane. In turn, the manufacturer of the smokescreen, Rheinmetall Defense, spins off further into its own zones. Testing facilities and "proving grounds," run by their subsidiary Rheinmetall Waffe Munition GmbH, preside over a vast 50-square-kilometre swath of bombed out fields in Unterlüß.

If the human factor is in error, the offsets proceed in similar fashion. At the Powertech Training Centre in Essen, one trainer hedges the factor of human error with a buffer zone, literally blocking out the possibility of human decision: "We define tasks performed by humans and tasks performed by technology, and our facilities are designed to account for human error. And we all make mistakes, ten an hour on average... that can be risky when dealing with nuclear technology. That's why the facilities have automated mechanisms that decide what action to take in unclear situations." Human error not only pushes outward in offsets of automated failsafe, but proliferates humans as well. Almost in response to Schopenhauer's charge that "materialism is the philosophy of the subject who forgets to take account of himself,"¹ the nuclear industry radiates outward in ringed forms of bureaucratic architecture. As if to say, we will account for subjectivity by proliferating subjects.

Scenes of the International Atomic Energy Agency take place in architect Johan Staber's Austria Centre in Vienna. In a vast semi-circular room reminiscent of the cooling towers from earlier in the film or the UN General Assembly, a lone official maintains that although the amount of plutonium required to create a nuclear bomb is 8 kg, they account for "every last gram" of nuclear material in a country. In 1968, Sol LeWitt, contemplating a similarly rare and guarded material, the jeweled Cellini Cup, proposed to encase it in a cube of concrete. Indeed, concrete, deployed in LeWittian fashion, is the medium of choice for the land artists of nuclear disposal. So-called "geological disposition" entails the mixing of radioactive waste water with concrete, pouring that concrete into barrels, burying those barrels in granite 600 metres below the earth's surface, and finally backfilling the entire underground system of caverns with even more concrete.

Concrete is the copious and obvious response to water. Water, the dynamic and essential element of the nuclear industry, is indispensable in all aspects of generation, safety, and remediation. Perhaps the most impressive footage in the film is of a spent fuel rod being moved from the reactor into storage. The entire operation needs to happen under a considerable amount of water, all of which is extremely radioactive. This liquid in the film helps to give expression to the invisible presence at the centre of all the offsets. In *Stalker*, Tarkovsky, the mystic, provides the antithesis for the glowing water of the materialist masterpiece: in a long downward looking tracking shot, the camera hovers over a shallow pool of water covering assorted detritus. As we recognize in this material—a gun, a razor blade, a syringe, a shell casing, a postcard of a painting by Van Eyck—the text of the Zone, its character begins to clarify. Buffers that were breached, fail-safes that failed, and a human factor in catastrophe—these are the touchstones of the exclusion zone.

Note

1. Arthur Schopenhauer. *The World as Will and Representation*, Volume II, trans. E.F.J. Payne (New York: Dover), 13.

James Macgillivray is the William Muschenheim Fellow in Architecture at the University of Michigan's Taubman College of Architecture and Urban Planning. He is a founding partner of L/MAS, an interdisciplinary studio focused on issues of representation and perception in architecture and the fine arts. Prior to University of Michigan, he worked as a designer at Steven Holl Architects and as a project manager at Peter Gluck and Partners Architects. He is currently writing a book that delineates the notion of space in the arts of architecture and film.

as to neutralize any gendered associations?"¹ Domesticity has historically been seen to be feminine—a woman's place, her domain. In these practices, privacies are shown in the processes of being reinforced and undermined, genders neutralized and intensified, while all are multiplied. In Kyna Leski's "Sister" chapter, the vision of a dream home transformed into a project for a Shadow House makes a virtue of that delicious morning moment of falling back asleep just after the alarm goes off. For two sisters, one who might be a heroine, the other perhaps heroin, the shadow house nods off, "no longer recognizable, having been dramatically transformed and re-constituted [...] we no longer understand public and private, shade and shadow in the same way again."² This smooth drift away from a hierarchical type undermines the conventions of residential construction and space planning toward a realizable dream image of (un) domestication.

The "Pedagogy" section provides examples of full-scale design-build studio practices that challenge "normative student-teacher relationships, the classroom's hierarchical structure, and the professor's role in the class."³ It is easy to teach a class full of alpha types: praise the strong ones and watch the rest run to catch the leader. It is harder and more rewarding to engage and collaborate, to discover each student's personal aspirations, and to walk that path together. In this, Margarita McGrath's 2006 Taipei studio is exemplary, investigating the mundane and the worldly. There's a generational divide that she points to when she writes in her piece "Fishing for Ghosts": "I'm in my 40s. It is bold to reveal one's age, but in this discourse I think it is critical."⁴ She writes of the "wave of feminism" in architecture schools that straddled the late 80s and early 90s, a time when academic institutions were struggling with the new gender parity of the student body.

Feminist Practices: Interdisciplinary Approaches to Women in Architecture

Lori A. Brown, ed., Ashgate Publishing Limited, 2011, 371 pp. Review by Scott Sørlie

Feminist Practices is assembled into four thematic groupings: design, pedagogy, design research, and communities. Apart from these sections are editor Lori Brown's introduction, conclusion, and editorial prerogatives providing coherence to an increasingly diverse and productive field. Two chapters, however, slip away from the structure of a book. Jane Rendell's chapter "Critical Spatial Practices" and Despina Stratigakos' chapter, "Inventing Feminist Practices," are placed outside of the four themes. The decision not to force-fit these two chapters into one of the four broad categories of the book allows them to open up content that doesn't necessarily conform to the other categories. This is a feminist editorial decision.

Not one of content, not one of form, but one that smooths the strictures of form to receive and hold content without forcing it to follow a rigid structure. This permission is an elegant means to accept and embrace work that would otherwise fall outside, or worse, be forced in.

Domesticity is a theme throughout the anthology. One meaning of domesticate is to tame, and the place of taming is the home. The complex, ambivalent relationships encircling domesticity provide productive territory for feminist practices in architecture. There are many territories, institutions, and subjects problematized viscously in the works of *Feminist Practices*, but for the purpose of this brief review, domesticity stands in for the whole.

The first section, "Feminist

Practices of Design," features five designers whose work engages the sophisticated and subtle inter-relationships of the body and surroundings. Lori Brown asks several questions of this group in the introduction, among them: "How is privacy understood within the domestic sphere and how is this idea materially reinforced? [...] How can the furniture with which we occupy space be reconsidered and redesigned so

Janet McGaw, in "Urban Threads," works with homeless women (the undomesticated) to make private realms in public spaces. This empowering work is the definition of community, in practice and execution. Liza Fior and Katherine Clark of the design practice muf, equate civic work with citizen input, through the design process as much as built work. These projects are architectural examples of relational aesthetics—where the work lies in the acts that are co-construed; the civic moments that arise belong to the citizens who bring them about.

This is a very important book; the bibliography at the end of Jane Rendell's opening chapter, "Critical Spatial Practices," alone is worth the cost of the book. It provides a survey of feminist practices and literature from the last decade of the 1900s and the first of the 2000s, a survey that is unavailable anywhere else. Students of any gender and designers of all genders cannot claim to be adept at working in this contemporary territory without availing themselves of this resource.

I worry that because it is 'feminist' men wouldn't dream of picking it up, and that women will pause before buying it: so I appreciate the definitions of feminisms that Lori Brown provides. They have nothing to do with gender. First, she writes, "feminist practices are political acts that seek to challenge the status quo and identified relationships of power." And second, that "there are those who work to improve and better the lives and spaces of others, concerned with larger social justice efforts, but may never call themselves feminist."⁶ She follows with a quote from bell hooks, who writes, "we can live and act in feminist resistance without ever using the term 'feminism'."⁷ Maybe we don't have to say it if we find the word limiting. Lori Brown challenges us to re-define the term for ourselves.

Notes

1. Lori A. Brown, ed., *Feminist Practices: Interdisciplinary Approaches to Women in Architecture* (Aldershot: Ashgate, 2011), 7.

2. Ibid., 8.

3. Ibid., 9.

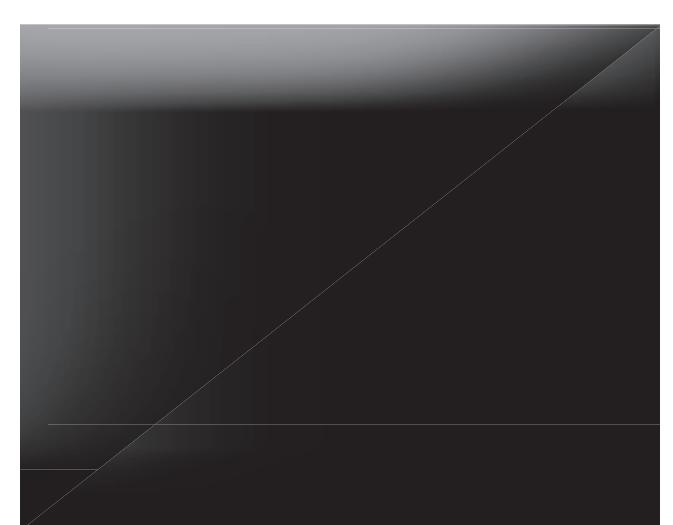
4. Margarita McGrath, "Fishing for Ghosts," in Lori A. Brown ed., *Feminist Practices: Interdisciplinary Approaches to Women in Architecture* (Aldershot: Ashgate, 2011), 233.

5. Brown, *Feminist Practices*, 10.

6. Ibid., 367.

7. Ibid., 368.

Scott Sørlie is currently pursuing a post-professional degree in Design Research at the University of Michigan. He co-founded and co-curates Convenience, a window gallery that provides an opening for art that experiments, engages, and takes risks with the architectural, urban, and civic realms. Visit www.conveniencegallery.com



SS: I am interested in how your work seems to trace the potential for occupancy, but in the act of tracing, it also eliminates occupation as a possibility.

CN: This leads to *Second Story*.⁴ If, in *Salvaged Landscape*, I used the framing to aggregate charred wood so people could reoccupy the thickness of the building, in *Second Story* I "skinned" the house's wall so people could occupy a tracing of the house. Six-thousand bent acrylic rods were stretched to trace the surface of the house's second story as a skin. They were then removed and suspended from the gallery ceiling. It was a gallery piece so I wanted to make a work that created a kind of occupation that wasn't possible in a house.

This happens in three ways. First, the skinning of the house occurred on the second story: in the gallery you walk relative to the suspended installation as if walking around the perimeter of the second floor. Second, the ghosting of the house allows you to enter the material volumes. And finally, the windowsill is a thickened passageway, a sillway. It is related to *Salvaged Landscape*, but I think all the projects actually dream about each other, despite their different materials and formal commitments.

SS: There is something with aggregation and intricacy for me that I haven't entirely finished with yet.

SS: But there is also a double articulation of surface, where the inside and outside, while composed of the same material, express entirely different relations to the viewer. Neither side can be anticipated or assumed when viewed from the other side.

CN: This way the viewer goes through the thickness but can't see the charred spikes until you come around a corner, thus confusing and delaying the expectation of what is to come.

Curating Demolition

SS: Is the organization of materials mostly intuitive and idiosyncratic in *Salvaged Landscape* and other projects, or is there some other objective logic? And, how is it standing up?

CN: I started from the ground, stacking and working with the charred cantilevers, allowing them to create patterns. I knew the outer edge of the piece would eventually be exposed but it wasn't until the piece was eventually removed from the framework of the existing house by demolishing the rest of its unusable volumes that we saw them. But it is important to explain that it is never fastened to the remainder of the house; it only attaches to itself.

me realize that the materials create a volume that can be rearticulated as a new atmosphere. At some point the house was stable enough that the additions were removed and the project took on its form. For a while it was an earthworks piece, a dark pit of a house. But then I realized I could use the house as form-work and put its pieces back into the space. As such, I could play with a new type of room within the house, as well as the permitted or restricted paths of the occupant. This would occur through the editing of these volumes, both the original house and the installation embracing the consideration that the altering of the volumes is the manipulation of the exact same, and limited, material.

You can see where the gasoline was thrown to start the fire and that is part of the positioning of the piece. As you walk toward the spikes in the piece, you are following the gas stains of the arson. The passage way was carefully placed to coordinate with the remaining structure of the house. I also wanted to work with light and dark as materials. Light can get through but we don't know where it will be.

SS: Is darkness a material in your work?

CN: It is definitely a material. But what is the definition of a material? I'm not prepared to answer that, even though it is a really big question for me. But darkness is a necessary component of altering space within my work, allowing the boundaries of the work to remain allusive and intangible. It can change everything. I wouldn't call darkness immaterial; for me it is a very real material. I am interested in darkness as a spatial tool—I call it "intentional darkness." I want it to be very, very dark.

CN: I want it to be haunting and aggressive. I don't want to say otherworldly, because the works are of this world. I'm not interested in discussions that project a program, but the "unoccupiable" dimension is really important. The work reconfigures typical materials through a thickness that denies the usual proximities and adds tension to passage and occupation.

SS: Do you agree with that?

CN: I do. I think it is a good ruler for the space while I'm working.

SS: So you are making decisions based on physical experience in the space, at the scale of the body.

CN: It tends to be my body, because it is a convenient measuring tool and usually on site, but it is not at all about my presence. I'm just a good ruler for the space while I'm working.

SS: The 1:1 scale is a way of amplifying familiarity. The domestic scale is recognized by our indexical relation to those sizes, scales, etc., of the space of the house. What about the glass?

CN: The tubes are cut from a factory-standard, 5-foot length that is cut, bent, and flared at different lengths. I worked with chemistry instrument makers at the University of Michigan to do this, and I wanted to be able to capture different parts of the ambient conditions to siphon and direct the atmosphere through the envelope. Each tube registers the atmosphere differently to circulate it through the house. Each has its own placement, rotation, and bend; if it is bent, it is also flared on that side. If we were in the space, I could explain to you why certain bends and flares exist. They create a certain contour inside, and both complicate and express the building. They agitate the space.

Impure Geometries

SS: What about *Salvaged Landscape*?³ In Detroit, how did that project come about? Is it in dialogue with *Weatherizing*?

CN: Some people who had seen *Weatherizing* approached me; they had two houses that were about to be demolished and they asked me to create an installation in what was going to eventually be an exposed gallery crawl space in the foundation of one of the demolition sites. The house had fallen victim to arson, and was burned throughout. There are a lot of conversations in Detroit about how to take down buildings and what to do with the materials. Many people had been cleaning materials, scrap metal, etc. from the house. For me the material potential of the space was in the charred wood. I knew I couldn't make materials like this—you can't machine something to look this charred. Also, the wood is not burnt entirely through, a raw state remains in the centre of the material. On the exterior of each piece, the bulbous quality of the wood, as a result of the fire, creates impure geometries. Not to mention the material was native to the house.

During the demolition, the second story of the house fell through to the first. This made

completely. I positioned the length of the tubes to respond to the form of the spaces as well as to create a new bodily experience for the occupant of the space. Some people have said that the aggression of the work is due to its denial of occupation, which exists at the scale of the body and where the new volume changes the way the space can be occupied.

SS: Do you agree with that?

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CN: This started with my interest in weather—and the house as the apathetic barrier between inside and outside. The house became the medium through which I could break that separation down. I removed the window by filling it in, and then redistributed it throughout the wall, "shattering" the window into many glass tubes. But the shatter was not a mere surface displacement. The goal was to change the implied volume and make a new atmosphere out of the pieces that were once the house.

SS: You're shattering or attenuating the envelop of domesticity?

CN: I would say I attenuate it. Also, the light is very important. The light glow from the glass tubes—there are also lights embedded in the wall—isn't distinctly on either side. You cannot mark the boundary because the glass tubes project a glow both inside and out. I started working in the house while it was boarded up because I have to start by working, not by drawing. But when other designers started to work on the house and open it up, they took my darkness away.² So I moved to the detached garage space so I could control the light. If this project adds darkness to then add light, *Salvaged Landscape* adds light to then add darkness.

SS: Can you talk about the process of working with glass as a material?

CN: I had worked in a glass studio and had been interested in making a tube that would let rain and wind into a building, puncturing the envelope. For *Weatherizing*, I punctured the wall and realized the glass could work like an optical fiber. I was turning the window into a volume instead of just a surface. I didn't know how many glass tubes would be too many or what the pattern should be, but I wanted to be responsible about how I played with darkness—it wouldn't be arbitrary. So, I made a base pattern driven by the decision to avoid puncturing the surface of the bottom edge of the siding, but didn't fill in the pattern

Scapegoat Says: Many of your projects involve interventions in unoccupied houses. The house is a readily available medium to work on because of the urban condition in Detroit. Is there a position in your work about these houses as materials?

Catie Newell: The house has a consistent presence in my work. Given their strained existing physical state and ghostly abandonment, all of these sites I have called "Once Residences." No one is living in them, but the materials and the volumes are there capturing interior and exterior existing conditions. Generally, reoccupation is unlikely so there is the opportunity to experiment with the houses being something else. All of my work goes back to an idea that Alibi Studio is working on and that we call "Inhabitable Textures." In each project, we are exploring how manipulating a material also manipulates its volume. For each of the three houses used in *Weatherizing*, *Second Story*, and *Salvaged Landscape*, the fact that they are domestic allows us to play on the familiarity of the volume, but we're also playing with deterring occupation. In some cases, the space is intentionally very difficult to occupy.

SS: Can you talk more specifically about the material manipulations of each project? For example, in *Weatherizing*, the building is punctured with glass rods.¹



Weatherizing, Detroit, 2010

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You can see where the gasoline was thrown to start the fire and that is part of the positioning of the piece. As you walk toward the spikes in the piece, you are following the gas stains of the arson. The passage way was carefully placed to coordinate with the remaining structure of the house. I also wanted to work with light and dark as materials. Light can get through but we don't know where it will be.

SS: Is darkness a material in your work?

CN: It is definitely a material. But what is the definition of a material? I'm not prepared to answer that, even though it is a really big question for me. But darkness is a necessary component of altering space within my work, allowing the boundaries of the work to remain allusive and intangible. It can change everything. I wouldn't call darkness immaterial; for me it is a very real material. I am interested in darkness as a spatial tool—I call it "intentional darkness." I want it to be very, very dark.

CN: I want it to be otherworldly, because the works are of this world. I'm not interested in discussions that project a program, but the "unoccupiable" dimension is really important. The work reconfigures typical materials through a thickness that denies the usual proximities and adds tension to passage and occupation.

SS: Do you agree with that?

CN: I do. I think it is a good ruler for the space while I'm working.

SS: So you are making decisions based on physical experience in the space, at the scale of the body.

CN: It tends to be my body, because it is a convenient measuring tool and usually on site, but it is not at all about my presence. I'm just a good ruler for the space while I'm working.

SS: The 1:1 scale is a way of amplifying familiarity. The domestic scale is recognized by our indexical relation to those sizes, scales, etc., of the space of the house. What about the glass?

CN: This started with my interest in weather—and the house as the apathetic barrier between inside and outside. The house became the medium through which I could break that separation down. I removed the window by filling it in, and then redistributed it throughout the wall, "shattering" the window into many glass tubes. But the shatter was not a mere surface displacement. The goal was to change the implied volume and make a new atmosphere out of the pieces that were once the house.

SS: You're shattering or attenuating the envelop of domesticity?

CN: I would say I attenuate it. Also, the light is very important. The light glow from the glass tubes—there are also lights embedded in the wall—isn't distinctly on either side. You cannot mark the boundary because the glass tubes project a glow both inside and out. I started working in the house while it was boarded up because I have to start by working, not by drawing. But when other designers started to work on the house and open it up, they took my darkness away.² So I moved to the detached garage space so I could control the light. If this project adds darkness to then add light, *Salvaged Landscape* adds light to then add darkness.

SS: Can you talk about the process of working with glass as a material?

CN: I had worked in a glass studio and had been interested in making a tube that would let rain and wind into a building, puncturing the envelope. For *Weatherizing*, I punctured the wall and realized the glass could work like an optical fiber. I was turning the window into a volume instead of just a surface. I didn't know how many glass tubes would be too many or what the pattern should be, but I wanted to be responsible about how I played with darkness—it wouldn't be arbitrary. So, I made a base pattern driven by the decision to avoid puncturing the surface of the bottom edge of the siding, but didn't fill in the pattern

Scapegoat Says: Many of your projects involve interventions in unoccupied houses. The house is a readily available medium to work on because of the urban condition in Detroit. Is there a position in your work about these houses as materials?

Catie Newell: The house has a consistent presence in my work. Given their strained existing physical state and ghostly abandonment, all of these sites I have called "Once Residences." No one is living in them, but the materials and the volumes are there capturing interior and exterior existing conditions. Generally, reoccupation is unlikely so there is the opportunity to experiment with the houses being something else. All of my work goes back to an idea that Alibi Studio is working on and that we call "Inhabitable Textures." In each project, we are exploring how manipulating a material also manipulates its volume. For each of the three houses used in *Weatherizing*, *Second Story*, and *Salvaged Landscape*, the fact that they are domestic allows us to play on the familiarity of the volume, but we're also playing with deterring occupation. In some cases, the space is intentionally very difficult to occupy.

SS: Can you talk more specifically about the material manipulations of each project? For example, in *Weatherizing*, the building is punctured with glass rods.¹



Weatherizing, Detroit, 2010

SS: I am interested in how your work seems to trace the potential for occupancy, but in the act of tracing, it also eliminates occupation as a possibility.

CN: This leads to *Second Story*.⁴ If, in *Salvaged Landscape*, I used the framing to aggregate charred wood so people could reoccupy the thickness of the building, in *Second Story* I "skinned" the house's wall so people could occupy a tracing of the house. Six-thousand bent acrylic rods were stretched to trace the surface of the house's second story as a skin. They were then removed and suspended from the gallery ceiling. It was a gallery piece so I wanted to make a work that created a kind of occupation that wasn't possible in a house.

This happens in three ways. First, the skinning of the house occurred on the second story: in the gallery you walk relative to the suspended installation as if walking around the perimeter of the second floor. Second, the ghosting of the house allows you to enter the material volumes. And finally, the windowsill is a thickened passageway, a sillway. It is related to *Salvaged Landscape*, but I think all the projects actually dream about each other, despite their different materials and formal commitments.

SS: But there is also a double articulation of surface, where the inside and outside, while composed of the same material, express entirely different relations to the viewer. Neither side can be anticipated or assumed when viewed from the other side.

CN: This way the viewer goes through the thickness but can't see the charred spikes until you come around a corner, thus confusing and delaying the expectation of what is to come.

Curating Demolition

SS: Is the organization of materials mostly intuitive and idiosyncratic in *Salvaged Landscape* and other projects, or is there some other objective logic? And, how is it standing up?

C

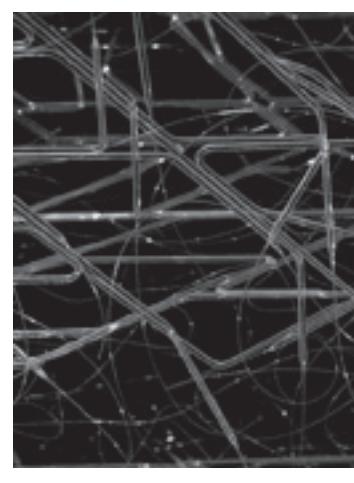
Notes

1. Weatherizing. Detroit, 2010. As a material study and electrical experimentation, this alteration to a stand-alone garage mutates and activates the barrier between the atmospheres of the interior, and the greater surroundings on the exterior. Of nearly one thousand glass tubes, the work spatializes and amplifies light conditions, both natural and artificial, and the flow of air. Varying in length and bends, the aggregation of the glass tubes works as a material substrate upon which energy is captured in the form of a glow, and an accumulation of hollow channels for energy, air, and precipitation. Mysterious and moody, reliant on the immediate qualities of the atmosphere, the luminosity becomes an eerie registration of the seemingly intangible surrounds and a foil to the once apathetic barrier. Weatherizing was completed as part of a project by the Taubman College "Five Fellowships"; additional work can be found at <http://www.tcapc.umich.edu/architecture/faculty/fellowships/5Fellows>.
2. Salvaged Landscape. Detroit, 2010. Grand Rapids, 2011. Detroit, 2011. Framed by the setting and pace of demolition, *Salvaged Landscape* reappropriates a Detroit house hit by arson to create a translation of the original volume and materials, using intricacy, mass, and intentional darkness. Keying into the opportunities present in its own timeline, *Salvaged Landscape* was constructed with the demolition of the house occurring around it. Leaving the existing stable walls of the house as framework, the salvaged charred wood was configured piece by piece into a new, denser volume that explores thickness, texture, and occupation. The wood was sliced on one end to expose and contrast the raw conditions against the depths of the char. With the exposed end on the exterior, the dark bulbous lengths were suspended inward. The work adds a new room to the house, only made possible through the presence of arson and its necessary demolition. The work was then transported away from the original house, further adding to the story and reconfiguration of the materials and volumes. *Salvaged Landscape* was awarded the Use of Urban Space Award at ArtPrize 2011.

3. Salvaged Landscape. Detroit, 2010. Grand Rapids, 2011. Detroit, 2011. Framed by the setting and pace of demolition, *Salvaged Landscape* reappropriates a Detroit house hit by arson to create a translation of the original volume and materials, using intricacy, mass, and intentional darkness. Keying into the opportunities present in its own timeline, *Salvaged Landscape* was constructed with the demolition of the house occurring around it. Leaving the existing stable walls of the house as framework, the salvaged charred wood was configured piece by piece into a new, denser volume that explores thickness, texture, and occupation. The wood was sliced on one end to expose and contrast the raw conditions against the depths of the char. With the exposed end on the exterior, the dark bulbous lengths were suspended inward. The work adds a new room to the house, only made possible through the presence of arson and its necessary demolition. The work was then transported away from the original house, further adding to the story and reconfiguration of the materials and volumes. *Salvaged Landscape* was awarded the Use of Urban Space Award at ArtPrize 2011.
4. Amplifying. Flint, 2011. Chicago, 2011. Amplifying, transporting, and distorting the volumes surrounding and within a contested existing domestic environment, *Second Story* reconfigures spaces that were once familiar into an "other" occupation and visual register. Used to imprint the inhabitable texture of the atmosphere, this inhabitable texture is driven by the manipulation of factory-standard acrylic rods to capture, manipulate, and distort the existing volumes of the second story of Spencer's Funeral home in Flint, Michigan, a house situated for demolition. Inherently transparent, the material both captures and permits the passing of light, visually distorting its presence and the view beyond, through refraction and reflection, altering both the context, the perception of its physical boundaries, and heightening the role of the building in the neighborhood. The work agitates, relocates, and makes accessible new volumes otherwise once unoccupiable; the exterior zone, the wall depth, and the depth of a windowsill. As a further technique of distortion and interplay of tectonic connection and assembly, the acrylic rods are systematically manipulated through the use of heat. One such technique allows for the bending and forming of components to create a pattern that resonates with its context, but also distorts the a priori relationships within the house to construct depth and volume originally unused or nonexistent. A further alteration is the tapering and pulling of the material, developing extensions and strands that flee in near weightlessness in pursuit of space, altering the perception and depth they occupy. The otherness of *Second Story* is further heightened by suspending the piece above the ground by tethering it to the building's roof trusses so that it hovers to promote a ephemeral sense of space, an attuned acknowledgement of its surrounding, and an implied stretched atmosphere.



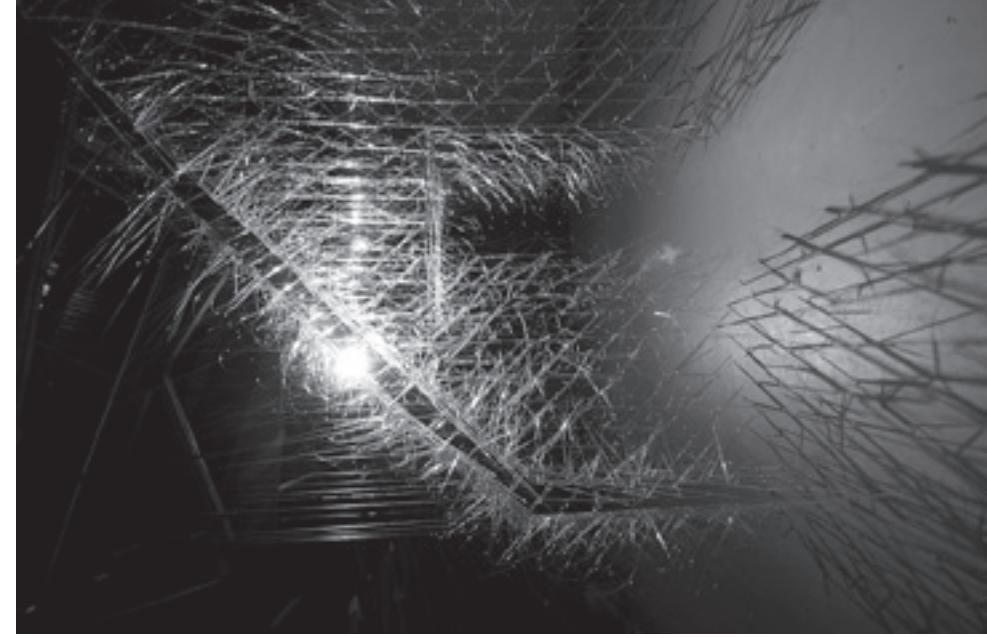
Salvaged Landscape, Detroit, 2010



Second Story, Flint & Chicago, 2011



Salvaged Landscape, Detroit, 2010



Aggregates, Houston, 2004

Haptic Corrections

CN: The geometries of the acrylic rods have various logics, but there are locations when they become very clear. All the diagonal and vertical patterns respond to the house. They have a very rigorous imprecision.

SS: Do these patterns relate at all to your physical presence while installing the piece?

CN: There was haptic correction and control of every length and its whisker while installing. There were set zones of densities and maximum and minimum lengths in sets of angles but not fully prescribed to exact dimensions. So, while I made a pattern before installing, I couldn't predict the snarly mess that the whiskers would create until it was being installed.

SS: Did you know that *Second Story* would be suspended in the gallery—that the house would float, but that we would be the ones floating? Can you talk about the structure and how it floats?

CN: The structural lines of the house were aligned with the trussing of the gallery to suspend the acrylic rods on a grid of strings. I always knew that the project would be suspended, but during the installation I decided I wanted to make sure nothing touched the ground—only the shadows get to touch the wall and ground. Darkness, illumination, light, and shadow have the ability to completely and drastically change the experience of a space, but it is so fleeting and impermanent that it can be altered quickly.

SS: What do you see as the relationship between dark and light as materials in your practice of documentation? Is it a way of transposing the affective experience of the work through material manipulation?

CN: Lightness and darkness are best captured through photography, which is a very important part of my practice. It is a whole other exercise where I am completely distanced from my act of creating the work itself, and begin to investigate its other volumes through the light and the darkness. How the lightness is framed in a photograph as space...this creates other dimensions as well. With darkness, I don't want to simply capture what is there, but to manipulate the volume even more. Photography helps me to alter the physicality of the project and find the things that I want to work on next—things that aren't quite material and yet can't be drawn. So for the next project I will have to be looking at *Second Story* a lot more.

SS: A consistent aspect of your work, even in an early work like *Aggregates*, is that you close spaces, but even more, you challenge fundamental assumptions of domestic architecture. If a child draws a house, they include all the things you have somehow removed, changed, or made strange. Is it an architecture-complex to want to pervert the essentials?

CN: I make familiar spaces, domestic or not, un-familiar; I'm agitating architecture. There is something in that instinct that is stronger than making things that are entirely new. There is something in the translations and transpositions that can take on more because the "once residences" have been changed. These are already part of the work—whatever the essence may be for someone, the semantic associations are an important material in all of my work. With material manipulations and changes in volume that deny physical occupations, I want to agitate those spaces of architecture that are most ubiquitous.

werker magazine is a contextual publication about photography and labour that appropriates its name from the worker photographer movement; the first group of amateur photographers to use the camera as a tool to fight class-struggle.

werker 5 — photography lesson 1

during lesson 1 we've made 3 different photos. the assignment we got, was to play with the *shutter speed*.

we had to take a *panning photo*, a photo of *frozen motion* and a photo on which movement is clearly visible.

it was quite difficult to take some of these photos but once you start playing

