

# PLOT(S)

---

JOURNAL OF DESIGN STUDIES

*Issue #2*





## **EDITOR'S LETTER**

### **PUSH HARDER**

In thinking about revolving doors, countless images, places and experiences come to mind: weathered hotels, sterile hospital entrances, glass and steel, airport good-byes, flows of office workers, and awkward, shuffling steps. A seemingly mundane object, the revolving door's ubiquity and diverse role in the cultural imaginary makes it an evocative entrance to a conversation about design studies—a discourse in which the stuff of the everyday is understood to be not only compelling, but impactful.

Each piece in *Plot(s)* aims to articulate how forms of design practice shape and transform the human experience. The articles in the journal peel apart and critically examine different facets of design — from design practice as one of intentional social change, to the histories and politics latent in our built environment. The objective of this issue of *Plot(s)* moves beyond illustrating the transdisciplinary nature of our discourse, to illustrating a field in dynamic flux: the works selected do not attempt to paint an exhaustive picture of design studies, but rather expand its boundaries.

Design is neither neat nor easily defined. Given this, as practitioners of design studies we are forced to not only push harder, but also question what else design has the potential to be and do.

**THE EDITORS**

# CONTENTS

**FOUR  
REFLEXIONS  
ON PLEXIGLASS**  
*by misha volf*  
*Page 7*

**SPACES OF  
PERFORMANCE:**  
Considering Event,  
Agency & Routine  
*by rachel meade smith*  
*Page 14*

**PUBLIC SPACES  
AND AGONISTIC  
PLURALISM IN  
POLITICAL  
DESIGN:** The Case  
of Conflict Kitchen  
*by veronica uribe*  
*Page 23*

**INDUSTRIAL  
DESIGNER,  
A MODERNIST  
HERO?**  
*by dora sapunar*  
*Page 41*

**DESIGNING  
GOVERNMENTALITY:**  
The Power of Data in Urban  
Propositions  
*by anke gründel*  
*Page 44*

**DESIGN AT WORK:**  
*by estefania acosta*  
*Page 28*

**THE MANUFACTURED  
PHARMAKON:** Pharmaceutical  
Drugs and the Technology of Life  
and Death  
*by mae wiskin*  
*Page 56*

**TERMS OF  
DESIGN:**  
*by estefania acosta,  
laura sanchez and  
misha volf*  
*Page 33*

# **STAFF**

**estefania acosta**

**rachel meade smith**

**veronica uribe a.**

**misha volf**

**laura wing**

**laura sanchez**

**soohee cho**

**juan pablo pemberty j.**

**mae wiskin**

**ivana garcia**

**genevieve duval**



# Four reflexions on plexiglass

by misha volf

## 01 INVENTION

*Material is from what we make. To take the word at its Latin root, it is that which comes from ‘mother earth’ (mater). Or, in a less extractive formulation, material is substance, that which stands below, the ground on which things rest. Materials shape and structure the made world. But, while materials possess this aura of primacy, what often goes unobserved, is that materials themselves are inevitably products that must be made. Another set of ends from preceding means. This means-to-ends procession, like artifice itself, is a human invention, since what ‘mother earth’ immediately provides is not inherently useful towards making, and thus not a material.<sup>1</sup> Ore is made into a material by mining. Nothing usable exists as is; we make it so.*

As cars began to mature in the 1920s, windshields became a major concern for automobile manufacturers. Made from plate glass, windshields would often shatter even in minor accidents, causing gruesome injuries to passengers and drivers.<sup>2</sup> Seeing an opportunity, a

young chemical company called Rohm and Haas pursued the development of a shatterproof, laminated safety glass with an acrylic based interlayer. Working in his lab, Otto Rohm and his assistant Walter Bauer formulated a new compound, methyl methacrylate, which they hoped would produce a superior laminate. During one experiment, the liquid compound was poured between two sheets of glass and exposed to light in order to trigger the hardening process. When the team attempted to examine the composite however, they were surprised to find that the top sheet of glass slid right off, separating cleanly from the inner layer, revealing a perfectly transparent, smooth-as-glass sheet of acrylic.<sup>3</sup> This is Plexiglass, the trade name for an acrylic thermoplastic, which is brilliantly clear, shatterproof, weather resistant, half the weight of glass, easily formable with heat, and rigid when cool. By pursuing shatterproof glazing, Rohm and Bauer found a plastic with all the benefits and none of the vulnerabilities of glass.

What’s happened? Plate glass, which has worked for horse carriages, no longer works for cars. Automobiles move faster and collide more often. The material’s prime property, transparency, is suddenly compromised by its hitherto sufficiently mitigated, secondary property, fragility. Rigid iron framing of early cars in tandem with motorized speed break the glass, not only in its produced manifestation, but also as an idealized material;<sup>4</sup> glass becomes deficient because the things made from it, demand more from it. A reinforcing attempt is made with acrylic in order to address the deficiencies, but glass resists the reinforcements. Instead, acrylic directly receives, by polymerized transmission, the rigid, translucent properties of glass. Acrylic becomes glass that bends and doesn’t shatter into sinister slivers. Acrylic becomes glass that is beyond glass. Acrylic becomes a material.



FIGURE 1A

## 02

### PLANES

*The made world is made from materials based on their capacities, vulnerabilities, histories, and associations. The things that emerge from these materials are not only oriented towards their intended use, but also refer back to the material's attributes. The thing engages the material in a fundamental way. Just as material becomes itself in the moment of its production, in that it becomes workable, this 'becoming itself' happens again but in a different way, when material is worked into a thing and the material's attributes are activated to serve the thing. The thing and the material are in a dialectic; the material passes its attributes to the thing, while the thing shapes the material towards its own function.*

FIGURE 1C



FIGURE 1B

**FIGURES 1A, 1B,  
1C.** Development of the acrylic nose in the B-17 Bomber. Note how 2a, a 1935 prototype – Model 299, shows a completely conical, segmented 'greenhouse' nose. In the 1939 model shown in 2b, the shape of the nose of the B17-B, develops a flattened underside to accommodate the Norden bombsights. 2c shows a B-17F, with a completely frameless nose, and bombsight visible inside.

Rohm and Haas saw applications for plexiglass right away as they pursued military contracts. The material's ease of forming and resistance to impact made it ideal for airplane canopies, turrets, and gun blisters, giving pilots and gunners panoramic views of terrain and enemies (see Figs. 1a-c). In 1942, the New York Times described the air battle experience this way: “Butt-End Charlie [...] is the gunner who mans the ‘stinger’ in the rear of the big bombing planes [...]. Riding backward in his tiny plexiglass-walled cubicle, [...] he squints through his gunsight at a dark speck swooping down from the blue.”<sup>5</sup>

The acrylic was most essential in the front noses of bomber planes, where wide and unobstructed fields of view were required to accommodate the Norden Bombsight, an aiming mechanism developed by the U.S. military in its pursuit of



**FIGURE 2** nose of the plane. Note the lack of wavy distortion in the triangular section in the center, and the effect of the distortion on the rest of the material.

strategic precision bombing. This presented a challenge to plexiglass. The heat forming process that was used to make the cone shaped noses would introduce minor optical distortions, negligible for general landmark identification and way finding, but inadequate for the bombsight, which required a higher degree of clarity through a small section of the nose. To resolve the issue, this section was cut out from the completed form and then reinstalled as a separate, detachable plate, cut from flat, unformed and undistorted stock. If damaged, it was easily produced and replaced in the field, eliminating the need for rehabilitating the damaged plexiglass component.

The Norden, the plane, the crew, the designers of the plane, the field repair technicians, and the plexiglass now enter a conversation. The plane needs to be aerodynamic, so a smooth curved shape is required. The bombardier needs an unobstructed view, so the nose develops from a segment-

ed ‘greenhouse’ configuration to a frameless bubble. Finally, the Norden needs a flat, optically pristine surface through which to aim, so the nose is reshaped with a flattened underside and a removable, interchangeable sight window (see *Figure 2*). As acrylic sheet is deformed, a capacity alien to its glass progenitor, it forfeits some of its vitreous quality. Flat stock, having undergone fewer transformations after its production, is in this sense closer to glass, and retains its pristine transparency.

# 03

## MAGIC

*The thing, then, is already in the material. Not unlike sculpture from stone, the thing emerges from the material through the material's attributes. As things and materials interact with other things and materials, their attributes also interact; histories mingle with capacities, vulnerabilities reject associations. Celluloid, an early plastic invented to replace ivory in billiard balls, failed for being too soft. It did, however, inadvertently replace tortoise shell used in hair combs.<sup>6</sup> Nevertheless, thing and material never separate. Material is inescapable. The more a thing emerges out of the material, the more treacherously the material closes in on the thing. The thing becomes the material as the material disappears.*

There is a scene in the 1939 film *Eternally Yours*, where Loretta Young's character, an angelic maiden, is synthesized in a giant lab retort by a magician-chemist. The film made an effort to make the retort look and sound like glass, as evidenced by the resonant knock the magician gives the retort. In fact it was made from clear acrylic by Dave Swedlow, a California designer and fabricator who made early use of the material in furniture and small household objects. "Gleaming, clear, light in weight, and almost impossible to smash," the San Bernardino County Sun raved about Swedlow's work, "these new ornaments and furniture will add light and beauty as well as 'newness' to your home."<sup>7</sup> The scene's less than subtle coding of science as magic, signaled the arrival of a new age where anything seemed possible with science and technology—from concocting a perfect female, to any number of new synthetic materials with incredible properties, to an abundance of products restyled and updated annually to add "newness." What Loretta Young seemed to deliver as she

**FIGURE 3** Loretta Young in *Eternally Yours*, 1939, emerging from a plexiglass retort.





**FIGURE 4** A woman posing for a photo at the Douglas Aircraft Company Plant, emerges through the Norden Bombsight section of a B-17 bomber nose. Her yellow tag says 'Temporary Employee #3007.'

emerged from the chemistry mixture was the modern promise of progress, transcendence of nature through artifice, and the self-assurance of absolute technical prowess. In a similar sense, this is what Temporary Employee #3007, also from a plexiglass bubble, delivered to the U.S. military in the form of a frameless bomber plane nose (see Fig. 4).

The true magic of acrylic lies in its power to reveal, whether the object is target or product. At the 1939 World's fair, General Motors showed a transparent Pontiac Deluxe Six with a body made of formed plexiglass, showing the inner construction of the vehicle.

Across the fair grounds, another manufacturer was also revealing the innards of a new product through clear acrylic. RCA produced a plexiglass replica of an early television, which gave the "public [a] close-up view of mysterious parts that the owner would never see in his receiver." The announcement in Popular Mechanics magazine continued:

*Some of the secrets of television reception are disclosed to the public by a glass-encased receiver .... Those who see the set gain an impression of the genius out of which grew such an involved and intricate piece of magic in this newer field of radio."*

"These are the days of miracle and wonder," Paul Simon sings in his song "The Boy in the Bubble."

In an age of wonder and amazement at technology that is beyond immediate comprehension, the way things work becomes spectacle. As the bombardier gazes from his plexiglass bubble at the infrastructure of cities below, he too observes how they work, and subsequently intervenes in their working from his divine vantage. But the bombardier is not just the observer. He, along with the .5 caliber machine guns, and the bombsight, is the technology inside the acrylic display case. The subject object relationship becomes unstable. Like the bombardier, the car and the television set become participating agents, re-making the outside world as much as being made by it.



**FIGURE 5** The Pontiac Deluxe Six, "Ghost Car" with a plexiglass body produced by Rohm and Haas for the 1939 World's Fair in New York.

## 04 CONVERSIONS

Velocity penetrates glass as if it isn't there; a surface dematerialized because it is invisible. Cars, airplanes, bullets, people, stones—all projectiles marking a path through Newtonian space and time, meeting and annihilating glass with the power of speed, making the surface visible just as it ceases to be a surface. No, this is not the material of the imagined, hurtling modernity. The truly modern plane of impact between transparency and projectile is plexiglass. This relationship between carbon-based acrylic, a chemically synthesized thermoplastic, and glass, its inorganic, much less pliable predecessor, provides a complex screen through which to observe the making project. That transparency is such a ubiquitous experience of the 20<sup>th</sup> century—the most destructive on record—points to a power and a fragility embedded in exposure.

Plexiglass, so often used as a material, is itself a product, made from acetone and hydrogen cyanide. These two components are of course products themselves: acetone of petroleum and hydrogen cyanide, a formulated compound used as poison gas and as an electroplating agent in precious metal mining operations. The material becomes a thing that's at the same time deeply steeped in its materiality. Entities shuttle freely between states, presenting attributes selectively. Insofar as we make from the already made, the thing-material dialectic ultimately serves to weaken the dichotomy. The ends to means conversions keep coming.

**Misha Wolf** is a student in the MA Design Studies program at Parsons.

# **Spaces of performance:**

*by rachel meade smith*

**Considering  
Event, Agency  
and Routine<sup>1</sup>**

This selection of entries threads together diverse takes on the space of performance, including notable moments and individuals within traditional performance design (scenography), and spatial and social concepts related to diverse notions of “performativity.” The topic of performance is broadly defined in this work, encompassing interpretations relating to live arts, social and political performance. By putting in conversation these alternately explicit and implicit notions of performance, I propose that space and design are distinct actors in both traditional performance and the performance of everyday life and everyday agency. This proposition begs the question of how designers can implement performative thinking towards creating experiences of engagement, agency, and an interactive public life.

I can take any empty space and call it a bare stage. A man walks across this empty space whilst someone else is watching him, and this is all that is needed for an act of theater to be engaged.  
—Peter Brook, *The Empty Space*

## ADOLPHE APPIA

Swiss scenographer Adolphe Appia is heralded as one of the first practitioners to critically consider design's agency in staged performance. Rejecting the overtly spectacular and 3D illusory sets that had dominated popular theater since the Renaissance, Appia proposed a modernist paradigm wherein design attended to the relation between actors' movements, light, and sound, as opposed to the goal of realist representation. Working with famed composer Richard Wagner, Appia's designs aligned with the ideal of *gesamtkunstwerk*, the total work of art. Wagner—another early critic of traditional theater space—was dissatisfied by rigid picture-frame staging and the opera house's privileging of social politics above the artistic encounter. In response, he had devised a new theater space where lowered lights obscured social classes and equitable sightlines offered all spectators a spiritually invigorating experience.<sup>2</sup> In addition to this “democratic seating,”<sup>3</sup> the interior of Wagner’s reformed theater did away with the gratuitous (and occasionally obstructive) décor of traditional opera houses. However, it was Appia who extended this modern vision to Wagner’s still flattened pictorial stage sets. He removed the scenic stage paintings

arranged on vertical flats, liberating the actor from the constraints of “dead illusion;”<sup>4</sup> in their place, he configured sculptural organizations of light, scale, and shadow that served the expressive movement of the actor and abolished the rigid division between stage and spectator by allowing for subjective interpretation.<sup>5</sup> Building upon these collaborations with Wagner, Appia’s legacy of scenographic exploration has had influence on and beyond the stage, establishing the performative<sup>6</sup> capability of mass, light, and geometry.

## BEIJING

Comparisons have long been drawn between the theater and the public domain, most often in regards to the “personas” or social “roles” undertaken by citizens in public society, through which we derive our identities.<sup>7</sup> Sociologist Richard Sennett noted the resemblance between city dwellers’ interactions with a “milieu of strangers” and the relations between an actor and her audience;<sup>8</sup> Hannah Arendt viewed the public domain as a stage for making oneself visible—for “performing” individuality and citizenship.<sup>9</sup> While not all discourse on public space draws such literal comparison between

the theater and the street, it is widely held that the cultivation of equitable society requires public space allowing diverse citizens to assemble—space offering social roles a functional stage.<sup>10</sup> With the Greek *agora*—the utopian public square—as the eternal model, the ideal public space allows for free speech and visibility; for interaction with both strangers and acquaintances; for the encountering of diverse viewpoints, whether solicited or not. But increasing privatization of the public sphere has led many urbanists and social thinkers to mourn the loss of public space and its empowerment of the everyday performance of citizenship.<sup>11</sup>

Countering this narrative somewhat are acts of “insurgent citizenship”—tactical appropriations of urban space by city dwellers.<sup>12</sup> Occasionally, these acts employ actual performance to restore public space to its function as a flexible stage for social interaction. In the last several years, Beijing has seen an uptick in the tactical use of public spaces for the ad-hoc performance of *yangge*, a traditional Chinese folk dance practiced by much of the city’s elderly population. Beijing’s increasing urban density means that most of its open public space is the *in-between* kind—traffic islands, vacant areas under highway overpasses,

median strips, sidewalks, and parking lots. These sites now frequently find themselves stages for impromptu performance, with groups converging for brief dance sessions, activating the otherwise dead spaces with movement, color, and music.<sup>13</sup> By imposing performance on these found spaces, the dancers create what Karen Franck calls “loose space”—what results when individuals liberate urban spaces from intended uses.<sup>14</sup> Beijing’s *yangge* dancers illustrate how performance activates space, in this case allowing for temporary and agile appropriation in an increasingly inflexible urban landscape.

## CRUELTY

“For the theater as for culture, it remains a question of naming and directing shadows.”<sup>15</sup>

Writer, actor, and director Antonin Artaud disturbed and altered the course of performance practice with his *Theatre of Cruelty*, a theater practice aimed at shocking audiences out of complacency and into a visceral awareness of reality. A famously tormented soul, Artaud wished to impress upon his audiences the same darkness that shrouded his own mind—a cruelty that he found inherent to living.

*It is not the cruelty we can exercise upon each other by hacking at each other's bodies, carving up our personal anatomies, or, like Assyrian emperors, sending parcels of human ears, noses, or nearly detached nostrils through the mail, but the much more terrible and necessary cruelty which things can exercise against us. We are not free. And the sky can still fall on our heads. And the theater has been created to teach us that first of all.*<sup>16</sup>

The task required a destruction of the barriers between stage and audience, both spatially and emotionally. A man plagued by lifelong illness—vaguely diagnosed and with effects both mental and physical—Artaud’s struggles to articulate his own pains encouraged him to appeal directly to senses and intellect.<sup>17</sup> The task of translating emotion through text frustrated him—it seemed an inefficient detour; his theatrical approach thus sought to overcome the inadequacy of words and plot, and “divest the theater of *all* logic and verisimilitude; touch and bruise the spectator, thereby forcing involvement” and allowing “*reality* [to] emerge.”<sup>18</sup>

## DEMOCRACY

Hannah Arendt proposed theater as the “political art par excellence,” the only place where “the political sphere [is] transposed into art.”<sup>19</sup> Theater’s politicality is further augmented when considering her attribution of power to spaces and events where people gather together.<sup>20</sup> In the theater, strangers aggregate, expect to encounter the unfamiliar, and hope to be moved. In this sense, the theater provides a unique platform for democratic action that often operates outside the social logic of the societies in which it exists. The avant-garde theater of 20<sup>th</sup> century socialist states and today’s flash-mob have the same catalyzing effect on their occupied sites—the creation of a domain in which existing orders may be challenged, and social conventions abandoned. Inside the performance spaces occupied by mid-century Poland’s radical Young Theater troupe, for instance, actors asserted calls-to-action through interactive performance, creating, as Elzbieta Maty states,

*...more than artistic productions, since the reality in these theaters was not an illusion but an argument, an investigation, or a diagnosis. Thus they became institutions that initiated discussion in a space that seemed to be safe, a process that stimulated the emergence of increasingly informed and concerned social actors, a process that turned both creators and audience into aspiring citizens.<sup>21</sup>*

Appropriating the theater for more than fictive performance, the Young Theater used the heterotopic logic of theater space as a means of stepping outside the bounds of socialist restriction. But the democratic function of performance is not relegated to the traditional stage; performative action in the urban sphere—as illustrated by the recent Occupy movements—extends this agency offered by performance beyond the stage and into the street.

## ANNA AND LAWRENCE HALPRIN

Both Anna and Lawrence Halprin spent their careers working in reaction to the sterility of modernism. Anna, a contemporary dancer and choreographer, emphasized improvisation and non-traditional staging in her work (often held in public urban spaces, like city streets), while Lawrence,

a landscape architect, was singular in his consideration of social behavior and kineshetics in public space. Both were fundamentally concerned with how individuals participate in public life and interact with their urban surroundings.<sup>22</sup> Their proximity to one another’s practices made for inevitable cross-fertilization: Lawrence sought to design spaces “like stage sets for a dance in that they... determine the movement of the people in them,”<sup>23</sup> and believed that urban areas “must be experienced through movement to come alive.”<sup>24</sup> Meanwhile, Anna’s participatory dance performances—like the 12-hour “Citydance” that took all of San Francisco for a stage—explored the inhabitation of the built urban environment. Significant to the couple’s legacy are the collaborative process tools they developed,

aimed at bridging design methods across their disciplines.<sup>25</sup> Their “Experiments in Environment” workshop of 1966 brought together 29 dancers and 15 architects for a month of interdisciplinary work sessions during which “dancers became architects and architects became dancers … [They] gain[ed] a sophisticated knowledge of (for the architects) how the freeing of the body and its movements can lead to heightened spatial awareness, and (for the dancers) how activities and objects other than their own movements and bodies can take place in an environment.”<sup>26</sup>

Here, one might be reminded of Appia’s insistence on the actor’s body as primary in shaping performance space: “[The actor] expresses his life through movement; he possesses space not just through his mass, but also by his movement within it…In this sense his body creates space.”<sup>27</sup>

## IMMERSIVE THEATER

While Artaud advocated for creating visceral experience via unadorned space and intense assault on the senses, his appeal to shock and displace the viewer finds a contemporary reprise in today’s more elaborate immersive theater movement. Unlike the *Theatre of Cruelty*, these performances employ illusory tactics on a monumental scale, performing not just narratives but entire worlds, in which the *spectator* becomes *participant*. Of course, performance has a long history of work focused on the experiential—from Artaud, to mid-century European avant-garde theaters, to Allan Kaprow’s 1960s *Happenings*, to performance scholar Richard Schechner’s axioms for Environmental Theater published shortly thereafter.<sup>28</sup> Increasingly, however, “immersive” is a term used to distinguish more a genre than a quality of theater experience. Immersive theater differs from other experiential theater in several ways. Contemporary immersive experiences rely on interactions between participants and performers, as well as holistically designed and choreographed space, focusing on “one-on-one” or ‘one-to-one’ performance, which explores the direct connection between performer and audience member, space and individual interaction.<sup>29</sup> The spaces hosting these events typically offer no hint at the external world.

Often, they occupy elaborate and sprawling sites, like that of British theater troupe Punchdrunk’s *Sleep No More*, the McKittrick Hotel: a 100,000 square foot warehouse in New York’s Chelsea neighborhood, renovated to include more than 100 fully furnished and traversable rooms. Masked guests are let loose in the purportedly haunted space, forced to self-navigate and encouraged to open doors, rifle through drawers, and confront actors and other audience members. Here, illusion is elevated to virtual reality.

## KITCHEN

The kitschy culinary craze of what English-speakers call *hibachi*-style cooking (actually a confused reference to Japanese *teppanyaki*-style cooking) was born with Benihana, the American restaurant chain made popular by its conflation of cook with master of ceremonies. Patrons seeking a side of spectacle with their beef negimaki can flock to any of the 63 nationwide locations, where communal counters enclose the chef and his kitchen, rendering his job equal parts theatrical performance and food prep. Much like a date to the opera, a meal at Benihana—with attention placed squarely ahead—has the bonus of relieving meal-goers the burden of steady dinner conversation.

## EL LISSITSKY

In early 20<sup>th</sup> century Russia, the stage — as a space outside the everyday — offered a culture in revolt a realm for liberated experimentation with aesthetic and political ideals.<sup>30</sup> For the Constructivists, the Russian stage was an aesthetically controllable space to further their ideological aims and “re-hearste the birth of a New Man.”<sup>31</sup> Towards this end, architect El Lissitsky designed a theater space intended to enact a new, democratic audience-spectator relationship. For Russian theater director Vsevolod Meyerhold’s unrealized 1929 production of Sergei Tretyakov’s *I Want a Child*, Lissitsky envisioned a utopian interior space centering the action of the performance in the heart of an encompassing audience fanning outward in concentric rows. Audience members were expected to converse, debate, and sabotage, if so desired, disturbing the placid relationship between events housed on traditional picture-frame stages and their requisite complacent spectators. Exceeding notions of constructivist stage design as “machines for acting” privileging technological functionalism over artistic experience, Lissitsky’s mechanized interior sought an “engaged spectatorship”<sup>32</sup> with its mobile planes of stage and seating (intended to vary with each repeat performance).<sup>33</sup> The design complimented the production’s plan for a troupe of non-actors to embed themselves within the audience, inciting debate, and demanding a diversity of experience.<sup>34</sup> (See DEMOCRACY).

## MARK HELLINGER THEATER

On the corner of 51<sup>st</sup> and 8<sup>th</sup> Avenue, a few blocks north of New York’s Times Square, the immaculately maintained Mark Hellinger Theatre no longer houses Broadway productions. Its pristine picture-frame auditorium and marble lobby belie a disparate function—the home of New York City’s first mega-church. During a visit to the area in 1986, power-preacher David Wilkerson was struck by the perceived plight of New York City’s homeless and destitute; he quickly bought the then struggling theater and converted it to Times Square Church, a non-denominational parish that continues to operate and grow. It now claims over 8,000 congregants, a global live-streaming web presence, and programming and production value absolutely worthy of a location in New York’s Theater District. Despite the congregation’s religious fervor, there is not a cross, effigy, or icon on site. Instead, the original red velvet curtains, gilded columns, and baroque ceiling frescoes embody a dramaturgical lineage for which most parishioners have a manifest indifference.<sup>35</sup> Yet the weekly services have many of the qualities of a traditional Broadway performance: a neatly choreographed program, an audience enraptured by the action of the stage, blinding spotlights, tasseled curtains, uniformed ushers, and musical numbers that bring down the house. But the semblance of commonality between religious ritual and theatrical performance indicated by the architecture ultimately evaporates. While the architecture is uncannily suited to a church service, there lies an undeniable disparity between the decorum of a Broadway audience—passive, respectful—and that of Times Square Church—bustling, loud, and prone to interjections.

## NOTATION

Architect Beth Weinstein studies the cross-over between choreography and architecture, pointing to the visual methodologies of choreographer Lucinda Childs and architect Bernard Tschumi for mapping the movement of bodies. Childs' notations are simplistic interpretations of her routines, intended for instructional use in conjunction with other media recordings of the performances, and represent a standard style of dance notation used since the 16<sup>th</sup> century.<sup>37</sup> Tschumi's, on the other hand, are the inversion of a standard architectural drawing's depiction

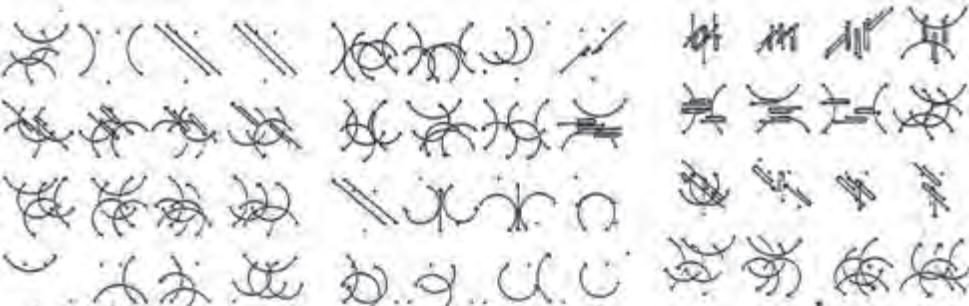


**FIGURE 1** *Bernard Tschumi, Manhattan Transcripts (1976–1981).*  
(Courtesy of Bernard Tschumi Architects)



of built, immobile space, instead illustrating anticipated movement "as if [it] has been literally solidified, frozen into a permanent and massive vector."<sup>38</sup> The likeness of Childs' and Tschumi's notations speaks to architecture and choreography's shared capability of re-creation,<sup>39</sup> as well as the shared intent of orienting movement in space. But perhaps the most significant takeaway from their resemblance is the illustration of everyday living as an event akin to performance.

**FIGURE 2** *Lucinda Childs, notation from Melody Excerpt (1977).* (Courtesy of Lucinda Childs)



## PRESENCE

*“Something is said to have presence when it demands that the beholder take it into account, that he take it seriously — and when the fulfillment of that demand consists simply in being aware of it and, so to speak, in acting accordingly.”*

-Michael Fried, *Art and Objecthood*<sup>40</sup>

C. Thomas Mitchell notes the performance designer’s attention to instilling a sense of *presence*—design criteria typically unconsidered in other design practices—calling their work “a catalyst for perceptual experience.”<sup>41</sup> Theater designer/director Robert Wilson (an architect by training) designs performances that do not impose a singular narrative; instead they demand the alertness and emotional participation of each individual in order to achieve meaning.<sup>42</sup> The presencing effects of his designs are distinctly lacking in the work of most design practice, namely urban design wherein macro-scale considerations overwhelm those of street experience and the everyday. The resulting urban landscapes, apathetic to the citizen, do little to assuage the self-isolation of city-dwellers whose interactions (with each other, and with the built environment) are often non-existent, unacknowledged, or perma-mediated by glaring iPhone screens. (See SUBWAY). But what might a city designed to incite action and participation—a city privileging presence—look like? (See WHITE NOISE WHITE LIGHT).

## SUBWAY

What happens when you take a world-class performance out of the appropriate realm and space, and offer it to a distracted, unsoliciting public? *The Washington Post* and violinist Joshua Bell put this question to the test in 2007, when Bell spent 45 minutes performing in a Washington DC subway station, in rush hour, alone, with his 3.5 million dollar Stradivarius.<sup>43</sup> A primer: Bell has been heralded as one of the greatest living musicians; he frequently headlines renowned venues across the world, playing to sold-out crowds and consistently rave reviews (*Interview* magazine once praised his talent as doing “nothing less than tell[ing] human beings why they bother to live”)<sup>44</sup> Two days previous to the subway stunt he had played to a full house at Boston’s Symphony Hall, where tickets went for around \$100 a head.<sup>45</sup> This time, six or

---

**...the sub-way platform proved itself a place of non-presence, where a world-class opus strikes the ear as just more noise, or, worse, not at all.**

---

seven people stopped to listen intently, and Bell walked away with \$32 in cash. As *The Washington Post* noted, Bell had become, “art without a frame.”<sup>46</sup> Unlike accepted “frames” for experiencing moments of transcendence offered by great talent and artistic beauty—opera houses, theater auditoriums, etc.—the subway platform proved itself a place of non-presence, where a world-class opus strikes the ear as just more noise, or, worse, not at all.

## THEATRUM MUNDI

A common objective threads itself across modern performance design practice: a reinvigoration of human interaction (See ADOLPHE APPIA, CRUELTY, EL LISSITISKY, IMMERSIVE THEATRE). Richard Sennett’s 1974 polemic, *The Fall of Public Man* speaks to why this may be. Sennett describes the dissolution of public life that accompanied the approach of modernity, wherein opportunity for diverse interaction and communication continues to diminish. He considers the notion of *theatrum mundi*, that of society as theater—an evolving concept positing everyone as actors and the public domain as the stage. As long

as Western society has considered its own ontology, the notion of society as theater has been present. The theory evolved from an envisioning of the world as a “puppet show staged by the gods,”<sup>47</sup> to a theater for the sole spectatorship of the divine, to society as a stage for man to look upon man as the scenes of everyday life played out in the public domain.<sup>48</sup>

## URBAN STAGE

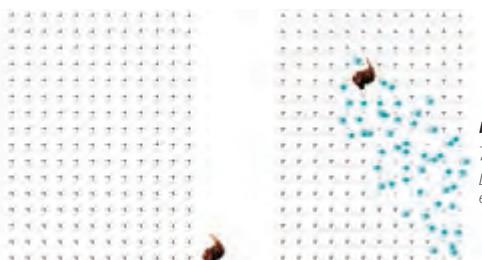
Theater architect Andrew Todd identifies a threat to a viable public life other than privatization and social apathy: the oppressive spatial influence of elite architects and private agencies. He maintains that a successful city must be porous, a constantly made, unmade, negotiated and shifting landscape of everyday interactions amongst diverse players. Only then can it adequately serve as a stage for the performance of social life:

*City life requires a subtle range of characters—as in any play—which extends from protagonists to minor players to crowds, the polis. We have to be able to situate ourselves, to find our own level in the human performance: how can we do this if the city is not porous in any way, has no depth or background, but is just a wall of bellowing prima donnas?<sup>49</sup>*

## WHITE NOISE WHITE LIGHT

Designer J. Meejin Yoon describes the effect of her 2004 performative installation, *White Noise White Light*, a field of lit stalks set in a city center, which responded to human touch with a pulsing noise and light:

*Depending on the time of day, number of people, and trajectories of movement, the project was constantly recording the cumulative interaction of the public. Visitors attempted to decode the installations responsive parameters by experimenting with their bodies in space: running, dodging, stamping, and tiptoeing. The field became an unpredictable aggregation of movement, light, and sound—a sight of play within the city.<sup>50</sup>*



## ZOO

While the classic spectator-actor dichotomy has been challenged throughout the history of performance practice, it remains in full thrust at the zoo, where reasonable debates about interspecies partitioning tend to hit a predictable ceiling. But the question of who plays what role is indeed questionable. While actors on a stage surely survey their audiences, their roles as the *producers* of action, are clearly defined (though immersive theater practices imply a leniency to this rule). At the zoo, it is we, the spectator, who possesses agency. Here, the stage is that of the freak show, where difference is elevated to spectacle, where we rejoice to watch the object beheld traipse.

**Rachel Meade Smith** is a student in the MA Design Studies program at Parsons.

**FIGURE 3** Höweler + Yoon Architecture, “White Noise White Light. Courtesy of Höweler + Yoon Architecture

# **Public Spaces and Agonistic Pluralism in Political Design:**

*by veronica uribe a.*

## **The Case of *Conflict Kitchen***

In “Design Democracy and Agonistic Pluralism,” Carl DiSalvo presents an alternative approach to the consensual ideal of democracy. According to him, agonistic pluralism is a model of democracy grounded in conflict. This “productive contest” takes place through all forms of social practices. Drawing from political theorist Chantal Mouffe’s ideas, he addresses the design community: “One of the tasks of those wishing to support and further democracy is, then creating and enabling these spaces of contest. In such spaces difference and dissensus are brought forward and the assumptions and actions that shape power relations and influences are revealed and challenged.” Along the same lines, Maria Hellström Reimer contends that liberal democracy needs spaces for public assembly, deliberation, or even confrontation. These spaces have to be different from others where power relations are institutionalized and are not questioned, such as the state and the market.<sup>2</sup>

Further in his analysis, DiSalvo presents a distinction between politics and the political, which could be useful when designing such spaces. He states:

*In the discourses of agonistic pluralism, politics are the means by which a state, organization or other social order is held together, politics are the structure and mechanism that enable governing... Different from these means, the political is a condition of society. It is a condition of ongoing opposition and contest.<sup>3</sup>*

On the one hand, *politics* range from codified laws and procedures to unspoken but observed habits of interpersonal interaction and performances of beliefs and values. In that sense, designs embody politics. On the other hand, *political* is a condition experienced and presented in many ways, from debate to acts of provocation, protest and resistance. If, as Hellström points out, “that something is materialized means that it has an established configuration,”<sup>4</sup> how can designers enact multiple reconfigurations within it? In other words, how design can provide these open spaces for agonistic pluralism?



**FIGURE 1.** Information about the country is displayed on everyday objects.  
Image courtesy of Conflict Kitchen

## CONFFLICT KITCHEN: POLITICS THAT ALLOW THE POLITICAL

*Conflict Kitchen*, a project by designer and artist Jon Rubin and architect Dawn Weleski, aims to use the social relationship of food and economic exchange to engage the general public in discussions about countries, cultures, and the polarizing rhetoric of governmental politics. Located in Pittsburgh, it seeks to challenge the narrowness of the media's approach to these issues and instigate questioning, conversation, and debate among customers.<sup>5</sup> In reflection of geopolitical events, the project is constantly changing the conflict addressed.<sup>6</sup> What interests me

about this project is the way in which this established configuration enacts multiple and coexisting reconfigurations.

In *The Practice of Everyday Life*, Michel De Certeau presents the dialectic between tactics and strategies. By *strategies* he refers to practices used by subjects holding power (cities, institutions and businesses) to control spaces and practices. By *tactics* the author refers to practices that those who don't hold power use to subvert the established order. Tactics are not intended to last for an extended period of time, because their subversive nature relies on their temporality. Through them, subjects take advantage of any moment of freedom within strategies in order to momentarily change them. As Jamer Hunt states, "Tactics are therefore performative. They are enactments of a given situation to produce a different end."<sup>7</sup>

The relevance of *Conflict Kitchen* for "political design" lies in its capacity to create an everyday space that provides a space for confrontation. In that sense, *Conflict Kitchen* reframes an everyday action and place with specific politics and materialization (a take-out restaurant), and transforms it into

---

***The relevance  
of Conflict  
Kitchen for  
“political de-  
sign” lies in  
its capacity to  
create an ev-  
eryday space  
that provides a  
space for con-  
frontation.***

---

a public sphere where notions of countries, culture, and foreign affairs are questioned (the political). Customers and workers address America's international affairs and related subjects in an agonistic and productive way. This is accomplished by subverting the strategy (the restaurant) with three different sets of tactics.

The menu and the façade, often in the language of the country addressed, provides a first encounter with "the other." What should be a harmless meal, suddenly engages the customer in a discussion: What does it mean? What language is that? Why is it not in English? Moreover, the wrapper contains opinions of members of the community on different political issues. By reading it, customers discover the inherent contradictions of this specific culture. "The goal is to show the complexity of cultures and not reduce them to one coherent narrative" creator Jon Rubin points out.<sup>8</sup>

Often, interested customers approach the workers for further information. Otherwise, the workers themselves are instructed to engage customers in conversations. This second set of tactics—hidden in everyday interactions—implies discussions about the country, its culture, and the conflict. They also include conversations about the project its the current iteration—the taste of the food or the relevance of the menu. It should be noted that all of the people involved in the project traveled to the chosen country and conducted research on the ongoing conflict and its current status.

Finally, special events provide a third tactic to ensure plurality of narratives and the emergence of the political. One of the

most successful events is the “Lunch Hour,” which is a meal shared by customers and members of the communities addressed (living in Pittsburgh or elsewhere in the country), through Skype.

*Conflict Kitchen* establishes a strategy, i.e. a predetermined space that holds specific politics and configuration. This is materialized in the restaurant—the wrapper, the food, the service, the graphics and the brand. Within this strategy, it also uses tactics to generate the political. These are enacted by three scripts<sup>9</sup> in its design: 1) the menu, the wrapper and the façade of the restaurant; 2) the everyday interactions between customers and workers, inside and outside the restaurant, and 3) the special events that take place on specific days of each iteration. The agonistic aspect of this project lies in the fact that tactics are not intended to show a specific point of view or critique; the narrative is left open and is often incoherent. The main purpose of these tactics is to generate a space for deliberation and contestation that does not need to be solved.

**Veronica Uribe A.** is a student in the MA Design Studies program at Parsons.

**FIGURE 2** “Lunch Hours” taking place during Venezuela’s Conflict Kitchen. Image courtesy of Conflict Kitchen.



# **Design at Work**

*by estefania acosta*

This is an exploration of how ergonomics and office design took shape during the industrial era and how it has played an integral part in crafting its own demise. Ergonomics is usually offered as a solution, not framed as a problem. If we trace the trajectory of ergonomics in becoming a prevalent practice and a universally accepted precept of design, questions arise about its relation to work and other socio-economic issues. In order to meaningfully move towards enhancing people's work lives, we must first reassess notions of productivity and efficiency.<sup>1</sup>

To achieve this, we need to reconsider the physical spaces where many people spend roughly one third of its lives. Consequentially, this exploration points towards the notion that ergonomics is not always beneficial, especially if it allows us to ignore the underlying issues of contemporary businesses. By allowing companies to use comfort as a tool of capitalism, ergonomic design is successfully changing employees' behavior. The unquestioned status of ergonomics in ethical design practices makes it easy to overlook how the science of efficiency patches over physiological, mental and emotional facets of the workplace. At the same time it presupposes that the main goal of enterprise is to be as profitable as possible.

## THE BODY AT WORK

It's telling that the case in favor of workplace ergonomics is always made by framing it as a productivity tool, one that can increase profits in the long-term for companies.

Although it may be natural for a company to make decisions primarily based around generating income, it provokes the notion that if ergonomics were to result in more benefits for the company than its employee, it would still be institutionalized.

Its basic premise dates back to antiquity, but a more recognizable form surfaced at the start of the 20<sup>th</sup> century. Scientific management, or Taylorism, arose for the idea that in order to increase the amount of coal a worker could shovel, it had to be cut into smaller pieces.<sup>2</sup> Its motivation was to optimize the task, and fortunately, the process improved worker's conditions. Since then, there has been a shift in focus. As offices became the most ubiquitous places to work, we now refer to 'Human Factor and Ergonomics' and workplace design as everything from cognitive processes to policies, team building and organizational structures. It would be naive to think, that ergonomic design would be instituted without being cost-efficient, just as Taylorism's basic premise was always productivity for profitability's sake. On the surface and to some extent beneath

it, ergonomics is evidently a positive thing for people at work. It equips an environment around a person who performs a particular task, and when applied correctly has a direct impact on the worker's wellbeing. Design, one could argue, can claim a kind of success in workplace ergonomics. It is hard to argue against the concept that spaces and objects should always carefully consider the stresses and strains of the human body. It is expected that designed spaces aspire to be engaging and attractive enough to compel a person to stay, and ideally, better facilitate their duties

Thus, a workplace is designed to contain both comfort and productivity, characteristics that are directly correlated.<sup>3</sup> There is no apparent tension here, except for a presumably significant initial investment, but the argument could stop there. And in fact, it actually has—ergonomics has permeated workplaces and has been increasingly adapted to other consumer products. Hardship and discomfort have been traditionally accepted as a fact of work. Thus, the establishment of seated deskwork is accepted as one of the benefits in pursuit of comfort. Adverse effects that arise from this shift emerge over the long term and can be chalked up to personal weaknesses—genetics, diet, or other negative habits outside the office—and thus not attributed to sitting. As a result, design's complicity in the rising numbers of people with obesity, for example, is easily ignored.

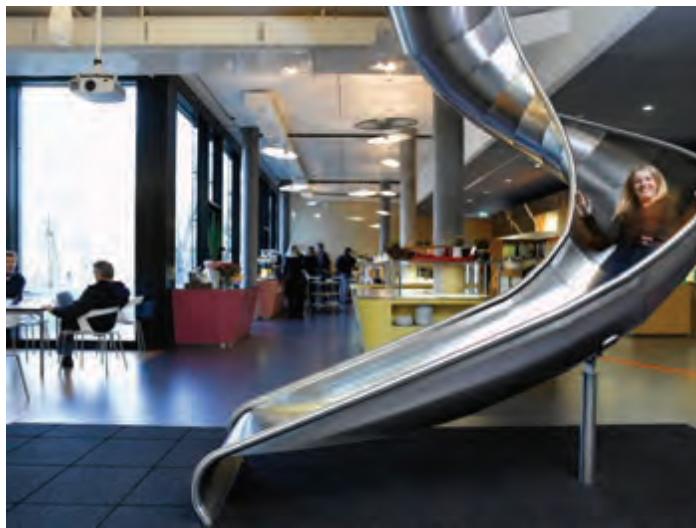
On average, people sit for 50 - 70% of their day.<sup>4</sup> Most of those hours are at work given that a typical weekday is defined by approximately nine hours of work.<sup>5</sup> Ergonomic studies have shown that the human body breaks down after long periods of idleness. To overlook this information in the design of workplaces is a severe dereliction, particularly as a branch of design and science that presumes to hold the human body up as the protagonist.

Other physical distresses of contemporary workplaces include carpal tunnel syndrome (still not completely understood or avoidable),<sup>6</sup> damaged eyesight (irreversible and considered an inevitable part of growing old),<sup>7</sup> and tension migraines (painful to the point of incapacitation). The fact is that the body is responding to a task for which it is not equipped. Kevin Logue, president at Professional Ergonomic Solutions states: "The root of the problem lies in a fact that seems counter-intuitive: the human body is not made to sit for extended periods of time. We are designed to be upright, walking, running, and on the move. Sitting and standing still for extended periods of time are detrimental to our health."<sup>8</sup> This concept is at odds with current workspaces that champion ultra-productivity to fuel ultra-production. Even when we consider working remotely as an option, the fact remains that the majority of white-collar work requires sitting at a computer, in front of a desk, and for long hours.

---

***It seems to be  
a hard fact to  
face that the  
most ergonom-  
ic chair in the  
world might  
still be worse  
than no chair at  
all.***

---



**FIGURE 1** Slide in  
the Google offices  
in Zurich. Courtesy  
of Google.

Recently, companies have begun to take note of lost capital due to paying for health insurance for unhealthy employees. This has served as a small motivator behind taking small measures towards prevention. Unfortunately, the most common solutions offered are workplace aerobics and small breaks throughout the workday. In effect, these tactics may bring employees to the healthy side of fit, albeit barely. It seems to be a hard fact to face that the most ergonomic chair in the world might still be worse than no chair at all.

Competition among companies has driven innovation in technology in incremental and unforeseeable leaps. A company's success depends on gathering the most talented and loyal employees, having the most productive team, and cutting the most cost in order to attain the highest profit. The result is a fragile balance between keeping people as comfortable and happy as possible, while at the same time focused and efficient.

This competition gives cause for new tendencies among large companies that can afford to invest in experimental office design. Companies that ostensibly value employee comfort are consistently challenging the traditional workspace by hiring designers to create spaces meant to "promote cooperation and innovation."<sup>9</sup> Experimental office design (napping pods, slides, etc.) is a competitive advantage that only large companies can afford to implement.. While people who work at these innovative places may be happy to do so, the rest of the white-collar population can only adjust their chair and get back to work.

## THE MIND AT WORK

During the 20th century in the United States, office workers increased from 20 - 60% of the total working population.<sup>10</sup> As the physical workload decreased with equipped environments and ergonomics, the mental workload increased. Companies could now employ minds rather than bodies. This shift presumably benefited people with disabilities, decreased the gap between men and women, and increased the demand for more technologically minded professionals. Division of labor and specialization has had a great impact on the design of offices; in turn, design has served to maintain the hierarchical systems in place today.<sup>11</sup>

Cognitive ergonomics came about with the rise of psychology and artificial intelligence.<sup>12</sup> It is based on the design of human-computer interactions to modify mental workload and aid decision-making. In other words, it engages directly with a person's mind in a calculated way. Its premise is so pervasive that it's one of the core principles in marketing and design thinking.

The effect of workplace design to make people work for longer periods of time by providing comfort can be framed as either beneficial for the employee, by providing him comfort, good for the company, by increasing profits, or positive for both, by finding the balance between them. The problem arises when we consider how little debate there has been about the role of design—cognitive or otherwise—with the workplace. Assuming that design is limited to the solutions that condition an environment, unintended consequences are catching up with office dwellers all the time. When Herman Miller introduced Ergon, the first ergonomic chair in 1976 it was after ten years of researching posture.<sup>13</sup> A recent study by researchers from Columbia, MIT, Northwestern, Harvard and UC Berkeley took a look at body postures enabled through ergonomic chairs and their impact on what they defined as "dishonest behaviors." They found that, "individuals in expansive physical settings reported that they felt powerful. This sentiment was the common link between those in an expansive physical setting who also exhibited dishonest behaviors such as stealing, cheating, and violating traffic laws."<sup>14</sup> This may be a far-fetched proposi-

tion, and practically impossible to predict. Yet, we cannot continue to ignore the effects of a sedentary mode of work, especially if we consider how many consequences have already been ignored in the name of profit and productivity. Present modes of work have been dictated by the speed with which design becomes normative and not our ability to measure its effects. The capacity to *be* productive makes us think that we always have to be.<sup>15</sup>

## THE SPIRIT AT WORK

When 17 Foxconn employees committed suicide in Southern China,<sup>16</sup> the scandal provoked endless discussions about the work conditions in economies primarily driven by factories. The company responded with measures that ranged from forced legal waivers to bluntly effective suicide nets. This tragedy-turned-spectacle was so notorious mostly because of the company's ties to Apple and the ever-controversial iPhone. Reports and analyses surfaced in news outlets about how the company perpetuated the conditions in which workers were compelled to jump from the complex's roof, and how it did so without breaking any of the country's labor laws. Worse still, Foxconn is reportedly one of the most humane factories in China to work in.<sup>17</sup>

Reports such as this force society to stop and reflect on what kind of systems are in place that result in people committing suicide. Everything from consumerism to international laws was blamed for the tragedy, but this situation is replicated the world over. Due to sheer numbers, the Foxconn factory scandal stood out against a backdrop of seemingly isolated incidents. In 2010 an NBC article titled "Workplace suicides in the U.S. on the rise"<sup>18</sup> points to three such cases, which are just a sampling of the greater population. Extreme situations like this are unfortunately easy to explain away as personal problems, economy crises, or even pre-existing mental health issues.<sup>19</sup>

Meanwhile, depression and burnout are already so prevalent that large companies have policies and guidelines on how to handle them. Anxiety disorders alone affect approximately 40% of American workers "persistently and excessively."<sup>20</sup> Stress is

meant to help the body respond to 'extraordinary' situations,<sup>21</sup> but if 40% of America's workforce is living in what they describe as excessive anxiety,<sup>22</sup> the situation no longer qualifies as 'extraordinary,' but a sad, perpetual state. In these factories and offices alike, supposedly designed around the needs and desires of humans, ergonomics and design are failing by excluding, or even exacerbating the emotional consequences of overwork.

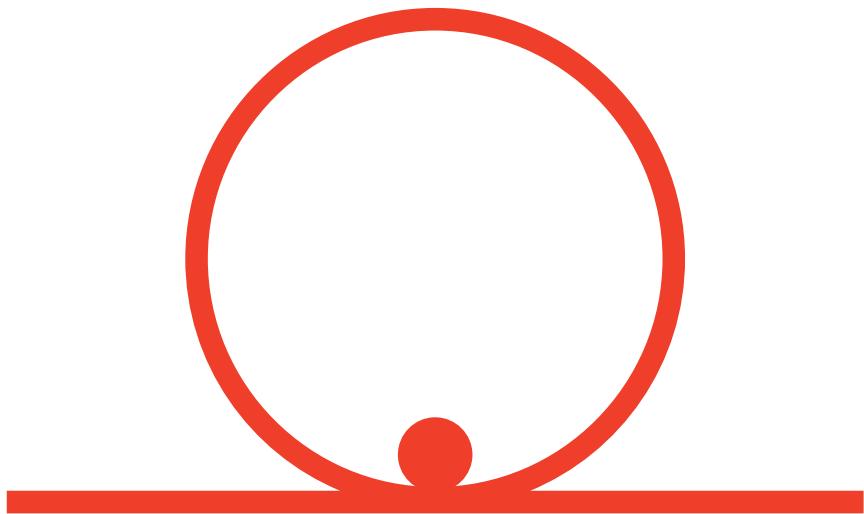
Admittedly, ergonomics is not only related to the design of workplaces, nor is it single-handedly responsible for the directions it has taken. Rather, as a mantra used to misrepresent what it means to live and work in an artificial environment, it is symptomatic of the deeper problems addressed here. The physical and psychological realms of workplace design have left questions unanswered and glossed over problematic conditions. In so doing they have created the paradigms we now hold close as we face an age of socio-technological overhaul.

**Estefania Acosta** is a student in the MA Design Studies program at Parsons.



# AGENCY

you either have it,  
or you work at one.



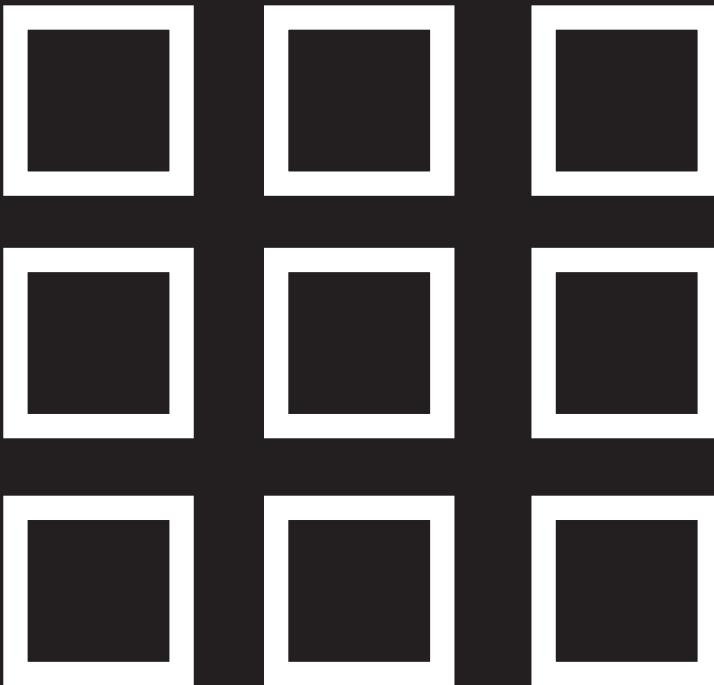
# the **ARTIFICIAL**

we are the world.  
plastic, poetic,  
and profane.



# the **BODY**

see object.  
make Other.



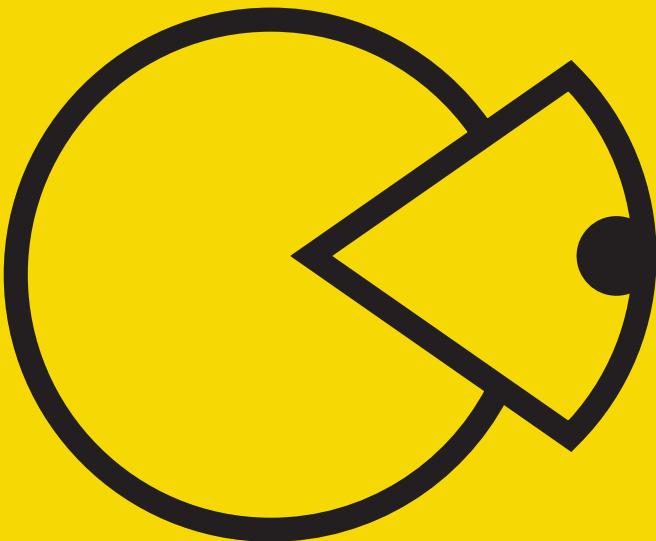
# DESIGNERLY

sticky insights  
disrupting paradigms,  
solving problems.



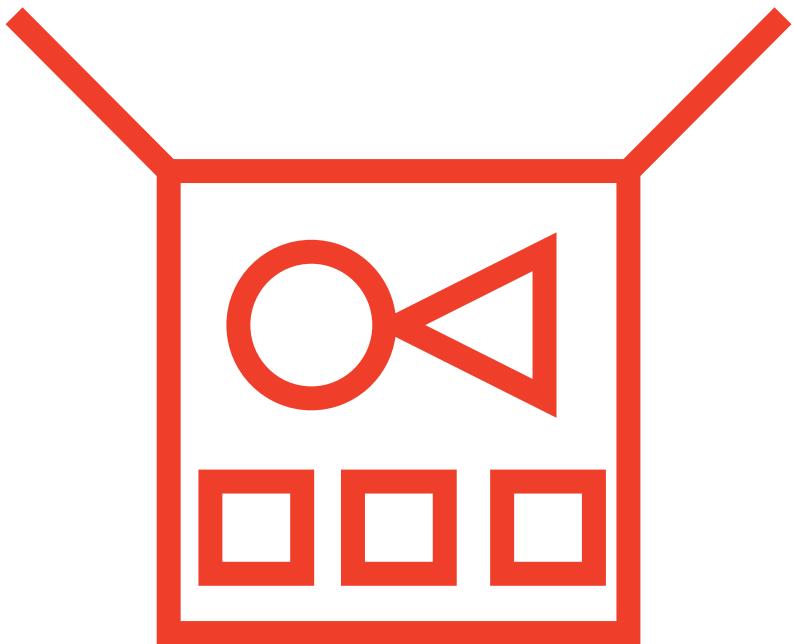
# DISCOURSE

pong-tificate.  
unpack. repeat.



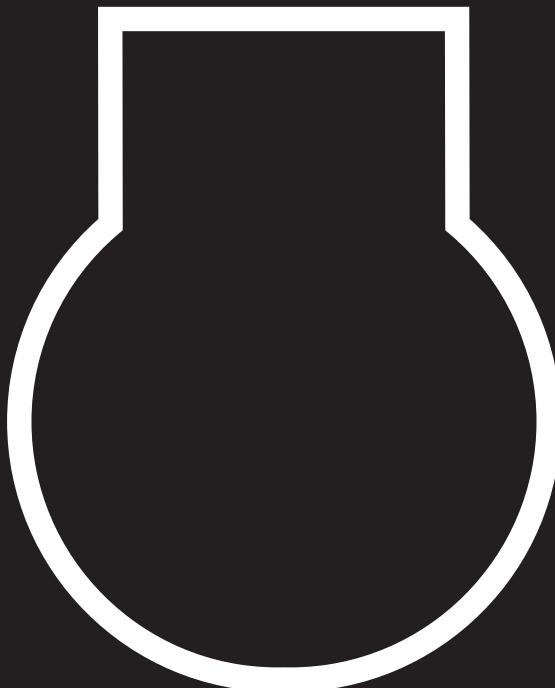
# FUTURING

I've got my  
Fry on you.



# SPECULATIVE DESIGN

faturing the discourse  
fantastic.



# THING

a vessel, a void,  
a \_\_\_\_\_.  
you make it.



# **Industrial Designer, a Modernist Hero?**

*by dora sapunar*

Design has consistently been framed as an answer, solution or at least a contributing factor to issues and changes in the social sphere. One of the key moments in which design became a crucial political tool was in the early years of the Cold War (1947-1960). The regimes looked to designers to propagate visions of their respective ideologies and the lifestyles which these ideologies had the potential of generating. The war was not waged on a battlefield, but took shape in the construction of design solutions: the variety of gleaming American appliances implied individual freedom of expression, while the longevity of standardized Soviet machinery suggested equality and stability in that region. Yugoslavia, as a non-aligned country, attempted to provide a third solution to this political dichotomy, one where design would be egalitarian but not repressive; one that would promote rational consumption but would not be blindly dependent on fashion. Although embedded in a singular historical context, considering the position of industrial design in mid-century Yugoslavia might help increase our understanding of the broader role of design and its ties to the political sphere.

Following the Second World War, Yugoslavia experienced a period of rapid development. There was an increased understanding that the future of design lay in industry. Industrial



**FIGURE 1** Article on the proper place for ornament from a 1959 issue of the magazine 15 Days (15 dana). Image taken by Dora Sapunar.

design—a rising field whose implications were yet to be defined—was imbued with great social responsibility, as its successes and failures were set to be replicated hundreds and thousands of times. Industrial design objects were believed to embody the social intent of the designer, as well as political and social ideologies, and in turn become, themselves, arbiters of proper living.



In a time when designed objects were still often seen as products of two different spheres—the world of engineering, which provided the object's functional character; and the art world, in developing the objects' outward appearance—industrial design appeared as a way of combining these two in a manner fitting for the rapid changes the society was undergoing. It is no wonder, then, that the question of the role of design in the fifties began as a question of terminology. Hardly an issue of Yugoslavia's renowned architecture and design magazines<sup>1</sup> was published without an inquiry into the role of industrial design. Consider the titles of some key articles such as: "Definition and Social Significance of Industrial Design,"<sup>2</sup>



**FIGURE 2** Article on industrial esthetics from the magazine Architecture (Arhitektura). Image taken by Dora Sapunar.

**FIGURE 2** Article on the connection between art and industry by designer Niko Kralj. Image taken by Dora Sapunar.

---

***Industrial design was seen as the perfect embodiment of ideological concerns.***

---

“Industrial Artist, and the Acute Need for One,”<sup>3</sup> “On the Terms and Definitions in the Field of Industrial Arts.” The goal of the articles was to define the new discourse of design, as well as its position in Yugoslavia.<sup>4</sup>

On a practical level, products of industrial design were intended to help achieve greater efficiency in both the household and the workplace. Writers lauded new material developments in plastics and metals and new advances in domestic appliances such as refrigerators and high-pressure cookers. By being simple, functional and effective, industrial products were thought to be able to provide an easier life for their users.

However, there was another reason why Yugoslavian designers of the time preferred plain and durable materials such as plastic and metal.<sup>5</sup> In their “practical beauty,”<sup>6</sup> they were seen as manifestations of both the industrial advancements of the country and the ideology of socialist life that rejected the accumulation of unnecessary decoration. Industrial design was seen as the perfect embodiment of ideological concerns. The idea was that increased efficiency on a mass scale could in turn make a society more egalitarian. For instance, making household chores easier would allow women to participate both in the private and the public sphere.

Designers in Yugoslavia saw a key difference between their approach to industrial design and the one taken by designers in capitalist countries. This was their creation of products with the goal of longevity, in contrast to the planned obsolescence they

observed in the West. Despite the increased efforts of American designers to create simple, affordable products, in many situations the role of the designer was still reduced to that of a decorator, tasked solely with fashioning an appealing surface in accordance with the latest trends. In one of his articles, the famous Yugoslav architect and designer Bernardo Bernardi criticized the continued popularity of Streamline Moderne in household objects, as well as the colorfulness of contemporary appliances. In their dissociation from the functional he found them no better than the kitsch of period furniture.<sup>7</sup>

Instead of decrying the autonomy of industrial design, young Yugoslavian designers advocated a blurring of boundaries between design, art and engineering in shaping new products. This separated them from the strict insistence on unadorned functionalism found in other socialist contexts. The aesthetic element remained important as the scale of production increased. These synthesizing tendencies were disseminated through architecture and design schools, and reached a broader audience through discussions in the media—from newspapers and television shows, to national fairs. In the end, many of these expectations of industrial design never came to full fruition. Industrial design and its products remained at the mercy of economic and social factors, rather than acting as independent harbingers of change. Despite efforts on all sides, the connection between manufacturers, designers and the public remained fraught with problems. However, the efforts to define and understand the implications of industrial design allowed the discipline to become a key, though not singular, component of the cultural and political fabric of the country, and one that was to have a profound influence on the country’s future developments.

**Dora Sapunar** is a Design Studies alumna and a part-time lecturer at Parsons the New School for Design.

# **Design Governamentality:**

*by anke gründel*

**The Power of  
Data in Urban  
Positions**

## **GOVERNMENT, DESIGN, AND ACADEMIC DISCOURSE**

Government in the age of big data and the internet 2.0 is becoming as smart as the things that start to make up our daily lives. Smart phones, smart cars, even smart homes and cities are presenting new ways of imagining politics. Design in such propositions is the key to governmental change. However, design is not a straight-forward term and its study often requires considerable conceptual scaffolding and interdisciplinary method appropriation. Such intellectual gymnastics in turn enable the illumination of design from a plethora of angles. In the following I will discuss new governmental technologies in smart cities, new urban developments in which infrastructure is instrumented with computing networks that both record information about the city and its inhabitants and manage everything on the basis of this information. I hope that a discussions of new political paradigms from the field of design studies will yield interesting insights about the political nature of design itself. Its current integration in political rhetoric presents new problems for philosophy, but also the traditional design fields. The centrality of design in governmental paradigms questions the dichotomy between the ‘practical’ and ‘theoretical’ fields and necessi-

tates a renewed perspective on political, social, and economic consequences of design. I want to argue that design, as an increasingly complex and ambiguous term, finds application in all areas of human activity. In this paper, I will discuss design as a method of government and its relation to political economy. I will trace the representation of the user, consumer, or participant in the new smart city design and link it to new governing paradigms embedded in them.

## DESIGNING THE BUILT ENVIRONMENT

Much of what we would consider archetypically human happens in artificial environments. Often, the interconnectivity of the designed environment and human interaction escapes our notice. As Bruno Latour and Michel Callon have argued in studying associations, more than forming networks of interconnected pieces, the made world and its makers constantly codetermine each other.<sup>1</sup> It is this codeterminacy between human and non-human actors that design studies takes as its object. The environment we construct around us is deeply and reciprocally connected to human subjectivity, to our understanding of ourselves in connection to the made world. At the same time, building and making are complex problems whose connection to subjectivity is neither always immediately apparent nor manifested in predictable ways. In thinking about building within the discipline of design studies, a specific interpretive mechanism would be useful through which subjectivity can be made visible. The tools for such an investigation can be extracted from Michel Foucault's account of spatial organization and its effect on subjectivity. For the purposes of design studies, his methodology provides a useful scaffold for establishing a discourse centered around design as a mode of acting in the world and as a mode of goods and service production that affects individuals and groups on a number of levels. Although Foucault's earlier work put more emphasis on passive subject formation through dominant power-relations, as is the case in his example of the panopticon, it is necessary to consider his later work which attributed more agency to the subject in the processes of its own formation. Such subjectivation processes are integral to current problems

of modern urban developments. The centrality of governing mechanisms be it in cities, work, or general organization of life, is epitomized by Foucault's concept of biopower. By this term he means "the set of mechanisms through which the basic biological features of the human species became the object of a political strategy, of a general strategy of power."<sup>2</sup> Put another way, governmentality, the organized practices with which subjects are produced to be effectively governed, built on biopower in "modern Western societies took on board the fundamental biological fact that human beings are a species"<sup>3</sup> with certain characteristic qualities.

In modern Smart Cities as I will argue, biopolitics, working on the basis of biopower alone, can no longer provide a full set of answers for the kind of public/private politics embedded in urban design today. What seems to become increasingly important to government is a move away from targeting people as biological entities and towards a politics based on the representations of social behavior as large data clusters. The virtual individual is purely representational. Its reality consists only of categorized behaviors that appear as data sets upon which this representation is assembled and which ultimately constitute individuals as behavioral patterns.<sup>4</sup> In smart cities it is the design itself, the very instrumentation of architecture which enables data about the city's population and environment to be gathered. In short, the information we produce through our interaction with the instrumented space becomes intelligible as behavior only through its representation as established patterns. This phenomenon is especially apparent in Smart and Ubiquitous Cities, one of which I will elaborate on as a case study. These urban developments are constructed primarily on the basis of an economic rationality using governing mechanisms that rely on instrumented spaces with pervasive networks of sensors and electronic services throughout the city. The principles of government, termed algorithmic regulation, are based on availability and representability of vast amounts of information produced by the design of both computing network and physical city. Underlying such governing principles seems to be a technological positivism that places perhaps undue trust in the accuracy of data as well as in

the devices which gather it.<sup>5</sup> This suggests a deep underlying shift regarding what is actually governed. Instead of messy physical causes, there are discrete virtual effects. Commenting on large scale algorithmic regulation, Evgeny Morozov argues that “shifting the focus of regulation from reining in institutional and corporate malfeasance to perpetual electronic guidance of individuals”<sup>6</sup> ignores many of the underlying issues that created individual and social problems in the first place. He reminds us that an “imperative to evaluate and demonstrate ‘results’ and ‘effects’ already presupposes that the goal of policy is the optimisation [sic.] of efficiency.”<sup>7</sup> A government which is so preoccupied with looking for effects instead of causes, as is the case of Smart and Ubiquitous cities, operates on a new understanding of politics. I will argue that it represents a distinct shift from the biopolitical paradigm.

## HOMO ECONOMICUS –THE DESIGNED SUBJECT

While Foucault emphasizes the structural configuration of space in connection with the system of thought through which it came into being, he did not concern himself very much with the concept of design in the sense that it is understood today. Design as a structure of thinking and making, acting and reflecting, constitutes a mode of acting in the world. It is an action that is inherently future oriented, in that it points to a better future which the product is designed to help bring about. This future is presented as intrinsically superior, more desirable<sup>8</sup> than anything existing today.

Design as a system of creation and planning geared toward constant innovation and competition in an increasingly globalized market, expanded in importance in the early to mid 20th century.<sup>9</sup> Today, its generalization beyond material production seems to have ballooned. Guy Julier traces design’s increasing relevance for political economy to the neoliberal changes of the Reagan Thatcher era.<sup>10</sup> Increasingly today, design is co-opted by economic rhetoric in political discourse. Any investigation of design in large commercial ventures cannot function

without acknowledging underlying neoliberal assumption. Again, Foucault’s account of neoliberal governmentality is particularly valuable for design studies. In *The Birth of Biopolitics*, he outlines the production of a new kind of subject emblematic to neoliberalism. Within neoliberal economic rationality “the basic element to be deciphered by economic analysis is not so much the individual, or processes and mechanisms, but enterprises.”<sup>11</sup> He asserts that “the man of consumption, insofar as he consumes, is a producer.”<sup>12</sup> This producer, he maintains, “produces his own satisfaction.”<sup>13</sup> Foucault suggests to understand consumption in this complex behavior-mechanism “as an enterprise activity by which the individual [...] will produce something that will be his own satisfaction.”<sup>14</sup> This cyclical and reciprocally influential consuming-producing behavior then creates a particular type of subject. Foucault’s neoliberal subject is a “return of the homo oeconomicus.”<sup>15</sup> However this economic man, he argues, is constructed as an “entrepreneur of himself, being for himself his own capital, being for himself his own producer.”<sup>16</sup> This entrepreneurial consumer/producer subject, is central for the analysis of subjectivation within the context of the designed space. The centrality of the homo oeconomicus becomes apparent when we acknowledge the effects of designed things, space, and images on subjectivity.

For this purpose, I want to situate the economic man within an environment that is entirely artificial. The task of design studies is to highlight the artificiality of the world<sup>18</sup> and reframe man as part of artifice. In the artificial world, insofar as it is constituted by the various practices of design, as the world of the neoliberal homo oeconomicus, constant innovation and competition represent

**The very structure of urban space – the design of cities, neighborhoods and technological systems, interfacing with the city's inhabitants – is built to produce, maintain, and legitimize the economic man.**

a primary mode of address. Modern design and its link to the market, especially as it relates to planned obsolescence, seems to be intricately interwoven with the emergence of the this economic man. Indeed, design in its interactions with us today works hard to maintain the entrepreneurial subject. Perhaps it would be prudent then, to understand objects of design as parts of larger governmental mechanisms. It is also design's fundamental historic tie to the economy, its connection to efficiency, competition, effective problem solving as well as affective impact on individuals which make it a powerful but also loaded term.

## PANOPTIC PROPOSITIONS

Having sketched out the subject central to this analysis, I want to now turn to the problem of the built environment inherent in the Foucaultian notion of biopower. Before tracing changes in governmental-ity constitutive of algorithmic regulation, the interfaces between designed urban space and people need to be explored. The question that design studies has to ask is how we become the subjects we are, both actively and passively. Foucault here, provides design and architecture scholars with some invaluable tools for this project. In *Discipline and Punish* his exemplary analysis of such a complex within the penal system of the 19th century, his discussion of panopticism, should be of particular interest. While panopticism primarily focuses on coercive practices disregarding individuals' own contribution to subject formation, it is nonetheless a powerful example for the embeddedness of biopolitical mechanisms in the built environment.

The concept of the Panopticon was first developed by Jeremy Bentham as an efficient and economic model for penal complexes (although it was never actually implemented) but he quickly imagined its importance beyond the penal system. Here the “architectural apparatus should be a machine for creating and sustaining a power relations independent of the person who exercises it.”<sup>19</sup> The designed space then is “an important mechanism, for it automatizes and disindividualizes power.”<sup>20</sup> This power “has its principle not so much in a person as

in a certain concerted distribution of bodies, surfaces, lights, gazes and arrangement whose internal mechanisms produce the relation in which individuals are caught up.”<sup>21</sup> It is therefore the existence of human bodies within architectural space, the physical interaction of bodies with the architectural environment that ensures the transmission of power. The idea of the panopticon was then not only applicable for penal institutions but Bentham eventually conceptualized it as “a great new instrument of government ...; its great excellence consists in the great strength it is capable of giving to *any* institution it may be thought proper to apply it to.”<sup>22</sup> Panopticism as an idea of government arose in a specific economic rationality, the same rationality that first gave rise to the economic man (although the liberal homo economicus became a dramatically new structure in neoliberalism). This link to economics is of crucial importance. The original economic man, unlike its neoliberal successor was governed by interest. It was then the government’s task to create an economic subject whose self-interests were aligned with those of the state. Bentham’s model of governmental apparatuses in the Panopticon presented just the tool needed to create such subjects.

*The Panopticon [...] has a role of amplification; although it arranges power, although it is intended to make it more economic and more effective, it does so not for power itself, nor for the immediate salvation of a threatened society: its aims is to strengthen the social forces – to increase population, to develop the economy, spread education, raise the level of public mortality; to increase and multiply.*<sup>23</sup>

Here it is not power for power’s sake that is at work, but power for the social good, power for the good of the nation state, in an organized effort to make its government more effective. It is of course not only the built environment that adheres to these principles of political economy. It is the embedded economic rationality that makes the designed space itself and its mode of subject production intelligible. Therefore, when design studies looks toward modern smart cities and the existence of modern subjects within them, it is an economic rationality that should determine the terms of analysis. If we are trying to understand the connection of power to design as embedded in the world-as-artifice then economics cannot be neglected. Foucault’s problematization of

future and as the means by which such a future is to be realized, is innately concerned with creating the conditions of possibility for the proposed future. What is at issue is more than the corporate dreams of the future.<sup>27</sup> It is therefore crucial to make visible the economic and social assumption embedded in Smart Cities.

## THE SMARTNESS OF CITIES

population<sup>24</sup> in the context of the Panopticon also enables an interesting comparison to populations in smart cities. Population today presents an intricate problem for effective government. The solution, as some argue,<sup>25</sup> is a decentralization of government in favor of smart communities, which are able to tailor management to local needs through the integration of large scale and ubiquitous computing and sensor networks, a measure of smart cities' effectiveness. Local factors here correspond to global trends and with the help of technology as the mediator, local communities are believed to become capable of harnessing global forces.<sup>26</sup>

Not unlike the panopticon, a governmental model designed to optimize and align individual interest, smart cities today align their inhabitants' mode of life along a similarly economic axis. On the other hand, in contrast to algorithmic regulation, panopticism did not necessarily rely on individuality and the entrepreneurial form as the basis for government. It targeted a population, whereas today government targets individual behavior. It is precisely this neoliberal economic man, the homo oeconomicus who becomes the object of such cities. The very structure of urban space—the design of cities, neighborhoods and technological systems, interfacing with the city's inhabitants—is built to produce, maintain, and legitimize the economic man. In that such developments are always geared toward producing a certain future, it is necessary to show these propositions and trace the actors within them. Often, these are corporate propositions, as the spaces are built by private corporations, and address the governmental apparatus itself. The propositional character of the design itself has to be acknowledged and problematized. To recapitulate, design as an indicator for the

The concept of smart cities is a relatively new one and does not adhere to one unified definition. It has been described in exclusively economic terms as a spatial organization principle to optimize human and social capital and create competitive urban developments.<sup>28</sup> On the other hand, smart cities are also defined by a specific way of achieving local and global competitiveness, which more closely resembles the popular notion of "smart" in our current cultural imaginary (smart phone, smart lighting, smart clothing etc.) that is, the integration of information technology into everyday life and activities. Smart cities also ensure ecological and economic sustainability in an efficient and intelligent manner, through linking services and allowing for maximum interconnectedness.<sup>29</sup> Smart cities then, become economically and socially competitive because they do not leave their management to humans, but turn to technology and design to optimize human, social, and economic capital. These urban developments function on a number of major neoliberal premises, such as competitiveness, increase in human and social capital, and efficiency, that is, a political economy. Their spatial organization is geared toward the most effective creation of the competitive homo oeconomicus.<sup>30</sup> It is both their physical design and the design of their computing networks that enable local governance of individuals on the basis of data regimes.

The economic rationality underlying both the neoliberal subject and smart cities forms the basis of their intelligibility. The principles of efficiency, effectiveness, and competitiveness in conjunction with big data propose a new reality, which is subsequently created by the actual configuration of government within the designed environment. Does the concept of biopower still

remain applicable in such realities? This question can only be answered if we take the different modes of interaction between design and individuals as the basis of this inquiry. Ascertaining if biopower will still be fundamentally relevant in the future to the concept of population and its relationship to the assemblages of material configuration, people, and virtual systems may point to a different principle. There may be another, more dramatic change underlying the transition of governmentality in design's projections of the future. The question design studies will have to answer is the following: Does the design of the city alone suffice to manage its inhabitants in the most efficient and effective way? I will limit myself here to the most important services available in smart cities.

## THE UBIQUITY OF DATA

Smart cities and smart communities are becoming increasingly more prevalent as urban models.<sup>31</sup> The degree to which these cities and communities are instrumented varies however. New Songdo City, in South Korea is such a smart community. In contrast to comparable developments in the US, Brazil, or China it is called a ubiquitous city or U-city.<sup>32</sup> The term U-City denotes its reliance on an all-pervasive ubiquitous computing system that both provides services and information but also gathers data on a large scale through sensors that are distributed throughout the city. Songdo is a new urban development built from scratch on land claimed from the eastern coast of South Korea on the northern shores of the Yellow Sea. As a city built from the ground up within only a few years, it does not have any of the historical appendages older cities struggle with.<sup>33</sup> This smart city's competitiveness and efficiency results from its innovative management apparatus. The city is no longer exclusively or even principally managed by people, as human error often reduces efficiency. Instead, most services and interactions in smart cities are done on the basis of the city's very instrumentation. That is, the city's spatial and human organization revolves around the representation of the city's population in vast data sets which are gathered by sensors throughout the city. Population here is a loaded term and needs to be contrasted with Foucault's conception of it.<sup>34</sup>

The ubiquitous system is a large-scale informational and sensorial system that pervades the city in both public spaces and private homes. While the technology by the city's intended completion in 2020 will already be outdated, what is novel in comparison to other smart communities which have been retrofitted with IT systems is the network's presence everywhere. All buildings are integrated into and equipped with it. The stated purpose of this system is not only to provide internet access to businesses and residents but also to make the city economically and ecologically viable. The system is designed to direct traffic based on the amount of cars registered at certain times of day, gather and distribute weather data, and manage sewage and similarly invisible services. This however, is not all. Most apartments are outfitted with biometric sensors which are not only linked to the HVAC (heat, ventilation, and air-conditioning) system. The city's government planned to link the system to hospitals and insurance companies,<sup>35</sup> calling ambulances when needed, sync medical records from doctor's offices, and monitor the overall health of the apartment's occupant.

While surveillance is certainly an important part of smart cities, in most cases the design of the sensors and interfaces is specifically configured to obscure the presence of a technological gaze, in contrast to the very visible and constantly felt human gaze of the panopticon. This is an important difference as it leads precisely to the governing of effects rather than causes, something Morozov attributes to an overarching "aim to reprogramme [sic.] the state and make it feedback-friendly."<sup>36</sup> In other words, the existence of data-recording devices in everyday life is not in all cases directly visible. Data gathering often happens surreptitiously. Its generation is not only relatively easy through services provided by the city—in the form of a variety of services or online interaction—but also by means of especially engineered sensors embedded in the urban environment and calibrated to record specific interactions within and outside of the building's architecture. The sensors' invisibility has important consequences for biopower and subjectivation. In practice, Songdo's ubiquitous system is touted as a special appeal of the city, evidenced by general information about sensors and management being available online.

# BIG DATA–SPEAKING THE TRUTH ABOUT SMARTNESS

To understand why smart cities rely on big data as the foundation for efficiency in government, I want to turn to Foucault once more. The method I am concerned with draws upon demonstrating that “establishing intelligibility of reality consists in showing its possibility.”<sup>37</sup> That is to say, if the goal is to show the proposition of a new form of government based on big data then what needs to be done is to show that it is possible for this new form of governmentality, one that supplants biopolitics, to exist and that it is to be found precisely in design. Only then can design studies legitimately engage philosophy on the basis of the political importance of design. Foucault is less concerned with “the description of insular and autonomous systems of truth,”<sup>38</sup> but instead he is engaged in “undertaking the history of regimes of veridiction – and not the history of truth, the history of error, or the history of ideology,”<sup>39</sup> so that one can make sense of historical development and understand on what basis and to what end decisions were made. In other words, Foucault is concerned with making certain discourses intelligible through illuminating the conditions necessary for it to become established. He describes how these regimes of veridiction intersected with the law, that is he demonstrates their legality as bases for government by showing that “the regime of veridiction, in fact, is not a law (*loi*) of truth, [but] the set of rules enabling one to establish which statements in a given discourse can be described as true or false.”<sup>40</sup> In this context, Foucault understands economic rationality, which under neoliberalism allowed the subsumption of the state under the header of the market, as a regime of veridiction. Alongside and indeed very much on the basis of this economic rationality, big data itself can be understood as a regime of veridiction. The assumption of accuracy and representativeness, for government forms the basis for a new mode of governmentality.

As I have argued, the underlying organization principle in such urban developments is an economic one. The system of truth according to which good government, that is, effective, efficient, and sustainable govern-

ment, is judged is of course ‘big data’. ‘Big data’ needs to be understood as representing a range of human behaviors, human-artifice interaction, and environmental conditions. The element of veridiction which is attributed to big data amounts to a problem of representation. In other words, big data in its representativeness of the world is taken as truth, as truth about human behavior, about the conditions of the city’s systems, and the sometimes adversary environment outside of the city. Big data, algorithmic analysis, and parametric design insofar as they truly and accurately present real-world conditions is presumed to be so effective because they enable real-time responses by the system itself.<sup>41</sup> That means potentially costly lags between the occurrence of a problem and its elimination can be dramatically reduced. Songdo presents a good example for the phenomenon of propositional cities in which government relies on the existence of a smart system that can both gather and analyze information from people and the environment. This system here presents the condition for a potential new form of governmentality, something which might be called data-politics.

## A SHORT KOREAN EPISODE

In order to understand Songdo’s existence in context, its history should be given some attention. Its inception dates back to the late 1980s when it was designed to bring in foreign investment during South Korea’s technological upswing. Then presidential candidate Tae-Woo Roh campaigned with the promise to expand Korean economic incline through the building of a new international business hub close to South Korea’s capital Seoul. Governmental struggles and economic problems delayed this project for more than ten years. It was taken up again in the early 2000s during a period of economic growth. Today Songdo is located in the Incheon Free Economic Zone (hereafter IFEZ), which was set up in 2003 expressly for the purpose of allowing for the influx of foreign companies and investment.<sup>42</sup>

Songdo was to be its centerpiece, a North Asian business hub designed to represent South Korea's centrality in the Pan-Asian and international market. Within IFEZ, government is limited to providing the ideal conditions for foreign investment and strong market expanse from which the country hopes it will ultimately profit. The government's task, aside from designating this special zone which functions to a large degree independent from the central governmental apparatus, is financing and subsidizing investments. These conditions should have ideally made it appealing for foreign corporations to set up their business in Songdo, however, the dream of this economic utopia, the premiere North-East Asian economic metropolis, has not yet proven realistic. Songdo's utopic future was envisioned on more than one level. Being South Korea's beautifully designed face to the global market, it was developed as a technologically advanced space, a manifestation of South Korea's technical and technological prowess. It was also designed as a green city, which operates at a third of the carbon emissions of normal cities, utilizing sustainable materials and systems built to reduce overall carbon footprint. This seems particularly ironic considering that it is built on land that was claimed from precious coastal wetlands, land that represents the displacement and extinction of a number of red-listed species.

## CORPORATE PROPOSITIONS

Songdo's construction adhered to strict organization of its geographic and information spaces. At its center is the business district, representing the centrality of the economy in this urban venture. The large park designed to imitate New York's Central Park,<sup>43</sup> conveys a sense of attention to ecological and social sustainability, a feature that is touted as one of the prime advantages of this city. While its geographic configuration is novel, what is more relevant to the question of data-power is the design of the computing system and concomitant new proposal for government. What is crucial at this point is to highlight the propositional content of Songdo's network and governance as a smart city. This proposition, while desired by IFEZ, is largely private, in that the system-design is entirely private property. During Songdo's development, IFEZ

partnered with Cisco Systems and a few other large American private corporations to build the city proper and implement its ubiquitous computing network as its prime feature. Cisco was contracted to develop this system, which for the corporation represents merely a test-scenario, a phenomenon Orit Halpern called 'test-bed urbanism'.<sup>44</sup> This technology along with the data it produces is therefore private property and while Cisco partnered with public agencies on the implementation of governing mechanisms, the question of ownership and property remains. That means that data-politics, insofar as they can be shown to exist, are a private proposal for a governmental technology, one that attempts to redress the private/public dichotomy and frames it as increasingly obsolete for government.

While South Korea seems an ideal test ground for such propositional cities, the exact location on the planet is of little importance for Cisco or other participating corporations, as Haperns concept of test-bed urbanism would attest to. What matters is the ability to work at least partially outside of established federal law in order to make the kind of economic and political propositions I am concerned with. Thus, the IFEZ, as a free economic zone with a high degree of independence from South Korean federal government, creates the perfect conditions for test-bed urbanism. For Cisco this is a prime opportunity to develop the capacities to support the implementation of city-wide smart and ubiquitous systems. Primarily, what Cisco markets and sell is the possibility of new management strategies, new methods to organize the population in a city, new ways of surveillance, and also new methods of delivering government. The ubiquitous system promises new methods of certainty about security, crime management, and even provides feedback as to where additional infrastructure is needed. For Cisco this means not only potentially greater revenue, but most importantly the possibility of becoming the leader for a new technological age. The company is hoping to become the leader in what they termed Smart + Connected Communities (S+CC), as part of its rebranding and diversification program. Such systems do not require human oversight,<sup>45</sup> as most services function largely autonomously. The question becomes, what does this mean for design?

In order to ensure better cooperation between business and the IFEZ authority, in terms of system build-out, data management, and financing, Songdo became the site for a highly representative public-private cooperation between the local government, Cisco and a number of other companies.<sup>46</sup> For that purpose a Public Private Cooperation Company (PPCC) was formed.<sup>47</sup> In essence, this company has committed itself to the efficient delivery of what it calls U-city services, among which are public services like disaster control, public safety, environmental management, along with traffic and public information. Among the private services the PPCC offers are building automation, operation and management, advertisements and information, and internet connectivity. Aside from providing services, the PPCC, like any corporation, is also trying to create capital.<sup>48</sup> Local government in smart cities needs to be able to manage a number of services. Along with quotidian urban needs like traffic light regulation and optimized metro systems, there are also a number of new concepts like e-governance, e-participation, and e-democracy.<sup>49</sup> E-governance is utilizing electronic services to improve communications between the government and citizen-customers,<sup>50</sup> government and the market, and among government entities. In its ideal form, it increases transparency and access while it purports to reduce inequality. In many cases this functions precisely on the basis of Public-Private-Partnerships.

This raises the question of where the information is stored, who has access to it, and to what ends will it be used. If it is privately held, then what is done with it? These are serious issues that will determine the course of new city organization, spatial or informational. The answers will have consequences

for new governmental apparatuses as well as technologies of government. To what degree will private organizations be embedded in government? Will government on a local level be handled predominantly privately? The constant shift toward privatization in judicial, military, as well as security apparatuses seems to suggest that Cisco's idea of government through technology handled largely by corporations is not all that far off. A new governmental technology arising out of the same economic rationality that has created the neoliberal homo oeconomicus as a self-entrepreneur and that has produced cities in which the very spatial design as well as the design of interfaces and services, appears to be a pressing matter. Relying on the designed world and its interrelation with human subjects, this new governmentality is indeed intricately interwoven with the various practices and products of design. The nature of the relationship between the artificial environment and people, the mode of their interaction, produces the informational foundation, in the form of big data, that presents the conditions of possibility for this new governmentality.

## THE INEQUALITY OF SMARTNESS

In many respects, developments like Songdo dramatically raise the standard of living of their inhabitants. Insofar as that is the case, they seem to be fairly innocuous cultural phenomena. Smart cities are always distinctly heterotopic,<sup>51</sup> in that one of their main goals is to efficiently increase human capital. Alongside structuring citizens such that their human and social capital is optimized, this also necessitates eliminating those elements that would lower overall human capital. In other words, smart cities like Songdo aim to keep out those individuals from lower socio-economic strata. While this is not only a phenomenon of smart cities, it does become particularly evident there. In the case of Songdo, the solution is simple. The apartments and condos are sold or rented at such high prices that the entire city is essentially a high priced suburb of Seoul for affluent Koreans. The city is connected to the mainland over bridges equipped with cameras. That way, exclusivity can be assured. The problem this raises is politically complex. If big data is proposed as the

basis for government and only the top 5% of the population have sufficient access to the data-gathering apparatus, then the whole system is steeped in economic inequality. The result, in essence, is a systematic design of policy-making and governance registering only those above a certain economic level. As long as this type of government is restricted to primarily market-cities the problem seems contained. However, the design propositions reach farther than that. As long as data-power remains a viable model for future government, the inherently neoliberal assumptions embedded in these designs make their concepts at best ethically questionable. If community governance is built on the principle of smart cities as in the case of Songdo, then we have to start reckoning with the inequality of such designs and consider it on the basis of competition as a neoliberal principle. Designing cities with the explicit purpose to increase human and social capital, results in urban environments whose very structure, the very organization, creates economic subjects as self-entrepreneurs, excluding those who have not properly internalized entrepreneurial values.

The latent inequality that permeates smart city configuration goes beyond organizing citizens geographically in accordance to their human and social capital. Even e-governance, a system of services which have been touted as a possible solution for governmental corruption<sup>52</sup> seem to have an inherent segregational component.<sup>53</sup> This social segregation comes as a result of competition and competitiveness, which is grounded in the necessity of inequality for competition. Thus in smart cities we can precisely observe Foucault's comment on American neo-liberalism as a "generalization of the economic form of the market [...] throughout the social body and including the whole social system."<sup>54</sup> In smart cities, the market spans everything from homes to parks, from water treatment facilities to schools. We should therefore start addressing design from this perspective.

## FROM BIOPOWER TO DATA-POWER

I have tried to lay out the method by which design studies as a nascent academic field can and should open up and contribute to

a discourse around the world-as-artifice. In tracing subjectivating mechanisms in the built environment, I tried to give an example of the kind of analyses design studies can provide. I believe it is crucial to acknowledge the underlying rationality that enables design as both a set of practices and their products to become intelligible today. As a marker of relevance, I have traced the component of veridiction within the phenomenon of smart cities. What emerged was the existence of big data as a regime of veridiction which in turn points to larger changes in technologies of government and subjectification. As a field inherently concerned with the artificial, its creation, and its influence on culture, design studies is perfectly positioned to ask a number of important questions which should be answered in conjunction with other disciplines such as philosophy or sociology. What changes in the construction of our very understanding of subjectivity in the artificial world if we are addressed by design only as behavioral entities? Does 'big data,' as a regime of veridiction and its concomitant form of governmentality, present a moment of departure from the concepts of population, biopolitics, and biopower that Foucault introduced?

Still, it is not the seemingly Orwellian nature or Huxleyan aftertaste of such developments that should make us aware of data-politics. Rather what is at issue here, is the ever more prevalent question of who controls this information and to what end. The ability to source and manage data ubiquitously and unobtrusively is a relatively new development.<sup>55</sup> While warnings have been voiced about the need for critical interaction with the digital gaze and digital reductionism,<sup>56</sup> what appears problematic and difficult to grasp in the case of Songdo is less the inevitability of the situation and more the principles of its implementation. The fact of the matter is that technology and design will become more pervasive. Culture is not a static force but an incredibly dynamic assemblage. It is not the fact that large corporations are suggesting new governmental practices, new management proposals, and new ways of representing large groups of people. Propositional city designs such as Songdo appear like a logical next step in a political economy that values competition seemingly above all else. If governmental practices are concerned with balancing

cost of government, creating cost-effective ways of managing a population, and shaping individuals that manage themselves, then proposals such as Songdo seem like a good idea. The question should be to what degree do these practices impact the people towards whom they are directed? Do these practices enable or preclude criticism to a larger degree than previous governmental paradigms? What seems truly problematic about data-power, is that, at least in the foreseeable future, because these ubiquitous city proposals are primarily geared towards affluent social strata, only those who have access to the big-data production apparatus are represented in its analysis. If this data is indeed used to make more sweeping policy decisions, then those policies only consider the behavior of the affluent population and completely disregard those social strata that cannot afford such spaces. This does not happen according to any sinister back-room deal or evil scheme but results from the very economic principles of spatial and technological organization. It is the systemic and unquestioned inequality of neoliberal design that present data-politics' greatest hurdle.

John Protevi describes as the ultimate goal of Foucault's historically realist analysis to "provide tools by which the governed can understand the rationality that informs the way they are governed and thereby resist intolerable governance."<sup>57</sup> It is not so much the point then, to critique technological innovations because they evoke dystopian pop-culture fears, but to make them historically intelligible for the present. This should enable people to understand themselves as subjects of a certain kind. Should this result in a rejection of the apparatuses that create them the question that must necessarily follow is: What ought to replace them? But it may just as well end in an acceptance of the utopia they propose. In summation, it is not that cities like Songdo reduce our humanity or somehow make our lives worse. In many ways they increase standard of living. What is questionable is the deeply embedded inequality that comes with such systems, and smart cities in general. If design studies can problematize such developments and present them to an established academic and popular audience this new field may be one step further to legitimating itself. As a field which has rarely assumed relevance in the discourse of politics, design today seems to become central to it.

**Anke Gründel** is a student in the MA Design Studies program at Parsons.

# The Manufactured Pharmakon:

by mae wiskin

**Pharmaceutical  
Drugs and the  
Technology of  
Life and Death**

The lighting in the cafe was dim and I walked right past the installation. I was in a rush and barely noticed the enormous word “Normal,” plastered on the back wall. Yet the glare from the neon orange pill bottles was so bright that it struck the corner of my eye. Out of curiosity, I turned and walked back towards the glow. The piece was so startling, direct and jarring that I spent the better part of an hour staring at it.

The messages conveyed by the installation (*Figure 1*) were thought provoking, multiple and loud. It was dramatic, not only because its nature was visceral and discomfiting, but also because the imagery was so familiar. The use of pills and pill bottles in order to create artwork is evocative because it forces onlookers to think of themselves in relation to both drugs and society. Here, the viewer is faced with the additional task of deconstructing the definition of “normal.” What does ‘normal’ mean within this context? What does the notion refer to and how does the term resonate within our culture? Was the artist suggesting that drugs have become so ubiquitous in society that we are all incognizant of their presence and noxious potential? Or does the piece speak to the notion of self, identity, the quality of our conscious experience and perception? The questions this installation raises are important and innumerable.



**FIGURE 1** "Normal."  
Anonymous work of art.  
Duboce Park Cafe, San  
Francisco, 2013). Image  
taken by Mae Wiskin.

It is striking to me that even after three years, I still occasionally think about this particular work of art. When I look at the photograph above, I am reminded of the powerful role pills and medications play in our everyday lives. Taking and interacting with drugs has become profoundly normalized and indispensable in today's world. Greg Critser speaks to this incredible pervasiveness, writing that:

*Today the expectation is that pills can and will do everything, from guarding us against our excesses of drink, food, and tobacco, to increasing our children's performance at school, to jump-starting our own productivity at work, to extending our very time on this mortal coil. Indeed pills – and by that I mean prescription drugs that require a physician's signed authorization – have become interwoven with the very notion of what constitutes health.<sup>1</sup>*

I would extend Critser's statement even further and suggest that because humans are transforming themselves into pharmaceutical selves on a scale previously unknown, the artist was aiming to enhance consciousness and begin a conversation.

William Shakespeare wrote, "Art is a mirror held up to nature." This is a compelling and poetic way to think about pills—prescrip-

tion or otherwise—because pills have the distinct capacity to alter the qualities of that mirror. According to author Janis H. Jenkins, if we comprehend the self as the sum of processes by which the subject is situated in the world and toward other people, then, “the pharmaceutical self” is that aspect of self oriented by and toward pharmaceutical drugs.”<sup>22</sup> Pills as a class of material “things” have lives of their own. They are uniquely able to reshape and regulate what it means to be human. When philosophizing about the transformative qualities of pills, design thinking is essential because the topic requires that you be both immensely critical, and also aware of how much these “things” affect our mode of being and acting in the world. Pills are of particular import because they have effectively re-conceptualized social interactions, networks and our sense of both agency and dependency.

Pills, or more accurately, tablets and capsules, are tiny manufactured objects with enormous socio-economic implications and interpretations. The scope and depth of their resonance is self-evident in that when you think about them, myriad conceptions and supplementary meanings immediately come to mind. Though seemingly banal everyday objects, their effects are profound, as pills—and psychotropic drugs in particular—are capable of affecting the mind, emotions and the overall behavior of users. Illustrated most generally, pills allow us to mediate our reality by enhancing or altering personal capacities. Pills ought to be defined by their anomalous qualities because as designed objects they carry consequences that affect users not only physically, but also economically. From birth control, diet pills, antidepressants, prescriptions and over-the-counter medications, pills enable us to undergo complex psychosomatic experiences. Given how interconnected they are to numerous psychological, social and commercial practices, it is clear that as a paradoxically designed object, pills can only be understood in terms of their complexity, dynamism, ethical implications and multidimensionality.

The scope in which we can analyze and reconfigure pills is so large, however, that this essay will only attempt to touch upon the ways in which these everyday objects fit within our contemporary context. In this

paper I will attempt to unravel how pills can be understood in relation to “design thinking” and theory. By using a design-centered approach, things and objects appear intrinsically linked and tied to the human experience. According to theorist Giorgio De Michelis, this allows the design object to be “envisioned as an evolving web of things created, imported, or modified by designers.”<sup>23</sup> The focus on dynamism and fluidity is critical here because in order to understand objects and things (I will use these terms interchangeably), we need to move beyond limiting categorizations and static perceptions. The philosopher and sociologist Bruno Latour aptly wrote about this evolution, noting that, “design has been extended from the details of daily objects to cities, landscapes, nations, cultures, bodies, genes, and...to nature itself.”<sup>24</sup> The meaning of the word is now so wide that there is an incalculable range of ways in which it can be applied and interpreted.

All objects are inherently linked to evolving social processes, and thus also, inextricably connected to a “dynamic actor network in which material and semiotic actors create meaning.”<sup>25</sup> In light of Giorgio De Michelis, John Law and Bruno Latour’s work on actor network theory, also known as “sociology of association,” or “material semiotics,” I will primarily analyze the pill as a fluid design object that is tied to a complex and ever-changing social netting of entities. This web of relations are created and interpreted by “designers” who are in actuality a combination of scientists, medical and pharmaceutical professionals.<sup>6</sup>

Actor network theory (ANT) can be applied to numerous contexts. For the purposes of this paper, ANT will be defined as a sociological method deployed in order to understand the life of scientific objects, their roles, materiality and modes of being. Given this, the enormous resonance of pills will largely be understood by analyzing both ANT and Latour’s notion of “matters of concern” and “matters of fact.” ANT is useful in a discussion on pills because the theory encourages the reimagining of the social as a network of interconnected relationships and configurations. ANT aims to understand how interwoven associations make actors behave in the ways they do. Due to this, pills then consist of multiple realities

attached to myriad complex ‘connections.’ Moreover, because materials play a central role in how people interact with the world, humans and things need to be considered symmetrically.<sup>7</sup>

Through the lens of ANT, all designed objects have the ability to generate actions from other stakeholders involved within the ‘web.’ Pills serve as an indisputable example of this because of their inherent multiplicity. Cloatre writes:

*Drugs are an interesting example of multilayered heterogeneous assemblages. At one level, they could be defined as very ‘simple’ materials – molecular structures that are relatively easy and cheap to produce and replicate in most cases. However, each drug is also the result of a very complex process that becomes inscribed into each of the tablets that is produced, and each tablet carries with it significant implications in relation to health and life, but also in relation to the future production of drugs... Interestingly, the same ‘tablet’ can therefore acquire significantly different meanings, depending on its situatedness in networks of production.*<sup>8</sup>

Cloatre very clearly highlights the enabling power of pills and their ability to seriously impact and influence various structures of power and relationships. No design exists without consequences; however, the ubiquity and complexity of drugs is such that their design and the systems that derive from their production have not only created new patterns of control, but also caused global repercussions, which extend into the political space and beyond.

Pills clearly do not exist ‘outside design.’ Design, however, is a difficult term to satisfactorily define because there is no concrete consensus as to what the notion fully means and encompasses. Due to this I have loosely defined design as a fundamentally hybrid human activity, which provides a framework through which we can begin to understand and mediate our built environment. Humans largely understand the concept of values through their interaction with objects. Given this, design provides a sufficient lens through which to understand the relationship between animate and inanimate things. Similarly to design, pills also represent one type of lens through which we can come to understand the artificial and our place within it. This lens is also historical in its reach; from the advent of the pill, aspirin, and penicillin

etc., pills, as a class of things, are indispensable to our lives, and in many respects maintain an even quasi-magical quality. Jenkins writes, “Multivocal symbolizations of pharmaceuticals such as ‘magic bullets,’ ‘awakenings,’ ‘placebo,’ ‘God’s miracle,’ ‘happy pills,’ ‘cure,’ or the scientific foundation for recent ‘evidence-based’ medical practice seem to constitute components of a transformative magic in the form of science and almost with the aura of religion.”<sup>9</sup>

Psychopharmacological use in North America and Europe is estimated to be as high as a quarter of the adult population and the aggressiveness of the marketing and consumption of drugs worldwide is increasing.<sup>10</sup> When people or subjects enter into a relationship with an existing situation, an object appears, which is in our case, the ubiquitous pill. Giorgio De Michelis writes in *Design and Culture*, “[...] design creates an evolving web of things that reflect the way the design thing will be used, the functions it will accomplish, and the emotions it will elicit. This web reveals the images its constituents evoke, the stories they tell, and the diverse views stakeholders may have on it.”<sup>11</sup> Clearly, pills maintain a tangled social nature, which reflect and respond to the diversity, needs, desires and emotions of those

negotiating with them. Giorgio De Michelis captures the intrinsic complexity between the pill as an object and its relationship to people who can be interpreted as its subject, writing how, “Inner complexity reflects outer complexity, or better we can access the inner complexity of things only through the outer complexity of the social processes that objectify them.”<sup>12</sup>

Having explored how pills engage with ANT, I will now uncover their relationship to Bruno Latour’s theory of “matters of concern” and “matters of fact.” Latour writes, “Whenever a network is deployed, a substance is transformed from an object into a thing...from a matter of fact to a matter of concern.”<sup>13</sup> Latour summarizes this notion colorfully by writing: “A matter of concern is what happens to a matter of fact when you add to it its whole scenography, much like you would do by shifting your attention from the stage to the whole machinery of a theatre.”<sup>14</sup> To add more weight to this philosophical proposition, Latour notes a few core specifications that are required in order to deem an object or class of things matters of concern. Firstly, and most evidently, matters of concern have to *matter*; they cannot simply be classified as “pure stuff of no interest whatsoever...”<sup>15</sup> Secondly, matters of concern have to be *liked*, signifying that they must embody a sense of relevance and desire. Thirdly, matters of concern have to be *populated*. This simply means that they have to become something that could be recognized as a “gathering.” The things in question must “gather human beings” and play a central role in the common experience of community.<sup>16</sup> Finally, matters of concern have to be *durable*, meaning that they are not ephemeral and thus have “staying power.” When positioned against the essential characteristics of drugs, pills satisfy each of these key specifications, thus illustrating the usefulness of understanding pills through the lens of both theories.

Having broadly fleshed out Latour’s theory, I argue that Latour would most likely categorize pills as falling under “matters of concern.” Pills involve a large community of stakeholders acknowledged as being linked to an actor network of human and non-human collectives. Also, pills cannot be divorced from human beings; therefore, Latour’s statement that “things do not exist

without being full of people,” substantiates the fact that pills are also “full of people,” and therefore exist *within* the realm of design.<sup>17</sup>

The very nature of pills raises additional questions as to what it means to be human. Since pills have the power to manipulate and alter personality, can they merely be thought of as an inanimate object or must they be categorized as something more substantial? In answering this question, I will turn to the title of this piece, “The Manufactured Pharmakon: Pharmaceutical Drugs and the Technology of Life and Death.” In ancient Greek, the word ‘Pharmakon’ could mean life or death, and often referred to an object that was both a remedy and a poison. Pills can be argued as being similarly paradoxical in that for many they are a cure providing relief, even ‘visibility,’ whereas for others, their semiotics are associated almost strictly with poison,<sup>18</sup> abuse, ‘Big Pharma’ and human experimentation. Since pills are such complex things, and always multiple, it would be inaccurate to state that they are strictly one or the other.

Pills are made even more multifaceted by the fact that they are also treated as economic commodities. The pharmaceutical industry is wildly lucrative and huge profits are made from the manufacturing of pills. Consumers are created and both pharmaceutical companies and pills are ‘culture creators.’ Big Pharma for instance does not necessarily sell drugs as much as create awareness of diseases. Crister quotes a pharmaceutical marketing executive who told him, “We are in the business of branding medical conditions.”<sup>19</sup> This begs the question: how did pills become key transformers of human bodies, ethics and culture?

Additionally, the rise of pharmaceutical financial power has translated to an increase in the industry’s political clout. This is unsurprising given that its main tools are money, media, and lobbying. According to Crister, “Between 1996 and 2002, the industry spent half a billion dollars on lobbying, employing six hundred full-time lobbyists, among them twenty-four former members of Congress.”<sup>20</sup> The freedoms pharmaceutical companies won in order to market pills enabled them to do so as if they were any other consumer product. These

shifts in legal labeling and socio-technical practices have utterly revolutionized the way people use prescription pills to run their lives.

Pills are such commonplace things, yet very few people can definitively answer what they are. According to the Oxford dictionary, a pill, most simply, is “a small round mass of solid medicine for swallowing whole.” In the technical sense, pills are products made through a largely automated manufactured process by companies and corporations whose scientists compress chemicals into tablets or capsules. It’s a multi-layered production effort that involves chemists, marketers, design teams and advertisers who work on sales campaigns, among other initiatives. Also, whereas pills were traditionally handmade by massing the ingredients using a mortar and long-handled pestle with a narrow head, tablets are now produced mechanically by compression.<sup>21</sup> Although pills in some form or another have been in circulation since even before ancient Greece - Roman scholar Pliny who lived from 23-79 AD was the first to coin the word “pilula” - it wasn’t until the mid-nineteenth century that the compressed tablet was invented.<sup>22</sup> English pencil lead manufacturer, William Brockedon, patented the tablet press in 1843, paving the way for the mass manufacture of medicines. This design process effectively eliminated the need to make pills by hand and completely revolutionized the face of medicine making. Interestingly, the technology for creating compressed tablets developed out of the same technology used for making lead bullets for firearms.<sup>23</sup> As mentioned above, the paradox of pills is that for some it is used as a means to improve or enhance life, whereas for others it is intertwined with the technology of death.

The ways in which pills are interpreted depend wholly on the stakeholder. Pharmaceutical companies are primarily concerned with branding their product as an object, which can negotiate between different user personalities. The branding of antidepressants, specifically Prozac, is a particularly useful case study. Most simply, psychotropic drugs work by interfering with the process of synaptic transmission, either by inhibiting or enhancing the effects of neurotransmitters. Prozac, which is a psychotropic drug, has, according to Miller, “become a

metaphor in the public consciousness for all the drugs that are increasingly widely used by psychiatrists...By 2002 more than 40 million people had been prescribed Prozac and sales topped US \$22 billion.”<sup>24</sup> Prozac is a poignant case study to illustrate the pill as a culture creator because its success in the drug market created widespread cultural influences. Prozac stood at the core of this phenomenon and inspired books and films such as *Listening to Prozac*, *Prozac Nation*, *Let Them Eat Prozac* and *Talking Back to Prozac*. Portraying pills as part of a lifestyle choice illustrates the powerful socio-cultural crafting capacity of pills.

The legal drug cultural phenomenon of the 1990s arose when millions of people began clamoring for Prozac despite the enormous stigma associated with taking psychotropic pills. Prior to Prozac, drug branding was largely scientific; Prozac revolutionized medical branding by abandoning that model. It represented a brilliant marketing strategy that highlighted the sales driven “one pill fits all” formula. Moreover, rather than referring strictly to the pharmacological, Prozac as a pill was designed to create a persona and identity. Healy notes that Prozac was marketed “to convey professionalism (through its ‘pro-’ element) and the ability of the medication to target the right area for treatment (through its ‘-zac’ element).”<sup>25</sup> Additionally, New York Times journalist Sara Rimer wrote that before Prozac was widely recognized for its addictive qualities, people—even those opposed to drugs—were nonetheless taking the drug. “But they [consumers] are not talking about getting high, or escaping. They are talking about not feeling depressed anymore, or feeling better able to cope or, in some instances, simply feeling more like themselves.”<sup>26</sup> This returns us to the discussion of what constitutes humanness. Do pills reveal who a person actually is or do they change fundamental capacities? As Healy notes, “Prozac, Zoloft, and Paxil were not put in the drinking water, but they were put into the cultural air we breathe.”<sup>27</sup> The “cultural side effects” meant that pills were transformed into lifestyle agents - inextricably linked to both popular culture and self-identification.

The notion of pills having the ability to alter an individual’s identity is critical to the discussion about the multidimensionality of the

---

**...the paradox  
of pills is that  
for some it is  
used as a means  
to improve or  
enhance life,  
whereas for  
others it is in-  
tertwined with  
the technology  
of death.**

---

thing. Elaine Scarry writes in her book, *The Body in Pain*, about what things “know” about human capacities. She asserts that incorporated into objects is an awareness of sentient distress. This is a compelling proposition: it implies that in the design and structure of a pill lies the structure of a perception—that, ultimately, pills represent the material objectification of our awareness of pain.<sup>28</sup> Moreover, Scarry contends that everyday artifacts maintain forms of “materialized awareness” or “projected knowingness” that extend beyond their immediate use. An object is therefore *self-aware* of the specific sentient problem it is meant to eliminate. In this case, the pill must “know” about the problems of both physical and mental human pain. These notions then propose that pills, and by extension pill bottles, are knowledgeable about the human world. Scarry, in writing about the aspirin bottle, addresses this claim:

*It knows about the chemical and neuronal structure of small aches and pains. It knows the size of the hand that will reach out to relieve those aches and pains. It knows that it is itself dangerous to those human beings if taken in large doses. It knows that these human beings know how to read and communicates with them on the subject of amounts through language. It also knows that some human beings do not yet know how to read or read only a different language... it contains within its design a test for helping to ensure responsible usage that has all the elegance of a simple three-step mathematical proof.<sup>29</sup>*

Scarry’s propositions are challenging to accept wholesale because they raise the question of whether the object actually *knows* how to interact with humans, or whether it is simply that whomever designed the interior structure of the given object knew the needs of the user, and therefore designed with those needs and desires in mind. Do pills actually *know* how they will be used or do the user and the designer simply imbue the pill with multiple meanings? Exploring the notion of the inherent intelligence of things fundamentally reconstructs the relationship between objects and people because it suggests that they are sensitive to our limitations and vulnerabilities. If this is the case, how ought humans treat things?

Scarry’s argument that humans embed their built environment with humane awareness and consciousness is evocative. To assert that people design objects to not only serve as extensions of themselves, but also to

extend the powers of sentience, establishes a framework in which objects can be seen as working on behalf of our wellbeing. Or, in Scarry's own words, the interior structures of things become "the champions of human beings."<sup>30</sup> Although it is common to outwardly dismiss materiality, Scarry discredits this behavior because she writes that in clinging to objects, we acknowledge their importance; and once we establish their value, it becomes self-evident why our desire for them must be controlled and why their benefits must be equally accessible throughout the world.<sup>31</sup> Finally, and this point relates to the discussion of "smart" pill bottles which we will explore later, the human imagination is configured such that the work of imagination is to make the inanimate world animate-like, "to make the world outside the body as responsible as if it were not oblivious to sentience."<sup>32</sup>

In many respects, materiality and marketing go hand in hand. Marketing shapes desire and desire coupled with social interactions is one of the primary driving forces behind designing things. Given the enormous scope of pill production, fringe companies and designers are developing products aimed at the populations who drive the pharmaceutical market. Competitive branding campaigns capitalize on the user's belief that they have a measure of choice in how they pick their drugs and medication. Users often select pills based on their "personality," or the personality embedded within the drug by an advertising campaign chosen by the pharmaceutical company's 'core-brand' idea.<sup>33</sup> Pharmaceutical advertising frames their consumer as an unsatisfied person who would be better off, "more enhanced," if he or she decided to take on a particular pill regimen. This type of marketing offers particular kinds of lives and ways of being, in the hopes that the consumer "buys in," deciding to "take residence inside" the world the pharmaceutical brand concocted for them.<sup>34</sup>

The normalizing quality, ubiquity and perceived banality of pills are not dissimilar from "smart" technologies, which are also deeply interwoven into the fabric of our social networks and mores. For example, people become very emotionally invested in both their medications and smart devices. Technologist, Betti Marenko goes so far as

to suggest that things, such as smartphones, have morphed into our trusted companions with whom we cannot live without. Scarry would agree with Marenko in her discussion of neo-animism, design and object theory, because as is the case with pills, smart technologies are also extensions of our own cognition and emotions.<sup>35</sup> Things are constantly reshaping human behavior, highlighting the undeniable relationship between human beings and designed objects. According to Peter-Paul Verbeek and Adriaan Slob, "Users perform specific actions on the basis of their interaction with technology (in its socio-technical environment), and technologies perform specific tasks on the basis of the ways in which they are embedded in user practices."<sup>36</sup>

Consider GlowCap, the first smart pill bottle. GlowCap is a smart product that reminds its users to take their medications via light, sound and wireless relay alerts using AT&T Mobile Broadband Network. If its user misses a dose for instance, the bottle will light up. If a few hours have passed and the GlowCap user has yet to take his or her medications, the user will receive text messages as well as phone calls until they do. Additionally, GlowCap offers push-of-a-button refills and produces personalized reports, creating, as the website states, "a full circle of care – where it matters most." The GlowCap slogan is "Remembering so you don't have to." GlowCap represents a clear example of a device that possesses intelligent agency. It is an assertive object whose agency speaks very loudly of matters of concern.<sup>37</sup>

GlowCap is a compelling example of how humans cannot be disentangled from things. The reason for this is that humans are constantly delegating human characteristics, identities, capacities and capabilities to *things*.<sup>38</sup> Pills alongside smart technologies such as GlowCap shape human actions and attitudes because they are purposefully designed to substitute, influence or transform the actions of people. We project human attributes to things all the time. It is partially because of this that the world today has been rendered inaccessible without the mediation and translation of design. The paradox of our time is twofold, not only are we designing things, which are in turn *re*-designing us, but also, we are creating that

which we have yet to fully comprehend.

We already know that design has the capacity to reconfigure ideas about our world and our relationship with it. Design, therefore, is a complex nexus of theories, cultural practices, processes, discourses and industries – each with its own material entanglements. The cultural obsession with both pills of all types and animated things raises further philosophical questions, the most interesting of which is: What constitutes an object and subject when both object and subject are able to react and respond to one another in unprecedented ways?<sup>39</sup> (Below, I consider the problems associated with clinical trials and human experimentation—topics adding an additional dimension to the discussion around subject and object).

Although pills embody numerous social dimensions, it cannot be forgotten that they are first and foremost commodities. Therefore, by injecting pills with both personalities and desired identities, companies are able to in effect manufacture their user, turning them into passive subjects. In the following example, Emily Martin writes about how drugs can result in “new” persons. Below, she quotes a woman speaking out at a bipolar disorder support group:

*I am Hanna and I am manic-depressive. I am a rapid cycler, I am either up or down, and I am not much in the middle, or at normal (if you want to call that normal). I realize I expected the pills to manage the manic depression, and now I see I need to manage it at all levels, including the spiritual. I need to learn more, to exercise more, to be active not passive. My shift in thinking is due to taking Depakote - it is like a new suit of clothes! I am a snake who has shed its skin, I am all new and shiny.<sup>40</sup>*

Martin goes on to note material culture theorist Susanne Kuchler’s observation that, for some users, pills are “animated things, ‘intelligent’ objects both material and mindful.”<sup>41</sup> Pills are believed to have the power to produce various desired social and psychological outcomes for subjects or users, making them ‘whole’ again. Does this analysis then suggest that we are less of a person without drugs?

Capitalizing upon this complex mentality, pharmaceutical marketers design branding campaigns that encourage psychiatrists to combine drugs into “cocktails.” Healthcare

professionals almost behave as matchmakers who match the perceived character traits of various drugs with their patients’ own traits and symptoms in order to optimize their mental state. In thinking about this practice, it might seem like drugs are more “person-like” than previously thought; however, Martin argues against this interpretation by writing that drugs are not like persons—they can be bought, sold, combined and manipulated much like one would with parts of a car.<sup>42</sup> Although this is in many ways true, the fact that pills can fully alter personality traits and mental states suggests that the distinction between human-like and un-human isn’t so clear-cut. Pills may be an example of how we are becoming *differently* human than in the past. It is limiting and too circular to frame what it means to be human today in terms of an either/or scenario.

Rather than questioning whether it is things that are shaping humans or humans that are shaping things, a more effective framework would be to understand the two as shaping one another simultaneously. This reciprocal process is simply a part of our evolution in becoming differently human.

The discussion of pills inevitably becomes

a discussion about side effects. No designed object exists without consequences. It is highly strategic on behalf of pharmaceutical companies to ensure that the miniaturized character of pills remains intact because their size make us feel that we are the masters and the pills our subjects. Using Levi-Strauss's argument about the power people feel over miniatures is crucial to our understanding of side effects because we view them as the drug's subject. Intelligent branding displaces side effects to the peripheries of our consciousness.<sup>43</sup> This manufactured reality restricts us to the aisle seat of a much greater power play.

This power play introduces the question of morality into our discussion on design and drugs because every element of pills calls upon ethics. In Adriana Petryna's work titled, *Ethical Variability: Drug Development and Globalizing Clinical Trials*, she contends that the rapid growth of pharmaceutical markets has led to gross ethical dilemmas in the arena of global human-subject research. Throughout her work Petryna found that the global dynamics of pill production play a critical role in reshaping ethical norms, especially as they pertain to individual bodily integrity.<sup>44</sup> Petryna writes about the developing world and the outsourcing of pharmaceutical clinical trials, an enormous industry that is fraught with human rights abuses. Many drug trials are carried out in developing countries because impoverished and disempowered participants are willing to undergo testing for very little monetary compensation.

Additionally, this process has been aided by the fact that U.S. companies are not required to inform the Food and Drug Administration (FDA) before testing on non-U.S. patients, nor does the FDA track research by location upon approval of new drugs.<sup>45</sup> Petryna writes that drugs are the products of profit-making corporations. As long as pharmaceutical companies can prove their drugs are safe "enough" and better than placebo-controlled trials, they have permission to sell them—even to patients who don't absolutely need them. Shah quotes the old Pharma saying, "While it's good to have a pill that cured the disease, it's better to have a pill you have to take every day."<sup>46</sup> Given that these companies are able to control their trial populations, they are able to write the language of

their work; by this I mean that they are able to assert that bad side effects are "merely the hallucination of the psychotic patient."<sup>47</sup> Knowing that these vulnerable populations are unlikely to issue complaints to any government or social justice entity, using developing world populations to displace adverse effects has proven highly lucrative for these companies.

These corporations are essentially treating human subjects as objects and prototypes. Clinical trials and human experimentation turn the body, the *human being*, into a thing. This illustrates how things and people alter and transform one another concomitantly. If pills are quasi-sentient and capable of turning consumers into pharmacological persons, then humans, in becoming pill-testing subjects, are positioned as things. Ethics and governmental bodies should protect these people from harm; however, they are left completely vulnerable because they lack government acknowledgment, protection and support. Petryna writes that in order to even address these human rights abuses: "States themselves need to act as protectors and not abusers; transnational corporations need to respect the rights and dignity of all research subjects and recognize that different situations elicit different kinds of coercion; and international ethics codes must be enforceable in cases of clear violation."

Pills are not inherently 'bad objects;' however, they can easily be treated as such. Pills need to "return" to their intended purpose, and therefore, designers must "rediscover" drugs, such that they become objects of protection rather than of harm. In order to achieve this there needs to be a deeper awareness of bioethical issues, increased encouragement of consumer activism and pharmaceutical transparency. Melanie Klein suggests that the "bad" part of the "bad object" "can be pictured as part of the external world and does not need to be displaced into the hidden interior of the individual."<sup>49</sup> Applying this framework to pharmaceutical products mean that both designers and users need to acknowledge that the polished image of pills cultivated by advertisers is not only damaging, but also, nefarious.

How can these 'bad objects' be understood, or rather ingested, in a more ethical manner? I propose that both conscientiousness

and “humanness” ought to be reinserted back into the design and production of pills. It is also vital that critical thinking be the primary mode through which design acts, creates and is understood. If we stop being conscious of the fact that design is about the relationship between persons, artifacts, and nature, we allow for unbridled mass consumption and abuse. Without ethics, design as a practice is easily reduced to the manufacturing of useless or harmful commodities.

Despite the ubiquity of pills, the pharmacy pill bottle has remained largely unchanged since WWII. The standard issue amber cast pill bottle is not only unattractive and hard to read, but also a major reason why prescription drug users take their medications incorrectly.<sup>50</sup> Poor pill bottle design has been accepted as the norm for decades. Convolved labeling, discordant color choices, hard to read type and the curved shape of the pill bottles are only some examples of problems with the object.

That said, a new path forward is being forged, and there are designers who are seeking to re-envision what pills and their containers can be. In addition to GlowCap, designer Deborah Adler is revolutionizing the layout and construction of the pill bottle. This overhaul is significant because by redesigning the bottle, you transform the ways in which users interact and interpret pills. Adler's ClearRx prescription-packaging system represents a return to sensibility. In her piece *The Perfect Prescription*, Sarah Bernard explains how Adler's redesign will transform many existing practices of the pharmaceutical industry. Adler instituted multiple changes to the classic pill bottle. The new container has an easily visible I.D., a more universal color—as red tends to connote caution—a more accessible shape, and, most importantly, a clear hierarchy of information, with the most critical information placed above the black line (drug name, dosage, intake, instructions). There are many other redesigned elements; however, it is most compelling to note that the global megacorporation Target bought the design patent. This is revolutionary because it suggests that major corporations are open to changes taking place within Big Pharma. Although this is simply one of many design solutions that need to happen in order for

pills to be “rediscovered,” Adler’s creation is encouraging.

This paper has examined the pill as a fluid design object that is tied to a complex and ever evolving socio-economic network. As a design object, I have deconstructed the pill to illustrate its profound multidimensionality and deep resonance. From analyzing the pill as art, culture creator, social good, economic commodity, lifestyle agent, companion, paradox and political player, among others, I have tried to illuminate the complex nature of pills and their relationship to what it means to be human. Design is neither neutral nor value free, therefore, it must constantly negotiate with biases that stem from all facets of industry and society. The nature of design is such that it must always be understood as a critical and conscious practice. The enormous responsibility attached to design forces designers to always question in whose interest are they creating and to what end? If design, especially the design of pills, continues to be driven by a sense of aggressive commercial and marketing opportunism, then we face losing touch with what the true focus of design should be.

**Mae Wiskin** is a student in the MA Design Studies program at Parsons.





# REFERENCES

## FOUR REFLECTIONS ON PLEXIGLASS BY Misha Volf

### Endnotes

<sup>1</sup> cf. Hannah Arendt's work on instrumentalism in Arendt, Hannah. *The Human Condition*. Chicago: University of Chicago Press, 1958.

<sup>2</sup> "Auto Glass Cuts Vein, Killing Bronx Girl... Her jugular vein severed by broken glass, Miss Florence Kurland ... was killed in an automobile accident" See *New York Times*, Aug 16, 1931.

Or see "Finds Nearly Half of Those Hurt in Automobiles Are Cut By Glass," *New York Times*, Jan 17, 1932.

<sup>3</sup> Jeffrey L. Meikle, *American Plastic: A Cultural History*. (New Brunswick, New Jersey: Rutgers University Press, 1995), 86.

<sup>4</sup> cf. Heidegger, who would say that the materiality of glass becomes present at hand.

<sup>5</sup> George H. Copeland. "Butt-End Charlies." *New York Times*, Sep 27, 1942, 16.

<sup>6</sup> Jeffrey L. Meikle, *American Plastic: A Cultural History*, 10.

<sup>7</sup> "Mirror the Beauty of Your Home." *San Bernardino County Sun*. March 10, 1940. 31.

<sup>8</sup> "Receiver Dressed in Glass Shows Secrets of Television." *Popular Mechanics Magazine*. Vol. 72, No. 2. August, 1939, 199.

### Additional References

Arendt, Hannah. *The Human Condition*. Chicago: University of Chicago Press, 1958.

Bennett, Jane. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press, 2010. Blaszczyk, Regina Lee. Rohm and Haas: A Century of Innovation. Bainbridge Island, Washington: Fenwick Publishing, 2009.

Elkadi, Hisham. *Cultures of Glass Architecture*. Burlington, Vermont: Ashgate. 2006.

Fry, Tony. *A New Design Philosophy: An Introduction to Defuturing*. Sydney: University of New South Wales Press, 1999.

Heidegger, Martin. *Being and Time*. Translated by Joan Stambaugh. New York: State University of New York Press, 1996.

\_\_\_\_\_. "The Question Concerning Technology." In *The Question Concerning Technology*, 3-35. New York: Garland Publishing, 1977.

Hochheiser, Sheldon. *Rohm and Haas: History of a Chemical Company*. Philadelphia: University of Pennsylvania Press, 1986.

Latour, Bruno. *Reassembling the Social: an Introduction to Actor-network-theory*. Oxford: Oxford University Press, 2005.

\_\_\_\_\_. *We Have Never Been Modern*. Trans-

lated by Catherine Porter. Cambridge: Harvard University Press, 1993.

Meikle, Jeffrey L. *American Plastic: A Cultural History*. New Brunswick, New Jersey: Rutgers University Press, 1995.

Welchman, John C, ed. *Sculpture and the Vitrine*. Burlington, Vermont: Ashgate, 2013.

### Credits

**Figure 1a:** Image by Mike Black. Used with permission from Mike Black and Mike Black Photography.

**Figure 1b:** Image by U.S. Air Force. Available from National Museum of the US Air Force.

**Figure 1c:** Image by U.S. Air Force. Available from National Museum of the US Air Force.

**Figure 2:** Image by Scott Murdock. The Norden Bomb Sight. July 14, 2007. Used with permission.

**Figure 3:** Image from: "Big Chemist's Retort Built for Movie." *Popular Science*, February 1940.

**Figure 4:** Image by Alfred T. Palmer. Courtesy of Library of Congress.

**Figure 5:** Image by Aaron Summerfield. Courtesy of RM Sotheby's. 2011.

## SPACES OF PERFORMANCE: CONSIDERING EVENT, AGENCY & ROUTINE by Rachel Meade Smith

### Endnotes

<sup>1</sup> Without explicitly defining the term *performance*, a consideration of the relationship between performance and design will be vexingly nebulous and manifold, and this is just the point. For performance — defined as a theatrical production, a social routine, an act of agency — pervades the everyday, and is thus inherently slippery. By considering its multiple meanings largely in terms of the spaces in which they apply, this work positions space and matter as actors in every performance — social, theatrical, or otherwise. This work explores two related propositions: the first, that the performativity of all of these diverse acts owes a debt not only to their animate actors, but also to their spatiality; and second, that designers and citizens employing performance-as-agency can work to activate a dispirited public realm.

<sup>2</sup> *The Design of Modern Theatre: Adolphe Appia's Innovations / Films for the Humanities and Sciences*. Perf. Richard C. Beacham. Films Media Group Company, 2008.

<sup>3</sup> Dorita Hannah and Olav Harsløf. *Performance Design*. Copenhagen Lancaster: Museum Tusculanum, 2008, 34.

- <sup>4</sup> Ibid.
- <sup>5</sup> Ibid.
- <sup>6</sup>In this text the word “performative” references an amalgam of meanings including leading voice in performance design, Dorita Hannah’s definition of performative space as relying on the “event (historic, aesthetic, and quotidian) in order to realign the static object of architecture” (Hannah, 5); J.L. Austin’s notion of “performative speech” as speech that is in itself an action (e.g., “I hereby declare you man and wife”); as well as the quality of a theatrical act performed for an audience. Considering these, I will use the word “performative” to connote a quality of producing or offering agency through an activation of that which is otherwise static.
- <sup>7</sup> For instance: Richard Sennett, *The Fall of Public Man*. New York: W.W. Norton, 1978; Hannah Arendt, *The Human Condition*. Chicago: University of Chicago Press, 1958.; Erving Goffman, *The Presentation of Self in Everyday Life*. London: Penguin, 1959; Judith Butler, *Gender Trouble : Feminism and the Subversion of Identity*. New York: Routledge, 2006,. etc.
- <sup>8</sup> Sennett, *Fall*, 39.
- <sup>9</sup> Arendt, *Human*, 1958.
- <sup>10</sup> Sennett, *Fall*, 34.
- <sup>11</sup> Sennett, 1978; Don Mitchell, *The Right to the City: Social Justice and the Fight for Public Space*. New York: Guilford Press, 2003; Margaret Kohn, *Brave New Neighborhoods*. New York: Routledge, 2004.
- <sup>12</sup> Margaret Crawford, “Contesting the Public Realm: Struggles Over Public Space in Los Angeles,” *Journal of Architectural Education*. 49.1 (1995) 4-9.
- <sup>13</sup> Caroline Chen, “Dancing in the Streets of Beijing,” *Insurgent Public Space: Guerilla Urbanism and the Remaking of the Contemporary City*. Ed. Jeffrey Hou. Routledge, 2010, 19-35.
- <sup>14</sup> Karen A. Franck and Quentin Stevens, (eds.), *Loose Space: Possibility and Diversity in Urban Life*, London: Routledge. 2007.
- <sup>15</sup> Antonin Artaud, *The Theater and its Double*. New York: Grove Press, 1958, 12.
- <sup>16</sup> Ibid.
- <sup>17</sup> Bettina L. Knapp, *Antonin Artaud: Man of Vision*. Chicago: Swallow Press, 1980.
- <sup>18</sup> Ibid., 46.
- <sup>19</sup> Arendt, *Human*, 184.
- <sup>20</sup> Elzbieta Matynia, *Performative Democracy*. Boulder: Paradigm, 2009, 19.
- <sup>21</sup> Matynia, 24-25.
- <sup>22</sup> Tim Cresswell and Peter Merriman, eds. *Geographies of Mobilities: Practices, Spaces and Subjects*. Burlington: Ashgate, 2012.
- <sup>23</sup> Lawrence Halprin, “The Choreography of Gar-dens,” *Impulse Dance Magazine*, 1949, 30-34.
- <sup>24</sup> Lawrence Halprin, *Cities*. New York: Reinhold, 1963, 193.
- <sup>25</sup> Cresswell and Merriman, *Geographies*, 2012.
- <sup>26</sup> Jim Burns, “Experiments in Environment,” *Progressive Architecture*, July 1967, 131–2.
- <sup>27</sup> Adolphe Appia and Richard C. Beacham, *Adolphe Appia : Texts on Theater*. London New York: Routledge, 1993. 124.
- <sup>28</sup> Josephine Machon, *Immersive Theaters: Intimacy and Immediacy in Contemporary Performance*. Basingstoke: Palgrave Macmillan, 2013.
- <sup>29</sup> Ibid.
- <sup>30</sup> Nancy V. Baer, and John E. Bowlt. *Theatre in Revolution : Russian avant-garde stage design, 1913-1935*. New York San Francisco: Thames and Hudson Fine Arts Museums of San Francisco, 1991.
- <sup>31</sup> Chris Salter, *Entangled: Technology and the Transformation of Performance*. Cambridge: MIT, 2010. 20.
- <sup>32</sup> Roann Barris, “Culture as Battleground: Subversive Narratives in Constructivist Architecture and Stage Design,” *Journal of Architectural Education* 52.2 (1998): 109.
- <sup>33</sup> Roann Barris, “The Life of the Constructivist Theatrical Object,” *Theatre Journal*, 65.1 (2013): 76.
- <sup>34</sup> Barris, “Culture as Battleground,” 1998.
- <sup>35</sup> I recently spent four months studying the church and its congregation on-site. Thus, while this is my “outsider” impression, I believe it to be true.
- <sup>36</sup> Beth Weinstein, “Flamand and His Architectural Entourage,” *Journal for Architectural Education* 61.4, (2008): 26.
- <sup>37</sup> Bernard Tschumi, “Illustrated Index: Themes from the Manhattan Transcripts,” *AA Files* 4 (July 1983): XXIII.
- <sup>38</sup> Weinstein, “Flamand and His Architectural Entourage.” 2008.
- <sup>39</sup> Michael Fried, “Art and Objecthood,” 1967. Web, accessed May 1, 2014. <http://atc.berkeley.edu/201/readings/FriedObjcthd.pdf>.
- <sup>40</sup> C. Thomas Mitchell. *Redefining Designing: From Form to Experience*. New York: Van Nostrand Reinhold, 1993. 89.
- <sup>41</sup> Ibid.
- <sup>42</sup> Gene Weingarten. “Pearls Before Breakfast.” *The Washington Post*. 08 Apr. 2007.
- <sup>43</sup> Ibid.
- <sup>44</sup> Ibid.
- <sup>45</sup> Ibid.
- <sup>46</sup> Ibid.
- <sup>47</sup> Sennett, *Fall*, 34.
- <sup>48</sup> Sennett, *Fall*, 1974.
- <sup>49</sup> Andrew Todd, “Narci-city or Theatrum Mundi? The Urban Stage of the Future,” *House of Futures*

/Issues 2, 2012. 151.

<sup>50</sup> J. Meejin Yoon, "Public Works: Projects at Play," *Journal of Architectural Education* 61.4 (2008): 61.

#### Additional References

- Brook, Peter. *The Empty Space*. New York: Atheneum, 1968.
- Deutsche, Rosalyn. "The Question of Public Space." Lecture, The Photography Institute, New York, 1998.
- Hannah, Dorita. "Event-Space: Theater Architecture and the Historical Avant-Garde." Diss. NYU, 2008.
- Hannah, Dorita, ed. *Sceno-Architecture: ERA21 3* (2011): 1-10. Web. Accessed April 12, 2014. <http://ebookbrowse.net/sceno-architecture-pdf-d203001360>
- Ross, Janice. *Anna Halprin: Experience as Dance*. Berkeley: U of California, 2007.
- The Design of Modern Theatre: Adolphe Appia's Innovations / Films for the Humanities and Sciences*. Perf. Richard C. Beacham. Films Media Group Company, 2008.
- Tschumi, Bernard. *Event-cities : Praxis*. Cambridge, Mass: MIT Press, 1994.

#### Credits

**Figure 1.** Bernard Tschumi, *Manhattan Transcripts* (1976-1981). (Courtesy of Bernard Tschumi Architects)

**Figure 2.** Höweler + Yoon Architecture, "White Noise White Light." (Courtesy of Höweler + Yoon Architecture)

## PUBLIC SPACES AND AGONISTIC PLURALISM IN POLITICAL DESIGN: THE CASE OF CONFLICT KITCHEN by Verónica Uribe A.

#### Endnotes

<sup>1</sup> DiSalvo, Carl. "Design, Democracy and Agonistic Pluralism," *Design Research Society*. Accessed November 13, 2014. [designresearchsociety.org.2](http://designresearchsociety.org.2).

<sup>2</sup> Hellström Reimer, Maria . "Some Critical Remarks on the Art of Making Publics" Lecture, Transdisciplinary Design Seminar from Parson The New School for Design, New York, December 12, 2014.

<sup>3</sup> Di Savlo, "Design, Democracy and Agonistic Pluralism," 2-3.

<sup>4</sup> Hellström Reimer "Some Critical Remarks on the Art of Making Publics."

<sup>5</sup> "Conflict Kitchen" N.p., 1 Jan. 2014. Web. Accessed 6 June 2014. <http://conflictkitchen.org>.

<sup>6</sup> During my first visit to the restaurant, in June 2014 the iteration that was taking place was "Conflict Kitchen Afghanistan". At the moment

their focus is on Palestinian food.

<sup>7</sup> Hunt, Jamer "Just Re-Do It: Tactical Formlessness and Everyday Consumption", in *Strangely Familiar: Design in Everyday Life* (Pittsburg, 2004), 62.

<sup>8</sup> Rubin, Jon, personal Interview with the author, New York, February 18, 2015.

<sup>9</sup> Latour, Bruno. "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts." In *Shaping Technology/Building Society: Studies in Sociotechnical Change*. Cambridge, Mass.: MIT Press, 1992.

#### Additional References

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

#### Credits

**Figure 1.** Available at: [http://conflictkitchen.org/wp-content/uploads/2014/04/IMG\\_4003.jpg](http://conflictkitchen.org/wp-content/uploads/2014/04/IMG_4003.jpg)

**Figure 2.** Available at: [http://conflictkitchen.org/wp-content/uploads/2014/07/IMG\\_6492b.jpg](http://conflictkitchen.org/wp-content/uploads/2014/07/IMG_6492b.jpg)

## DESIGN AT WORK by Estefania Acosta

#### Endnotes

<sup>1</sup> "American Time Use Survey Summary." *U.S. Bureau of Labor Statistics*. June 18, 2014. Web. Accessed March 24, 2015. <http://www.bls.gov/news.releaseATUS.nr0.htm>.

<sup>2</sup> Sandrone, Vincenzo. "Frederick W. Taylor: Master of Scientific Management." *SkyMark*. Web. Accessed March 24, 2015. <http://www.skymark.com/resources/leaders/taylor.asp>.

<sup>3</sup> Teresa Amabile's work, for example, studies on the relation between productivity and creativity in the workplace and set out to quantify the losses that unhappy employees cost businesses and found that the amount to roughly 300 billion dollars. Amabile, Teresa. "Employee Happiness Matters More Than You Think." *Bloomberg Business Week*. Bloomberg, Feb. 2012. Web. Accessed March 24, 2015. [http://www.businessweek.com/debateroom/archives/2012/02/employee\\_happiness\\_matters\\_more\\_than\\_you\\_think.html](http://www.businessweek.com/debateroom/archives/2012/02/employee_happiness_matters_more_than_you_think.html).

<sup>4</sup> Reynolds, Gretchen. "Get Up. Get Out. Don't Sit." *New York Times*. New York Times, 17 Oct. 2012. Web. Accessed March 24, 2015. <http://nyti.ms/1atdsmf>.

<sup>5</sup> Glatter, Robert. "Why Sitting At Work Can Be So Deadly." *Forbes*. Forbes Magazine, 27 May 2012. Web. Accessed March 24, 2015. <http://www.forbes.com/sites/robertglatter/2012/05/27/sitting-at-work-increases-your-chance-of-dying>.

<sup>6</sup> "Carpal Tunnel Syndrome Fact Sheet." *National Institute of Neurological Disorders and Stroke (NINDS)*. NIH, 5 Sept. 2014. Web. Accessed March 24, 2015. <http://www.ninds.nih.gov/disorders>

- ders/carpal\_tunnel/detail\_carpal\_tunnel.htm.
- <sup>7</sup> "Computer Vision Syndrome." *Computer Vision Syndrome*. America Optometric Association, Web. Accessed March 24, 2015. <http://www.aoa.org/optometrists/tools-and-resources/clinical-care-publications/environmentaloccupational-vision/computer-use-needs/computer-vision-syndrome-symptoms?ssq=y>.
- <sup>8</sup> Logue, Kevin. "The Science of Sitting." *SpineUniverse*. Web. Accessed March 24, 2015. <http://www.humanscale.com/userfiles/file/The-ScienceofSitting.pdf>.
- <sup>9</sup> Open-plan office spaces have gained popularity as a result of observing the natural interaction of workers and the chance-encounters that enhance collaboration. Further studies of the trend show how valuable privacy is, as well. The optimization of office space depends on finding the right balance between open and closed spaces. Fayard, Anne-Laure, and John Weeks. "Who Moved My Cube?" *Harvard Business Review*. July 1, 2011. Accessed March 24, 2015. <https://hbr.org/2011/07/who-moved-my-cube>.
- <sup>10</sup> Saval, Nikil. *Cubed : A Secret History Of The Workplace*. New York: Doubleday, 2014. eBook Collection (EBSCOhost). Accessed March 24, 2015.
- <sup>11</sup> One example of this is the study of the physical layout scheme in British and German mills of the late 19th century in Biernacki, Richard. *The fabrication of labor: Germany and britain, 1640-1914* (Berkley: University of California Press, 1995), 128.
- <sup>12</sup> Papantoniu, Bill. "Cognitive Ergonomics." *The Interaction Design Foundation*. N.p., n.d. Web. Accessed March 24, 2015. [https://www.interaction-design.org/encyclopedia/cognitive\\_ergonomics.html](https://www.interaction-design.org/encyclopedia/cognitive_ergonomics.html).
- <sup>13</sup> "Ergon 3 Chairs." Herman Miller Inc. *Herman Miller*. n.d. Web. Accessed March 24, 2015. <http://www.hermannmiller.com/products/seating/performance-work-chairs/ergon-3-chairs.html>.
- <sup>14</sup> Montini, Laura. "Can Office Ergonomics Lead to Bad Behavior?" *Inc.com*. INC, 13 Oct. 2013. Web. Accessed March 24, 2015. <http://www.inc.com/laura-montini/do-office-ergonomics-lead-to-dishonesty.html>.
- <sup>15</sup> In relation to this the commodification of time and monetization of labor is discussed in Richard Biernacki. *The Fabrication of Labor*, 351-385.
- <sup>16</sup> Johnson, Joel. "1 Million Workers. 90 Million iPhones. 17 Suicides. Who's to Blame?" *WIRED*." *Wired.com*. Conde Nast Digital, 28 Feb. 2011. Web. Accessed March 24, 2015. [http://www.wired.com/2011/02/ff\\_joelinchina](http://www.wired.com/2011/02/ff_joelinchina).
- <sup>17</sup> Ibid.
- <sup>18</sup> Tahmacioglu, Eve. "Workplace Suicides in the U.S. on the Rise." *NBCNews* 01 June 2010. Web. Accessed March 24, 2015. <http://www.nbcnews.com/id/37402529/ns/business-careers/t/workplace-suicides-us-rise>.
- <sup>19</sup> Becker, Dana. *One Nation Under Stress* (New York: Oxford University Press, 2013), 7-18.
- <sup>20</sup> "Highlights: Workplace Stress & Anxiety Disorders Survey | Anxiety and Depression Association of America, ADAA." *Anxiety and Depression Association of America 2006*. Web. Accessed March 24, 2015. <http://www.adaa.org/workplace-stress-anxiety-disorders-survey>.
- <sup>21</sup> Becker, 62-67.
- <sup>22</sup> "Highlights: Workplace Stress & Anxiety Disorders Survey | Anxiety and Depression Association of America, ADAA."
- Credits**
- Figure 1.** Slide in Zurich. Available at: <http://www.google.com/press/images.html>
- INDUSTRIAL DESIGNER, A MODERNIST HERO? by Dora Sapunar**
- Endnotes**
- <sup>1</sup> Magazines such as *Dizajn* (Design), *15 Days* (15 Dana), *Man and Space* (Covjek i prostor), *Architecture* (Arhitektura).
- <sup>2</sup> Bernardi, Bernardo. "Definicija i društveni znacaj industrijskog oblikovanja," *Arhitektura* 13, no. 16 (1959): 6.
- <sup>3</sup> Zlatko Kauzlaric. "Industrijski umjetnik neophodna potreba naseg vremena," *15 Dana* 2 (1959): 12.
- <sup>4</sup> The attempt to define and position the industrial designer is pervasive in most issues of design magazines in the 1950s. Radovan Ivancevic, "Umetnost i industrija: oblikovanje industrijskih proizvoda," *15 Dana* 2, no.18 (1959): 3; Radovan Ivancevic "Osnovna pravila industrijskog oblikovanja," *15 Dana* 2, no. 19 (1959): 3; Z. Potkovac, "Likovni umjetnik u industriji," *15 Dana* 2, no. 21 (1959): 3.
- <sup>5</sup> D.S. "Metal i plastичne mase," *15 Dana II*, 1959, 15.
- <sup>6</sup> Ibid., 16.
- <sup>7</sup> Bernardi, "Definicija i društveni znacaj industrijskog oblikovanja," 6.
- Credits**
- Figure 1.** Article on the connection between art and industry by designer Niko Kralj.
- Figure 2.** Zlatko Kauzlaric, "Industrijski umjetnik neophodna potreba naseg vremena," Article on the proper place for ornament from a 1959 issue of the magazine *15 Dana* (15 days) (1959): 12.
- Figure 3.** Bernardi, Bernardo. "Definicija i društveni znacaj industrijskog oblikovanja," Ar-

hitektura Article on industrial esthetics from the magazine Architecture. 13, no. 16 (1959): 6.

## DESIGNING GOVERNMENTALITY: THE POWER OF DATA IN URBAN PROPOSITIONS by Anke Gründel

### Endnotes

<sup>1</sup> Callon, Michel and Bruno Latour, "Unscrewing the Big Leviathan: How Actors Macro-Structure Reality and how Sociologists Help them to do so," in *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies*, ed. by Knorr Cetina, K. (Taylor and Francis, 2014), 277-303.

<sup>2</sup> Foucault, Michel, Michel Senellart, François Ewald, and Alessandro Fontana, *Security, Territory, Population* (Basingstoke New York: Palgrave Macmillan: République Française, 2007), 1.

<sup>3</sup> Ibid.

<sup>4</sup> Bentley, R. A., "Mapping Collective Behavior in the Big-Data Era," in *Behavioral and Brain Sciences* (37 no. 1, 2014).

<sup>5</sup> The gathered data itself is called raw data, a term that is not only misleading but a downright misnomer. There is obviously no such thing as raw data. All data is gathered through some sort of recording device which is calibrated to record only a specific kind of data. In the kind of online interactions the design of the site itself creates the paradigm through which data is created in the first place. Such data can hardly be called raw or pure. Even the algorithms used to analyze the data are teleological in that they try to get to one goal in particular.

<sup>6</sup> Morozov, Evgeny, "The Rise of Data and the Death of Politics," *The Guardian*, 19 July 2014. Accessed 20 November 2014. <http://www.theguardian.com/technology/2014/jul/20/rise-of-data-death-of-politics-evgeny-morozov-algorithmic-regulation>.

<sup>7</sup> Ibid.

<sup>8</sup> Here it is worth noting that Sigmund Freud's nephew, Edward Bernays, applied his uncle's theory of drives and desires to the public. His idea of manipulating public opinion to engineer consent was since applied (by himself and others in his field of public relations) to market products, boost political campaigns, and create the desires necessary for the survival of democracy (Bernays 1947). He thus transformed the production and advertisement cycle of products and inaugurated design as a set of practices that aim at constant innovation, constant influx of capital, and constant feeding of desires of economic subjects.

<sup>9</sup> Both John Heskett and Guy Julier describe this phenomenon explicitly.

<sup>10</sup> Julier, Guy, "Design and Political Economy in the UK," in *Knowledge, Technology & Policy* 22, no. 4 2009: 218-225.

<sup>11</sup> Foucault, Michel and Michel Senellart, *The Birth of Biopolitics : Lectures at the Collège De France, 1978-79* (Houndsill, Basingstoke, Hampshire [England] New York: Palgrave Macmillan 2008), 225.

<sup>12</sup> Ibid., 226.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.

<sup>15</sup> The homo oeconomicus was initially introduced to liberalism as the economic man managed by his own interests. This effective self-governing subject was the center piece of laissez-faire politics which were abandoned in neoliberalism. Foucault claims that, in contrast to liberal minimal government neoliberal government was responsible to maintain the conditions of possibility for the market. His analysis of neoliberalism presents it as intensely interventionist, which stand in direct opposition to the liberal principle of laissez-faire. Foucault's neoliberal market is everything but stable and needs the state's constant effort to keep it alive. However the government in its task to maintain and guarantee the conditions of possibility of the market is subservient to it. This makes the market the most important component of the state.

<sup>16</sup> Foucault and Senellart, *The Birth of Biopolitics*, 225.

<sup>17</sup> Ibid. 226

<sup>18</sup> The anthropocene as the new age of the world presents artifice as all-encompassing. Clive Dilnot writes in *Design and the Question of History* "artifice-as-world [...], the artificial in dominance instantiates a different logic, and thus a different understanding of what-is: emergence, the proposition and the possible, replace being, the actual and what-is." (Dilnot 2015: 175).

<sup>19</sup> Foucault, Michel, *Discipline and Punish: The Birth of the Prison* (New York: Pantheon Books,) 201.

<sup>20</sup> Ibid., 202.

<sup>21</sup> Ibid.

<sup>22</sup> Ibid., 206, Jeremy Bentham.

<sup>23</sup> Ibid., 207-208.

<sup>24</sup> The notion of population for Foucault's concept of biopower is crucial. Population was an important indicator for effective government. Panopticism targeted the biological features of the population, which was understood as the statistical representation of the characteristic human features of a multiplicity of individuals in a certain territory.

<sup>25</sup> Coe, Amanda, "E-Governance and Smart Communities: A Social Learning Challenge," in *Social*

*Science Computer Review* 19, no. 1, 2001.

<sup>26</sup> Ibid.

<sup>27</sup> Hunt, Jamer, "Prototyping the Social: Temporality and Speculative Future at the Intersection of Design and Culture," in *Design Anthropology: Object Culture in the 21st Century*, ed. by Clarke, Alison, 33-44 (Wien New York: Springer, 2011).

<sup>28</sup> Caragliu, Andrea, "Smart Cities in Europe," in *Journal of Urban Technology* 18, no. 2 (2011): 65-82; Shapiro, Jesse, "Smart Cities : Explaining the Relationship between City Growth and Human Capital," in *SSRN Working Paper Series* (2008); Giffinger, Rudolf et al., *Smart Cities Ranking of European Medium-Sized Cities* (Centre of Regional Science, Vienna UT, 2007).

<sup>29</sup> Hancke, Gerhard P et al., "The Role of Advanced Sensing in Smart Cities," in *MDPI Sensors* no. 13 (11/23/2014).

<sup>30</sup> Desirability and monetary value of residential space in smart cities is highly correlated. The most valuable space will also have the most access to resources such as physical proximity to educational institutions, healthy food choices, etc. Individual competitiveness is linked to the ability to afford the most desirable living space. The measure of effectiveness in creating individual competitiveness is human capital, a measure of economic viability, a marker of which is the physical distribution in cities. (Shapiro 2006).

<sup>31</sup> Marshall, Alex, "Big Data, Big Questions: The Smart-City Movement Spreading Around the Globe Raises Serious Concerns about Who Controls the Information, and for what Purpose," *Metropolis* 33, no. 7 (2014): 76-83.

<sup>32</sup> Orit Halpern called the concept of ubiquitous cities a particularly Korean appropriation of the smart city (Halpern 2013).

<sup>33</sup> Shwayri, Sofia, "A Model Korean Ubiquitous Eco-City? the Politics of Making Songdo," in *Journal of Urban Technology* 20, no. 1 (2013): 39-55.

<sup>34</sup> Foucault links the emergence of the concept of population to governmental reason in the development of liberalism. The term denotes a quantification of the fundamental biological features of a multiplicity of people. A population was not understood as a group of individuals but rather was constituted through statistics, through ever recurring, quantifiable phenomena pertaining to the mass of human beings within the boundaries of the state. In *Security, Territory, Population* (hereafter STP) Foucault traces its development and shows its biopolitical importance. He writes "population will appear above all as the final end of government" (STP 105) which he understands as an improvement in the conditions of population, its wealth, health, and longevity,

but also the raise of standard of living. "Vis-à-vis government, [population] is both aware of what it wants and unaware of what is being done to it." (STP 105).

<sup>35</sup> This functionality is not yet implemented, however Cisco representatives are pushing to change the laws in order to enable the development of such services (Halpern et al.).

<sup>36</sup> Morozov, Evgeny, "The Rise of Data and the Death of Politics," *The Guardian*, 19 July 2014, accessed 20 November 2014, <http://www.theguardian.com/technology/2014/jul/20/rise-of-data-death-of-politics-evgeny-morozov-algorithmic-regulation>.

<sup>37</sup> Foucault and Senellart, *The Birth of Biopolitics*, 34.

<sup>38</sup> Ibid., 35.

<sup>39</sup> Ibid.

<sup>40</sup> Ibid.

<sup>41</sup> Crang, Mike, "SENTIENT CITIES Ambient Intelligence and the Politics of Urban Space," in *Information, Communication & Society* 10, no. 6 (2007): 789-817.

<sup>42</sup> Shwayri, "The Politics of Making Songdo," 39-55.

<sup>43</sup> Halpern, Orit "Test-Bed Urbanism," in *Public Culture* 25, no. 2 (2013): 272-306; Shwayri, "The Politics of Making Songdo," 39-55.

<sup>44</sup> Ibid.

<sup>45</sup> While in Songdo there is a central management room, it is mainly for show. The central screen shows a vast number of camera feeds, much more than any of the human "controllers" could ever process. The system functions mainly autonomously and the central control room seems more to appease than to actually intervene should there be an error (Halpern et al. 2013).

<sup>46</sup> Halpern, "Test-Bed Urbanism," 272-306.

<sup>47</sup> Ibid.

<sup>48</sup> According to Cisco, much of the revenue is generated directly by the services provided. Among those, in-building facility management and connectivity services are creating the most revenue.

<sup>49</sup> Naidu, V. N, "E-Governance and its Impact on Decentralized Planning," in *Productivity* 55, no. 2 (2014): 181-193; Singh Kalsi, Nirmaljeet, "E-Governance Success Factors," in *The International Journal of Public Sector Management* 26, no. 4 (2013): 320; Giffinger, Rudolf, et al., *Smart Cities Ranking of European Medium-Sized Cities* (Centre of Regional Science, Vienna UT, 2007);

<sup>50</sup> It is of note here that in this case the citizen is defined as a customer of government, that is, someone who consumes government services.

<sup>51</sup> In his work "Of Other Spaces" Foucault out-

lines his idea of the heterotopia. It is, in contrast to utopia (a kind of non-place in which presents society in its perfected form), a real and existing place (acting as a kind of utopia). Heterotopic places are outside of every other place. They form their own internal rationality and within them “all the other real sites that can be found within culture, are simultaneously represented, contested, and inverted.” (Foucault, 1986: 24)

<sup>52</sup> Naidu, “E-Governance,” 181-193.

<sup>53</sup> Coe, Amanda. “E-Governance and Smart Communities: A Social Learning Challenge,” in *Social Science Computer Review* 19, no. 1, 2001.

<sup>54</sup> Foucault and Senellart, *The Birth of Biopolitics*, 243.

<sup>55</sup> Compared to modern surveillance, the methods of the East German Stasi not even 30 years ago seem positively childish. Today’s surveillance is largely done without even human involvement in data recording, a fact which is increasingly well-known thanks to people like Edward Snowden.

<sup>56</sup> Fattah, Kaveh, “Analyzing World Evolution and its Effects on Urban Designing,” in *Cercetari Practice Si Teoretice in Managementul Urban* no. 9 (2008): 74-94.

<sup>57</sup> Protevi, John, “What does Foucault Think is New about Neo-Liberalism?” John Protevi, accessed 10/19/2014, <http://www.protevi.com/john/research.html>.

### **Additional References**

Bernays, Edward. “The Engineering of Consent.” *Annals of the American Academy of Political and Social Science* 250, (1947): 113-120.

Boudreau, John. “Cisco Helps Build Prototype for Instant Cities.” *San Jose Mercury News* (CA) (2010).

Bush, Rick. “Smart Cities.” *Transmission & Distribution World* 66, no. 7 (2014): 5-5.

Cisco. Cisco Remote Expert Smart Solution for Government Services . [www.cisco.com/go/smart-connectedcommunities](http://www.cisco.com/go/smart-connectedcommunities): Cisco, 2014.

Cisco Remote Expert Smart Solution for Government Services . [www.cisco.com/go/smartconnect-edcommunities](http://www.cisco.com/go/smartconnect-edcommunities): Cisco, 2014.

Cisco Remote Expert Smart Solution for Government Services: Better Quality Services to More Citizens at Lower Cost . [www.cisco.com/go/smart-connectedcommunities](http://www.cisco.com/go/smart-connectedcommunities): Cisco, 2014.

Cisco Smart+Connected Personalized Spaces. [www.cisco.com/go/smartconnectedcommunities](http://www.cisco.com/go/smartconnectedcommunities): Cisco, 2014.

Dilnot, Clive. “History, Design, Futures: Contending with what we have made.” Chap. 131 - 272, In *Design and the Question of History*, edited by Fry, Tony, Dilnot, Clive and Susan Stewart: Bloomsbury Academic, 2015.

## **THE MANUFACTURED PHARMAKON: PHARMACEUTICAL DRUGS AND THE TECHNOLOGY OF LIFE AND DEATH**

**by Mae Wiskin**

### **Endnotes**

<sup>1</sup> Critser, Greg. *Generation Rx: How prescription drugs are altering American lives, minds, and bodies*. Houghton Mifflin Harcourt, 2007: 2.

<sup>2</sup> Jenkins, Janis. *Pharmaceutical Self: The Global Shaping of Experience in an Age of Psychopharmacology*. Santa Fe, N.M.: School for Advanced Research Press: 6.

<sup>3</sup> De Michelis, Giorgio. “What Design Tells Us About Objects and Things,” *Design and Culture* 6.2 (2014): 188.

<sup>4</sup> Latour, Bruno. “A Cautious Prometheus? A Few Steps Toward a Philosophy of Design (with Special Attention to Peter Sloterdijk).” *Proceedings of the 2008 Annual International Conference of the Design History Society*. 2008: 2.

<sup>5</sup> De Michelis, What Design Tells Us About Objects and Things,” 190.

<sup>6</sup> Ibid.,188.

<sup>7</sup> Cloatre, Emilie. *Pills for the Poorest: an Exploration of TRIPS and Access to Medication in sub-Saharan Africa*. Palgrave MacMillan, 2013: 13.

<sup>8</sup> Ibid., 32.

<sup>9</sup> Jenkins, *Pharmaceutical Self*, 4.

<sup>10</sup> Ibid., 15.

<sup>11</sup> De Michelis, What Design Tells Us About Objects and Things,” 196.

<sup>12</sup> Ibid.

<sup>13</sup> Latour, Bruno. “Networks, Societies, Spheres: Reflections of an Actor-Network Theorist.” *International Seminar On Network Theory: Network Multidimensionality In The Digital Age*. 2010: 5.

<sup>14</sup> Latour, Bruno. “What is the Style of Matters of Concern.” *Van Gorcum, Amsterdam* (2008): 39.

<sup>15</sup> Ibid., 47.

<sup>16</sup> De Michelis, What Design Tells Us About Objects and Things,” 189.

<sup>17</sup> Latour, “Networks, Societies, Spheres,” 10.

<sup>18</sup> Martin, Emily. “The Pharmaceutical Person.” New York: 273-287. (2006): 274.

<sup>19</sup> Critser, *Generation Rx*, 6.

<sup>20</sup> Ibid., 8.

<sup>21</sup> Martin, Emily. “The Pharmaceutical Person,” New York: 273-287. (2006): 274.

<sup>22</sup> Anderson, Stuart, ed. *Making Medicines: a Brief History of Pharmacy and Pharmaceuticals*. Pharmaceutical Press, 2005: 212.

<sup>23</sup> Foley, V. I., & Belcastro, P. “William Brockedon and the Mechanization of Pill and Tablet Manufacture: From Bullets to Pills.” *Pharmaceutical Technology* (1987): 112.

- <sup>24</sup> Miller, Richard J. *Drugged: The Science and Culture Behind Psychotropic Drugs*. Oxford University Press, 2014: 145.
- <sup>25</sup> Healy, David. *Let them eat Prozac: The unhealthy relationship between the pharmaceutical industry and depression*. NYU Press, 2004: 33.
- <sup>26</sup> Rimer, Sara. “With Millions Taking Prozac a Legal Drug Culture Arises.” *The New York Times* 12/13/1993.
- <sup>27</sup> Healy, David. *Let them eat Prozac: The unhealthy relationship between the pharmaceutical industry and depression*. NYU Press, 2004: 263.
- <sup>28</sup> Scarry, Elaine. *The Body in Pain: The Making and Unmaking of the World*. Oxford: Oxford University Press, USA, 1985: 289.
- <sup>29</sup> Ibid., 305.
- <sup>30</sup> Ibid., 306.
- <sup>31</sup> Ibid.
- <sup>32</sup> Ibid.
- <sup>33</sup> Martin, “The Pharmaceutical Person,” 275.
- <sup>34</sup> Ibid., 276.
- <sup>35</sup> Marenko, Betti. “Neo-Animism and Design: A New Paradigm in Object Theory.” *Design and Culture* 6.2 (2014): 221.
- <sup>36</sup> Slob, A. F. I., and Peter-Paul Verbeek. *User Behavior and Technology Development Shaping Sustainable Relations between Consumers and Technologies*. Dordrecht: Springer, 2006: 387.
- <sup>37</sup> Marenko, “Neo-Animism and Design,” 234.
- <sup>38</sup> Johnson, Jim. “Mixing Humans and Nonhumans Together: The Sociology of a Door-Closer.” *Social Problems* (1988): 298.
- <sup>39</sup> Marenko, “Neo-Animism and Design,” 221.
- <sup>40</sup> Martin, “The Pharmaceutical Person,” 276.
- <sup>41</sup> Ibid., 277.
- <sup>42</sup> Ibid., 278.
- <sup>43</sup> Ibid., 283.
- <sup>44</sup> Petryna, Adriana. “Ethical Variability: Drug Development and Globalizing Clinical Trials “American Ethnologist 32.2 (2005): 184. *American Ethnologist*. Web. 11/14/2014.
- <sup>45</sup> Shah, Sonia. *The Body Hunters: Testing new drugs on the world’s poorest patients*. New Press, The, 2012: 7.
- <sup>46</sup> Ibid., 44.
- <sup>47</sup> Martin, “The Pharmaceutical Person,” 286.
- <sup>48</sup> Petryna, Adriana. *When Experiments Travel: Clinical Trials and the Global Search for Human Subjects*. Princeton: Princeton University Press: 190.
- <sup>49</sup> Martin, “The Pharmaceutical Person,” 286.
- <sup>50</sup> Bernard, Sarah. *The Perfect Prescription: How The Pill bottle Was Remade – Sensibly and Beautifully*. New York Magazine. 11 Nov. 2014. Web. 2 Dec. 2014.

## Credits

**Figure 1.** “Normal,” Anonymous work of art. Duboce Park Cafe, San Francisco (2013). Photo taken by Mae Wiskin

