Alien Phenomenology, or What It's Like to Be a Thing

IAN BOGOST

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ONTOGRAPHY

Revealing the Rich Variety of Being

King Aethelberht II, the ruler of East Anglia, was executed by Offra of Mercia in 794. There was a time when many held the opinion that Offra led an early unification of England, and indeed Offra did contribute to the expansion of Mercia from the Trent River valley to much of the area now known as the English Midlands. More recently, Offra's invasions have been explained in more straightforward terms: as megalomania and bloodlust. Given this context, Aethelberht's later canonization was justified by martyrdom: he had visited the court of Offra at Sutton Walls in Herefordshire in an earnest attempt to make peace with Offra by asking for his daughter Etheldreda's hand in marriage. Offra took advantage of the situation, detaining and then beheading Aethelberht, then soon after invading and capturing East Anglia.

Montague Rhodes James is responsible for much of the definitive scholarship on St. Aethelberht, work made possible thanks to excavations he conducted at the Bury St. Edmunds Abbey in West Suffolk. Among fragments unearthed there was the twelfth-century vita of St. Aethelberht, which James reconstructed in the 1910s.

But like his countryman C.S. Lewis, James is rarely remembered for his medieval scholarship. Instead, we know him best as M.R. James, author of classic collections of ghost stories, including *Ghost Stories of an Antiquary*. Still, traces of James's medievalist roots reveal themselves like apparitions on his pages, usually in the form of gentleman–scholar protagonists who accidentally release supernatural wrath from an antique collectible.

One such tale, "Oh Whistle and I'll Come to You, My Lad," begins like this:

> "I suppose you will be getting away pretty soon, now Full Term is over, Professor," said a person not in the story to the Professor of Ontography, soon after they had sat down next to each other at a feast in the hospitable hall of St James's College.

In the story, the antique in question turns out to be an inscribed bronze whistle that, when blown by the naive Professor Parkins, summons the requisite ghost. But for our purposes, the interesting bit is not the apparition but the professor's unusual field of expertise, *ontography*.[1]

James might have intended the term to be a then contemporary absurdism, like Don DeLillo's satirical Professor of Hitler Studies in *White Noise*. Such was Graham Harman's reaction to finding the term.[2] Ontography, Harman reasoned, "would deal with a limited number of dynamics that can occur between all different sorts of objects," an initial take on what he would later develop into a full-fledged part of his philosophy. My adoption of "ontography" offers a different interpretation of this received invention than that of Harman.

As it turns out, the term is not quite an invention, although it's hardly commonplace either. In his 1988 book *The World View of Contemporary Physics*, Richard F. Kitchener declares, "Ontology is the theory of the nature of existence, and ontography is its description."[3] Kinematics, transformation theory, and relativity offer examples, ideas not so far from Harman's back-of-the-napkin sketch of Professor Parkins. Along these same lines, the science and technology studies scholar Michael Lynch suggests that "ontography is a descriptive alternative to its grand-theoretical counterpart."[4]

Other sources, if perhaps a bit untrustworthy, suggest that despite its obscurity ontography very much (and very aptly) exists. According to Susan Schulten, the geographer William Morris Davis (who was also an American contemporary of James and a professor at Harvard) deployed the term to describe "the human response to the physical landscape."[5] Schulten argues that ontography "moved geography

toward a general concern with the causal relation between humans and their earth."[6] This take on ontography may be laced with too much correlationism to take root in my garden, but it does sow a promising seed.

Another, more recent application of the concept comes from Tobias Kuhn, a Swiss informaticist who has developed a method of ontography for depicting controlled natural languages (CNLs)—grammatically and semantically simplified languages for use in situations where reduced ambiguity is desirable, such as in technical documentation.[7] Kuhn's method uses a graphical notation he calls "ontographs." Each ontograph "consists of a legend that introduces types and relations and of a mini world that introduces individuals, their types, and their relations" (Figure 1).[8] A related but more familiar approach can be found in IKEA assembly instructions, which renounce language entirely in order to be more readily usable in any of the thirty-seven nations served by the company's products for the home.[9] Kitchener's, Davis's, and Kuhn's approaches have something in common: an interest in diversity and specificity.

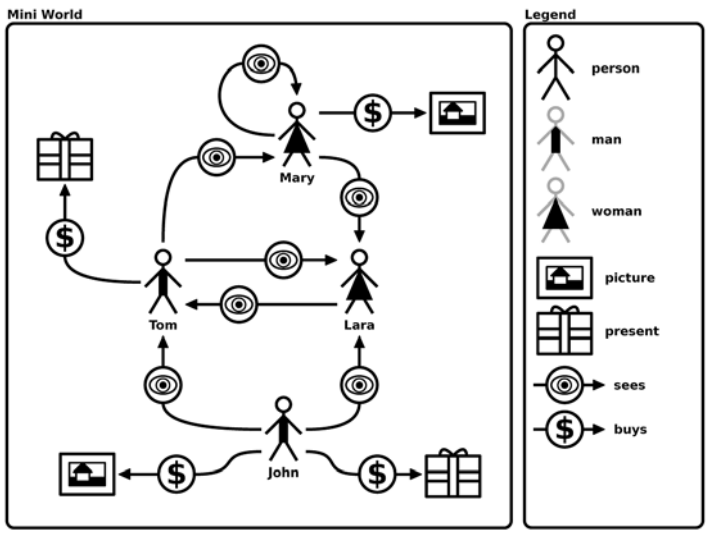

FIGURE 1. Tobias Kuhn's ontograph framework is a graphical notation for representing types and relations in controlled natural languages, a kind of formal language used in contexts where formalization or simplification are desirable, such as technical documentation.

Quentin Meillassoux uses the phrase "the great outdoors" to describe the outside reality that correlationism had stolen from philosophy.[10] The great outdoors involves both untold cosmic and worldly paraphernalia as well as the reentry into a singular existential domain, one no longer broken down into crass hemispheres of nature and culture. Both Meillassoux and Bruno Latour describe this binary as closed-minded, blinkered.[11] Once we put down the trappings of culture and take the invitation into that great outdoors, a tremendous wave of surprise and unexpectedness would overwhelm us—a "global ether" of incredible novelty and unfamiliarity.[12] As Latour sums up, "If you are mixed up with trees, how do you know they are not using you to achieve their dark designs?"[13]

Faced with such a situation, the first reaction we might have is that of the registrar, taking note of the many forms of being. Let's adopt *ontography* as a name for a general inscriptive strategy, one that uncovers the repleteness of units and their interobjectivity. From the perspective of metaphysics, ontography involves the revelation of object relationships without necessarily offering clarification or description of any kind. Like a medieval bestiary, ontography can take the form of a compendium, a record of things juxtaposed to demonstrate their overlap and imply interaction through collocation. The simplest approach to such recording is the *list*, a group of items loosely joined not by logic or power or use but by the gentle knot of the comma. Ontography is an aesthetic set theory, in which a particular configuration is celebrated merely on the basis of its existence.

Lists, as it happens, appear regularly in Latour's works. They function primarily as provocations, as litanies of surprisingly contrasted curiosities. One doesn't need to look very hard to find examples of these Latour litanies, as I call them:

> A storm, a rat, a rock, a lake, a lion, a child, a worker, a gene, a slave, the unconscious, a virus.

> Elections, mass demonstrations, books, miracles, viscera laid open on the altar, viscera laid out on the operating table, figures, diagrams and plans, cries, monsters, exhibitions at the pillory.

> The tree that springs up again, the locusts that devour the crops, the cancer that beats others at its own game, the mullahs who dissolve the Persian empire, the Zionists who loosen the hold of the mullahs, the concrete in the power station that cracks, the acrylic blues that consume other pigments, the lion that does not follow the predictions of the oracle.[14]

Following Latour's lead, Harman also adopts the rhetoric of lists, whether as introduction ("object-oriented philosophy holds that the relation of humans to pollen, oxygen, eagles, or windmills is no different in kind from the interaction of these objects with each other"),[15] as argument ("For we ourselves, just like Neanderthals, sparrows, mushrooms, and dirt, have never done anything else than act amidst the bustle of other actants"),[16] or as emphasis ("among the coral reefs, sorghum fields, paragliders, ant colonies, binary stars, sea voyages, Asian swindlers, and desolate temples").[17] He offers a defense and justification for lists:

> Some readers may . . . dismiss them as an "incantation" or "poetics" of objects. But most readers will not soon grow tired, since the rhetorical power of these rosters of beings stems from their direct opposition to the flaws of current mainstream philosophy. . . . The best stylistic antidote to this grim deadlock is a repeated sorcerer's chant of the multitude of things that resist any unified empire.[18]

Litanies are not indulgences; they do indeed perform real philosophical work. Yet naming objects is only one ontographical method, the most basic one. In addition to mere mention, things also ought to be considered conjunctively, lest the lighthouse, dragonfly, lawnmower, and barley all collapse into the abstraction of example without exemplification.

In his curious book *The Chatto Book of Cabbages and Kings*, Francis Spufford explains why lists feel troublesome in literature:

> Language usually puts the signs that represent things into definite relationships with each other. Syntax joins: *I want to*

> *be loved by you*, or *the sky is falling*, or *Mr Murdoch has bought The Times*. Lists, however, divide, or leave divided, the things they include. They offer only the relationship of accumulation: *I*, *you*, *love*, *sky*, *fall*, *purchase*, *Mr Murdoch*, *The Times*. Lists refuse the connecting powers of language, in favor of a sequence of disconnected elements.[19]

The inherent partition between things is a premise of OOO, and lists help underscore those separations, turning the flowing legato of a literary account into the jarring staccato of real being. Lists offer an antidote to the obsession with Deleuzean becoming, a preference for continuity and smoothness instead of sequentiality and fitfulness. The familiar refrain of "becoming-whatever" (it doesn't matter what!) suggests comfort and compatibility in relations between units, thanks to the creative negotiations things make with each other. By contrast, alien phenomenology assumes the opposite: incompatibility. The off-pitch sound of lists to the literary ear only emphasizes their real purpose: disjunction instead of flow. Lists remind us that no matter how fluidly a system may operate, its members nevertheless remain utterly isolated, mutual aliens.

Yet Spufford underestimates the ontological scope of lists. Lists do not just rebuff the connecting powers *of language* but rebuff the connecting powers of *being itself*. As he observes, "No one scribbles down a helpful sonnet before going shopping. . . . Finding a list in a book or a poem is an immediate reminder of the most obvious differences between literature and every other kind of non-performing art: literature is made out of something, language, that is an everyday stuff."[20] Philosophers, literary critics, and theorists spend so much of their time dealing with textual material that they risk forgetting about the ordinary status of such material. When made of language, lists remind the literary-obsessed that the stuff of things is many. Lists are perfect tools to free us from the prison of representation precisely *because* they are so inexpressive. They decline traditional artifice, instead using mundaneness to offer "a brief intimation of everything."[21]

Perhaps the problem is not with lists but with literature, whose preference for traditional narrative acts as a correlationist amplifier. Whether empathy or defamiliarization is its goal, literature

aspires for identification, to create resonance between readers and the human characters in a work. Lists work differently. Consider this one, which appears in Roland Barthes's delightfully strange autobiography:

> J'aime, je n'aime pas ~ I like, I don't like
>
> *I like*: salad, cinnamon, cheese, pimento, marzipan, the smell of new-cut hay (why doesn't someone with a "nose" make such a perfume), roses, peonies, lavender, champagne, loosely held political convictions, Glenn Gould, too-cold beer, flat pillows, toast, Havana cigars, Handel, slow walks, pears, white peaches, cherries, colors, watches, all kinds of writing pens, desserts, unrefined salt, realistic novels, the piano, coffee, Pollock, Twombly, all romantic music, Sartre, Brecht, Verne, Fourier, Eisenstein, trains, Médoc wine, having change, *Bouvard and Pécuchet*, walking in sandals on the lanes of southwest France, the bend of the Adour seen from Doctor L.'s house, the Marx Brothers, the mountains at seven in the morning leaving Salamanca, etc.
>
> *I don't like*: white Pomeranians, women in slacks, geraniums, strawberries, the harpsichord, Miró, tautologies, animated cartoons, Arthur Rubinstein, villas, the afternoon, Satie, Bartók, Vivaldi, telephoning, children's choruses, Chopin's concertos, Burgundian branles and Renaissance dances, the organ, Marc-Antoine Charpentier, his trumpets and kettledrums, the politico-sexual, scenes, initiatives, fidelity, spontaneity, evenings with people I don't know, etc.[22]

Like literary prose, the account is meant to help the reader grasp something about Barthes, yet by fashioning a list he also draws our attention to the curious world outside his person, as filtered through the arbitrary meter of likes and dislikes. Unlike his literary and critical works, this list disrupts being, spilling a heap of unwelcome and incoherent crap at the foot of the reader. In doing so, a tiny part of the expanding universe is revealed through cataloging.

Ontographical cataloging hones a virtue: the abandonment of

anthropocentric narrative coherence in favor of worldly detail. Quasi-ontographical prototypes are common throughout literature and the arts, where catalogs and lists pepper a narrative, disrupting a story with unexpected piquancy. The catalog of ships in book 2 of Homer's *Iliad* offers one example, its inventory of the Achaean navy covering some 265 lines of the epic and detailing over one thousand ships from fifty different locales carrying well over a hundred different nationalities.[23] Similarly, Herman Melville's *Moby-Dick* catalogs the equipment and practices of nineteenth-century whaling as much as it does a story of obsession and revenge. A characteristic excerpt:

> The lower subdivided part, called the junk, is one immense honeycomb of oil, formed by the crossing and re-crossing, into ten thousand infiltrated cells, of tough elastic white fibres throughout its whole extent. The upper part, known as the Case, may be regarded as the great Heidelburgh Tun of the Sperm Whale. And as that famous great tierce is mystically carved in front, so the whale's vast plaited forehead forms innumerable strange devices for the emblematical adornment of his wondrous tun. Moreover, as that of Heidelburgh was always replenished with the most excellent of the wines of the Rhenish valleys, so the tun of the whale contains by far the most precious of all his oily vintages; namely, the highly-prized spermaceti, in its absolutely pure, limpid, and odoriferous state. Nor is this precious substance found unalloyed in any other part of the creature. Though in life it remains perfectly fluid, yet, upon exposure to the air, after death, it soon begins to concrete; sending forth beautiful crystalline shoots, as when the first thin delicate ice is just forming in water.[24]

Passages like this are frequent and detailed enough to match the travails of Ishmael, Queequeg, Ahab, and others on the Pequod. It would be just as appropriate to call *Moby-Dick* a natural history as it would a novel—the former is perhaps more apt, even.

A truly deliberate—not to mention lucid and beautiful—specimen of inventory ontography can be found in the Brazilian bossa nova, a form of soft jazz that evolved from samba in the mid-

twentieth century. Just as Spufford's written lists make a break with literary tradition in form as much as in content, bossa nova's structure differs considerably from other musical forms. It softens the swing rhythm of jazz into a gentler sway. And unlike samba, bossa nova has no dance step; it's designed to be heard rather than felt. Furthermore, the structure of pop music finds no place in bossa nova, where repetitive, whispery, lyrical verses take the place of the narrative verse-chorus-bridge structure.

"The Girl from Ipanema" is probably the best-known example, with its tiny catalog of properties—"tall and tan and young and lovely"—but Tom Jobim's "Águas de Março" ("Waters of March") is the ultimate ontographic bossa nova collage. Each line begins with "É" ("It's" in the English version, which Jobim also wrote) and names one or two objects. A wide variety of things are mentioned in the song, from natural objects (stick, stone, oak, fish) to human-made ones (spear, truck, bricks, gun) to concepts (must, bet, loss, nothing). The song's lyrics could be interpreted as a gentle memento mori, detailing the passing of life into and out of prosperity, but the song's rhythm and tone give the lie to that sort of moralism.

Instead, the "Waters of March" name the torrential rains of Rio de Janeiro, bossa nova's birthplace. The deluge floods the streets, dredging up and making visible the myriad things seen and unseen in normal conditions. Here's a sample (note that the English version differs from the Portuguese in some verses):

É pau, é pedra,	A stick, a stone,
é o fim do caminho	It's the end of the road,
É um resto de toco,	It's the rest of a stump,
é um pouco sozinho	It's a little alone
É um caco de vidro,	It's a sliver of glass,
é a vida, é o sol	It is life, it's the sun,
É a noite, é a morte,	It is night, it is death,
é um laço, é o anzol	It's a trap, it's a gun
É peroba do campo,	The oak when it blooms,
é o nó da madeira	A fox in the brush,
Caingá, candeia,	A knot in the wood,
é o Matita Pereira	The song of a thrush

É madeira de vento,	The wood of the wind,
tombo da ribanceira	A cliff, a fall,
É o mistério profundo,	A scratch, a lump,
é o queira ou não queira	It is nothing at all

"Waters of March" does real ontological work. By setting the objects of "it" to a wide variety of different things, it gives sonorous voice to flat ontology. In a verse like the one below, we find the juxtaposition of a human-made, aggregate object, a natural condition, an action, and a concept:

A truckload of bricks
in the soft morning light,
The shot of a gun
in the dead of the night

Perhaps this incredible flexibility and openness toward things of all sorts explains why "Waters of March" has been frequently appropriated as a platform for communicating ontological repleteness. A somewhat less object-oriented version of the song made an appearance in a 1985 Coca-Cola ad, which declared, "It's a kick, it's a hit, it's a Coke, Coke is it."[25] The *it's* of "Waters of March" offers the marketer a perfect translation of the Coca-Cola Company's hopes for the famous slogan that appears in their commercial rendition of Jobim's bossa nova. No matter the situation, a cold Coca-Cola has a place.

More recently, the San Francisco–based television advertising director Carl Willat made an unauthorized, self-promotional television commercial for the American specialty grocer Trader Joe's (which famously refuses to air advertisements).[26] Unlike Coke's thirty-second spot, Willat's homage runs for nearly three minutes, recreating the entirety of "Waters of March" in reference to the curious and wonderful things that occupy Trader Joe's. A selection of verses from Willat's short film:

It's milk, it's bread
It's the stuff on your list
It's the strange little snacks

you end up buying instead
It's a box of soup
It's a bell from a boat
It's yogurt made
from the milk of a goat
A handle that rips
on a paper sack
That checker you like
who'll never be back
It's the plastic grapes
hanging over the wine
It's the guy with twelve items
in the ten item line
It's the beautiful moms
in their yoga clothes
It's your favorite place
it's that store Trader Joe's

Willat's adaptation characterizes the store effectively because he recognizes that a great wealth of objects constitute it—not just the products but also the queues, the parking lot, the product discontinuations, the customers, the decor. This may seem like a prosaic observation to make in print, but watching the video produces a sensation of surprise: the experience of Trader Joe's is not just that of the shopper but also that of the shelving, the managerial policy, the secretive economics, the aloe chunk juice. Lists of objects without explication can do the philosophical work of drawing our attention toward them with greater attentiveness.

VISUAL ONTOGRAPHS

Verbal lists like Latour litanies and "Waters of March" teach us that the specificity of objects well up when situations are concretized and enumerated. Yet these examples are fleeting, the exceptions that prove the rule. How might such a strategy be carried out on a larger scale?

One such effort can be found in François Blanciak's speculative, paradigmatic architectural theory *Siteless*. In a series of 1,001 rectilin-

ear sketches, all drawn freehand "for the sake of versatility," Blanciak offers a hypothetical account of abstracted interedifice relations as they might exist in some hypothetical alien cityscape. The forms are all identical in size, with no sense of scale to distinguish office tower from iron sculpture from garden slug. Within each, he suggests (but does not clarify) formal, material, aesthetic, and representational implications of hypothetical structures. For example, the "optician building" illustrates a reading chart inscribed into the face of a tall rectangular structure; the "pixel circle" depicts a blocky "O" shape that appears much thinner than it is wide; the "inflatable floors" sketch shows a log cabin–like shape composed of puffy layers; and the "house arena" details an open space produced by unfolding the sides of a canonical house form into hinged surfaces (see Figure 2).[27]

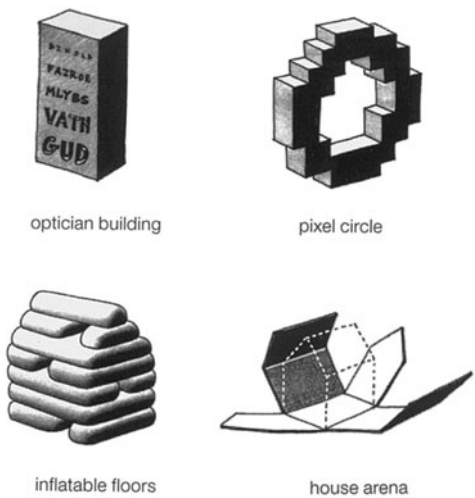

FIGURE 2. Four of the more than one thousand abstract architectural forms in François Blanciak's architectural treatise *Siteless*, which offers "an open-ended compendium of visual ideas for the architectural imagination to draw from."

While architecture has embraced the optical illusion of material deformation since the rise of architectural deconstructivism, that style's characteristic shapes often fail to contrast the form of a structure with the malleability of a material. Frank Gehry's Walt Disney Concert Hall and Dancing House insinuate motion and gesture, but it is difficult to experience such works as spatial organisms both supple and rigid all at once. After the construction of the Disney Concert Hall, nearby residents complained about the hot, blinding reflections that issued from the building's polished stainless steel surface. Perhaps this result came about not because Gehry had failed to take the surrounding neighborhood into account (as he is often criticized for doing) but because he had failed to consider the building as an ontograph of sun, cushion, and steel.

By contrast, Blanciak's sketches offer a simultaneity of material and form that brings together unfamiliar objects implausibly, often in materially impossible relation. The "floor bud," for example, offers a series of surfaces gathered together in the form of a rose. The simultaneity of forms suggests different object relations, within and without the domain of architectural reality: petal as substrate for insect, for raindrop; floor as housing for wood, for metal, for rat, for copper wire. All together, the 1,001 takes on simultaneous abstract objects provide ontographies of unrelated objects, akin to Latour litanies but with implied if speculative material couplings between unfamiliar entities.

As Lynch describes it, "Ontography would involve . . . mundane, deflationary transformation."[28] Such mutations already appear in Latour's litanies and in Blanciak's speculative hybrid forms, but something overly remarkable is still going on in both cases. Mullahs and monsters, cushioned skyscrapers bent back on themselves—these are all fantastical inscriptions. Moreover, they are scarce and precious: the occasional devotional interlude in a study of bacteria, a scant example of a fleeting experimental structural design.

For a more ordinary alternative, consider the photography of Stephen Shore. He is an artist best known for two things, documenting Andy Warhol's Factory in the mid-1960s and popularizing color photography as a fine arts practice in the 1970s. But such a characterization ignores the remarkable creativity in Shore's photographs.

Fifty years before Shore, Brassaï had dragged an enormous view camera with tripod and magnesium powder lights around Paris—a process anyone who has climbed the steps of Montmartre might find more remarkable than his famous image of them. Yet at a time when Henri Cartier-Bresson and Garry Winogrand's tiny Leica rangefinders still set the standard for the subtle documentation of the outside world, Shore returned to the film plates of Brassaï's era. It might be tempting to imagine a photographic version of Latour litanies that involve innumerable images, the sort of strategy Winogrand brought to street photography. But Shore did the opposite, making precious few photographs with an 8 × 10 view camera he lugged across North America.[29]

Today, photography has become so commonplace that we scarcely think about its equipment, except perhaps to compare statistics on

the latest gadget. But Shore's photography cannot be fully appreciated without an understanding of the nature of the view camera. To take a photograph with one, the photographer must set up the device and frame its image on a ground glass plate inserted in the film back. The lens projects onto the film plane upside down, requiring the photographer to compose and focus in a way that is decidedly unlike the way we normally think of photography, as an unmediated way of looking. Once composed, the photographer replaces the ground glass with emulsion and uses a wired release to trip the shutter and expose the film. The process invites the artist to see the scene to be captured separately from the way the camera will see it. It offers a phenomenal parallax that already invites curiosity toward the objects in the scene: the view through the ground glass is not only rotated but also translated from the photographer's natural vantage point.

Brassaï composed and recomposed, watching the image on ground glass before capturing and later obsessing over the edges of his frames for perfection. The same is true of Ansel Adams, who also used view cameras to capture America's dynamical sublime. Both sought to overcome the perceptual parallax of the view camera by producing the most humanlike perspective possible, usually an idealized view. Everything finds its place: black lampposts in relief against the mist wafting up the *escalier de Montmartre*, the Snake River winding carefully back and forth toward the snowcapped Tetons, a young girl carefully hidden in the shadows of a corner shop's eaves. All inspire, invoke, or reinforce our ordinary, human experience of these objects and scenes.

But Shore composes entirely different images. It is easy to say that the subjects—city streets and motels mostly—are *more* mundane, but to be fair, the streets of Paris before the war and Wyoming before the Jackson Hole National Monument were also mundane in their eras. Shore's images are deflationary not because their subjects are subordinate but because their composition underscores unseen things and relations (Plates 1a–c).

> In New York City, a television sits atop a pale orange table. Nearby rest glass bottles and some sort of frame wrapped in paper. The television's single antenna extends to the side, crossing in front of the tallest bottle.

> In Rolla, Missouri, a water fountain perches in a semicircular alcove, its drain pipe extending to the right and into the wall behind, while its power cord attaches to an outlet just above its basin.
>
> In Alberta, a textured, rust-colored lamp with shade sits near the edge of a table, while an ashtray holds down a motel survey. Nearby, a window lever emerges from behind curtains.[30]

These images register the world.[31] As Michael Fried explains, the images are remarkable because Shore's relation to the subject is unironic. "You don't seem superior to the material. Nor are you seeing these places and things as a foreigner might," suggests Fried to Shore in an interview.[32] The result, Fried suggests, is "imaginatively liberating." They posit objects, even the objects of human activity, in a world of mysterious relation with one another.

Consider one of his most famous images. At the corner of Beverly and La Brea in Los Angeles, a Chevron station sits across from a Texaco (Plate 2). While the composition suggests the familiar vantage point of a pedestrian, the view itself bears little resemblance to the street photographer's usual focus on human activity. An immense swath of pavement occupies most of the bottom of the image, drawing attention to the pneumatic cable that stretches in front of the pumps. It curls like a pig's tail. In the center of the frame, plastic numerals attach to a sign to indicate prices. Below them, a soft vinyl tube contains radial tires, the form of which gives the tube its shape. Just behind, a station wagon's transmission assembly extends down from its chassis, almost reaching the painted asphalt surface of a crosswalk. Everywhere, all across the image, objects tousle one another.

To list them underscores the difference between a Latour litany and a Shore ontograph: floodlight, screen print, Mastercard, rubber, asphalt, taco, Karmann Ghia, waste bin, oil stain. The Latour litany gathers disparate things together like a strong gravitational field. But the Shore ontograph takes things already gathered and explodes them into their tiny, separate, but contiguous universes. As Christy Lange explains, "This was a new conception of the landscape picture, one in which the details themselves—their density and abun-

dance, rather than their entirety—were intended to be the focal point or subject."[33] Nothing is overlooked, nothing reduced to anything else, nothing given priority. Instead, everything sits suspended.

Other photographs invite greater specificity. On an outdoor dining table at a McDonald's in Perrine, Florida, a partly eaten hamburger rests inside a polystyrene box (Plate 3). Fries and a cup of ice milk sit atop a napkin, while deep scratches on the table below reveal a pink surface beneath yellow paint. In this image, Shore focuses our attention not on the gastronomical relation between lunch and hunger, or on the industrial relation between franchise and customer, or even on the amorous relation between a previous diner and an unseen girl called Jenny, whose name has been scratched into the table's cold surface. Instead, units reveal themselves: pickle dangles across meat patty, salt scuttles from fry, ice milk clings to the inside of plastic straw. It is a common image for Shore, the secret lives of meals.

But ontographically speaking, this image tells us nothing about the perception of milk on plastic, seed on bun. It simply catalogs, like the monk's bestiary, exemplifying the ways that human intervention can never entirely contain the mysterious alien worlds of objects. Like painting, photography usually operates on the temporal scale of *now*. The landscape or the still life shows the corporeal arrangements of things, arrested before human perception. But Shore's work rejects the singularity of the now in favor of the infinity of the *meanwhile*.

EXPLODED VIEWS

Meanwhile is a powerful ontographical tool. The unit is both a system and a set. Under normal conditions, its state remains jumbled, inconspicuous, unseen in its withdrawal. In its most raw form, the Latour litany offers an account of a segment of being. It's an *account* in the literal sense of the word, like a ledger keeps the financial books. The practice of ontography—and it is a practice, not merely a theory—describes the many processes of *accounting for* the various units that strew themselves throughout the universe. To create an ontograph involves cataloging things, but also drawing attention to the couplings of and chasms between them. The tire and chassis, the ice milk and cup, the buckshot and soil: things like these exist not just *for us* but

also *for themselves* and *for one another*, in ways that might surprise and dismay us. Such is the ontographical project, to draw attention to the countless things that litter our world unseen. As Harman puts it in his application of the term, *ontography* is "a name . . . for the exercise of describing and classifying pairings" of objects.[34] Harman's use is different from mine (he uses "ontography" to describe the relations between what he calls real and sensual qualities of objects), but the spirit is the same: "Rather than a geography dealing with stock natural characters such as forests and lakes, ontography maps the basic landmarks and fault lines in the universe of objects."[35]

We can analogize the spirit of ontography with a technique in graphic and information design, the *exploded view* diagram. Such drawings are commonly found today in parts manuals, assembly instructions, technical books, posters, and other diagrams meant to "show the mating relationships of parts, subassemblies, and higher assemblies."[36] But the technique dates back to the Renaissance, as even a cursory review of Leonardo da Vinci's notebooks reveals.

The exploded-view drawing is meant to clarify some complex physical system for the benefit of a human constructor, operator, or designer (Figure 3). But in common practice, an exploded-view drawing offers just as much intrigue as it does use value: for example, when viewing a car parts manual, someone with no knowledge of

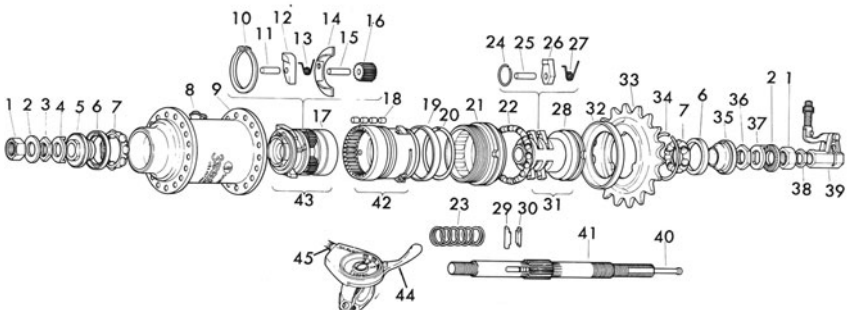

FIGURE 3. Exploded-view diagrams show both sides of being, density, and expansion. This example shows the components of a Shimano three-speed internal gear hub for a bicycle. Among the several dozen parts that constitute it are a cone stay washer (4), a planet pinion (16), and a pawl spring (27).

automotive repair can still bask in the unfamiliar repleteness present in a modern automobile. Likewise, a child pores over the cutaway view of the submarine unfolded from a magazine not to learn how to operate it but to fathom a small aspect of its murky otherworldliness.

They are not identical, but the exploded view and the ontograph have much in common. An anonymous, unseen situation of things is presented in a way that effectively draws our attention to its configurative nature. An ontograph records the presence of many potential unit operations, a profusion of particular perspectives on a particular set of things.

It's no wonder, then, that photography offers such good examples—the photograph has long been understood as a "way of looking." On the one hand, it offers a view of the world that is representational, thanks to the photographer's framing and choice of exposure. On the other hand, it offers an automatically encyclopedic rendition of a scene, thanks to the photographic apparatus's ability to record actuality. Shore's enormous plate film is particularly adept at such renditions, able to capture vast detail at high resolution. Not every photograph is an ontograph, but Shore's work tends in this direction, partly because he refuses to treat any object as primary, as a subject. "Beverly Boulevard and La Brea Avenue" regards nothing in particular and everything all at once. Shore's framing technique turns his photographs into ontographs.

ONTOGRAPHIC MACHINES

Photographic ontography is effective as art and as metaphysics. But photographs are static; they *imply* but do not *depict* unit operations. For the latter, we must look to artifacts that themselves operate.

Many puzzle toys and games are abstract: Rubik's Cube, *Tetris*, and *Bejeweled* ask players to manipulate shapes and figures to complete goals. Cube faces, polyominoes, and gem tokens are certainly real objects, but they are also units removed from context such that their associations with other units become indistinct. But other games are concrete, mapping abstract gestures to concrete meanings. The popular puzzle board game *Rush Hour* is such a one. The game is played on a gray plastic grid onto which molded automobiles of various sizes can be arranged. The player attempts to extract a red

car through an opening in the side of the game board by moving the other vehicles out of its way. Cars and trucks can be moved only by sliding them backward or forward along their axis of orientation. The game comes with many dozens of puzzle cards, which describe initial states of the board for the player to solve, each becoming more difficult than the last.

Rush Hour could have been created with abstract colored blocks instead of vehicles. The experience of playing the game would remain the same, on a mechanical level at least. On a representational level, however, its meaning would become indeterminate. Just imagine an abstract Stephen Shore–style ontograph, with multicolored, three-dimensional polyhedrons taking the place of tire stack, station wagon, traffic light, and all of the many other objects in the picture. Such an artifact might be interesting as art, particularly if it re-created the overall form of a real scene, but it would likely not be ontographical in the same way as the original. The addition of a fictional skin connects the mechanical operation of the abstract game to the material reality of a specific unit operation—in this case traffic congestion. If the fictional skin and the mechanical depth are tightly coupled, then the resulting game can offer a compelling account of an ontological domain.[37]

Rush Hour offers a good example of tight coupling, but its scope is more limited than a Latour litany or a Shore ontograph: only car and road appear in the game. *Scribblenauts* offers a more encyclopedic account of things. It's an unusual videogame created by the developer 5th Cell and released for the Nintendo DS handheld in 2009. On first glance, the game looks like any other 2-D platform or adventure game. The player controls a cute, pixelated character named Maxwell. Each of its two hundred levels takes place in an abstraction of a realistic environment, be it city, ice floe, mine, or ocean. Somewhere in the level sits a "Starite" (a shiny star icon), which the player must collect to complete the level. The challenge comes in reaching the starite, a task troubled by one of two challenges, depending on the game mode. In puzzle levels, the player must help Maxwell complete a task to reveal the starite: return soil samples to the astronaut; fill and pay for a tray of cafeteria food; stop the out-of-control truck. In action levels, the player must help

Maxwell capture a starite placed out of reach: atop a tree, perhaps, or across a lake, or underground, for example.

To overcome such challenges, the player can summon objects into the level by typing their names into a notebook in the game. The game recognizes almost anything—its dictionary includes some 22,800 terms, from air raid shelter to zucchini.[38] After the player types a word that the game recognizes, the requested object drops into the game, bearing an appearance *and* behavior befitting its name. The player can then move, connect, operate, and manipulate these objects to complete the game's puzzles.

Scribblenauts puzzles ask the player to retrieve only the starite, but they also offer incentives to explore the operational possibility space formed by the level scenario along with the many thousands of summonable objects. Some of these incentives are codified in the game itself: after completing a level, the game awards "merits" for meeting certain criteria (e.g., "entomologist" for using two or more insects, or "savior" for completing a level without harming any humanoids or animals).[39] Playing a level three times without reusing objects earns a gold star.

But even absent these explicit incentives, the game still inspires natural curiosity. Despite its incredibly bare-bones simulation of individual and interobject behaviors, *Scribblenauts* still motivates players to explore a multitude of unit operations by sheer force of charm. In the game's eleventh puzzle level, the player must collect three flowers without harming them or the girl whose basket awaits them. One flower is guarded by a bee, one sits underwater near a piranha, and one sits precipitously atop a ledge. Innumerable permutations of unit operations exist for completing the puzzle, some portion of which the average player will explore in a single session. Here are the some of the sixteen attempts the critic Stephen Totilo tried before completing the level:

> Attempt 3: Made bear; bear killed bee. Laid down bear trap, ran away. Bear didn't chase. Ran back over. Caught self in bear trap. Mauled by bear. Level failed.
>
> Attempt 6: Made exterminator. Exterminator fumigated bee. Did not grab first flower. Approached piranha lake. Made fish-

ing boat. Dropped big boat into lake. Boat must have crushed flower. Level failed.

Attempt 10: Made gun. Tried to shoot bee dead. Bullet ricocheted and destroyed first flower. Level failed.

Attempt 12: Made hot air balloon. Put Maxwell in it. Flew over piranha lake. Made gun. Shot at fish. Gun destroyed hot air balloon instead. Fell into lake. Jumped out of lake. Made corpse. Threw it into lake to draw fish away. Made gun to shoot fish while it ate corpse. Shots didn't hit. Made new corpse and tried with sniper rifle. Didn't work. Dove in and just grabbed flower. Success. Bee was gone. Put lake flower in basket. Put bee flower in basket. Made helicopter to get to high ridge for final flower. Was afraid to land helicopter on ledge, out of fear of destroying flower. Tried to jump out of helicopter. Fell into piranha lake. Died. Level failed.

Attempt 13: Made gun. Shot bee dead. Got first flower. Made two corpses. Tossed them into piranha lake for distraction. Dove and recovered second flower. Made truck and dumped it into lake. Did same with a boat. Tried climbing over those vehicles to get to ledge and final flower. Vehicles shifted; Maxwell thrown into ridge wall. Died. Level failed.

Attempt 16. Made gun. Shot bee dead. Made hot air balloon. Flew to ridge. Got out, grabbed flower. Got back in balloon. Safely put cliff flower in basket. Put bee flower in basket. Threw corpses into piranha lake to distract fish. Dove in and grabbed lake flower. Jumped out. Put lake flower in basket. Starite found! Success![40]

Shore's photographs catalog the way things *exist* in a given situation. *Scribblenauts* catalogs the way things *work* in one. Both approaches explode the density of being, giving viewer and player a view of a tiny sliver of the infinity of being, through reconfiguration.

WHAT'S IN A WORD?

A Latour litany reveals a few unfamiliar corners of being's infinity through naming. *Scribblenauts* reveals objects' relations by inspiring

players to invoke their behaviors in relation to one another, by keying in the signs that name them. In both cases, language works referentially, identifying an object such that the edges of its experience can be imagined or explored.

But language itself is composed of things. Words do not just denote, they also operate. We can understand *signs themselves* to have experiences of one another that remain comprehensible only by tracing their own relations to our engagement with them as signifiers. Latour litanies already lead us to the river of semiotic ontology, offering brochures of semantic units—words—as much as of material ones. In that respect, grammatical incantations like the recitation of Latin declensions function ontographically, as an informal catalog of the varieties of grammatical case possible with a linguistic domain: *puella*, *puellae*, *puellae*, *puellam*, *puella*. But more complex examples of linguistic ontography require more detailed, deliberate artifacts that expose the strange graspings of stuffs linguistic.

Take *In a Pickle*, a card game about words. Play is simple: each card is emblazoned with a word, and under the word is an arrow pointing downward. The players are dealt five such cards each, and four more are placed face up on the table. On each turn, a player selects a card and places it atop one of the outermost cards in a pile. For such a play to be valid, the word on the card played must either fit *inside* or be *larger* than the outermost card onto which it is played, or be able to be fit *inside* or be *smaller* than the innermost card. For example, given the starting card "Dryer," "Basement" could be played atop it, on the outside. Then "Shirt" could be placed underneath "Dryer," on the inside. Play proceeds like this until a row contains four cards, in which case players take turns playing one last card that is larger than the outermost card in the pile (see Figure 4). The game continues until one player captures a winning number of sets (the winning total varies based on the number of players).

The game instructions encourage players to "think creatively and play cards that might not 'fit' in an obvious way." Players can challenge such "creative" interpretations, and opponents vote to allow or invalidate them. The designers offer such an example in the rules: "Yes, you can fit a Turkey in a Purse. It's sliced turkey."

In a Pickle is based on homography. In linguistics, homographs

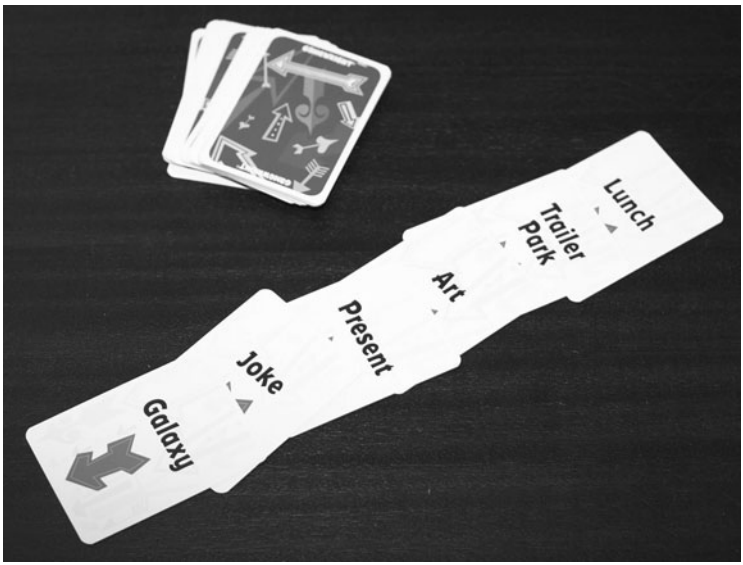

FIGURE 4. A round of *In a Pickle* in progress. Note how the chain combines physical and conceptual objects at various scales.

are two different words that share the same orthography yet have different meanings. For example, "bark" (the sound a dog makes) and "bark" (the surface of a tree) are homographs. Homographs are helpful lenses for tiny ontology, which maintains that being multiplies and expands. *Bark* the name for a dog's sound and *bark* the name for a woody surface are different units (remember, we're talking about the *signifiers* as much as the signifieds). Yet *bark* is another thing entirely, a sign that can mean several things to an English speaker, among them the sound of a dog and the covering of a tree. (For that matter, *bark* is also an instance of that sign, which appears in the present sentence.)

Moves far more interesting than "Turkey in a Purse" are possible in the game, thanks to the mereological possibility space afforded by homography. As the game's title suggests, a Fork could be in a Pickle, but a Bank Robber could as well. For that matter, a Movie could be in a Pickle (when "Movie" is as a metonym for its production), and yet a Pickle could be in a Movie (when "Pickle" is a prop). So could a Bank Robber. Indeed, a Pickle could be in a Bank Robber in a Pickle in a Movie in a Pickle.

Things just get weirder: A Movie could be in a Letter ("I just saw this strange movie about an incompetent, vinegar-loving bank robber"), which could be in an Atlas (as a bookmark), which could be in a Tornado, in a Dream, in a Woman, in a Marriage. Or better, a Movie could be in the Universe, which could nevertheless *also* be in a letter ("I wouldn't give up pickles for anything in the world"), in the Mail, in Time.

A Latour litany is an ontograph made of words. By contrast, *In a Pickle* is a machine for producing ontographs *about* words. It bears the tagline, "The what's in a word game," and in this case "in a word" means two things. For one, it takes on the idiomatic sense of "briefly" or "in a nutshell." Indeed, nutshellery isn't a bad metaphor for tiny ontology—the condensation of multitudes into dense singularities. For another, it implies containment. Words have semantic extensions for human speakers, and playing with homographs can reveal those extensions. But containment also takes yet another, even more curious meaning. "In a word" can refer to the interior of a semantic unit, the molten core of a name, where its various homographs and referents swim like ribosomes grazing on peptide chains.

A Latour litany helps catalog material, conceptual, and fictional objects; *In a Pickle* shows us how ontography can be performed on far more abstract units. If a dictionary shows us the meaning of words *for us*, the game attempts the opposite: to reveal that words have meaning *for themselves*. A dictionary is a catalog of the meanings of words. But *In a Pickle* is a catalog of the insides of words, like a crossword puzzle is a dictionary of the letters between them.

Dictionaries, grocery stores, Rio de Janeiro, La Brea, and Beverly—these are the labels we stick to the outsides of things. They mark them with relevance, but they also occlude the richness of their infinite depths. Ontography is a practice of increasing the number and density, one that sometimes opposes the minimalism of contemporary art. Instead of removing elements to achieve the elegance of simplicity, ontography adds (or simply leaves) elements to accomplish the realism of multitude. It is a practice of exploding the innards of things—be they words, intersections, shopping malls, or creatures. This "explosion" can be as figurative or as literal as you like, but it must above all reveal the hidden density of a unit.

For the ontographer, Aristotle was wrong: nature does not operate in the shortest way possible but in a multitude of locally streamlined yet globally inefficient ways.[41] Indeed, an obsession with simple explanations ought to bother the metaphysician. Instead of worshipping simplicity, OOO embraces messiness. We must not confuse the values of the *design* of objects for human use, such as doors, toasters, and computers, with the *nature* of the world itself. An ontograph is a crowd, not a cellular automaton that might describe its emergent operation. An ontograph is a landfill, not a Japanese garden. It shows how *much* rather than how *little* exists simultaneously, suspended in the dense meanwhile of being:

On August 10, 1973, at a boathouse in Southwest Houston, the shovel of a police forensics investigator struck the femur of one of seventeen corpses excavated that week, victims of serial killer Dean Corll.

Meanwhile, 235 nautical miles above the earth's surface, a radio wave began its course from Skylab to a parabolic radar dish antenna aboard United States Naval Ship Vanguard.

Meanwhile, at Royals Stadium in Kansas City, Lou Piniella's cleat met home plate, kicking up dust as it scored what would become the team's winning run against the Baltimore Orioles.

And meanwhile, at the Trail's End Restaurant in Kanab, Utah, a bowl snuggled a half cantaloupe, and butter seeped into the caramelized surface of a pancake (Plate 4).

69. Heinlein, *Grumbles from the Grave*, 49.
70. Husserl, *Husserliana* (24), 118.
71. Lingis, *Imperative*, 63.
72. Zahavi, *Husserl's Phenomenology*, 45.
73. Harman, *Guerrilla Metaphysics*, 183.
74. http://earthspeaks.seti.org.
75. http://earthspeaks.seti.org/pages/About.
76. Rescher, "Extraterrestrial Science," 83–116.
77. Waldenfels, *Phenomenology of the Alien*, 74.

2. ONTOGRAPHY

1. I am indebted to Graham Harman for pointing out this reference, from which we have both benefited in different ways.
2. Harman, "Ontography."
3. Kitschener, *World View of Contemporary Physics*, 76.
4. Lynch, "Ontography," 9.
5. Schulten, *Geographical Imagination in America*, 75.
6. Ibid., 105–6.
7. For example, in the 1970s Caterpillar made use of a controlled English known as Caterpillar Technical English for technical authoring and international documentation. See Kamprath, Adolphson, Mitamura, and Nyberg, "Controlled Language for Multilingual Document Production."
8. Kuhn, "How to Evaluate Controlled Natural Languages." See also http://attempto.ifi.uzh.ch/site/docs/ontograph/.
9. For an example of IKEA assembly instructions, see http://semitough.files.wordpress.com/2008/03/ikea_instructions.jpg. For a different but related example, see Mike Sacks and Julian Sancton's hilarious send-up of IKEA instructions on page 62 of the June 2006 issue of *Esquire*, http://www.doobybrain.com/wp-content/uploads/2008/06/ikea-instructions.jpg.
10. Meillassoux, *After Finitude*, 7, 26–29, 63.
11. Latour, *Pasteurization of France*, 199.
12. Harman, *Guerrilla Metaphysics*, 3.
13. Latour, *Pasteurization of France*, 194.
14. Ibid., 192, 196, 198.
15. Harman, *Guerrilla Metaphysics*, 1.
16. Harman, *Prince of Networks*, 58.
17. Harman, *Guerrilla Metaphysics*, 3.
18. Harman, *Prince of Networks*, 102.
19. Spufford, *Chatto Book of Cabbages and Kings*, 1.
20. Ibid., 2.

21. Ibid., 7.

22. Barthes, *Roland Barthes*, 116–17.

23. Homer, *Iliad*, 2.494–759.

24. Melville, *Moby-Dick*, 294.

25. Another, similar ad appeared in 1986. The "Coke Is It!" campaign itself began in 1982. The two ads can be found at http://www.youtube.com/watch?v=bR7Wj9qnwaM and http://www.youtube.com/watch?v=3zFPcWsmH1g, respectively.

26. See http://www.youtube.com/watch?v=OdB7GDZY3Pk. Carl Willat's website is http://www.carlsfinefilms.com. Lyrics are copyright 2009 by Carl Willat.

27. Blanciak, *Siteless*, 4–5.

28. Lynch, "Ontography," 7.

29. Shore's photographic selectiveness was partly constrained by the high cost of 8x10 plates.

30. Prints can be found in Lange, Fried, and Sternfeld, *Stephen Shore*, 10, 82. The first two examples were earlier images captured with a smaller Rollei instead of the larger view cameras discussed above.

31. Cotter, "A World unto Itself."

32. Ibid., 11.

33. Ibid., 87.

34. Harman, *Quadruple Object*, 124.

35. Ibid., 125.

36. Walton, *Technical Data Requirements*, 170.

37. For more on the tight coupling of skin and mechanics, see Bogost, *Persuasive Games*, 40–51.

38. Good, "All 22,802 Words in Scribblenauts."

39. A complete list of merits can be found at http://www.scribblenautsguide.com/page/Scribblenauts+Merits.

40. Totilo, "16 Attempts at Scribblenauts."

41. Aristotle, *Physics*, book 5.

3. METAPHORISM

1. Latour, *Pasteurization of France*, 215.

2. Nagel, "What Is It Like to Be a Bat?" 435–50. The question was originally posed by the physicalist critic Timothy Sprigge, although Nagel made it famous.

3. Indeed, the molecular process by which the sensation of sweetness occurs remains somewhat mysterious, and a subject of considerable inquiry in contemporary organic chemistry.

4. Nagel, "What Is It Like to Be a Bat?" 436.

5. Ibid., 438.

6. Ibid., 442.

7. Ibid., 439.

8. Ibid., 447.

9. Ibid., 449.

10. Ibid.

11. Bennett, *Vibrant Matter*, 120.

12. Ibid., 438.

13. Harman, *Guerrilla Metaphysics*, 3.

14. Ibid., 150.

15. Ibid., 98.

16. Ibid., 94.

17. Epstein, Genis, and Vladiv-Glover, *Russian Postmodernism*, 105.

18. Quoted in Epstein, Genis, and Vladiv-Glover, *Russian Postmodernism*, 138.

19. Epstein, Genis, and Vladiv-Glover, *Russian Postmodernism*, 106.

20. Zhdanov, "Oblast' nerazmennogo vladen'ia . . . ," 63. Quoted in Epstein, Genis, and Vladiv-Glover, *Russian Postmodernism*, 138.

21. Harman, *Guerrilla Metaphysics*, 153. "Real object" is a technical term for Harman, who splits entities into the withdrawn, real objects and the "sensual objects" that enter into relation.

22. Epstein, *After the Future*, 41.

23. Husserl, *Husserliana* (19), 437.

24. From my own tests: at ISO 200, color and saturation shifts are not noticeable; at ISO 400, red shifts toward yellow by about 17 degrees. Green shifts toward cyan slightly and desaturates by around 20 percent; at ISO 800, red shifts toward yellow by about 28 degrees. Green shifts away from cyan slightly, perhaps by 5 degrees, but desaturates almost entirely.

25. Maurer, "Reality and Digital Pictures."

26. From the question and answer session in a presentation of work at MIT in 1974. The University of California, Riverside has archived an audio recording of the session at http://cmplab16.ucr.edu/podcasts/2008.0009.0003/UCR_CMP_Podcasts_CollectionsSeries2.m4a. I am grateful to Ted Papageorge for sharing this recording with me.

27. http://twitter.com/ibogost/status/5928090585.

28. Latour, *We Have Never Been Modern*, 89.

29. Latour, *Pasteurization of France*, 197.

30. Ibid., 227.

31. Levinas, *Time and the Other*, 90.

a

b

c

PLATE 1. (a) Stephen Shore, *New York City*, *1972*; (b) Stephen Shore, *Rolla*, *Missouri*, *1972*; (c) Stephen Shore, *Room 28 Holiday Inn*, *Medicine Hat*, *Alberta*, *1974*. Courtesy of the artist and 303 Gallery, New York.

PLATE 2. Stephen Shore, *Beverly Boulevard and La Brea Avenue*, 1975. Courtesy of the artist and 303 Gallery, New York.

PLATE 3. Stephen Shore, *Perrine, Florida, November 11, 1977.*
Courtesy of the artist and 303 Gallery, New York.

PLATE 4. Stephen Shore, *Trail's End Restaurant, Kanab, Utah, August 10, 1973*. Courtesy of the artist and 303 Gallery, New York.

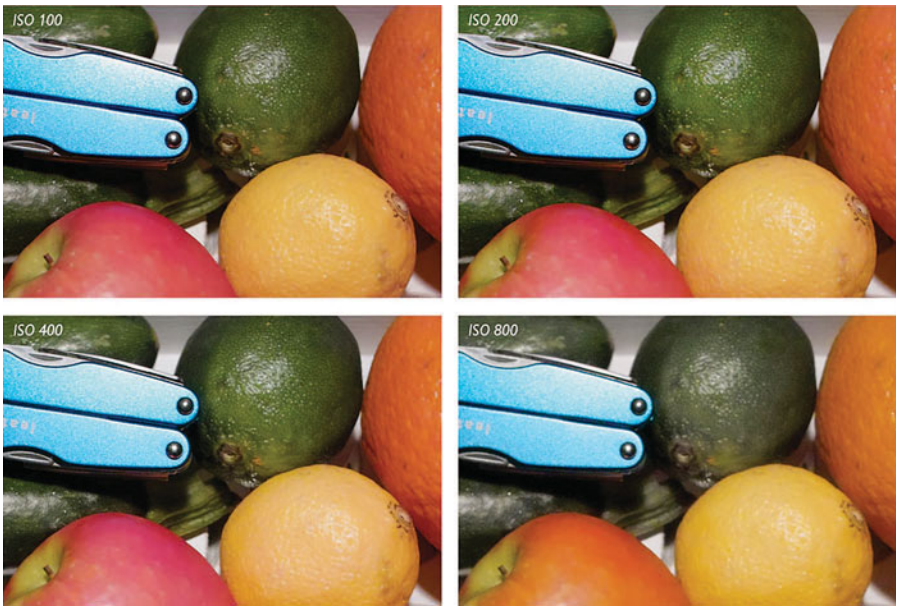

PLATE 5. As the Foveon sensor's light sensitivity is amplified, the images it records exhibit color shifts. Taking the ISO 100 image at top right as a baseline, by ISO 400 red shifts toward yellow, and green both shifts toward cyan and desaturates slightly. At ISO 800, red shifts even farther toward yellow, and green desaturates almost entirely.

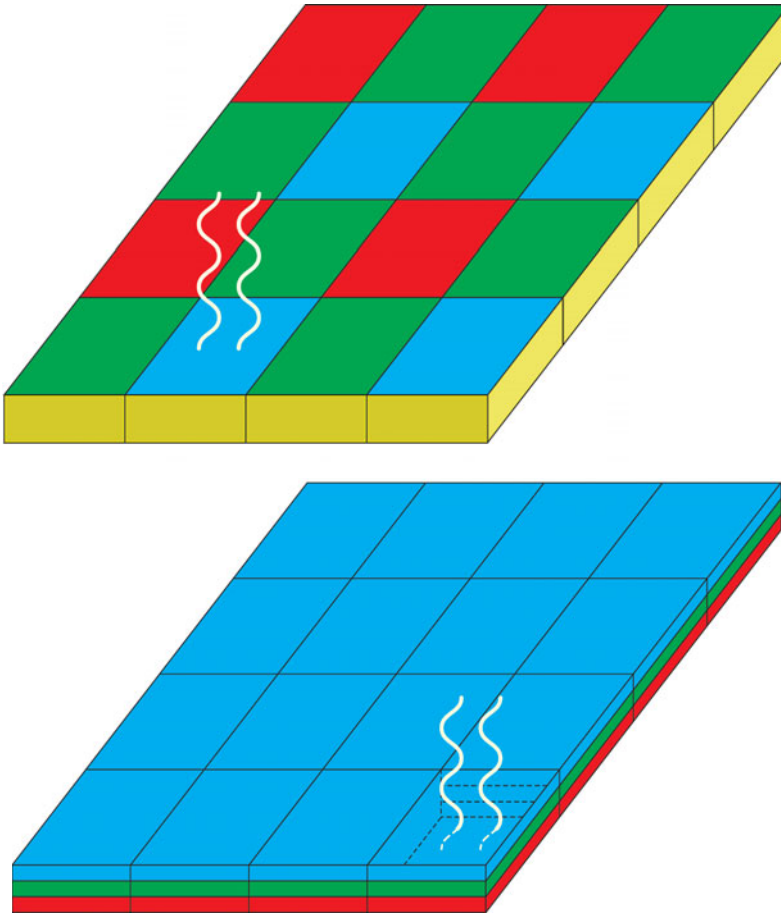

PLATE 6. A Bayer sensor *(top)* interprets colors by combining results from an array of photocells that are sensitive to a single color (red, green, or blue). In a Foveon sensor *(bottom)*, the silicon is photosensitive to different wavelengths of light at different layers of the individual photocells.

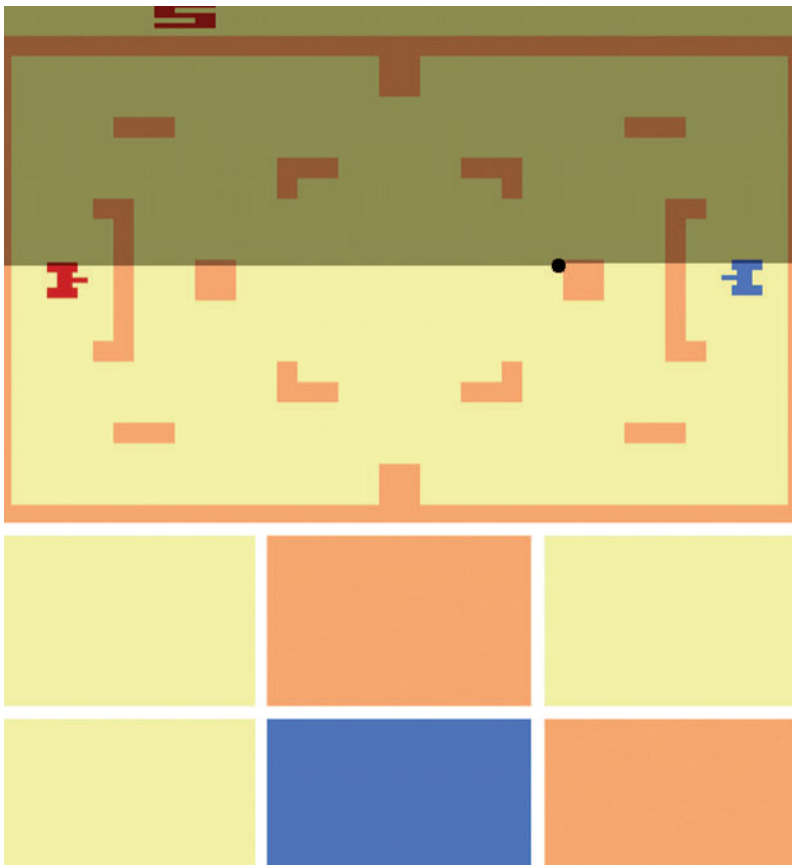

PLATE 7. *I Am TIA* is a work of carpentry that metaphorizes the experience of an Atari television interface adapter (TIA). At top is the reference image, a screen from *Combat* (1977). The black dot shows the current position of the electron gun on the television display, the darkened area above it having already been traversed. At bottom are six screens sampled from the output *I Am TIA* would display just after this moment, its internal circuitry choosing the topmost object's color and adjusting its signal accordingly.

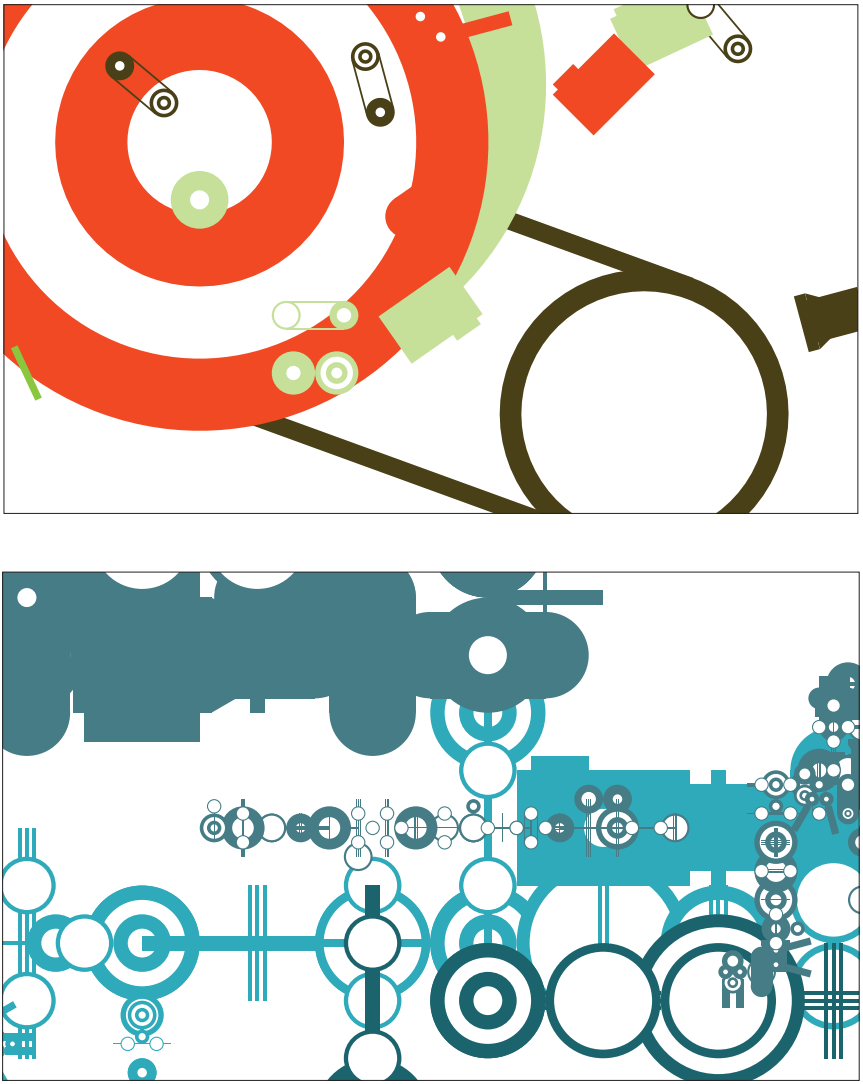

PLATE 8. Two of many possible visual states of *Tableau Machine*, a computational "alien presence" that characterizes a home's perception through abstract art. Reproduced courtesy of Adam Smith, Mario Romero, Zach Pousman, and Michael Mateas.