

PAINTING IN THE HOUSE OF SOLOMON

ELLEN K. LEVY'S WORK REVISITED

By Bruce Robertson

Just over a decade ago I wrote an essay on a body of site-specific work by Ellen K. Levy called "Shared Premises: Innovation and Adaptation" that was going to be exhibited at the National Technical Museum in Prague.¹ This event took place a little over a month before the upheavals of 9/11. Both of us shared an interest in the history of museums as part of the larger history of ideas, particularly the history of science and technology, and that shared interest provided the platform for my essay.

One aspect of the particular historical moment and place of the exhibition was the uncanny convergence between some of the spaces and forms conceived in the paintings and the space and forms of the National Technical Museum, which was a version of the canonical science museum gallery of the nineteenth century (itself a reworking of the classic library gallery of the previous century): an upper gallery circumambulating a high, rectangular space crammed with cases and exhibits, some suspended from the ceiling (Fig. 1). These angular forms, deep spaces, and industrial surfaces were reflected in Levy's paintings; both were part of the same, continuous history, even if expressed in radically different material and epistemological modes. And, as the essay discussed, Levy's work self-consciously explored the issues of taxonomy and classification and collecting in museums, and the convergence of forms in the specimens, whether they were human-made or biological. Both interests, for Levy, fell under the umbrella of evolution, but they might just as easily have been seen as expressing the understanding that all collectible material and the sciences that study them precipitated slowly out of the original museum, the Wunderkammer, and have only slowly been crystallized into their current configuration of art, science, and technology, and natural history and history museums, just as the disciplines attached to these museums have for the most part arisen from natural history.

Since the essay was written and the works painted, there has been a radical discontinuity, and the world we live in is not a place we could have imagined at the beginning of 2001. What follows, then, is the original essay and then a reflection on the developments in Ellen Levy's work and in the museum world in general. But as I reflect on the status of museums and their



Fig. 1. National Technical Museum, Prague, 2001. Photo: Ellen K. Levy.

future, and the full richness of significance of Levy's work, I realize that framing it within the trope of the museum is insufficient, as is our notion of the museum itself. I would rather think of both as sitting within Solomon's House, an institution dedicated to the generation of all knowledge.

Ellen Levy once said to me: "A painting is a museum too."² We were looking closely at an area of one of her paintings that reminded me, in its color and paint handling, of Mondrian. She clarified what she meant: at this point in time no artist can put brush to canvas without history shaping the act. The painting inevitably becomes a collection of these art historical moments, a museum of the artist's involvement in the art of her time.

But Levy also paints images of museums—of multiple museums all gathered together—and exhibits her paintings in those same museums. Her paintings become a collection of collections. They are both a metaphor for the museum, its sign

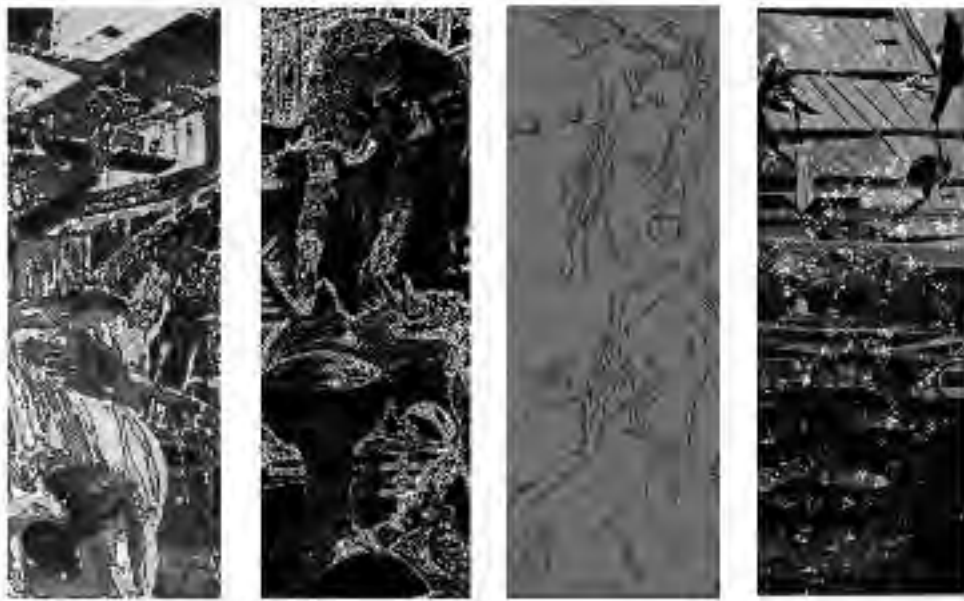


Fig. 2. Ellen K. Levy, *Untitled* (2001), four chromogenic prints mounted on metal, each 30" x 10". National Technical Museum, Prague. Photo: Peter Seidel.

and synecdoche, and the museum itself. They function as a microcosm in which all aspects of the macrocosm are reflected and collected. Since she fits her general work precisely to the particular circumstances of its location, one of the goals of the viewer of this exhibition is to see how she has brought her ideas about museums and painting to the history of transportation at the National Technical Museum.

What are her paintings really collecting? First, her painting concerns itself with basic scientific issues and theories of growth and chaos. These are questions of how intelligible form is created. Contemporary scientific theories suggest implicitly that form only takes shape in contrast to other forms or lack of form. There is no ideal form that exists independently in itself; today's theories of growth and chaos constitute the death of Platonic form. Moreover, form is now seen to be generated not geometrically but algorithmically, in a constant series of stages that succeed each other.

Perhaps the most important modern theory concerning the creation of form is evolution, the theory that explains how the most "perfect" form of all—ourselves—was finally made. But chaos theory has affected evolutionary ideas as well: no longer can evolution ever be seen as progress but instead it must be regarded as a byproduct of the algorithmic permutations affecting large communities. This enters Levy's work in a number of ways, but perhaps most dramatically in her works that are modeled on cellular automata.³ In these chromogenic prints, "genetics" becomes a mechanism for creating painterly form. She has applied algorithms of growth to scanned images of her paintings, using the computer not to generate order but to mutate it, so that the artwork itself is now part of an evolutionary order. Each of the chromogenic prints designated "Untitled" (2001; Fig. 2) is based on images from either natural history or technology displays.

Levy puts a further spin on evolution as she subtly juxtaposes the fin of a shark and the fin of an airplane. She reveals that

humans use the same algorithms to generate forms as "nature" uses to generate functional shapes in animals.⁴ But Levy pushes the notion of 'function' further than the obvious elements of locomotion and structure. She addresses questions of developmental biology through integrating painting, data visualization, and computational approaches in her installation (2001; Pl. 2). The forms in *Malevich's Tail: Brancusi's Bird* (1999) float in a medium that suggests water as well as air. By contrast, in *Christo's Tusks: Loewy's Propellers* (1999), the development of bicycle designs in the lower right-hand quadrant mimics the painted morphology of tusks. In *Damien's Gliders: Agassiz's Chart* (1999), Levy aims to compare evolutionary theories, juxtaposing Agassiz's evolutionary chart

in the left third of the composition with a cladistic-like series of branching lines on the right formed by the combination of lines from the ceiling and stacked airplanes. Through the constant process of visual rhyme—whereby the curve of a shark's mouth echoes the sinuous line of an elephant's trunk or a propeller—she reveals an order that underlies all the elements of the seemingly heterogeneous, unconnected objects she brings together.

This is the second thing that converges in Levy's work—her interest in classification, seriation, and organization. In gathering different creatures and machines, she classifies them



Fig 3. Ellen K. Levy, *Trophy* (1997), oil on wood, 72" x 72". Photo: Oren Slor. Private collection.

in an order that makes sense of some kind. There are several obvious ordering systems that are conventional in museums. Progress is the most constant—a line beginning from the earliest example and proceeding to the most recent. Or museums organize things into kingdoms and species, continents and regions, modes and uses. The impulse to arrange produces collections, and all collections suffer organization. Levy, by bringing together specimens from the Jardin des Plantes, Kennedy Space Center, and the National Technical Museum, for example, proposes an arrangement that harmonizes all other secondary classifications of time and space. This brings us to the third convergence. By gathering multiple collections in one unity, Levy recalls the history of museums.⁵ For example, *Trophy* (1997; Fig 3) exemplifies how an oil painting exhibited at Associated American Artists Gallery in 1998 reflects prior studies that Levy had made from displays in the Jardin des Plantes in Paris. The painting also contains additional elements such as paper clips and Damien Hirst's collection of sharks in glass cases. She regroups the dispersed elements of the first universal collections of all objects known to man, the curiosity cabinet or Wunderkammer of the sixteenth century, reuniting its primary division of *naturalia* and *artificialia*. All later museums descend from these microcosms of the universe. But where all later museums dismantle this microcosm into its separate parts, the Wunderkammer joined them firmly. The central function of the Wunderkammer was to explore similarity of form and, most particularly, the similarity between natural creations and humanity's, between *naturalia* and *artificialia*.

Levy has recuperated the fundamental epistemological maneuvers of the Wunderkammer: we know the world through the comparison and juxtaposition of like and unlike, by placing one thing next to another. She deftly conflates two kinds of juxtaposition—seriation (an Enlightenment, modern scientific tool) and adjacency (a technique of the curiosity cabinet). She collapses together, as she does the elephant and the airplane, the history of museums, even as she collapses ideas of history and progress and evolution in their seemingly different realms of technology (the history of things), human history, and natural evolution. In this maneuver, she is utterly postmodern, and is firmly in line with the new epistemologies of knowledge production being created (or recreated) by the Internet.

Levy does not so much write about these ideas as she paints them. And here she makes her most distinctive contribution, the point she made to me the first time I looked at her paintings with her. Understanding both the act of painting and the painting itself as a museum, she accomplishes several things. First, she knits all the disparate elements of the modern museum experience together. And she underscores their commonalties in the public performance of culture that constitutes the museum's characteristic involvement in contemporary society. Second, she begins to define the very act of making marks on canvas as an act of form creation, similar



Fig. 4. Ellen K. Levy, Installation at National Technical Museum, Prague (2001). Photo: Peter Seidel.

to those that scientists have agreed produce and shape meaning in the world. In other words, she suggests that artistic creation lies exactly on the knife edge between chaos and growth that her chromogenic prints illustrate. She unveils the truth that painting itself is an algorithmic activity of form creation that is both endless in its future and a product of its past. The profound importance of Ellen Levy's art lies in this demonstration, this unbaring of the deepest connections between the process of history, the progress of form development, and the activity of physical collecting.

Finally, one needs to say something about Levy's paintings at the National Technical Museum. The Museum is a specific place, above all dominated by the large gallery of airplanes, bicycles, automobiles, and other machinery of transportation. In that space one is faced with the usual contradictions of growth and chaos, between the orderly evolution and historical display of a particular machine type, and then, turning around, an amazing cacophony of objects, scale, uses, colors. One walks past a line of models, photographs, and text, all in a line on the balcony, and then sees, in a volume of space crowded with large machines of all kinds, the real thing, real wonders embedded in the amber of the museum.

Levy's installation recreated this fundamental experience of museums—and, one might add, science, art, and life itself. The installation (Fig. 4) shows three of the large-scale oil paintings that were just discussed, four chromogenic prints, a related animation, and a painted platform in the foreground that depicts some of the traffic underlying the museum and its displays. The orderly sequence of sixteen panels (not visible in this photograph) mimics the line of cases on the balconies of the transportation exhibit; but the view through them into the paintings themselves is a dizzyingly "accurate" recreation of the immediate impression of the whole exhibit. Only gradually does one recognize the affinities and rhymes of shapes, and the harmonies of human-made and natural forms. Slowly and carefully, progress and evolution are seen as systems of forms.



Fig. 5. Ellen K. Levy, with Michael E. Goldberg and Paul Sultan, still from *Stealing Attention* (an animated series) (2008).

The chromogenic prints and the four large oils frame these sixteen “windows” in another fashion, suggesting the two ends of the conceptual spectrum which Levy has brought together—the work in the laboratory and the collection of the museum. Finally, in the central sculptural installation, Levy works out of the transportation exhibit into the world outside the walls of the museum in her references to the city and its traffic patterns.

For that is the ultimate goal of Levy’s work, to situate the work of art—painting, the most traditional of Western civilization’s high art forms—in the realms of both the most abstract of scientific ideas and our daily experience of pattern making. The act of putting paint to canvas, she asserts, is as natural and as artificial as getting behind the wheel of a car, or of understanding the algorithms of life.

Since 2000 Ellen Levy has pursued her interests in the complexity of nature and culture, and the artist’s ability to address that complexity, in several different bodies of work. She has expanded into digital and video media and continues to experiment with installations. But she has returned to painting always, and to the ability of painting to absorb the most astonishing range of questions, motifs, and ideas. Painting can still function as a collection, a museum for her, but the work and the frame around the work have changed. In turn, installation and contextualization have become central strategies that enable her to extend the field of painting’s possibilities through focusing the viewer on the physical aspects of perception, especially its constraints.

Because the world of museums has changed radically, so has my reaction to her work. Museums now seem imperiled

institutions in a way that had been largely theoretical a decade ago. Then we were concerned about the inroads that both digitization and epistemological changes (arising within many disciplines from a focus on objects to a concern for process) had made on the goal of collecting, preserving, and displaying physical objects—the traditional core of the museum mission. In particular we chronicled the dismantling of natural history collections, their abandonment and occasional destruction, as it seemed that ecology had replaced taxonomy as the heart of natural history. Art museums, little more than a decade ago, were deeply reluctant to put images of their collections online, in case it should discourage people from visiting the museum because they would be content with a digital replica.

But we have also witnessed the wholesale physical destruction of art and archaeological collections: the museums in Iraq and Afghanistan most notably, but more recently the looting of the Cairo museums during the so-called “Arab Spring” of 2011, and even more recently the burning of historical libraries in Timbuktu early in 2013. We realize that we cannot just theorize about museums, but must actively work to protect them, if we value them. Even in this country, I find myself more interested in the pragmatic and ethical issues of cultural patrimony, the quickly evaporating boundary between the commercial art market and the museum exhibition, the distortions of the money and interest that surround contemporary art collecting and the continued relevance of historical collections, than I do about the epistemological status of collection and display practices. We may assert the continuing resiliency of museums within contemporary culture, but we must also acknowledge their fragility and mutability.

Levy’s art works reflect the deep changes undergone by museums: the shift from taxonomy to ecology, the pervasive influence of digitization upon archiving, and the distortions of the market. As Levy’s work alludes to iconoclastic acts of violence as well as the profitable trade in stolen antiquities, it embodies how the processes of evolution work their way on culture as surely as biology. Ellen Levy has explored just these issues most profoundly in a series of works entitled *Stealing Attention*.⁶ Focusing on the destruction and looting of museums in Baghdad, she ties these acts of violence to two larger forces in a different realm. While most of us would see these acts as political, theological, or cultural—that is to say, within the realm of the social—Levy is interested in how they play within the realm of biology. Specifically, she develops two threads: first, the ways in which inert objects themselves have a life, whereby they may be seen to migrate or replicate themselves; and second, how our attention to these events is shaped by the hard-wiring of the brain, as it has evolved over time.

Superficially, her consideration of provenance and the impact of political events on objects resembles the work of activists like Hans Haacke, and one cannot deny the value of Levy’s activism. However, the real frame of the work is more abstract and just as powerful. What Levy is getting at is the fact that our attention is not seamless but biologically constructed: there are gaps and holes in what we see in the world, as our brains put together discrete packets of data, file them away and retrieve them.



Fig. 6. Ellen K. Levy, L-R: *Conning Baghdad*; *Fleeced Chariot*; *Jack of Hearts* (all 2008), mixed media on wood, each 58" x 38". Photo: David E. Levy.

The work itself consists of an animation (the result of a collaboration between Levy and Michael E. Goldberg, Director of the Mahoney Center for Brain and Behavior, Columbia University), nine mixed media paintings, eight prints, and documentation, next to an empty shelf, in an installation. One of several large-scale mixed-media paintings, *Jack-of-Clubs* (2008; Pl. 3), depicts hands stealing relics and playing cards within a maze-like architectural space. The animation requests that we play a game of cards, counting the number of times the Queen of Hearts appears in each cycle; the hands displaying the cards flash rapidly and randomly over a matrix of black and white photographs of objects lost from the Museum in Baghdad in the looting after the invasion (Fig. 5).⁷ If we pay attention to the cards as we are supposed to, we don't notice that the objects are disappearing.⁸ The documentation consists of the catalogue data of the missing objects. The paintings are meditations on the objects, the cards, the destroyed museums and their archives, the invading troops; in other words, all the data that surround the incident. Levy poses a question through her installation: are the emotional, empathetic qualities of painting capable of recalibrating the viewer's vision? The task assigned to the viewers in the animation, which is placed at the entrance, nearly insures they will not see the looted objects in the background. Subsequently, as the spectator moves through the installation space, the artworks insist on the embodied qualities of paint and image to flesh out the theft of the antiquities. The three mixed-media works, *Conning Baghdad*, *Fleeced Chariot*, and *Jack of Hearts* (all 2008; Fig. 6), represent the theft taking place within the museum space. The bare wood of the painting support and the titles develop the issues of construction, destruction, and re-construction that

occur in the animation. If the viewer should watch the animation again before leaving the exhibition, she has a greatly increased chance of now seeing what had before been invisible—the removal of the antiquities.⁹ Painting stands for the real world of rich context, while the animation (essentially a distraction machine) reduces the situation to objects, hands, and cards. There are many ways we could look at this juxtaposition of media and event, but one way, surely, is the rich stillness of the paintings and the rapid firing tempo of the largely black-and-white animation.¹⁰ Or, framing it epistemologically and historically, one has all the incidental and pictorial qualities of art while the other embodies the deliberately reductive act a scientist goes through to conduct and experiment, selecting only those few basic elements she wishes to investigate.

In *Stealing Attention*, Levy also confronts the ubiquitous digitization of museum collections through juxtaposing digital with painted passages in collage on wood panels. She enables the eye to linger while it compares realistic renditions of a raided museum space (often identified by either printed or painted words) with impasto and depicted architectural passages. The digital collage requires viewers to actively rotate their heads to re-create how once unified forms have been split apart and to rely on their archival memory of salient art works. For example, the painting *3-Card Monte Projected* (2008; Fig. 7) includes patents and trajectories of the gaze, and features hands taken from Caravaggio's *The Cardsharps* (c. 1595) and George de la Tour's *The Cheat with the Ace of Clubs* (c. 1630–34) from the collection of the Kimbell Art Museum.

Not incidentally, however, Levy literally stages an experiment. By including painting, with its demand that we both

concentrate and expand our vision, she examines how she can affect our attention so that we do pay notice, so that the physiological processes of our brain are shaped by the medium the work is expressed in. In other words, she turns the installation into an experiment, not in the rather loose sense we all like to apply to our work, when we “try things out,” but in a more purely scientific sense, of containing the subject within precise parameters so that physiological change can be determined and measured.

As is typical of Levy’s work, she has placed these concerns within the frame of magic acts and illicit street action in the references to the cardsharp practices of three-card monte. Notably, magician’s tricks now function as excellent primers within the realm of neuroscience, of how attention, itself, works.¹¹ A context of moral outrage also exists since the antiquities can be seen as stand-ins for the collateral damage of war. In effect she has drawn a clear line between the political and cultural missteps of the Bush administration, which went so cavalierly into a country that it determinedly refused to learn anything about, and the larger psychological phenomenon of how we do pay attention to things, how easily distracted we are from what is important to pay attention to. But also her work allows us to learn what we habitually do, and thus avoid such mistakes in the future. In other words, her work is positioned not only as a political warning but as a model of knowledge production, one that is useful in all situations.

In subsequent artworks, such as *This Image is Unavailable #2* and *#3* (2012; Pls. 4 and 5) and *Molds and Memes: Cast of Thousands* (2013; Fig. 8) Levy continues to have the viewers focus on images of antiquities in the process of being stolen. They are portrayed under plastic wraps and / or being smuggled from their original habitats or else being replicated from casts. Upending expectations, Levy playfully comments that these fragile relics could instead be viewed as hardy, having solved some basic problems of life forms. Pretending these relics have agency, Levy depicts them in *This Image Is Unavailable #2* and *#3* as having “solved” the problem of transportation via human carriers while, in *Molds and Memes: Cast of Thousands*, she focuses on depicting the replication of the antiquities. She states that they have enticed us to become their accomplices; we commit theft on their behalf, viewing the pillaging of cultures as a form of unintentional tribute, and we humans provide for their transport and propagation (through the memes of casting and language). In this sense, she views herself as their human archivist.

Both groups of works, *This Image is Unavailable* and *Molds*



Fig. 7. Ellen K. Levy, *3-Card Monte Projected* (2008), mixed media on wood, 72" x 48". Photo: David E. Levy.

and *Memes*, portray the intersection of two worlds—the lichens that build a home on statuary and the migrating treasures of a fully globalized and monetized art world. Showing these treasures swaddled with plastic, Levy initiates a visual play of real and depicted transparency and opacity with painted illusion and cut mylar on paper. This time, however, the looted relics assume center stage while, in the background, near-invisible shifts of texture, value, and reflection take place while depicting the lichen and mold growing on the surface of the statuary. The subject remains inattention blindness, but the blindness is directed to the ominous changes in our environment. The lichens (known for longevity and as a barometer of environmental health) function as a microcosm that reflects on the human macrocosm of collected trophies from fragile and warring environments. As with the exhibition at Prague, Levy implements cellular automata studies using scans of the

developing art works, and she occasionally incorporates them within the art works. The proliferation of lichen that occurs over time is mimicked in paint by applications of impasto (modeling paste and gel) with knives, bubble wrap, and fabric over printing. Levy implicitly asks whether these antiquities (their memes consisting of descriptions, depictions, and imitations) can outlast the most fundamental and resilient forms of microbial life, deliberately equating or confusing again the human-made and the biological. The question intimated by the depicted lichen is whether these hardy forms can survive us and the changes we have wrought in the ecosystem.

Over the years, Levy, who has a B.A. in Zoology, has worked in laboratories and been immersed in the art and the neuroscience of attention, and has been engaged with a wide variety of major scientific research concerns, focusing on the nature of classification, the brain and visual perception, and genome research. Her art work has dealt with the subject of technological evolution by incorporating the patents from such industries as oil exploration and genomics and has portrayed the negative impact of corporate development upon the environment in *Sea Currents*, *DNA and Oil (Chakrabarty)*, and *Quorum sensing bacteria*, all executed in 2005.¹² Most of these works date from 2001 to 2007. An early oil work on wood support, *Relentless* (1987; Fig. 9) animated a force field of automated energy and was inspired by a display at a science museum as well as by images of Russian constructivism. Prior to that, she had exhibited in a number of scientific institutions, including the New York Academy of Sciences (1984) and the National Academy of Sciences in Washington, D.C. (1985). The works displayed at both locations focused on observatories. *Aperture* (1984; Pl. 6)



Fig. 8. Ellen K. Levy, *Molds and Memes: Cast of Thousands* (2013), Mylar, modeling paste, paint, and print, 60" x 40". Photo: Ellen K. Levy.

entailed a lengthy panel preparation involving sanding and casein layering to create a subtle emission of light. By contrast, the temporary ceiling mural, *Palomar* (1985; Pl. 7), consisting of eighteen units of archival paper pieced together, was exhibited on the rotunda portion of the ceiling of the exhibition space at the National Academy of Sciences. *Palomar* was two hundred inches in diameter, the same dimension as the famed Palomar mirror in California, and was instrumental in Levy's obtaining a commission from the National Aeronautics and Space Administration (NASA) (1985) at the Kennedy Space Center. Levy became one of a small group of NASA artists. She described her experience of meeting with NASA engineers and astronauts and touring the facilities, sketchbooks and cameras in hand, while avoiding alligators attracted by the activity. She completed several casein on panel works as a result of her NASA commission; many such as *V.A.B.* and *Chrysalis* (1985; Fig. 10) were based on the vehicle assembly building where components of the space shuttle were assembled. A *New Yorker* blurb singled out such work for its vertiginous, Piranesi-like space.¹³ Levy had long been immersed in the lore of space travel and recalls eagerly signing her name to travel to the moon when she visited the Hayden Planetarium as a child. Like many, she was greatly saddened by the Space Shuttle *Challenger*



Fig. 9. Ellen K. Levy, *Relentless* (1987), oil on wood, 72" x 48". Photo: Oren Slor.

disaster (1986), the death of its seven crew members, including school teacher Christa McAuliffe, and the threats to the continuation of the space program. According to the artist, *Untitled (Challenger)* (1986) and *Structure + Failure* (2003) are expressions of fear and explore the structure of failure. Works subsequently shown at Drew University and in Hamburg and Cologne, *Disorder and Early Sorrow* (1987; Fig. 11), were named after a short story by Thomas Mann. In them Levy explored complex systems theory with models, drawings, and paintings of dominoes subjected to destructive forces. The placement and removal of the dominoes suggested architectural models of cities. Her system relied on a random number generator; although the randomness is only approximate, it visually suggested some of the circumstances that result in chaos.

One common thread in her diverse periods of work is her interest in the convergence of cultural and technological change with biological evolution. As she stated in a 2009 article about George Kubler's *The Shape of Time*: "Just as biology and technology have coevolved to forge a new industry, we contemplate new art forms that merge the biological with the technological."¹⁴ Given her fascination with complex systems, it was natural that she view its discoveries and technologies as compelling resources for artists.



Fig. 10. Ellen K. Levy, L-R: VAB (Vehicle Assembly Building), *Chrysalis* (both 1985), casein on prepared panel, 60" x 30". Left, Photo and Collection the artist; Right, Photo and Collection NASA.

But what then does art offer? Why not continue the laboratory work? Or, to put it another way, how does painting actually embody research activity: what is the divide between measuring response or visibly compelling response? In other words, what are the relationships among the experiments and research, the creation of algorithms to trace networks in databases, the creation of digital media, chromogenic prints, and Levy's handsomely crafted, complex, and compelling paintings?

A decade ago I made the claim that Levy was arguing that painting at the end of the twentieth-century was a museum, a repository of the gestures, interests, and subjects of painting over the previous century and before. I argued, implicitly, that any painter today, in putting paint on canvas, did so from the position of a curator, that the painting was inevitably an exhibition, a sort of curated visual space. Now, however, I would make a larger and, I hope, more compelling claim, that Levy has argued successfully that painting is the House of Solomon, a space where all the world's knowledge resides and where knowledge workers—both artists and viewers—make use of that storehouse to discover the world anew and learn new things about it.

Solomon's House, while referring to the Temple Solomon built in Jerusalem, more specifically is the institution imagined by Francis Bacon as the heart of his utopian island in *The New Atlantis* (published in 1627 after Bacon's death). In this fantasy, Bacon imagines the perfect society, one guided by knowledge and reason, and untainted by the violence, disease, inefficiency, and irrationality of the Europe he knew. The island of Bensalem is governed by a ruler who is advised and

led by a group of wise scholars gathered together in Solomon's House, which includes laboratories, classrooms, storerooms, botanical gardens, and workshops. At the center of the institution, which is essentially the whole island and society, are two galleries, one which contains models of all the major inventions and discoveries, and the other with the images of the scientists who discovered them. This is a model of a museum which lies at the core of an enormous knowledge enterprise: the museum is the totality of the activities and structures of the House, and is also a microcosm of the whole, reflecting back to all participants the essential elements of the institution. As Bacon says of the House itself, the same may be said of the museum galleries: "which house or college ... is the very eye of this kingdom."¹⁵

This dream of a center of knowledge production that encompasses the world is age-old, from the first known "museum," the Library of Alexandria, to places like the Smithsonian or the modern research university. Bacon's formulation had a particular potency, and was a touchstone for the actions of generations of institution builders, from the Royal Society in the 1660s to the South Kensington Museums (which grew to include the University of London

at one point) in the 1860s, both of which explicitly evoked Bacon's term as their ideal. Ellen Levy's body of work has the same ambitions for her art and succeeds in both "exploring the similarities of the social, the biological, and the technological with the pictorial,"¹⁶ as Sara Henry asserts on her website, and arguing that the pictorial is a ground or matrix in which all the other modalities may be accessed and understood.

Let me conclude by remembering a peak experience visiting museums, in 2002, when on a dreary afternoon in New York, I trudged through two major exhibitions: the Renaissance tapestry exhibition at the Metropolitan Museum of Art and the Gerhard Richter retrospective at MoMA. The first demonstrated how insignificant oil painting, particularly easel painting, was at the height of the Renaissance: Raphael's art existed to provide designs that could be turned into tapestries that were infinitely more useful, more impressive and a lot more expensive than most of his paintings. Tapestries trumped oil painting hands-down, just at the point in the narrative of the Western canon when art historians trumpet its triumph. At the Richter exhibition, in contrast, I was thrilled at the way in which Richter met the challenge of every other mode of image production and reproduction and mastered them in oil painting: the extraordinary technical control exhibited in the abstract works in particular resulted in surfaces that no other medium could match or even approach. Here, I thought, at the beginning of the twenty-first century, was the painter who has most profoundly fended off the challenges of other media, and defended the centrality of painting more completely than any of his contemporaries, in the debates about the status of art within the



Fig. 11. Ellen K. Levy, "Disorder and Early Sorrow" installation (1987), L-R: Untitled, work on paper, 37" x 24"; Model, dominoes; Untitled, painting on panel, 12" x 16". Photos: Ellen K. Levy. All Private Collections.

expanding realm of visual technologies that has been going on since the invention of photography (and even earlier). Richter, ever expanding his art, also investigated the possibilities of the digital print in a 2012 exhibition at Marian Goodman Gallery.¹⁷

It seems to me that Ellen Levy has been engaged in a similar kind of investigation, assertion, and challenge, not so much about the relationship of painting to other image technologies, but the place of painting in the realm of knowledge production itself. Scientific inquiry has enabled Levy to intimate questions through her artworks: To what extent do cellular automata work like evolution? How does culture spread? Cultural evolution is considered to occur more rapidly than natural selection, but, now that biology can be manipulated, can its evolution proceed at a faster pace? When words describe antiquities or replace them, do we actually visualize the same images?

How does an artist assert the power of art within a world dominated by the claims of science to know the world more certainly and thoroughly than any other mode of knowing? Levy suggests that an artist's proper concern is all-encompassing and that the *qualia* of affect and concrete sensation that are basic to art cannot be ignored by science; this knowledge is part of what art offers science. As Bacon says: "The End of our Foundation is the Knowledge of Causes, and Secrett Motions of Things; and the Enlarging of the bounds of Humane Empire, to the Effecting of all Things Possible."¹⁸ As it concerns Levy, the point is that the House of Solomon was a storehouse of rich potential.

Two final points are worth making. We take for granted the differing claims of Art and Science, the major disciplinary division invented in the nineteenth century at the same time, not coincidentally, that museums became a primary feature of cities: science and art have fundamentally different ways of knowing and knowledge production. It's useful, however, to remember that the very word "scientist" was modeled explicitly on the term "artist."¹⁹

Most attempts in the humanities to "theorize" are rather sloppy imitations of scientific theorizing, just as the urge to incorporate quantification and measurement are largely meaningless (and forgetful of Duchamp's *3 Standard Stoppages* (1913–14). Levy, however, is no stranger to actual science; she is as grounded in the work and mentality of science and scientists as any artist living. She is informed in the scientific

fields she references (and having sat on several academic research committees I know that a geologist has no more understanding of theoretical physics or genetics than I do, and vice versa).²⁰ Her interests span Richard Dawkins' work on memes, D'Arcy Thompson's work on morphology and form, George Kubler's meditations on the shape of time, and L. Luigi Luca Cavalli-Sforza's examination of how genes and languages spread. The context of art and science interactions within which Levy functions has in recent years become increasingly compelling to artists, sparked perhaps by some of the spectacular developments that have taken place, like the cloning of Dolly. It has become virtually commonplace for artists and scientists to work together and to explore aspects of complex systems and genomics. Levy has a distinctive and important place in this interdisciplinary terrain. She is credited with bringing issues of genomics and art to a wide academic audience years before the Genome Project was concluded.²¹ She speaks now of a related, but far more complex project underway in brain research that is also likely to have a profound effect on the art community.²² New tools are available to shape visual language, and Levy does not hesitate to learn and use them when pertinent to her artistic investigations. However, whereas much media art focuses on new technologies, Levy concentrates on scientific theory and methodology. Of those artists that address art and science, many now use biology in the most literal sense, employing biological processes in the creation of work. Early on Levy made bacterial paintings while employed in a microbiology department,²³ but she sees the aesthetic presence of painting and visual metaphors as resources worthy of continued exploitation, often in juxtaposition with other media. Her work on paper *Outnumbered* (2000; Pl. 8) results from implementing a cellular automata program. What initially looks like expressive abstract forms related to pointillism derives from the application of a computer program to a scanned drawing. She explains that the initial drawing incorporates the image of bacteria that she grew by "painting" it on agar and then photographed. The drawing also incorporates references to the deadly prion virus causing Mad Cow disease, alluding to the emergence of its human spin-off as it entered the food chain. Form creation is once again a key to her approach; prion theory holds that a misfolded form has

caused the human disaster. Her art is evidence of both her success in integrating the two epistemological modalities, but even more important, the convincing and substantial proof of her claim that painting may function both as a container of knowledge and a device to sort it out, but also a means for generating knowledge, itself.

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Notes

1. "Shared Premises: Innovation and Adaptation" was the title of several varied exhibitions of Levy that compared technological with biological evolution, including the National Technical Museum, Prague, Czech Republic (2001), the New Britain Museum of American Art, New Britain, CT (2001), Trans Hudson Gallery, New York City (2000). The first of these exhibitions was at Skidmore College's Saisselin Art Building, Saratoga Springs, NY (1999), where Levy was a Distinguished Visiting Fellow in Arts and Sciences, a position funded by the Luce Foundation.
2. All unsourced quotes are from my conversations with Ellen K. Levy over the many years of our being friends and colleagues.
3. Stephen Wolfram defines cellular automata (CA) as self-organizing groups of cells that develop in accordance with rules; the cells form patterns based on the instructions received. Their behavior changes depending on neighboring cells. Scientists use them to study complex systems in order to understand interrelationships between the individual elements and the whole. Wolfram implies that the CA mechanism can explain certain recurrent patterns in nature such as that of mollusk shells.
4. John Holland introduced genetic algorithms (GAs) in the U.S. in the 1970s, and designers now use them widely. GAs are modeled loosely on the principles of evolution via natural selection. They work very differently from cellular automata and are used by industrial engineers to design engines. The engineers seek efficiency whereas the artists using them tend to explore the possibilities they permit.
5. Levy used displays at the Jardin des Plantes as the basis for an exhibition, "Cabinet of Wonders," at the Institut Cochin de Génétique Moléculaire, Paris, France (1997). The documentation and drawing conducted while a NASA artist served as the basis for work included at the Kennedy Space Center, Cocoa Beach, FL (1986). The exhibition in Prague included images from collections not only from the National Technical Museum but from the other museums as well.
6. *Stealing Attention* was exhibited at several venues. It was first exhibited in a solo exhibition at Michael Steinberg Fine Arts, (2009), then in a group exhibit, "Resurrectine," at Ronald Feldman Fine Arts, both New York City (2010), at another group exhibition, "Neurodiversity," (curated by K. J. Baysa), Museum of Modern Art of Ukraine, Kiev (2011), and in two solo exhibitions at the Nanobiology Institute, Univ. of California Los Angeles (2011), and at the Univ. of Washington Medical School, St. Louis (2011).
7. URL for a looped version of the animation: www.complexityart.com/subs/images/flash/stealing_attention_feldman.mov
8. Inattention Blindness is the inability to see something directly in front of you due to distraction.
9. The animation was loosely modeled after "Gorillas in our midst: sustained inattention blindness for dynamic events," a study conducted by Daniel J. Simons and Christopher F. Chabris (1999), but with important differences.
10. The flash animation originally shown also incorporates chance as an element since it is unpredictable where the Queen of Hearts will next appear.
11. Randi the Magician has worked with neuroscientists to understand perception. See S.L. Macknik et al. "Attention and awareness in stage magic," *Nature Reviews Neuroscience* 9 (Nov. 2008): 871–79.
12. Her solo exhibitions, "Metaphors for the 21st Century," at Rider University, Lawrenceville, NJ (selections 2000–08, curated by H. I. Naar) (2009) and "evolution," at the Ezra and Cecile Zilkha Gallery, Wesleyan University (curated by N. Felshin) (2005), incorporated images and text from industrial patents.
13. "On Paper" *The New Yorker* (Aug. 10, 1998, reprinted throughout August), 14.
14. Ellen K. Levy, 2009, "Classifying Kubler: Between the Complexity of Science and Art." *Art Journal*, vol. 68, no. 4 (Winter, 2009): 98.
15. Francis Bacon, *The New Atlantis* (publ. 1627); see for example, Project Gutenberg ebook http://www.fcsh.unl.pt/docentes/rmonteiro/pdf/the_new_atlantis.pdf, p. 8.
16. "Disorder and Early Sorrow" was the title of a traveling exhibition that focused on complex systems, including Drew University, Korn Gallery, Madison, NJ (1993), and Galerie Wild, Frankfurt, Germany (1993–94). It used dominoes to embody chance events and referenced domino theory in the political as well as scientific sense.
17. Gerhard Richter's digital works were exhibited at Marian Goodman Gallery, New York City (2012).
18. Bacon, *The New Atlantis*; http://www.fcsh.unl.pt/docentes/rmonteiro/pdf/the_new_atlantis.pdf, p.19.
19. The term was invented in the early summer of 1833 as a response to a challenge from the poet Samuel Taylor Coleridge. Attending as a guest of honor the third meeting of the British Association for the Advancement of Science at Cambridge University, Coleridge challenged his hosts to invent a better term than "natural philosopher" to describe this new, emerging beast—of which he considered himself one, just as he thought of himself as a poet and philosopher. William Whewell, a geologist and general polymath (he also wrote about Gothic architecture), answered with the word "scientist," modeled explicitly on the term "artist."
20. Levy supported her art by lab work in the Pharmacology Department at Harvard Medical School at a time when David Hubel and Torsten Wiesel were conducting pivotal experimental work on vision. She pursued these interests through private study and later earned a doctorate for research in art and neuroscience from the University of Plymouth, U.K. (2012) following her term as elected CAA President (2004–06).
21. Levy was Guest Editor, "Contemporary Art and the Genetic Code," *Art Journal*, vol. 55, no. 1 (Spring 1996), with B. Sichel; contributors included S.J. Gould, R. Hoffmann, J. Davis, D. Nelkin, and D. Kremers.
22. The NIH Human Connectome Project is an ambitious effort to map the neural pathways that underlie human brain function.
23. While working at New York Hospital's microbiology department Levy became aware of the microbial paintings of Alexander Fleming (discoverer of penicillin). He created them on agar plates, (see <http://www.smithsonianmag.com/science-nature/Painting-With-Penicillin-Alexander-Flemings-Germ-Art.html>). Levy experimented growing images in a related fashion on occasion.



Pl. 1. Grace Hartigan, *Grand Street Brides* (1954), oil on canvas, 72 9/16" x 102 3/8". Whitney Museum of American Art, New York. Gift of an anonymous donor 55.27. Photo: Geoffrey Clements.



Pl. 2. Ellen K. Levy, L to R: *Malevich's Tail: Brancusi's Bird*; *Christo's Tusks: Loewy's Propellers*; *Damien's Gliders: Agassiz's Chart* (all 1999), oil on wood, each 96" x 60". Installation at National Technical Museum, Prague (2001). Photo: Peter Seidel.



Pl. 3. Ellen K. Levy, *Jack of Clubs* (2008), mixed media on wood, 72" x 72".
Photo: David E. Levy.



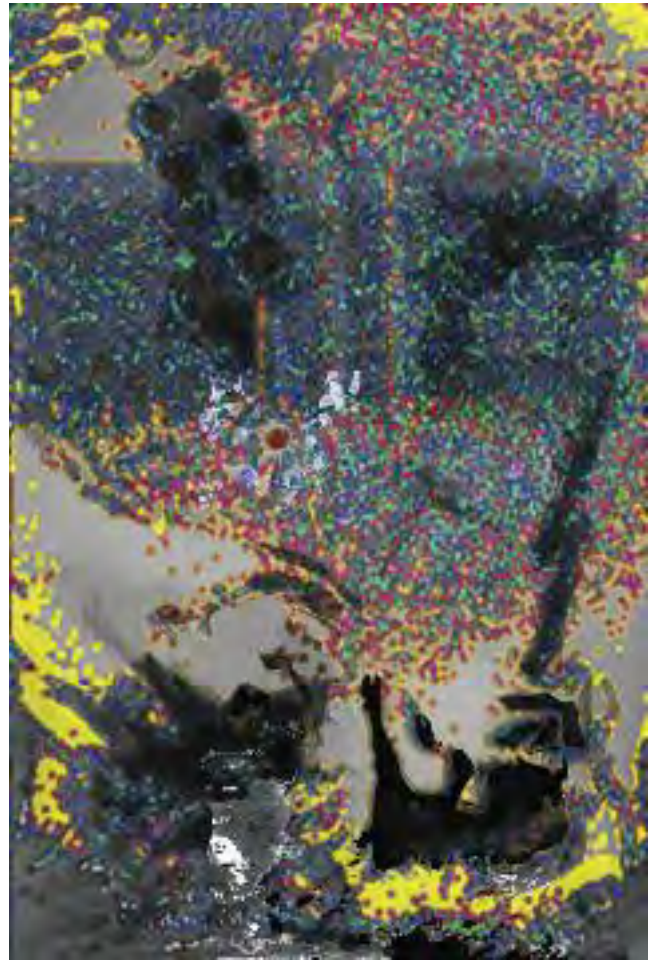
Pl. 4. Ellen K. Levy, *This Image Is Unavailable #2* (2012), mylar, modeling paste, paint, and print, 60" x 40". Photo: David E. Levy.



Pl. 5. Ellen K. Levy,
This Image Is Unavailable #3 (2012),
mylar, modeling paste, paint, and print, 60" x 40".
Photo: David E. Levy.



Pl. 6. Ellen K. Levy, *Aperture* (1984),
casein on panel, 60" x 30".
Photo: David E. Levy.



Pl. 8. Ellen K. Levy, *Outnumbered*
(2000), Iris print, cellular automata
applied to scanned drawing on
paper, 37" x 24". Photo: David E.
Levy. Private Collection.



Pl. 7. Ellen K. Levy, *Palomar* (1985),
spray paint on paper, 200" diam.
From the 1985 installation at National
Academy of Sciences, Washington, D.C.
(destroyed in fire, 2013).
Photo: Ellen K. Levy.