

Journal of Contemporary Painting

Volume 5 Number 1

© 2019 Intellect Ltd Article. English language. doi: 10.1386/jcp.5.1.177_1

CHRIS REITZ

University of Louisville

The algorithm and painting semi-skilled: Notes for an exhibition

Keywords

digital painting
Gabriel Orozco
technology
labour
deskilling
reskilling
algorithmic art

Abstract

When Gabriel Orozco began painting in the mid-2000s he did so via a turn to non-compositional strategies of making – to painting by algorithm, on the one hand, and painting by appropriation on the other. Work in this vein included his rule-based ‘Samurai Tree’ series and a series of pixelated images he calls the ‘Particle Paintings’. This turn in Orozco’s practice served as the point of departure for an exhibition investigating the legacy of modernist painting techniques in artwork articulated in and through digital and computer technology. In addition to two works by Orozco (Pollock’s Drip Grid, 2011, a pixelated detail of Jackson Pollock’s Number 8, 1949, and an animation from his ‘Samurai Tree’ series), the exhibition featured work by six contemporary artists, all of which were produced in the last year. Orozco’s work, the oldest in the show, set the terms of the investigation and provided a critically established frame for the otherwise brand new work on display. This article describes the dual art historical stakes – deskilled non-compositional modernist strategies and reskilled computer art – of the exhibition that resulted.

Gabriel Orozco's 2004 turn to painting started with a set of rules: begin in the middle of the canvas. Draw a circle, divide it into halves or quadrants, move outward, drawing more circles, each a multiple or division of the last by a factor of two. With a palette restricted to red, blue, white and gold, colour the divided circles according to the logic of a Knight's move in a game of chess (jump two moves horizontal, one vertical or one move horizontal, two vertical). Continue to the limits of the canvas. Using a computer program, Orozco determined that there were 672 possible variations to this pattern, which he used as the basis for paintings, prints and a video in the series 'Samurai Tree Invariants' (2004–present) (Orozco 2006, inside cover).

Orozco is not the most obvious point of departure for an exhibition about contemporary painting and digital visual technology. His work is neither strictly painterly nor strictly digital – indeed, both painting and digital making are outliers in his practice, which is itself a collection of outliers (sculpture, photography, photographic sculpture, and endless collaborations and 'projects'). However, as I researched an exhibition investigating the legacy of painterly idiom in recent computer-based art making, Orozco's turn to painting emerged as a particularly generative frame. To become a painter he wrote an algorithm and then executed it. That is, he adopted the methodology of computer art making to paint. The move alone is not particularly surprising. It is hard to imagine undertaking any activity today without incorporating a computer or, at the very least, its logic. Digital tools are nearly ubiquitous and ready-to-hand – invisible yet inextricable from our leisure and our labour (in the factory, the office or the studio). But this is precisely why Orozco's turn proved so useful. When he begins to paint, Orozco applies a logic that is ubiquitous to contemporary labour to the labour of painting composition. In so doing, he invokes two of modernism's key painterly investigations – first, the long negotiation between painting and the tools and logics of its technological replacements; second, modernism's various experiments in operational art making, tactics that artists developed to reconcile artistic labour with transformations in productive labour under industrial capitalism. Thus despite the novelty of painting and digital technology in Orozco's work, their elision in his practice invokes two specific and long-standing techno-painterly problematics. These problematics served as a generative point of departure for an exhibition investigating turns to painterly idiom in the work of a younger generation of digitally oriented makers (Alex Dodge, Tabor Robak, Laeh Glenn, Cory Arcangel, Siebren Versteeg and Davis Rhodes among them). For these artists, as for Orozco, digital technology is ready-to-hand, inextricable from artistic and non-artistic labour alike. They take up painterly idiom to reconcile new technologies with older forms of artistic production while also retooling negotiations between artistic and productive labour for a post-industrial, digital age – an age in which labour (social, productive and consumptive) is increasingly required to demonstrate dexterity with digital tools, and to negotiate between actual and virtual worlds.

Orozco's 'Samurai Trees' were not his only digital-painterly turn. Five years after beginning the project, in 2011, he embraced the visual vocabulary of computer technology explicitly in a series of

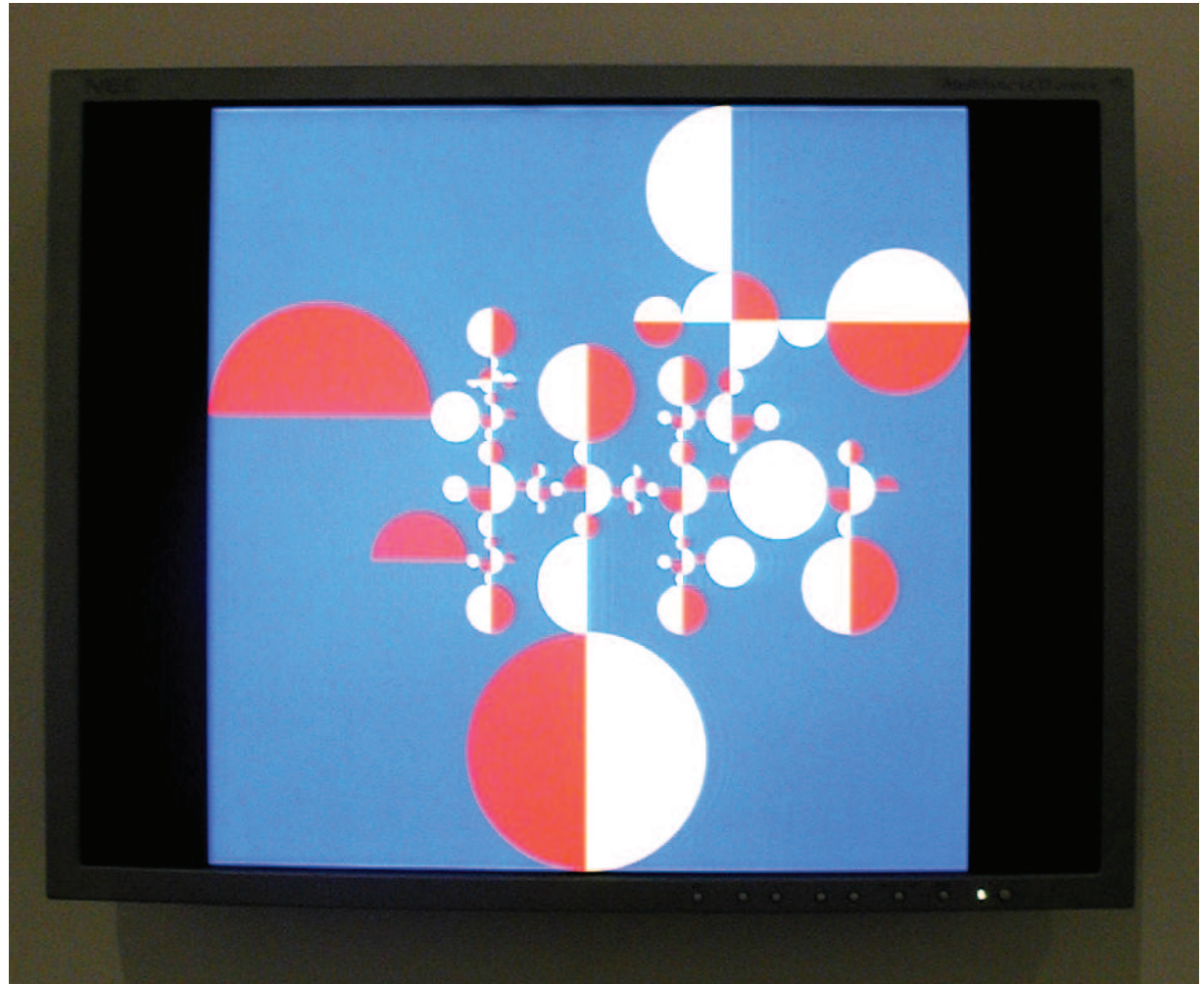


Figure 1: Gabriel Orozco, *Invariants Animation*, 2005. Computer animation, 11 minutes. Courtesy of the artist and Marian Goodman Gallery.

'Particle Paintings', works that rendered found images (popular images but also modernist paintings) in a gridded dot matrix pattern by way of raster-to-vector software (Buchloh 2011: 66). Where his 'Samurai Trees' took up the operational rendering of digital visual technology, these 'Particle Paintings' embraced the rational, uniform logic according to which the actual world moves into and out of the digital one. For the painting *Pollock's Drip Grid* (2011), a work included in the exhibition, Orozco appropriated an image of Jackson Pollock's *Number 8* (1949) from the Internet – specifically, a detail of the original painting that is the most common result of a Google Image search for Pollock's *Number 8*. He then used a computer program to transform the image into a gridded halftone dot arrangement. Such techniques are generally used to mimic older printing technologies. Halftone tools in programs such as Photoshop and Illustrator allow users to generate nostalgia-inducing comic book or raster-esque pictures and this is indeed part of Orozco's gambit. As Benjamin Buchloh points out, the artist's dot matrix invokes the modernist dot lineage from Georges Seurat's points to Roy Lichtenstein's Ben-Days (2011: 66). By citing that modernist legacy, Orozco situates his work within a particular negotiation between painting and technology-based image printing. However, Orozco's 'Particles' are not quite Ben Day's dots. Their gridded, uniform structure and size fall somewhere between the allover grid of the (square) pixel and the dots-per-inch generated by contemporary printers. In other words, Orozco locates his painting between the computer's virtual (pixel-screen) image and actual (dot-printed) image. As the painting's title suggests, both pixelating and dot matrix printing submit these images to a rational, uniform grid structure. Thus, in the network, even Pollock's drips are grids.¹

For Orozco, painting begins in negotiation with contemporary technologies of visual production, which means that for Orozco painting is also a decidedly modernist project. Again, as Buchloh argues (in his analysis of Orozco's recent painting), 'Since the invention of photography in 1839, every generation of painters has had to confront the manifest and latent impact that subsequent technological and scientific developments have had on the methods, procedures, and iconographies of painting' (2011: 65). For Buchloh, such confrontations manifest as (modernist) dialectical movements – as assimilations and recalcitrant returns of painterly practice in opposition to technological making. When Orozco turns to this techno-painterly dialectic he does so through recourse to operational making, another modernist manoeuvre that invokes a shift in both the tools and the labour of production.

Orozco's 'Samurai Trees' are, on the one hand, a painting-based iteration of the prolific method of contemporary technological production that we call the 'algorithm' – of making according to a code that is often, but not always, executed by a computer. However, if this work is embedded in such contemporary methodologies it is also, on the other hand, a return to certain modernist techniques of art-by-operation. That is, by abandoning subjective making in favour of operational execution, Orozco adopted an art-making tactic that Yves-Alain Bois would describe as a

1. Thanks are due to Tiffany Calvert and Josh Azzarella for their long and patient discussions with me about the difference between pixels and dots.



Figure 2: Gabriel Orozco, Pollock's Drip Grid, 2011. Pigment ink and acrylic on canvas. 31-1/2 x 39 in. Courtesy of the artist and Marian Goodman Gallery. Photo credit: John Berens.

‘non-compositional’. Such techniques, Bois argues, were parts of another modernist dialectic, one rooted in modernism’s search for absolutes that pitted artist-centric subjective making against antithetical tactics that attempted to eradicate the traces of their maker.²

In Bois’s formulation, such non-compositional strategies were not restricted to painting – they were, instead, one of the primary gambits of modernism generally. Moreover although they were articulated and executed in different ways, each non-compositional game also served as a limit case. Artists were not able to sustain their own erasure, even at the end of modernism’s century of experimentation and despite an abundance of formulae invented to do so. Sol LeWitt, Robert Ryman, Frank Stella: ‘countless examples can be found [...] the careers of most of [these] artists [...] reveals a nearly universal abandonment of non-composition in their later work’ (Bois 2007: n.pag.). Early in his non-compositional game, Orozco determined that his operation was limited to the production of 672 canvases. However, unlike his modernist predecessors, Orozco then immediately began to exceed this limit. By breaking or altering a rule the series could go on – new colours, erasures, supports. Rather than provide a limit-case, Orozco’s algorithmic making proved to be a generative – and indeed subjective – form of making. In other words, composition was not abandoned in Orozco’s operations; it was instead transposed to the subjective, creative act of algorithm writing and re-writing.

To call these operations ‘game like’ helps to situate them within Orozco’s practice generally. Much of his work is playful – he has incorporated balls, bicycles, billiards and a chess set into his work (the chess set, *Horses Running Endlessly*, 1995, only included knights, which are a recurring touchstone for the artist). Indeed his ‘Samurai Trees’ recall an earlier game-based series of ‘Atomist’ drawings (1996), works made with the help of a computer printer in gouache and ink. The ‘Atomists’ is a collection of sports photographs overprinted with colourful circles and ellipses. Like Orozco’s ‘Particles’, these works are also situated between actual and virtual worlds: ‘All the circles were structural’, writes Molly Nesbit, ‘extracted from the Ben Day dots of the page, their colors too, siphoned off into the cells of a computer drawing’ (2017: 168). The circles look very much like the later ‘Samurai Trees’, although in this case the gambit concerns the formal properties of the images rather than the operation of their making. Nevertheless, gaming offers a way into those later operations. Like all games, Orozco’s manipulations require both skill and rule following and like the operational gambits of Bois’ non-compositionality, this binary links up with a key problematic of modernist painting: the relationship between artistic (skilful) making and the (deskked) operational making of industrial labour.

Bois describes non-compositional strategies as antithetical to the kind of subjective art making that many artists (and critics) embraced as antidotes to the dehumanizing effect of industrial production. However, Bois’ account has many registers, and labour is not his primary route into non-compositionality. For other writers, John Roberts chief among them, operational art making was

2. Bois has maintained a long-standing interest in modernist non-compositionality. My citations come from a lecture in which Bois set up some of the key concerns: Bois (2007) ‘The difficult task of erasing oneself: non-composition in twentieth-century art’, lecture delivered at the Institute for Advanced Study, 7 March 2007. Thanks to Tessa Paneth-Pollak for productive conversations about Bois’ non-compositionality.

3. See Burn (1981: 394–95). John Roberts was particularly instrumental in developing the term (2007). Benjamin Buchloh has also been a key critic. Most recently the term has served him as a framing device for the collection of essays, *Formalism and Historicity* (Buchloh 2015: xxxiv–xxxvii).
4. His painting ended with *Tu'm* in 1918; his readymade reached its epitome in 1917 with *Fountain*.
5. For the critic John Roberts the gesture served as a foundational 'dissolution of the division between intellectual labour and manual labour', one that prefigured 'the future dissolution of art into social praxis' (Roberts 2007: 2). Claire Bishop offered a similar summary in 'Unhappy days in the art world':

primarily a response to labour conditions under industrial capitalism generally, and to the 'deskilling' effect on workers that resulted from novel production technologies. As Roberts' argues,

it is impossible to explain the ideals of the early avant-garde without stressing the overwhelming importance artists have placed on *how* they have laboured, in contradistinction to, or identification with, how they perceived others (non-artists) labouring.

(Roberts 2007: 1, original emphasis)

The term 'deskilling' was first used by Ian Burn in 1981 to explain certain conceptualist practices and has since entered a number of art historical accounts.³ Principally, it refers to the outsourcing of compositional labour to third parties or arbitrary systems or operations. In vaguely economic terms, it refers to the net effect on the workforce when new technologies replace skilled production jobs. The labourers remaining after such technical outsourcing become 'deskilled' and production becomes the domain of supervisors and managers who control the new technology (Roberts 2007: 82–86).

For Roberts, modernist deskilling hinges on the readymade, a form of productive making that *presents* a commodity, and thus identifies art making with industrial, technically determined social production '(mechanization, reproducibility)' (2007: 23). Such productive presenting, Roberts argues, developed as a rejection of the seeming infelicity between painting and modern social life:

The technical and cognitive demands of the readymade [...] derive from the perceived phenomenological inadequacy of painting [...] a process that can no longer be made to seem homologous with the experience of modernism, of living in a world of hard, reified things.

(Roberts 2007: 23)

Indeed, Marcel Duchamp's readymades were developed in the same years he was abandoning painting,⁴ and in this respect at least such deskilled making can be understood as a rejection of the hand-based 'residual' processes of painting (Roberts 2007: 23). However, in addition to rejecting painting's handmadeness, the readymade also levelled an attack against painting's academicism. It was (and remains) an anti-virtuosic and anti-elitist tactic used to shift artistic production out of the hands of experts and into the hands of everyone.⁵ In so doing, deskilling aligns art making with industrial production generally, reconciling art and working-class labour against both bourgeois leisure consumption and aesthetic judgement. As Burn's analysis suggests (and Roberts would later affirm), such operations were fully realized in the instruction-based work of conceptual artists such as Sol LeWitt and Lawrence Weiner – work that could be executed without the artist present, and thus that reflects the final skilled job-killing effect of technological automation and innovation.

As I argue, Orozco's algorithmic technique has its origins in the operational tactics of modernist deskilling. His work directly takes up the negotiation between painting and technological making, and does so through recourse to instruction (the 'Samurai Trees') and the readymade image (the 'Particle Pictures'). But this inheritance is only partial. His rather elegant and technically sophisticated paintings are the result of a set of rules that he keeps writing and re-writing. The instructions for this work, in other words, become the site of subjective or creative making. This is where Orozco's 'Samurai Trees' link up with the first computer art projects, work that involved outsourcing art production to the operation of an artist-composed program. Notably, this work emerged in the mid-1960s at the very same moment instruction-based deskilling was most fully realized.⁶ Some of the earliest examples include German programmer/artist Frieder Nake's *Hommage à Paul Klee 13/9/65 Nr.2* (1965), which was generated by a computer algorithm based on Nake's interpretation of the logic of Paul Klee's *High Roads and Byroads* (1929) and similarly, American A. Michael Noll's *Computer Composition With Lines* (1965), which recreated Piet Mondrian's *Composition With Lines* (1871) as part of an experiment to determine whether viewers could differentiate between computer and human-generated painting (he found that most people preferred the computer's version) (Noll 1966: 1–10).⁷ In these computer-based artworks, operational composition departs from its modernist deskilling origins via a return to the logic of painting. For such work, painting served as the means to evaluate the computer and computer programmer's relative dexterity.⁸ That is, these artists invoke modern and contemporary painting to prove their computer skills. Moreover, the dexterity that such automated making evidenced was the very creative and highly skilled labour of algorithm writing (that is, of instruction making).

Orozco's programmatic paintings, and the work of his algorithmic contemporaries, are heirs to this split legacy of artistic labour: on the one hand, the legacy of operational deskilling, and on the other, of creative code writing (and, by extension, masterful technical composition and execution). Indeed, the title of Orozco's series, 'Samurai Tree', implies such skilful execution. Moreover although deskilling and technical mastery seem at odds, these polar positions offer another route into the reconciliation of artistic and productive labour. As Harry Braverman argues in *Labor and Monopoly Capital* ([1974] 1998), on the whole, new technologies often have a semi-skilling effect on the workforce. New technology precipitates new skills, and in this respect the general skillset required to work is elevated when new tools are implemented. But as these technologies are integrated into daily life, the skills necessary to use them become less specialized. In other words, 'the more the worker needs to know in order to remain a human being at work, the less does he or she know' (Braverman [1974] 1998: 295). Whatever 'upgrading' the labour force appears to enact through the acquisition of novel technology is ultimately an illusion. Individual labourers are only trained to the minimum of necessity, and as the technology becomes ubiquitous (as the computer is today) the labourer's 'skill' turns out to be merely general knowledge. In turn,

6. Galerie Niedlich in Stuttgart and Howard Wise Gallery in New York both held exhibitions of computer-generated art in 1965.
7. This comparison is not incidental. Note that Bois, in his catalogue essay on Orozco's 'Samurai Tree' paintings, compares the artist's compositional strategies to the work of Mondrian. For Bois, the comparison turns on moments in which subjective composition intersects with operational making, and this is precisely the crux that I aim to articulate (Orozco 2006: 254–86).
8. In a more contemporary register, Noll's *Ninety Parallel Sinusoids With Linearly Increasing Period*, created at Bell Labs in the 1960s, recreated Bridget Riley's Op-Art painting *Current* from 1964 (Noll 1994: 40).

the very concept of skill becomes degraded along with the degradation of labour and the yardstick by which it is measured shrinks to such a point that today the worker is considered to possess a 'skill' if his or her job requires a few days' or weeks' training, several months of training is regarded as unusually demanding, and the job that calls for a learning period of six months or a year – such as computer programming – inspires a paroxysm of awe.

(Braverman [1974] 1998: 307)

When computer art emerged in the 1960s, digital making was limited to a very specialized class of technology inventors. But today their tools are nearly ubiquitous, and the skills necessary to produce algorithmic art are nearly identical to the skills necessary to navigate life under twenty-first-century capitalism. While it is certainly the case that many computer-based artists are early adopters of new technology, and their work often calls on elaborate processes and creative manipulations – an encounter with their complex, highly rendered art can indeed inspire 'a paroxysm of awe' – acquisition of the skills necessary to produce the work generally does not take more than a few months, followed by perhaps years of repetitive execution and elaboration. This is precisely Orozco's painterly conceit, and it is a central issue for many digital artists today. Like Orozco, they turn to painterly idiom to invoke modernist dialectics and frame the problem of skilful making.

At the level of technique, many of these artists – like Orozco – fold code writing into preexisting program use. They employ a hybrid of user-friendly technology and open-source software, acting as both specialized code makers and trained code users (Orozco wrote the instructions for his 'Samurai Trees', for example, but also utilized existing technology for his 'Particle Pictures'). Orozco's algorithmic composition is fairly analogue compared with much of the algorithmic digital, net and computer art produced today. However, it offers a route into this retooled painterly practice – into a certain mode of operational painting that embraces creative composition. One of the primary concerns of the exhibition was whether such digital retooling of painterly idiom follows in the optimism of the first computer art makers, invoking the history of modernist painting to demonstrate the skill necessary to produce and execute contemporary operational work, or whether these projects only offer the illusion of skilful mastery in yet another post-industrial iteration of the semi-skilling effect of new technology? The exhibition provides no answers, of course. These artists each have a specific route into technology-based making, and some are more optimistic in their application than others. But each of these artists turns to painting to invoke this legacy of artistic and productive labour, and so the exhibition offered an opportunity to consider the state of painterly idiom and labour in the context of digital making.

The show that emerged, 'Painting in the Network: Algorithm and Appropriation', at the Cressman Center for Visual Arts at the University of Louisville, included seven contemporary artists. Orozco

was represented by two works: an animation depicting all possible colour variations of one route through his 'Samurai Tree' algorithm (*Invariants Animation*, 2005) and *Pollock's Drip Grid* (2011). These works served as the frame for the rest of the work in the exhibition, all of which was produced in the same year (2016) by artists of a younger generation. The curatorial conceit was not prescriptive – no other artist in the exhibition was as clearly engaged as Orozco with modernism's dialectical relationship to technology. Rather, this next generation of artists begins, in a sense, where Orozco leaves off. For them, algorithmic making is always already a creative activity. It is out of this relationship between operational and creative making that these artists explore the legacy of painting in contemporary visual technologies, adapting its historical binaries to the conditions of contemporary social production.

The 'Painters'

Tabor Robak received his BFA from the Pacific Northwest College of Art, where he 'learned how to think about art and meaning', but his programming skills were largely self-taught (2013: 127). Early access to MacPaint, online Photoshop forums and a fascination with immersive video games were the primary engines. Indeed, video game-like in aesthetic, Robak's work is perhaps the most immersive of the group. For him, part of the allure of digital technology is its ability to captivate. Computer-generated 3D environments have, in this respect, bested single-point perspective. 'I think a lot about that moment of immersion when consuming media, when I forget my surroundings and am totally inside of the image [...]. To really be immersed you have to surrender to the image' (Robak 2013: 127). Such surrender is a testament to Robak's skill, certainly, but the goal is not only to produce illusory space: 'I like thinking about the materiality of digital work [...]. I also like figuring out ways to impart a feeling of warmth and craftsmanship to my work [...]. Sometimes that requires a deliberately excessive aesthetic: opalescent, sparkling and abundant' (2013: 127). *Darkroom* (2016), a work included in 'Painting in the Network', is a moving image-generating computer program run by a custom-built, water-cooled computer and rendered on a 4k monitor. The image is perpetually changing, and the artist does not control its composition at any given moment, although the visual terms are somewhat stable. It looks like a large hanger on a spaceship as seen through an endlessly moving, living windowpane. The image shifts constantly between illusionary space and surface. Sometimes the monitor appears to be covered in waves or etched glass, and as a result the image is almost totally impenetrable. Other times the waves give way to smoke or clouds, which part, revealing a busy world of bouncing technological balls, platforms and spacecraft engaged in a *Star Wars* (Lucas, 1977)-esque firefight. Robak's skill and craftsmanship are obvious – the work is clearly the product of masterful programming and design technique and, to borrow again from Baverman, might very well inspire 'a paroxysm of awe'.

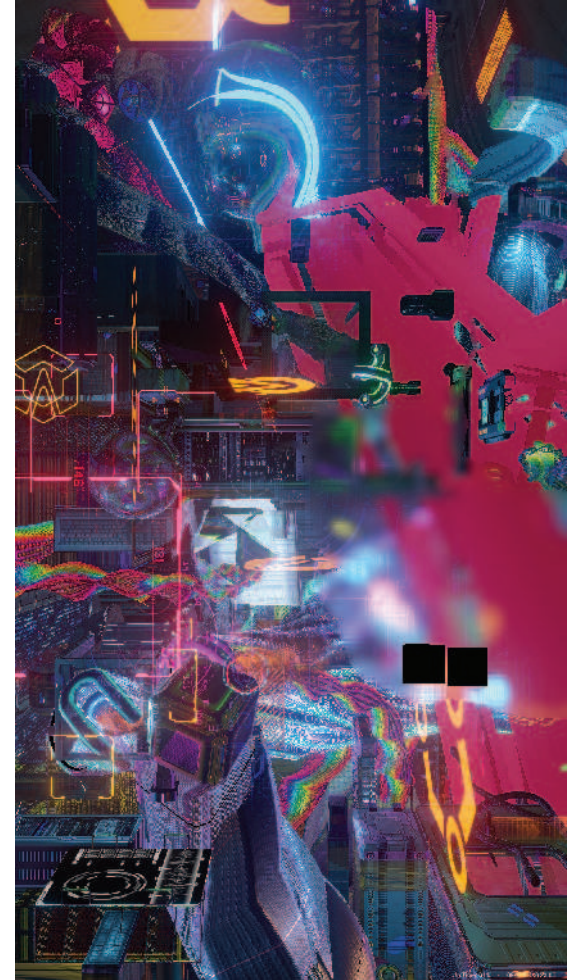


Figure 3: Tabor Robak, *Darkroom* (still), 2016. Courtesy of the artist and Team Gallery, New York.

Robak's work is decidedly digital, and his invocation of painting's legacy comes at the level of formal concerns rather than compositional strategies. Surface and illusory space are his primary investigations – terms that become slippery as his craft moves from code to image and from computer to screen. For example, the waves and haziness that punctuate and obscure his otherwise clear images insist on the flatness of their digital display, and yet do so through illusion. These digitally rendered surfaces undermine the screen's living windowpane effect, and often in moments of intense obfuscation the surface becomes so opaque that only the display apparatus is visible (in this case a brand-new 4K monitor). Elements of the algorithm's creation, including random bits of code or an image of a keyboard, also float into and out of the frame, interrupting the coherence of the illusory world with allusions to the tools of its making. However, this rupture is never total. It is instead an oscillation. To watch Robak's work unfold (or render or execute) is to move between and among the virtual and the actual. Digitally rendered screens give way to real ones, and back again; complex illusionistic spaces mirror the technology from which they emerge, even seem homologous with them. Indeed, the hardware required for this work is as much 'image' as it is 'support'.

The work is, in this respect, a series of elisions, which are announced in the title. *Darkroom* refers to both the dark, illusory space of the image (and, by extension, the dark space of the computer) and to the physical space of photographic development – of photographic image *rendering*. Robak's work thus elides the labour of modernist technology-based image production with the labour of computer execution – an invocation, like Orozco's, of the modernist dialectic concerning art making and its technological replacement. But Robak's art is also very obviously the product of playful invention and computer program experimentation. The aesthetics of 'gaming' are central to his work just as games are essential to Orozco's. For both, skill and rule following, technique and operation are intertwined. In his handling, the 'darkroom' is now the site of creative instruction making and execution. Robak has thus updated modernism's composition/technological production dialectic according to the terms of newer forms of technology. But he has also done so in the service of the much more contemporary labour of navigating between and among actual and digital worlds. Here too Orozco serves as an interlocutor: his 'Particle Pictures' also concern translations between actual and virtual worlds. Unlike in Orozco's work, however, the rendering and composition of Robak's final image remains totally outside of the artist's control – making happens in the space of code writing, rendering happens in the gallery. This is true for many contemporary digital makers. Their investigations into the relationship between artistic and productive labour do not only concern labour's operations, but also its spaces.

What remains unresolved for both Orozco and Robak is the role that such skilful production serves in this negotiation between actual and virtual. Robak is an adept maker, and within the bounds of his studio such making seems a skilled project. Yet like all technology-based art, his work very quickly looks outdated. Even his relatively recent work can require the use of outdated

9. Dodge uses many, although lately has been running the open-source program 'Blender' (2016).

operating systems, and elaborate digital compositions that might have confounded viewers years ago will appear quaint and even campy when they are exhibited in the near future. Because Robak's work relies on clever manipulations and misuses of current software and hardware, his skill is more acutely focused on the limits of and possibilities for commonly available tools (Photoshop, for example) than on inventing new ones. Such digital workarounds are indeed impressive, but they also resemble computer problem-solving that many semi-skilled workers call on in their daily lives. As Braverman's argues, the illusion of skilful mastery at the individual level often conceals the semi-skilling of labour broadly.

Alex Dodge's work similarly sutures material and subject, surface and illusory space to investigate negotiations between actual and virtual image – although his work is most often articulated across physical canvas. In the simplest of terms, Dodge's paintings depict 3D objects concealed beneath draped cloth or fabric. Many resemble Mike Kelley's *Lumpenprole* (1991) in smaller scale and in paint. But their rather simple analogue forms conceal an elaborate digital origin. The 3D shapes beneath these textiles begin as either real objects digitized by a 3D scanner or as invented objects produced by experimentation and code – in some cases, produced by an algorithm that allows its user to 'evolve' geometric creatures. Their textile covers begin in a 2D design program and are then imported into a 3D program that incorporates a 'physics engine', an algorithm that replicates the rules of Newtonian Physics.⁹ Just as Duchamp and Arp used gravity to shape their deskilled compositions, Dodge uses the physics engine to drape his textile constructions over his 3D objects. Of course, 'dropping' a digitized object in a 3D environment is hardly an act of operational deskilling. On the contrary, the process involves a complicated negotiation between model and subject, actual and virtual, and a skilled mastery of computer programming and software manipulation.

For both Robak and Dodge the final product is equal parts concealment and revelation. These objects slip between worlds that are governed by the same or similar physical laws. In one, the artist controls those laws; in the other, the artworks obey them. Slippages between the actual and virtual, but also between skilled and semiskilled labour, take place at the level of object: heavy impasto in Dodge's bright, confectionary paint hints at the real-world gravity shaping the work, but it also conceals the virtual physics engine behind the composition. Similarly, this whimsical paint handling reveals the talents of the painter but hides his computer dexterity. Dodge's practice on the whole, which combines these fetish objects with the narrative of his creative digital making, renders actual the process through which the semi-skilling of computer making is concealed behind an illusion of skilled production. Yet it is not at all clear, specifically, where the work is composed, and thus where to locate his skilled or semi-skilled making. That is, Dodge's composition has many spaces – the space of the physics engine, of the printer that produces the stencil and the space of the painter's studio. Each elaborates but also undermines or occludes the skill of the last (from the skill of digital object production to fabric draping to stencil printing and finally to paint application).



Figure 4: Alex Dodge, Bubble Keiki (Docodontidae), 2016. Oil on linen. 32 × 42 inches. Image courtesy of the artist and Klaus von Nichtssagend Gallery.

Indeed, the most prominent extension of Orozco's problematic comes via these artists' investigations of the spaces of digital labour. For Orozco, code writing and code execution happen in the painter's studio. But for artists such as Robak and Dodge, writing, executing and display can occupy many spaces (the studio, the computer, the gallery). This is perhaps most clear in the algorithmic art of Siebren Versteeg, who develops image-generating programs that he calls 'painting algorithms' (2019: n.pag.). In much of his work these programs are developed on a computer and designed to run constantly in the gallery space, churning out infinite unique painterly compositions. Although some individual 'paintings' are produced by printing a section of the rendered algorithm and stretching it on to a canvas, these objects are merely snapshots of the work as a whole. According to the artist, the project aims to undermine the 'institution of painting' and the notion that it is a primary site for 'the production and dissemination of value' (Versteeg 2016: n.pag.). That is, Versteeg's work is not an attack on the art object, but rather a reconfiguration of the labour of art making. 'Painting' here is a matter of studio-based code writing, which in turn allows for the endless generation of product elsewhere. In Versteeg's work the reconciliation of artistic and productive labour most closely resembles that of his modernist predecessors. By totally separating the artist's hand from the generation of artistic product, Versteeg elides digital production with unskilled commodity production under industrial capitalism. But in this respect, the process through which labour is hidden has shifted – where once this occlusion took place between sites of production and sites of consumption, it now takes place between spaces of code writing and spaces of code rendering.

The Maker and The Made (2016) consists of a two-channel work and accompanying rebar sculpture. Standing about human height, the sculpture is a wire caricature of a painter at his easel. Under the makeshift brush, a monitor displays the computer's execution of the artist's algorithm. Simultaneously, a second monitor installed a short distance away shows the same image. Indeed, simultaneity is key. In this work, image production and reception happen at the same time. For the algorithmic painter, the role of artist and audience is unified in the process of rendering – both become observers the moment the computer is set to task executing the code (think again of the photographic darkroom. Where the photograph develops in front of the photographer in a space very different from the site of its reception, Versteeg's 'painting' is rendered in the exhibition space in front of both the artist and the audience). But this rupture also marks the completion of painterly semiskilling. The work of making – of artistic labour – has been transformed into the act of code-writing, a labour that requires training, and one that takes place removed from the site of reception (just as bourgeois easel painting took place removed from the site of display), but that also mirrors the general training of computer operators across the digital labouring world. Versteeg's update of the techno-painterly problematic is, in other words, an update of commodity fetishism generally.

When these digital artists turn to painterly idiom they do so via the medium's long century of deskilling. Sometimes these turns reflect the retooling of artistic practice. Operational and (non) compositional strategies of modern painting are adapted here to the highly skilled operational

making of the digital era. But at other moments, such invocations are necessarily bound up with the continued deskilling of labour under post-industrial capitalism. In work like *The Maker and The Made* the labour has changed but the consequences of novel technologies for the labourer have not. This is not to suggest, however, that individual artists or even individual artworks are resolved to one position or the other. Despite the fact that digital technology has been around for more than half a century, and despite the speed at which novel digital tools meet our daily lives, the work remains locked in its negotiations among the skilled, semi-skilled and newly skilled consequences of digital making for both artistic and productive labour.

These artists do not oscillate between painting and digital technology – between the handmade, residual work of paint and the ‘world of hard, reified things’. Nor are these operational processes limit cases (in the way that non-compositional strategies were limit cases for Bois’s modernists). This work instead synthesizes technological and painterly making, extending a modernist problematic to a new techno-painterly dialectic. If deskilling was, as Roberts argues, a result of the inadequacy of painting to the phenomenological conditions of modernist social making (again, mechanical and reproducible), painterly semi-skilling can be understood as a response to the labour of contemporary digital social production. We are all now creative producers and consumers – Facebook and Instagram authors and audience: sharers, makers and viewers of endless memes and gifs. Neither ‘residual’ handmade painting nor non-compositional (non-subjective) operational labour is adequate to such conditions of social production. Rather, a synthesis is emerging in the art of a new generation of digital producers, one that reconciles the creative potential of operational making with the fact that creativity and technological production are increasingly demanded by global capitalism – a fact rendering creative, technologically sophisticated making into the kind of general knowledge required simply to ‘remain a human being at work’.

References

- Bishop, C. (2011), ‘Unhappy days in the art world? De-skilling theater, re-skilling performance’, The Brooklyn Rail, <http://www.brooklynrail.org/2011/12/art/unhappy-days-in-the-art-worldde-skilling-theater-re-skilling-performance>. Accessed 1 April 2017.
- Bois, Y.-A. (2006), *The Samurai Tree, Invariants*, Cologne: Walther König Books.
- (2007), ‘The difficult task of erasing oneself: non-composition in twentieth-century art’, lecture, Institute for Advanced Study, 7 March, <https://video.ias.edu/The-Difficult-Task-of-Erasing-Oneself>. Accessed 1 February 2018.
- Braverman, H. ([1974] 1998), *Labor and Monopoly Capitalism: The Degradation of Work in the Twentieth Century*, New York: Monthly Review Press.

- Buchloh, B. (2011), *Gabriel Orozco: Corplegadoes and Particles*, New York: Marion Goodman.
- (2015), *Formalism and Historicity*, Cambridge: MIT Press.
- Burn, I. (1981), 'The 'sixties: crisis and aftermath (or the memoirs of an ex-conceptual artist)', *Art & Text*, 1:1, Fall, pp. 29–65. Rpt. in Alberro, A. and Stimson, B. (eds) (1999), *Conceptual Art: A Critical Anthology*, Cambridge: MIT Press.
- Dodge, A. (2016), unpublished discussion with the author, 25–27 November, unpaginated.
- Nesbit, M. (2017), *Midnight: The Tempest Essays: Pre-Occupations 2*, Los Angeles: Inventory Press.
- Noll, A. M. (1966), 'Human or Machine: A Subjective Comparison of Piet Mondrian's "Composition with Lines" (1917) and a Computer-Generated Picture', *The Psychological Record*, 16:1, pp. 1–10.
- (1994), 'The beginnings of computer art in the United States: A memoir', *Leonardo*, 27:1, pp. 39–44.
- Orozco, G. (2006), *Gabriel Orozco: The Samurai Tree, Invariants*, Cologne: Walter König Books.
- Robak, T. (2013), "'I Love Screens" Tabor Robak interviewed by Cecilia Alemani', *Mousse* 41, December–January, pp. 126–29.
- Roberts, J. (2007), *The Intangibilities of Form: Skill and Deskilling in Art After the Readymade*, New York: Verso.
- Temkin, A. (ed.) (2009), *Gabriel Orozco*, New York: Museum of Modern Art.
- Versteeg, S. (2019), unpublished discussion with the author, 7 February, phone.

Suggested citation

- Reitz, C. (2019), 'The algorithm and painting semi-skilled: Notes for an exhibition', *Journal of Contemporary Painting*, 5:1, pp. 177–94, doi: 10.1386/jcp.5.1.177_1

Contributor details

Chris Reitz is assistant professor of Critical and Curatorial Studies and Gallery Director at the University of Louisville's Hite Art Institute. He completed his Ph.D. in Modern and Contemporary Art History at Princeton University in 2015. His research, which he divides between art critical writing and curatorial work, concerns the relationships and fissures between the art market, art practice and the spread of global capitalism in the period from roughly 1980 to today.

Contact: 145 Lutz Hall, University of Louisville, Louisville, KY 40292, USA.

Chris Reitz

E-mail: chris.reitz@louisville.edu.

 <https://orcid.org/0000-0002-9229-7643>

Chris Reitz has asserted his right under the Copyright, Designs and Patents Act, 1988, to be identified as the author of this work in the format that was submitted to Intellect Ltd.
