

SPRING 2018

art journal



caa



Material Motion

Eric Dyer

To cite this article: Eric Dyer (2018) Material Motion, Art Journal, 77:1, 71-86, DOI: [10.1080/00043249.2018.1456252](https://doi.org/10.1080/00043249.2018.1456252)

To link to this article: <https://doi.org/10.1080/00043249.2018.1456252>



Published online: 08 May 2018.



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The background of the entire page is a dense, repeating pattern of small, orange, hand-like sculptures. These sculptures are in various poses, some pointing, some curled, and some with fingers spread. They are scattered across a solid black background, creating a textured, almost pixelated effect.

Material Motion

I spent years working at a computer to produce images for the screen. Longing to get my hands back on the work, I returned to a tactile creative process in 2004. I began exploring the zoetrope, an early form of animation. The device, popular in the nineteenth century, consists of a slitted drum whose interior is lined with a sequence of images. When the object is spun, the viewer peers through the apertures in the drum and the forms appear to move. By replacing the drum with a fast-shutter digital video camera, I invented a process for making films from spinning sculptures. *Copenhagen Cycles*, created during my Fulbright fellowship to Denmark, was the first project to use this process.

Eric Dyer

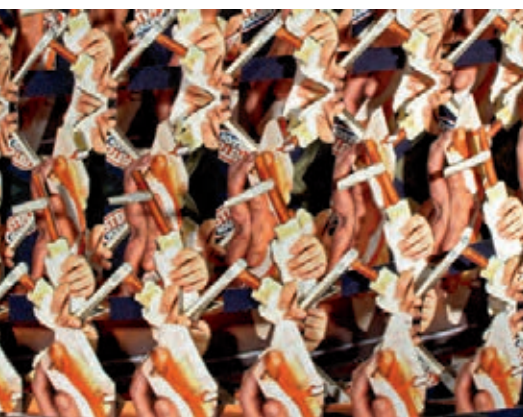


(previous page) **Eric Dyer, detail of *Artisan Obsolescence*, 2018**, UV-cured pigment on polycarbonate, sync strobe, 47 x 47 x 1/2 in. (119.4 x 119.4 x 1.3 cm)

All artworks on pp. 71–86 © Eric Dyer; photographs by the artist unless otherwise indicated

(above) **Eric Dyer, *Copenhagen Cycles*, 2006**, 3 of 25 zoetrope-sculptures, cut inkjet prints on foamcore, ea. the size of a bicycle wheel

(right) **Eric Dyer, stills from *Copenhagen Cycles*, 2006**, video, sound, 6:35





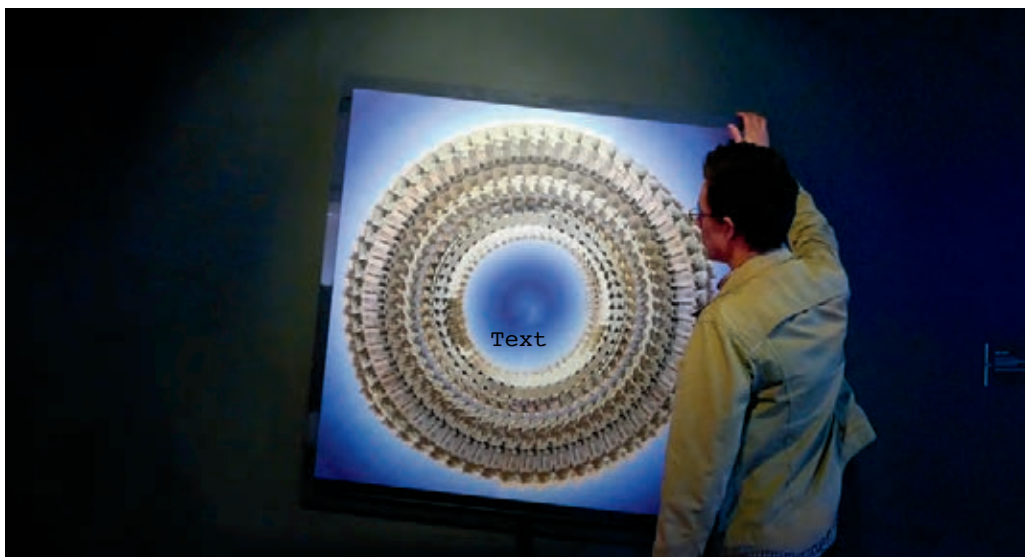
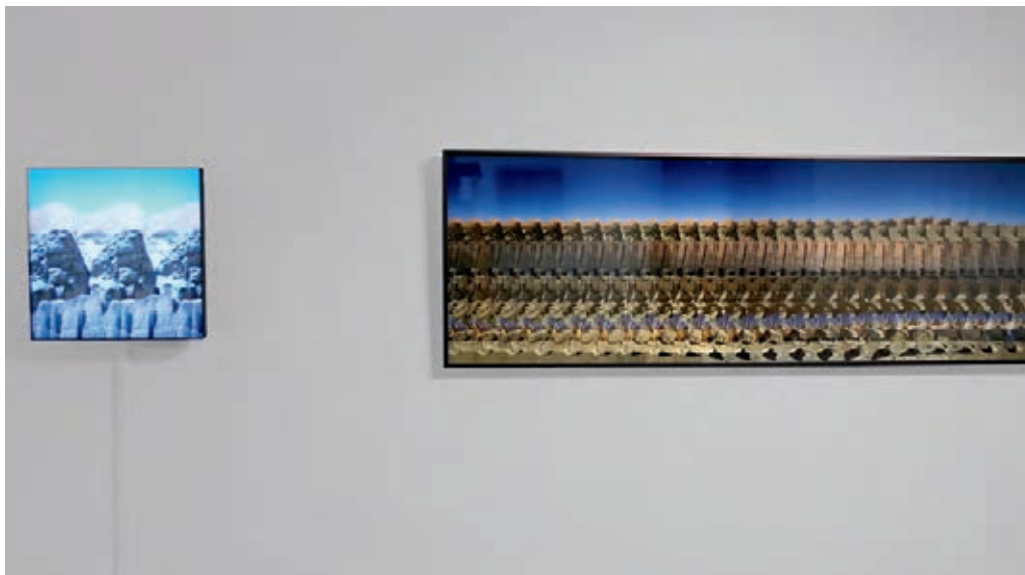
Eric Dyer, production still from *The Bellows March*, 2009, zoetrope-sculpture, sandstone 3D print, acrylics, 16 x 16 x 12 in. (40.6 x 40.6 x 30.5 cm) (photograph by Maxwell Hathaway)

Eric Dyer, stills from *The Bellows March*, 2009, video, sound, 5:35

In my 2009 film *The Bellows March*, crowds of concertinas live out a cycle of destroy-create-destroy. The narrative of the film, inspired by a visit to Berlin in 2005, contemplates the destructive and expressive potential of humans and observes these extremes as an eternal cycle.

The pioneering process of creating *The Bellows March* bridged digital, tactile, and live methods in animation and filmmaking. Working with a team of animation students at the Imaging Research Center at the University of Maryland, Baltimore County, I made the project's animated sequences and resultant zoetrope-sculptures digitally and printed them with rapid-prototyping printers. They were then hand-painted and textured, spun with variable-speed motors, and shot with a fast-shutter, high-resolution video camera.





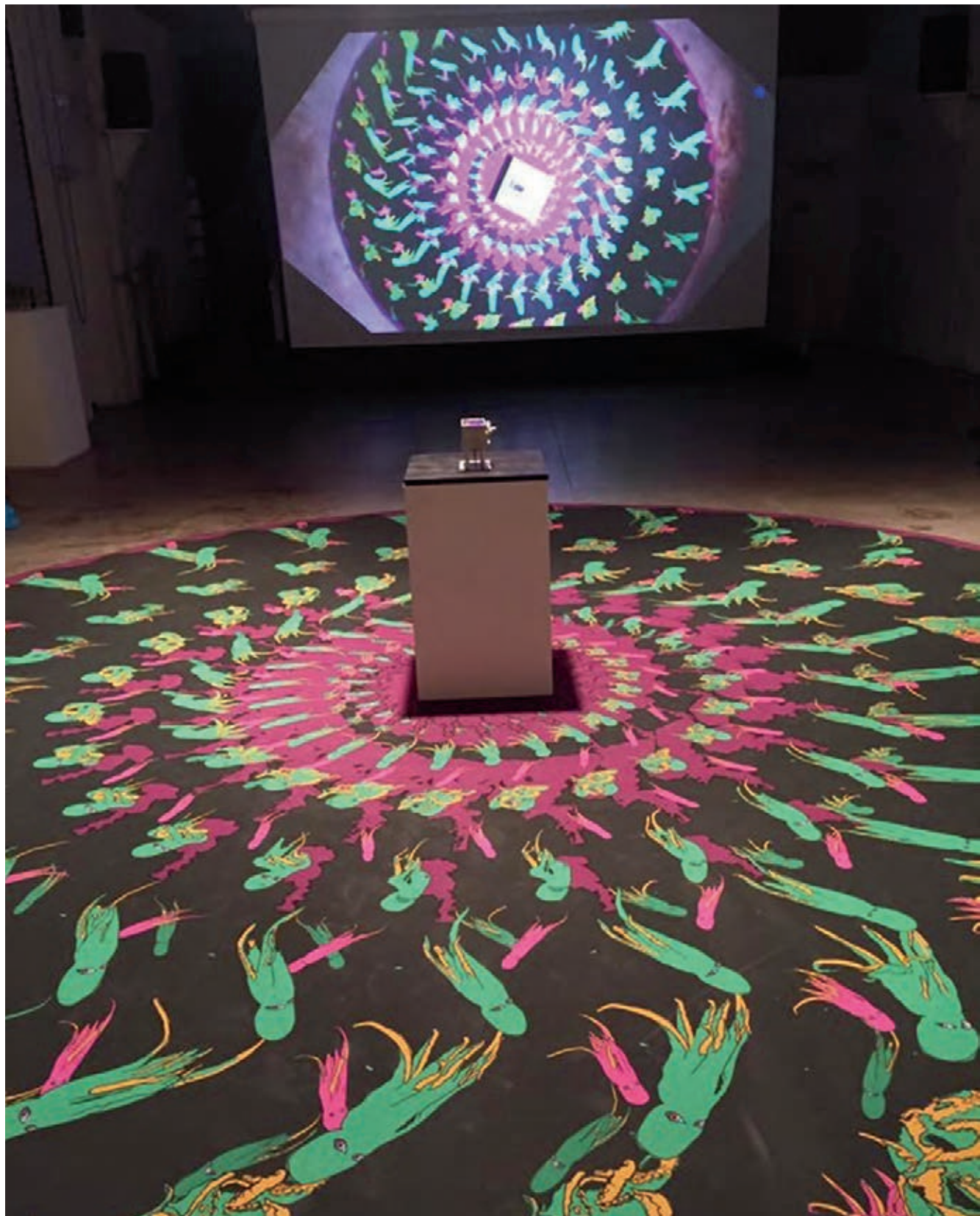
Eric Dyer, *Mud Caves*, 2016, layered cut inkjet prints and silent video, ea. print 22 x 62 x 2 in. (55.9 x 157.5 x 5.1 cm)

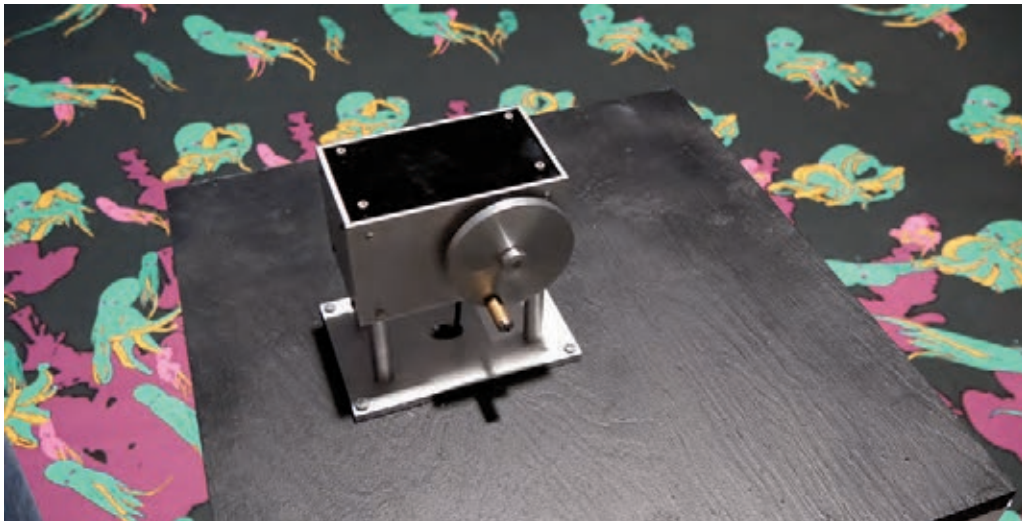
Eric Dyer, installation view of *Mud Caves #2*, 2017, UV-cured pigment on polycarbonate, sync strobe, 47 x 47 x 1/2 in. (119.4 x 119.4 x 1.3 cm)

Eric Dyer, detail of *Mud Caves*, 2016

Returning to physical engagement and experiences as seeds for the growth of artistic ideas, I headed west and camped for several days in the desert east of San Diego, California. I grabbed my camera and walked through the canyons, struggling to figure out what kind of motion could be present in this place that was so devoid of motion—I think it's the stillest place I've ever been. I discovered that it was the movement of my own body through and past the sandstone forms, sculpted by water over millions of years, that created the animation. The incremental photos I snapped were printed, cut, sequenced linearly, and layered in *Mud Caves* (2016) to create a kind of zoetrope-laid-flat. An adjacent monitor looped the motion hidden in the static artwork. *Mud Caves*, and its hand-spun, strobe-illuminated successor *Mud Caves #2* (2017), conveyed dramatic perspective shifts around the individual formations as well as, through the use of parallax, over the entire composition. I think of the *Mud Caves* pair as kinetic western landscape panoramas.







Eric Dyer, *Girona Octopi*, 2016, synthetic inkjet print, interactive crank box, live video, installation views, Aurora Picture Show, Houston, TX (photograph at left by Mary Magsamen)

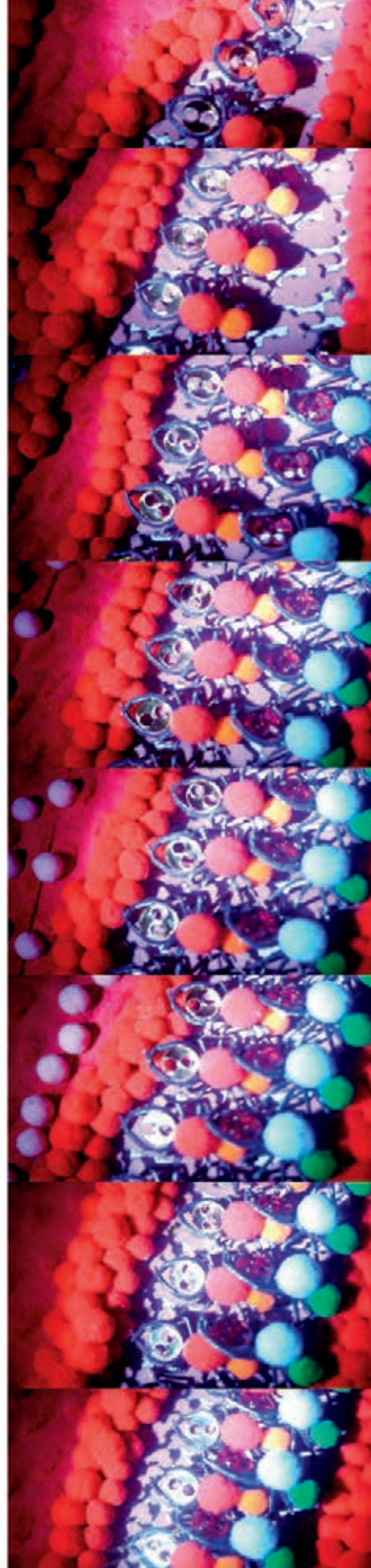
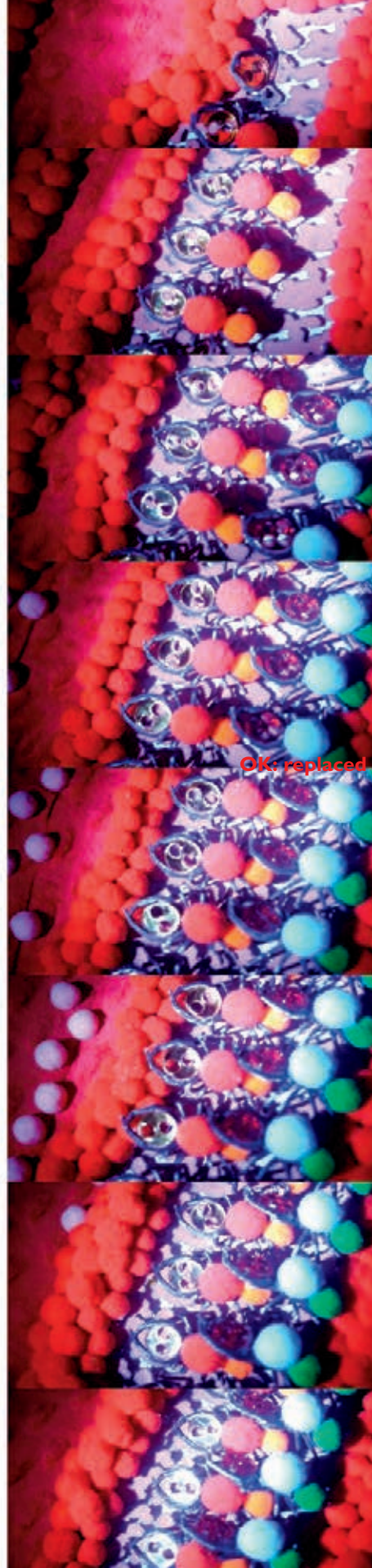
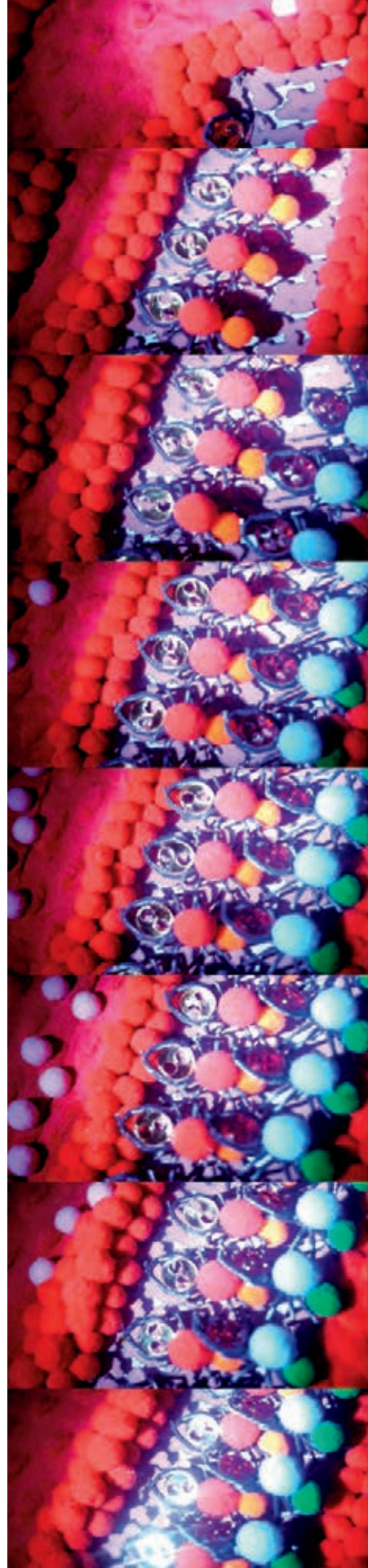
My earliest memory of being captivated by an animal in motion formed at the age of fourteen, while I was snorkeling off the coast of Spain. I reached out to hold on to an underwater rock and nearly touched a well-camouflaged octopus that darted away, leaving a cloud of ink in its wake. The complex, compound motion of its tentacles mixed with the ink cloud filled me with wonder and fascination. The acclaimed experimental-animation-artist-turned-kinetic-sculptor Len Lye, I was delighted to learn later, also credits a childhood encounter with an octopus (in a New Zealand tidal pool) as influential. This parallel mixed with a need to manifest a piece of my early artistic development inspired the creation of *Girona Octopi*.

Viewers enter the eighteen-foot-diameter circular image, see an aerial view of themselves in the projection, and activate the animation by turning a small crank that spins the live camera feed (also activating a traditional Spanish melody). The crank box evokes Eadweard Muybridge's zoopraxiscope—a device he invented in 1879–80 to project his own studies of animals in motion.



Eric Dyer, *Implant*, 2015, mixed media, 56 x 104 x 52 in. (142.2 x 264.2 x 132.1 cm), installation view and details, Beall Center for Art and Technology, University of California, Irvine (photograph by David Familian © UC Regents)

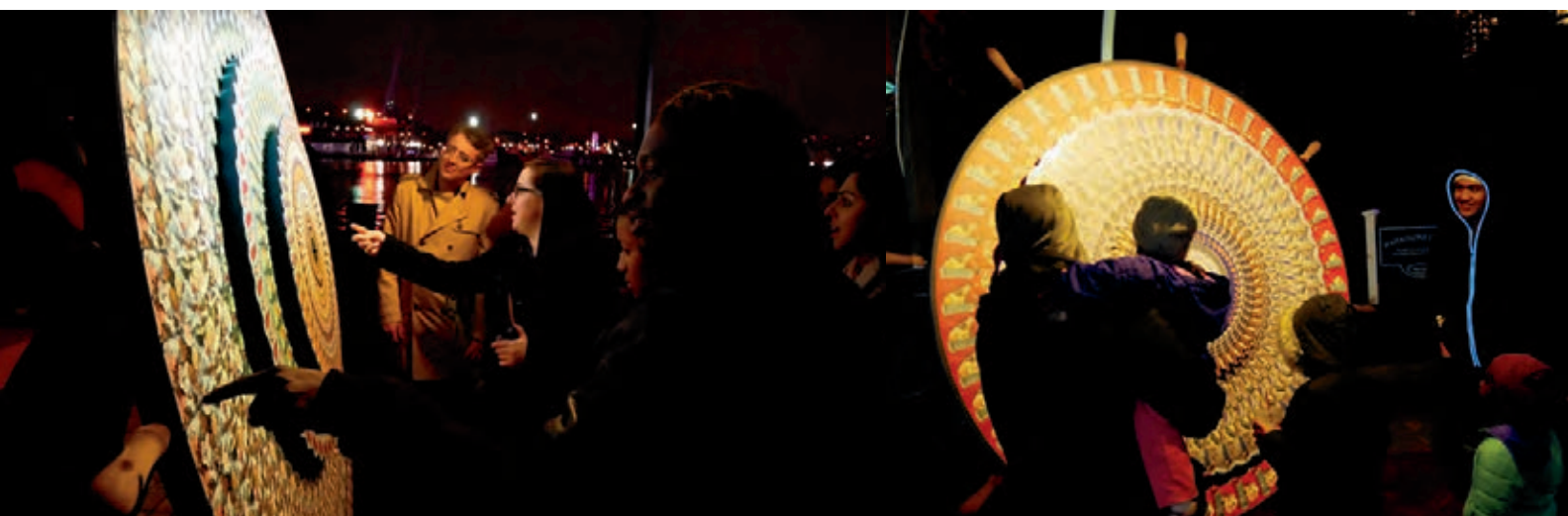
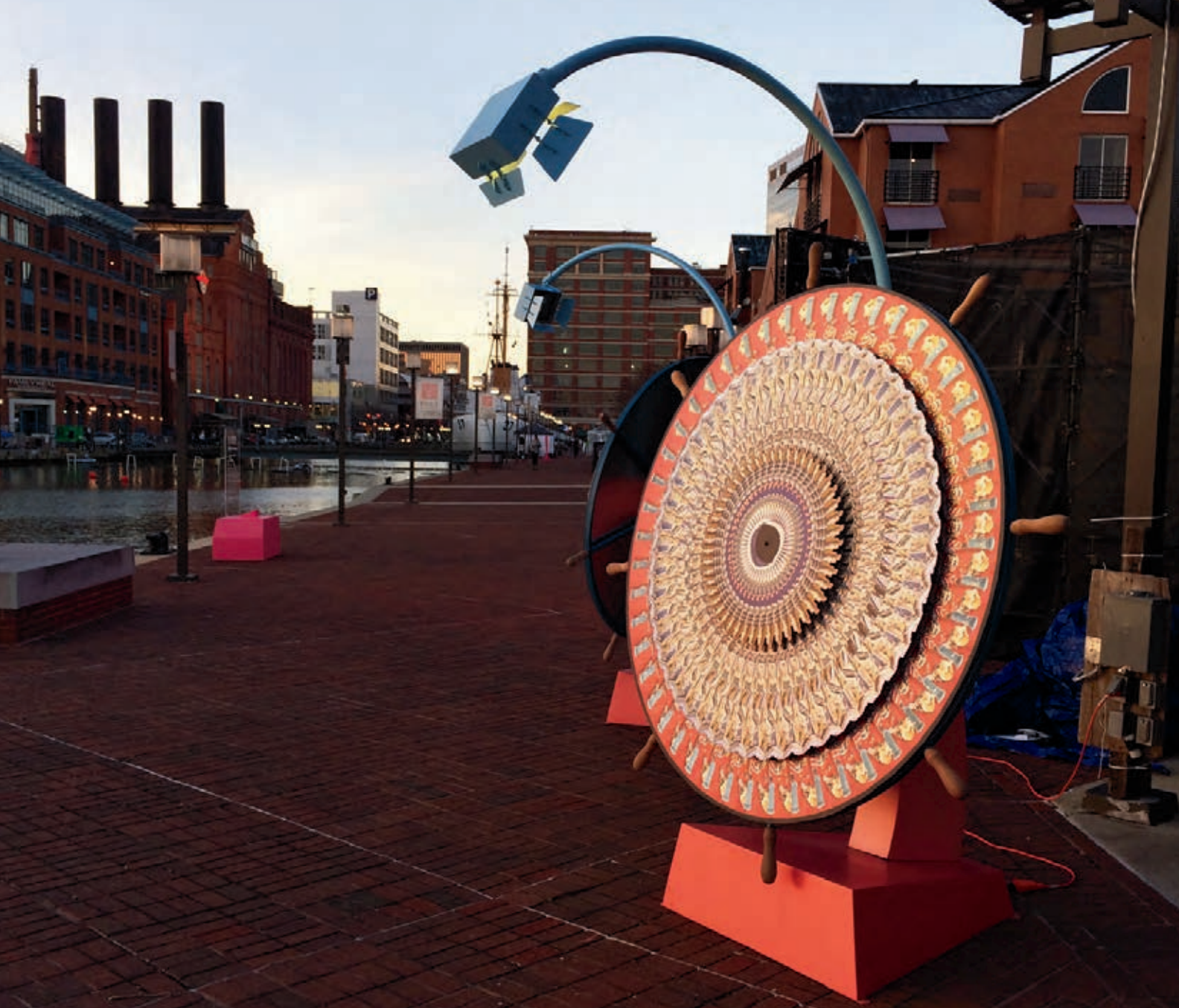
With *Implant* (2015) I fully embraced animation in physical form, discarding screens altogether. *Implant* is an imaginary, greatly magnified medical device that fits around the optic nerve. Viewers explore the cylindrical spinning sculpture with a handheld strobe flashlight, discovering thousands of colorful, fluffy, and sinister nanobots (cell-sized robots) performing unknown tasks and a spiral of organic-synthetic gears on the tube's interior. Since being diagnosed with a degenerative genetic retinal disease at the age of fourteen, I have closely followed developments in gene therapy, including the insertion of healthy genes into the body using viruses. With *Implant*, I play with the paradoxical threat and promise of bleeding-edge, anatomically invasive, and potentially rampant medical practices.





Eric Dyer, *Shabamanetica #1 and #2*, 2017,
zoetrope-sculptures, steel, walnut, UV ink on
aluminum, ea. 98 x 90 x 48 in. (248.9 x 228.6 x
121.9 cm), detail and installation views, Light City
Baltimore festival, 2017

Shabamanetica #1 and #2 mash up Shanghai, Baltimore, Panama, and kinetics in both title and imagery. Inspired in part by the recent expansion of the Panama Canal, the artworks consider the death and rise of industrial eras within a collage of the isthmus's natural and industrial wonders. I worked with a machinist and a computer engineer to develop a new system for experiencing animated artworks, one that is both seamless and interactive. A synchronous strobe light hangs just outside the viewer's peripheral vision; the individual spins the artwork, which masks the electronics, to activate the animated imagery. I discovered that the temporal resolution (frame rate) of the images was sometimes double that of film and video and the printed resolution of the images was about sixteen times that of HD video. During an exhibition of *Shabamanetica* at Light City Baltimore in 2017, I observed that the combination of this system and the densely collaged images themselves transfixes the public—how could this object made of steel, aluminum, and walnut come to life in a way they've never before experienced in the movie theater or on the video screen?



The zoetrope, originally a novelty whose potential as an art form was aborted prematurely by cinema, now resurfaces as relevant to our time. Very recently the developed world has experienced a dramatic shift. Work, play, and socializing had formerly involved our bodies in motion, our collected senses, and our physical presence. Today these activities can be and often are accomplished remotely, virtually, and with our nearly static selves seated and/or staring at screens. The arresting digital technologies, however, have paradoxically given a global reach to our voices, nearly unlimited access to information, and, ideally, augmentation of our lives' pursuits. The zoetrope allows the new expressive and interpretive possibilities offered by digital devices to be manifested, through printing and digital fabrication, in the real world and in full motion. As an artist, I often find myself caught in the tug-of-war between my reliance on hyper-enabling digital tools and my human need for physical, real-world experiences. The public's captivation and feelings of wonder when interacting with my artwork suggest that there is a universal human desire for tactility, for physical presence and engagement.

The following pages include two do-it-yourself zoetropes. You can activate them by cutting the page from the journal, removing the white circle in the center, and viewing either side on a record turntable, using the Eric Dyer Zoetroposcope app. To get the app:



Or download the app from <https://s3.amazonaws.com/edyer/index.html>.

Following pages:

Eric Dyer, *Late Spring (2006/2014)*, from *Copenhagen Cycles*, zoetrope-sculpture, cut inkjet prints on foamcore, 26 x 26 x 1/2 in. (66 x 66 x 1.3 cm)

Eadweard's Menagerie, 2017, zoetrope-sculpture, UV pigment on polycarbonate, sync strobe, 47 x 47 x 4 in. (119.4 x 119.4 x 10.2 cm)

Eric Dyer brings animation into the physical world with his sequential images, sculptures, and installations. His work has been widely exhibited at events and venues such as the Smithsonian National Gallery of Art, Ars Electronica, London International Animation Festival, the large public art video screens of Times Square, and the Cairo and Venice biennales. He has been honored as a Fulbright Fellow, Sundance New Frontier Artist, Creative Capital Artist, and Guggenheim Fellow. Dyer's fervent exploration of expression through motion has placed his work in books such as *Re-imagining Animation: The Changing Face of the Moving Image*, *Pervasive Animation*, *Animation: A World History*, and *A New History of Animation*. He has been a visiting artist at institutions such as Carnegie Mellon University, ECNU in Shanghai, and CalArts. Dyer teaches visual arts and animation at University of Maryland, Baltimore County, and is represented by Ronald Feldman Fine Arts, New York, which presented solo exhibitions of his work in October–November 2014 and February–March 2018.

More of Eric Dyer's work, including video of several zoetropes, can be found at www.ericdyer.com.



