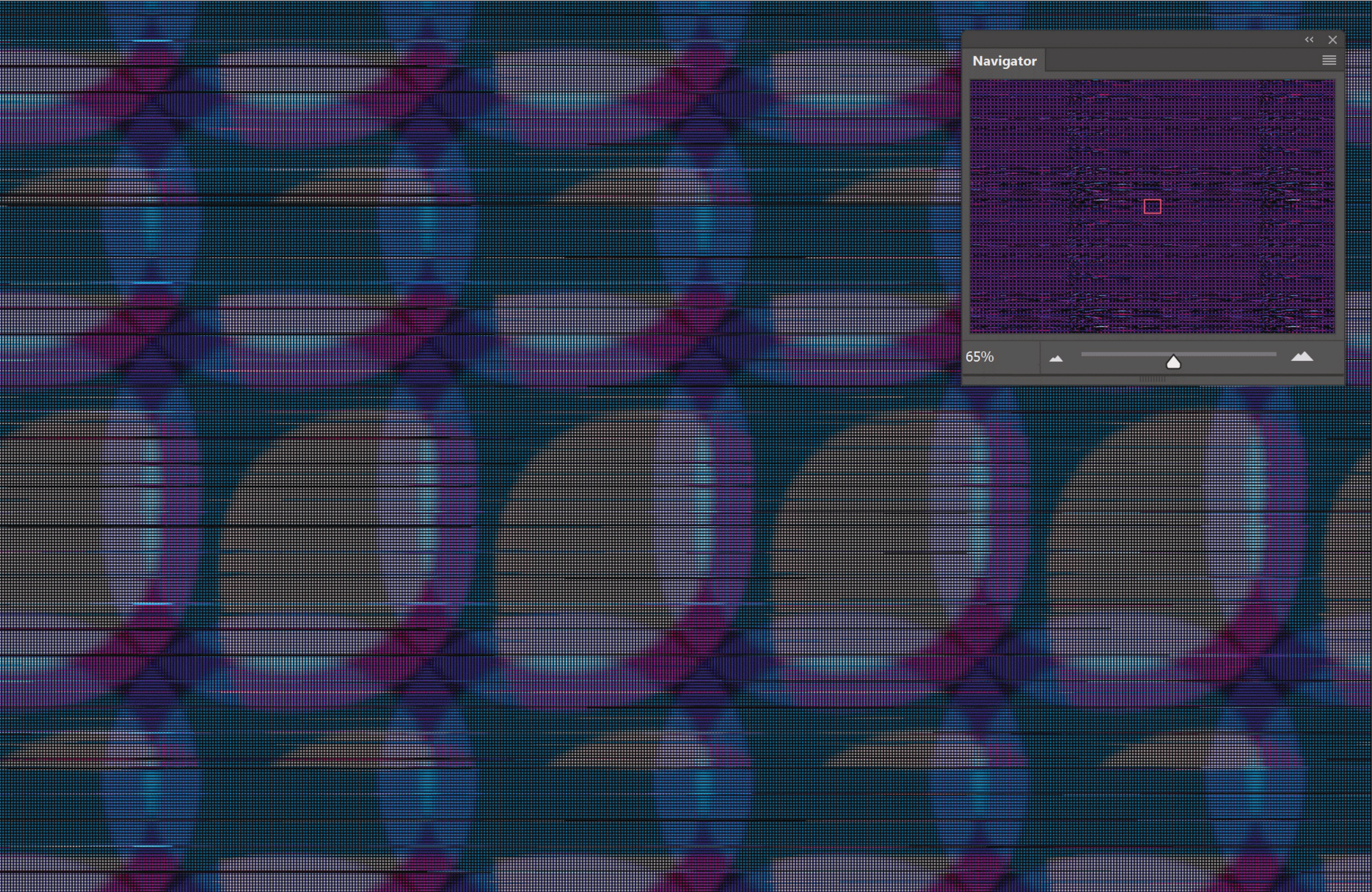


# Daniel Temkin Unprintables

DT





# DANIEL TEMKIN

## Unprintables Manual

Easier than showing the Unprintables is sharing the conditions for creating them, which can be expressed on a single page. This allows other artists to make their own Unprintable. I shared these instructions in the 2017 3D #Additivist Cookbook (a project by Daniel Rourke and Morehshin Allahyari). But in this Im/Possible Images reader, I would like to share updated instructions that include some new revelations of the process I had during the last five years. Anyone who wants to create an Unprintable work can do so with these steps. Much trial and error is required.

1. Create a very large document in your image editing program: at least 30,000 pixels on the long side.
  - a. As a variation, begin with a small grid, build a larger grid over it, and repeat this shape over and over until you get to the 30,000 pixel size. Don't be too clever: the more you try to design for the failure of resolution, the more likely the algorithm will figure you out and fail to fail the way you intend.
2. Add "content" that is not too contentful. Abstract shapes are best: bands of color, gradients, solid-colored blobs, with at least a third of the image left black and white or very high-contrast colors.
3. Save the file as an uncompressed format such as Photoshop RAW. Repeat each of the following steps (in random order) as many times as necessary, until the image becomes Unreadable:
  - a. Open it in a sound editor such as Audacity and apply sound effects on it (still in RAW format).
  - b. Re-open it at the wrong dimensions. opening a RAW image in Photoshop, the program will ask for dimensions. Change these slightly, by perhaps a dozen or so pixels.
  - c. Enlarge and shrink it just a tad, to force some bicubic insanity on it.
  - d. Open it in the wrong resolution; going from 8-bit to 16 is a great way to artificially introduce complexity into the pixel pattern.
  - e. Increase brightness and contrast to make it harder to look at.
  - f. Add Difference Clouds or other small random variations, in around the 5% range. These should be mostly invisible.
4. If it doesn't become Unprintable in a few hours, it is most likely overworked. Throw it away and start again.



Images this page: im/possible images installation views, workshop area with Temkins Unprintables Manual printed out & red axis, photos: Dominik Gigler, Lothringer 13 Halle, 2021

Images front page and at the beginning of the essay: Daniel Temkin, 2023

# Unprintables

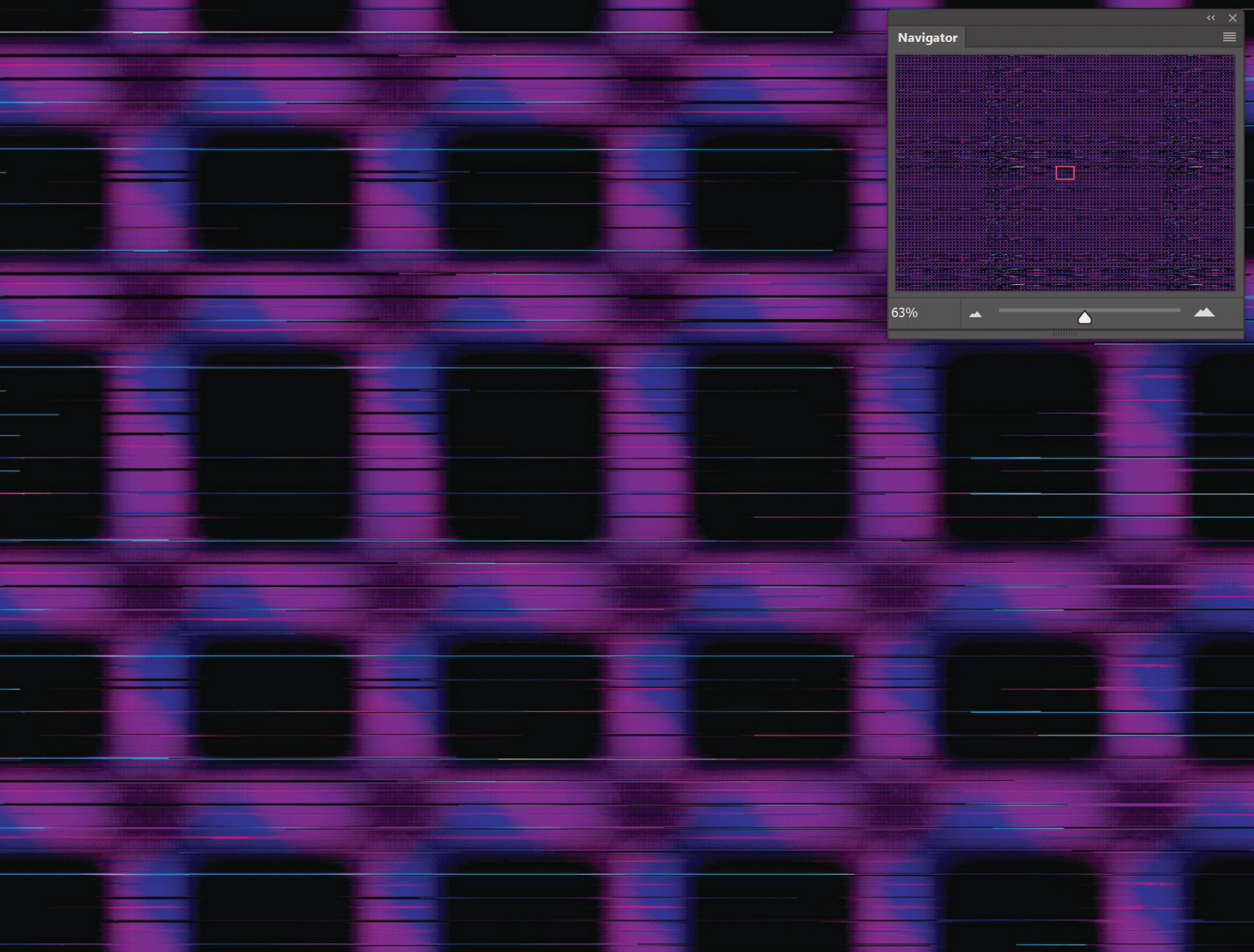
## DANIEL TEMKIN

Manual,  
2016 - 2017 & 2023

**EN** Daniel Temkin works with photography, programming languages, net art, and paintings examining the clash between systemic logic and human irrationality. His award-winning blog *esoteric.codes* documents the history of programming languages as an art form. Temkin has written about code and programming languages as an art form for publications like *Hyperallergic*, academic journals including *Leonardo* and *World Picture Journal* as well as his blog *esoteric.codes*. *Esoteric.codes* brings together work by artists, writers, and hacker/hobbyists who challenge conventional notions of computing, connecting works that resonate conceptually but originate from very different disciplines and communities. He received his MFA from the International Center of Photography / Bard College. Group exhibitions include *Open Codes* at ZKM, *TRANSFER Download* at Thoma Foundation, *xCoAx* at Museu do Chiado, *Dumbo Arts Fest*, *Future Isms* at Glassbox Gallery.

<https://danieltemkin.com/Unprintable>

**DE** Daniel Temkin arbeitet mit Fotografie, Programmiersprachen, Netzkunst und Malereien, in denen er das Aufeinandertreffen von systemischer Logik und menschlicher Irrationalität untersucht. Sein preisgekrönter Blog *esoteric.codes* dokumentiert die Geschichte der Programmiersprachen als Kunstform. Temkin hat über Code und Programmiersprachen als Kunstform für Publikationen wie *Hyperallergic*, akademische Zeitschriften wie *Leonardo* und *World Picture Journal* sowie für seinen Blog *esoteric.codes* geschrieben. *Esoteric.codes* bringt Arbeiten von Künstler\*innen, Schriftsteller\*innen und Hacker\*innen/Bastler\*innen aus unterschiedlichen Disziplinen zusammen, die konventionelle Vorstellungen von Computern in Frage stellen. Er erhielt seinen MFA vom International Center of Photography / Bard College. Zu seinen Gruppenausstellungen gehören *Open Codes* im ZKM, *TRANSFER Download* in der Thoma Foundation, *xCoAx* im Museu do Chiado, *Dumbo Arts Fest*, *Future Isms* in der Glassbox Gallery.



We don't see digital images directly. Our encounter is always mediated through a display mechanism: a screen or headset, a print. The Unprintables are images that frustrate this mediation. There is no correct way to view an Unprintable; any display of the work is flawed and incomplete, inconsistent across different screens. Even when zooming in or out on the same screen, the image dramatically transforms, seeming to become a different image entirely.

The Unprintables bring out the seams in what is often a thoughtless translation: the mapping of raster image data to the pixels (or printer dots) the material it is rendered on in the physical world. When we view a photograph on screen, it is unusual for us to view an image at the exact one pixel-to-one-pixel resolution. Instead, an algorithm translates one grid onto another. We expect this algorithm to translate consistently, if not entirely seamlessly. When we cast a photo of a cat from our phone to a television screen, it might appear more pixelated, but we don't expect it to suddenly render as a photo of a house.

The Unprintables are abstract images. Their visual make-up is determined antagonistically against what is considered content by bicubic interpolation or other common resizing algorithms. They are grids-within-grids, overlapping at many different scales. The patterns are repetitive but not perfectly so: small irregularities make them difficult to compress. When we view the work, we see the artifacts of its attempted render. They are not video, nor dynamic images. Each is a still image, fully-realized, fully-resolved, a static digital object that happens to break the intended result of display algorithms.

Zooming in and out on the images makes this apparent. Some appear different at every scale, while others seem consistent until a certain ratio is reached and suddenly the image transforms. A green-and-black grid, zooming in, turns all green, then all black, then transforms into a series of stripes followed by a checkerboard pattern. When a certain density is reached, a series of pale bluish circles on white suddenly changes into black circles on a purple field. The interpolation algorithm has decided that one color that summarized the image at one scale, failed in another.

The Unprintables are not a work about physical media: while a printer or a screen might be necessary to experience the work, the tension is an algorithmic one: the difference between how a person vs. a piece of software “sees” an image. Interpolation happens whenever we view an image on screen, from family photos, to memes, to any other image that crosses our display. The Unprintables isolate this single aspect of photography for experimentation.

The concept of the Unprintables emerged through error, or perhaps algorithmic serendipity. In 2012, I printed several images from my Glitchometry series, experimenting toward a show that would happen a year later at Transfer Gallery. Glitchometry builds on the glitch art technique of sonification, where sound algorithms are applied to visual images, distorting and crystalizing them into new patterns. These sound algorithms tend to introduce repetitive sequences and grids. In my first attempt to print these as chromogenic prints (a high-resolution photographic printing process), I was surprised to find that some had lost textures that had seemed definitive to the images. While on screen or in inkjet print, the grid of sound had resonated with the grid of pixels, creating emergent structures, these structures simply disappeared when printed at higher resolutions. The music of the work was lost. I learned to no longer trust what the screen told me.

Thus the Unprintables were born, along with the challenge of sharing work that has no consistent character. How does one show digital images that seem to resist digital representation?

I began to share these works similar to the way I had first experienced them: as a sequence of screen shots at different scales or as “resizing” videos, zooming in or out of the image. In doing so, I would reveal the breakage of their visual character in sudden transformations. However, the resizing videos proved hard to share publicly. They are too large to easily share online. Built on the failure of compression, they can’t be compressed without further distortion, obscuring their rhythms and the internal logic. Uncompressed videos are too slow to load and play, disrupting the flow of the hypnotic rhythms that are essential to the experience of the work. Finally, the original images are too big for most machines to load at any reasonable speed.

This has made the Unprintables a rarely-seen project. In May 2020, they were meant to be included in a solo show at Higher Pictures gallery (now Higher Pictures Generation). Unfortunately, COVID required turning the gallery show into an online show. While there was much discussion about how to translate the painted works and silver gelatin prints that made up the rest of the show into an online version, it was these purely digital works that had to be taken out. The public debut of these works has thus remained on hold.

There are ways to share the Unprintables. The resizing videos have been shared by file transfer services and traded on usb sticks, which I fondly think of as a modern equivalent of the manually exchanged Fish disks of the Amiga era. Most people who have seen the work have done so in studio visits. It has no presence on my website. But even though the earliest videos have been around since 2015, it has remained a somewhat obscure project.