Once More, With Feeling!

Or, How I Built a Mutoscope to Mourn the Censorship of Queer Porn GIFs on Tumblr

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Still from *Spill*, directed by Vex Ashley for Four Chambers, starring Jiz Lee and Valentine

1. The Mutoscope

There's a maiden who's captured my fancy –
I've dreamed of her for a week –
Though I don't even know what her name is
And I never have heard her speak.

Whenever I go to see her
She kisses her hand to me
And whirls around on her toe-tips
With a grace that is rare to see.

A glimpse of a tiny ankle,
A swirl of her silken skirt.
Then she kisses her hand and leaves me –
I fear me much she's a flirt.

I wish I could clasp her to me,
I wish I could call her mind –
I sigh for a touch of her tiny hand
Or a kiss from those lips divine.

But, alas! I can only see her –
My beautiful fairy queen –
For she's only a moving picture
And she lives in a slot machine!

This poem, written by John Smith in 1901 for *Buffalo Express*, expounds on the pleasures of the mutoscope, a flipbook-like machine patented by Herman Casler in 1894 (qt. Wink 2012, 396). Intended as a challenge to and improvement upon Thomas Edison's motorized Kinetoscope, the Mutoscope is hand-cranked by the viewer—relying upon the persistence of vision to seamlessly display a series of bromide prints (Figure 1). A year after patenting the machine, Casler co-founded The American Mutoscope and Biograph Company with Elias Bernard Koopman, Henry Marvin, and W.K.L. Dickson, the last of whom originally worked at the Edison lab and assisted in the invention of the mutoscope, as well as the kinetoscope (Hendricks 1972).

Cheaper to make and easier to operate than the kinetoscope, the mutoscope (Figure 2) began to populate penny arcades and boardwalks across the United States and Britain, gaining notoriety as a *What-the-Butler-Saw* machine[1] for its largely erotic content (Robinson 1996). However, as the mutoscope's reels—and reputation—became markedly blue, public perception of the device took a telling turn. When it was first brought to San Francisco's Embarcadero, a historic waterfront boulevard and entertainment district, a local newspaper wrote of the new invention:

It presents to the eye photographic views of objects in motion in

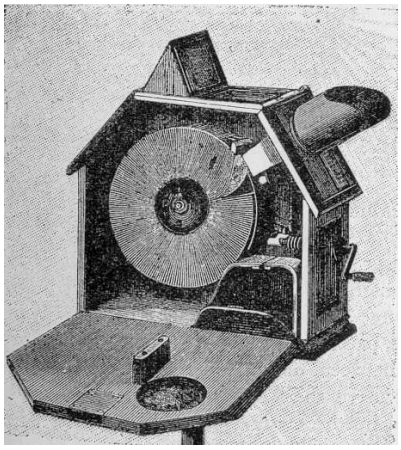

Figure 1.
Mutoscope, Onondoga Historical Association.

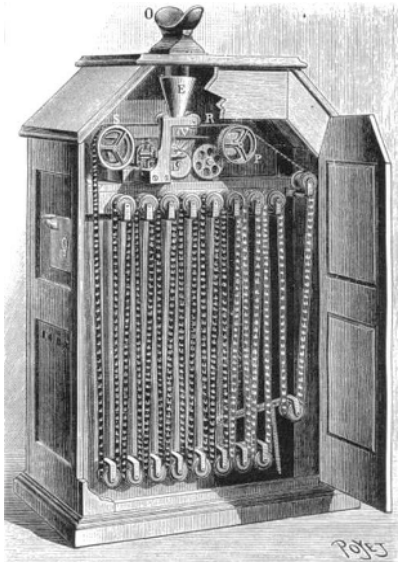

Figure 2.
Interior View Kinetoscope, Gaston Tissandier.

> manner so lifelike as to border on the marvelous. Every "reel" contains about one thousand views…All are produced with perfect fidelity to nature. (*San Francisco Call* 1898)

A year later (1899), the same paper wrote of the mutoscope:

> A new instrument has been placed in the hands of the vicious for the corruption of youth. They have been prompt to take advantage of it. They have copied pictures in which nude art has been carried to the extreme of indecency, they have induced vile women to pose in half nudity, and of these they have made scenes to tempt the depravity of manhood and the curiosity of youth. These vicious exhibitions are displayed in San Francisco with an effrontery that is as audacious as it is shameless. These vicious exhibitions are the more dangerous to society because they are given under the guise of scientific novelties of invention and new achievements in mechanical and electrical art. (*San Francisco Call* 1899)

Is it not a universal law that where technology goes, sex will follow? Or is it vice versa? Either way, the mutoscope was well-suited to its task. Though a single-viewer device, rows of these machines were placed in "Mutoscope Parlours," an originator of the modern-day peep arcade that gained popularity in North America in the 1960s. As such, just as "in the peep loops the filmed body is highly aware that it is being watched," so too "the body of the viewer…is explicitly acknowledged by the apparatus of the booth" (Herzog 2008, 34). In this manner, the use of a mutoscope is both an intensely private and highly public event. As an individual viewer, one is intimately engaged in a looped, fourth-wall-breaking performance: you watch the "maiden in the slot machine" as she watches you, as you are watched by those queued behind you. These queued viewers will then, in turn, look upon the maiden in a cinema-of-attractions-esque "succession of thrills…potentially limited only by viewer exhaustion" (Gunning 1997, 122).

At its height, the American Mutoscope and Biograph Company produced hundreds of short and long-form narrative and documentary films each year, publishing reels titled, "The Way French Bathing Girls Bathe," "The Corset Model," and "Phillis Was Not Dressed to Receive Callers," to name only a few (Streible 2003, 102). Yet, while the size and power of the Biograph Company largely protected the producers of these films, its distributors soon began to flounder. In the early 1900s—as a moral panic over the increasing popularity of What-the-Butler-Saw machines caught fire—pressure in the press led to police raids and the closure of numerous mutoscope parlours (Streible 2003, 108). Within a few short years, the mutoscope was relegated to "highly marginalized venues" in "the poor quarters of many of the larger cities" (Streible 2003, 108; 111).

Contributing to the decline of the device—by 1906, American Mutoscope and Biograph was rapidly divesting from micro cinema in lieu of feature-length productions. And, although Casler and Dickson continued to produce "subterranean" "sexualized spectacle" (Streible

2003, 108) through at least 1908, the company officially rebranded as The Biograph Company in 1909, eliminating the tarnished "Mutoscope" from its name and business (Spehr 1980).

But, this paper is not *just* about What-the-Butler-Saw.

2. The GIF

Another form of repetitive micro cinema, the GIF (Graphics Interchange Format) was invented in 1987 by CompuServe engineer, Steve Wilhite[2] (Figure 3). At its essence a compressed image file format, what distinguishes the GIF from a JPEG or PNG is that it supports *looping* sequences, enabling the GIF to display frames on repeat within the same image file without the file size demands of a video—almost like a digital flipbook. This invention was made possible by the 1985 development of the Lempel-Ziv-Welch (LZW) lossless data compression algorithm, which "gave the GIF capabilities that may as well have been superpowers" (Limer 2019) at a time when image uploading or downloading was a prohibitively slow process. Though originally used as a format for still images,[3] the GIF's capabilities were soon appropriated by early Internet users creating and posting two to 20 frames-per-second animations, such as the infamous "Under Construction" GIF (Deeming 2013) (Figure 4).

Spreading in use and recognition throughout the early 1990s, the rise of the GIF did not come without its controversy. In fact, when the PNG (Portable Networks Graphic) was first introduced in 1996, it was intended as a *replacement* for the GIF. Motivated by a licensing dispute over the threat of a "GIF tax" by CompuServe and Unisys (which patented LZW), the PNG image file format was designed to be open-source, patent-free, and intentionally *static*.[4] In fact, "the designers of the PNG saw the GIF's double-duty not as a superpower but as bad design…Besides, the logic went, this whole animation thing was just a gimmick anyway" (Limer 2019).

Yet, while the GIF did decline in popularity during the late 1990s, the format had a decade-later resurgence thanks to online fan communities developing on MySpace, LiveJournal, Tumblr, and Reddit. Rather than embedding short clips of video—which were often unsupported by these web pages and difficult to share—content creators and platforms began to utilize the looping capability of the GIF to embed a single image file that *played* like video. This phenomenon (of course) spread like mad, and today we use GIFs to communicate a vast amount of information, the meaning of which is largely constructed in and by the communities making and sharing them.

Tumblr, in particular, has done much to promote the proliferation of GIF content since the website's 2007 launch.[5] An early and important site of online queer community formation due to unique affordances offered by the platform (pseudonymous accounts, reblogging, etc.), Tumblr has long fostered a safe space for LGBTQIA+ folks to explore and connect around diverse gender and sexual identities (Duguay 2018).[6] Prior to 2019, a large portion of this community was built around shared

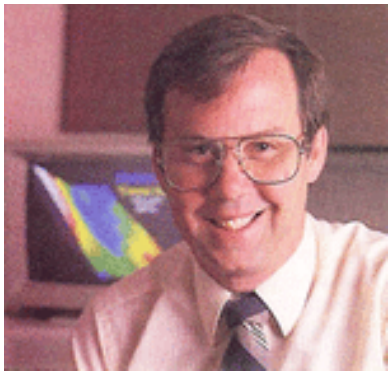

Figure 3.
Steve Wilhite, "Online Today," October 1987.

Figure 4.
"Under Construction GIFs," Jason Scott.

pornographic GIFs, which delivered a formative counter-narrative to the homogeneity and cis-heteronormativity of mainstream porn and its representations of sexuality.

Uniquely suited to the needs of the queer community on Tumblr, the GIF format itself is *polysemic* and *repetitive*, allowing not only for multiple, but dynamic meanings. These qualities enable the GIF "to feature a new, self-contained narrative, separate to the longer sequence from which the loop is sourced" (Highfield and Miltner 2017, 6). Furthermore, GIFs have the capacity for powerful affective charge, which, combined with their polysemy, "afford users with the opportunity to provide heightened and layered communication…and occasionally engage in displays of resistance to certain ideologies and actors" (Highfield and Miltner 2017, 6).

These displays, in my experience, have been both nuanced and bold. Individually, each GIF is a gesture—a simple brush of the hand, perhaps, made erotic in its repetition. Together, these GIFs form a *stream* of gesture, all distinct, but unified on a single feed—personally curated and always in motion. In this way, the experience of browsing smut on Tumblr was a satisfyingly overwhelming mish-mash rife with contradiction, depth, and *self*. As Tumblr-porn powerhouse producer, Vex Ashley states:

> Porn on Tumblr wasn't treated as disposable, something just to be immediately purged from your browser history, but an aesthetic, artistic component of your page and your life, alongside your complementary colours of sunsets and song lyrics and personal posts…It allowed you to become a collector of your own desires, displaying them and celebrating them proudly (Ashley 2018).

And, in fact, "self shot nudes on Tumblr were the first time I saw diverse, gender non conforming bodies presented as sexual on their own terms." Importantly, these are bodies, Ashley continues, "that are often censored, ignored or fetishized by mainstream depictions of sex" (Ashley 2018).

As a porn performer myself, Tumblr originally provided a place for me to post and cross-promote content that was otherwise deemed "unmarketable," or buried by search algorithms. In fostering a welcoming home, the platform enabled and encouraged me to produce more of the queer porn that I so dearly love to make and share.

Describing Tumblr's "queer ecosystem" from a different perspective, Alexander Cho writes in "Queer Reverb: Tumblr, Affect, Time," that users "circulate porn, flirt, provide support to deal with homophobia as well as advice on coming out" (2015, 43). This is supported in part by the simultaneously public privacy suggested by the platform. Much like the experience of operating a mutoscope inside a crowded parlour, Tumblr can be both anonymous and networked, allowing users to interact socially in a relatively safe way. When I reblog a GIF of two women kissing, for example, while my Tumblr username protects my identity and prevents an accidental outing, the likes and comments the post garners from followers is a public affirmation that,

Yes, I see what you like and I like this too.

Unfortunately, in a shift which began with Tumblr's acquisition by Yahoo in 2013 and smacking of a moral panic not dissimilar from that which brought down the mutoscope, Tumblr banned all adult content on its website in December of 2018, and its queer communities have been forced to re-group elsewhere. In the place of blocks of looping GIFs, now there is stillness. Scrolling through my favorite feeds, all that remains is page after page of grey boxes with the text, "Hey, this post may contain adult content, so we've hidden it from public view. Learn more." A graveyard (Figure 5).

Where, then, are its ghosts?

Can a loop simply…stop?

Seeking to uncover how the mutoscope—as a technological and a historical device—speaks to and about the loopiness of pleasure and queerness as enacted through the shared pornographic Tumblr GIF, I decided to perform a resurrection.

3. The Approach

This resurrection, figured as a handbuilt mutoscope and analog pornographic GIF, is primarily an effort in physicalization and recontextualization. To this end, the work employs a critical making approach, figuring it within a research-creation methodological framework. Critical making, described by Matt Ratto as "a mode of materially productive engagement that is intended to bridge the gap between creative physical and conceptual exploration," (2011, 252) here enables a deeper understanding of the loop only possible through the *practice* of looping itself.

By designing and trying and failing, then *re*-designing and *re*-trying and learning from those failures, I must engage with the loop theoretically *as well* as practically. The necessity of this resurrection, then, is in its ability to generate unexpected and practice-based outcomes, materially reviving Tumblr's pornographic GIF ghosts in an attempt to reattach the ends of this broken loop. As such, through the creation and use of the mutoscope, what this project seeks to reveal is a nuanced and reflexive understanding of repetition and polysemy as meaning-makers—both analog and digital, and decidedly queer.

4. The Build

The initial design for this mutoscope—built in March of 2019 (Figure 6) comes from Jesse Breytenbach (2009), a tutorial for which was published by *Make* magazine in 2009 (Figure 7).

Beginning with a spare set of 2 ft. by 2 ft. hardboard panels, I adapted Breytenbach's mutoscope design to be bigger, more square. Using thicker scrap boards to give the mutoscope body its depth, I began to assemble, cutting and then sanding and then gluing, with a few additional adaptations:

While most mutoscope designs feature a slot which allows the interior drum and attached flipbook to be lifted in and out from the

open top of the body, in an effort to enclose the animation and further immerse the viewer, I chose to secure the drum with a long screw threaded through the center of the mutoscope. In order to get the drum (an empty coffee can) to rotate with the screw, I glued a washer and nut to each side so that once the end of the screw catches, the flipbook plays as the viewer turns the handle. Designed in this manner, the drum can easily be removed from the bottom of the mutoscope by lifting the body off of its fitted base. However, as I discovered late in the process, the handle must thread on to the screw in reverse, otherwise the viewer will eventually turn the handle off the end of the screw. As I had already recycled a standard thread handle for use on the mutoscope, I secured the end of the screw with rubber bands. Though quite successful, there are certainly more elegant solutions that merit future exploration.

What proved to be much more difficult than constructing the body of the mutoscope was designing the animation inside. The first limiting factor is the number of cards, or "frames," that can fit around the circumference of the interior drum. Of the mutoscope designs I researched, all featured a single-use interior drum. Breytenbach's design, for example, calls for gluing a stack of cards directly to a cardboard tube, such that each animation requires a unique structural core. Wanting to reuse the drum itself, I chose instead to secure each card to a single rod of a wooden sushi rolling mat, which is designed pre-linked with wrapped string. In this way, the cards are easily, evenly spaced, and can be untied and removed from the drum as a single "book."

This, at least, was the idea.

Unfortunately, in order to pull the sushi mat tight enough to keep the book from slipping forward as the drum rotates, the rods must be spread too far apart for the attached cards to produce a smooth, animated image. While this is probably fixable with the application of a gripping material to the exterior of the drum, for the sake of simplicity and time, I unlinked the rods and glued them individually to the core. This allowed me to maximize the number of "frames" in my "GIF," thereby increasing the smoothness of motion. Ultimately, I was able to squeeze 124 cards around my coffee can, utilizing the natural spacing of the sushi mat rods to avoid overcrowding the drum, which results in card clumping. In order to strike an optimum balance between flexibility and stiffness,[7] I folded one large index card around each rod and glued an additional index card on top, folding it in the opposite direction to encourage the card to stand straight.

Based on this 124 frame limit, I began to create the animation itself. Wanting to engage in each stage of the GIF-making process, I began with a video. Sourced from Four Cham-

Figure 5.
The warning box used by Tumblr.com to replace all explicit posts on the website.

Figure 6.
Completed Mutoscope, Grace Van Ness.

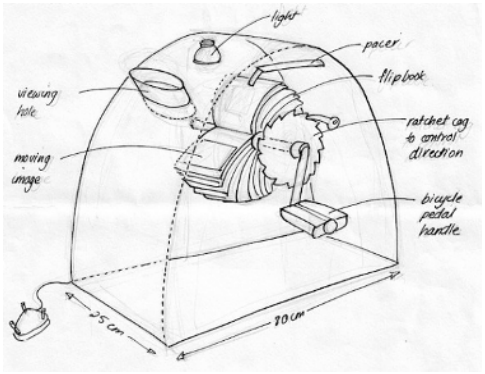

Figure 7.
Mutoscope Design, Jesse Breytenbach.

bers, an alt porn company led by Vex Ashley and born of Tumblr (Ashley 2018), I prioritized films starring popular queer performers, eventually settling on Jiz Lee and Valentine in *Spill* (2017). Selecting a clip with just the right level of suggestive mystery, I cut together a short sequence in Adobe Premiere Pro, playing on the video's triptych structure both to experiment with different movements and to highlight the mish-mash experience that was Tumblr. Ready to export, I paused to calculate: in a 23.976 frames-per-second video, a clip of approximately 5.2 seconds will contain 124 frames. From within Premiere, it's now possible to export directly into the GIF format, but I chose to render the sequence as individual TIFF (Tagged Image File Format) images, which were sized, printed, and cut before being glued to the cards encircling the mutoscope core.

Interested in the comparable process of constructing a GIF through an online GIF-creator tool[8], I ultimately created two versions of the animation, each with its own set of compromises. While the compression of an online GIF sacrifices either pixels or duration for a smaller, more shareable file size, the "file size" of an analog, mutoscopic GIF is determined by the size of its inner drum, which limits total frames, but does not compromise pixels. As such, the single images which comprise the latter can be high resolution, restricted only by the quality of the source video and available printer.

However, an additional consideration in the creation of a mutoscopic GIF is the pacer, which is attached to the top of the body and holds each frame just long enough for the viewer to see it before catching and releasing the next card. In this offline iteration, while the variable duration (or speed) of the GIF is controlled by the viewer, the pacer effectively *throttles* this speed, thereby functioning as an additional compression variable. The farther the pacer extends into the path of the flipbook, the longer it will hold each frame. The trick is to just barely catch the top of each card without obscuring the image or distracting the viewer. This mechanism gives the flipbook its *flip*, and functions in relation to the heft of the cards themselves. As the pacer must be fairly strong to resist the card, but flexible enough to release the card smoothly, I chose a light, yet stiff board. To attach it, I inserted the board through a slot in the body of the mutoscope, which, given the constant motion of the mechanism, felt more secure than gluing the pacer to the interior.

At this point, while I had tested the basic motion of the mutoscope before completing the reel (or GIF) inside, I had yet to view the animation in its entirety. This is, perhaps, the biggest difference between online and offline GIF creation. Using the online GIF-making tool, I was able to test each compression variable multiple times, watching and rewatching the GIF after every change in order to fine-tune the animation. The offline GIF, however, was a series of cyclical calculations and guesses—the results of which I couldn't evaluate until its completion. When I was finally able to play the GIF in the mutoscope, my first feeling was of disappointment. Immediately, all the necessary adjustments became clear:

1. There isn't enough motion in the images. I should have selected

content with greater movement, or extended the clip and deleted internal frames, sacrificing some smoothness for increased action.

2. The tops of the "frame" cards must line up perfectly and, furthermore, the pacer must be exactly parallel to the tops of these cards. Even a slight tilt on the pacer or misalignment of the cards becomes exaggerated through the rotation of the drum, causing the animation to look choppy.
3. The images are too dark, and lack clarity. One benefit of early cinema's black and white imagery is its heightened contrast—a trait well-suited to the mutoscope. While darkly lit, soft-focus clips communicate sexiness in online GIFs, they simply become too difficult to read in the mutoscope. Future GIFs must be brightened, the contrast increased, and more care taken to maintain image clarity.
4. The viewing window should be positioned lower on the body of the mutoscope, allowing for a more direct and less top-down perspective on the animation. This would also provide more space for the card-illuminating spotlight to be placed inside the mutoscope body itself. As it is now, the light is clipped to the edge of the viewing window, but this is distracting to the eye.
5. The effect of the GIF would have been more impactful if the loop began and ended with the same frame.






Unable to simply tweak a few sliders and immediately render a new output, re-compressing a mutoscope GIF requires *re-touching* every single frame, one after another. One alteration means re-editing, re-exporting, re-printing, re-cutting, re-gluing, re-testing, and then potentially re-editing again. In this way, the offline GIF-making process renders visible the looping inherent to all GIF compression, extending to the very core of the file format: Lempel, Ziv, and Welch.

Physically manipulating and re-manipulating every image, overwhelmed by the vast undertaking that is any minute adjustment, I reflect on the work done by LZW, the lossless compression algorithm that first made the GIF possible. It, too, in organizing data into smaller and smaller packages through the implementation of a table-based lookup algorithm, relies on repetition. Used to create TIFFs and PDFs, as well as GIFs, this compression algorithm works by identifying recurring sets of bits and creating a single entry for those sets in an attached code table, such that the program essentially *compresses* redundancies, limiting the total file size without losing any information (2019) As Eric Limer (2019) describes it in *Popular Mechanics,* whereas

> previous innovations in image compression, like "run-length encoding," would shrink files by just simplifying instances of repeated data…LZW's more complex approach allowed computers to collapse strings of data that were far more complicated than the same thing over and over again, as long as these strings contained some sort of repeating pattern. Essentially, it let computers invent a whole new phrase like "blite" pixel for combinations like "a blue pixel, a white pixel," but also combo-phrases like "bliteple" pixel






> for "blite pixel, purple pixel" and on and on, cramming more and more information into a single new word. (Limer 2019)

The very compression of the GIF, then—itself iterative—relies on harnessing repetition towards the creation of something new, something both *of*, and yet different and *greater than* its source.

This understanding of GIF-creation at its very technological foundation speaks to the power of the loop in alternative knowledge production. As articulated by Thulin, the practice of looping is one of "letting things arise, allowing space and time for something to repeat, and attending to the possibilities and differences generated by each repetition," such that the loop becomes "a way of avoiding getting paralyzed by an impetus to move in a straight, pre-defined path" and thereby "offering a time and space to explore divergent perspectives" (Thulin 2015). These divergent perspectives threaten hierarchies and alter preconceptions, giving strength to a queer, or even *pornographic*, challenge to limited and limiting traditional modes of thought.

In an effort to begin embracing these loopy possibilities, I must trace back to where this examination began: with the mutoscope, the GIF, and the build.

Close your eyes and picture the mutoscope.

Imagine a GIF.

Think through the process of thinking then making then thinking.

Where are the loops?

As each iteration of this project washes over me, I learn something different—something *different* from the *same*. Functioning akin to a compression algorithm, I seek out and identify repeated thoughts, creating from them new concepts, new *knowledges*.

This is the potential and the pleasure of the loop.

It is as simple as the sound of mutoscope cards flicking past the pacer, of her hand brushing past skin again and again, of sawing back and forth, then pausing and adjusting before sawing again. Though simple, this is a generative space to get lost in—a space of critical making and creativity and *new* thought. It is the home of the "blite," the "blitple," and other equally revolutionary innovations.

In examining the GIF through the mutoscope through Tumblr, it is clear that the loopiness afforded by these technologies and generated by its users contributes to their mutual success. What, then, will Tumblr become *without* its richly repetitive collection of queer porn? What will *we* become without this collection?

When the loop breaks, what is lost?

Mourning the censorship of queer porn GIFs on Tumblr, I am not only mourning the loss of the content and community that I knew and loved, I am mourning the loss of all that I will not know—of the *potential* promised by the loop. This is a loss of the repetitive ingenuity which begets futures. Our futures. Queer futures.

An examination of the repercussions of this continuity break is one of the many questions that remain—a loop for another reel, as it

were—and the clear next iteration of this project.

A video showing the process of building the mutoscope (including footage of the device in action) is available here.

Both the clip content used in this project and the timelapse video of the mutoscope-in-progress are also available as online GIFs: Content / Timelapse







Acknowledgements
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Notes

1. This is a reference to a mutoscope reel from the early 1900s titled "What the Butler Saw," which depicts a woman undressing from the perspective of a voyeur watching her through the keyhole.
2. For an (arguably biased, but certainly thorough) overview of the GIF/JIF pronunciation controversy, there's a site titled The Gif Pronunciation Page that's a delight to read. This debate is also discussed in the 1997 Graphics File Formats FAQ archived by the Internet FAQ Archives.
3. Interestingly, the first color image posted on the World Wide Web was a GIF!
4. This patent uproar eventually led to "Burn All GIFs Day" in November of 1999, when the League for Programming Freedom encouraged developers to gather and delete their GIF files in protest of the tax.
5. At its core, Tumblr is a social networking platform that allows its users to post multimedia content on their own customizable blogs. On the site, users can also follow others' blogs, "like" their posts, add a "note" or comment, and "re-blog" those posts to their own blog.
6. For further reading on these particular affordances, Duguay suggests Bryce J. Renniger's (2015) article, "'Where I can be myself…where I can speak my mind': Networked counterpublics in a polymedia environment."
7. By balance, I mean: the cards must be flexible enough to bend and arc smoothly as the mutoscope flips from frame to frame, but stiff enough to do so without bending too far—which would keep each frame in view for too long, eliminating the necessary flip and causing the frames to blend sloppily together.
8. There are a number of options available to create and edit GIFs online, but for this project I chose to work with GIFMaker.me.

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