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r/place 2022 was a monumental event in Internet history, gathering millions of Reddit users to collaborate and create their own art pixel by pixel. Factions were made, battles were fought, and alliances were formed. It sits between social movement studies, art history, and social media by itself, only joined by its previous incarnation in 2017. Exhibiting the work with its digital history intact is a challenge, one that demands a view into the space between the physical and digital worlds we inhabit each day, as well as a sense of interactivity and visitor participation.

Headings:

Museum exhibits
Social media
Art of social movements
Time-based media art

EXHIBITING R/PLACE: ART, THE INTERNET, AND THE SPACE BETWEEN THE DIGITAL AND PHYSICAL WORLD

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Part 1: Creating the Art

Introduction

Alone, an individual can create something amazing. Through months or years of work, they can make a creation that has its merits discussed for centuries. This could be a written work, a piece of art, a symphony, a video game, or even a social movement passed down through generations.

Individualism allows things to happen, an abundance of self-reliance giving a person the motivation to put something new into the world. On the other side is collaboration, a group of people working together to create something greater than what they could have done on their own.

Many people think of art as a solitary pursuit, of a lone genius locking themselves in their room, dedicating their life to their work and only emerging when they have finished their creation. This can sometimes be true, many works of art studied and revered today having been toiled over like this. However, this is not always the case. Take, for example, video games. They seldom have one 'creator', instead having been developed over years by one or multiple teams that design and program everything from graphics, music, characters, levels, and environments to user interfaces and artificial intelligence. Everyone contributes a piece to a greater work, bringing their skills to the table.

Groups create art for other reasons in other settings as well, like social movements. These groups are all united by a message and a desire to change

their present, typically choosing a cause to work towards achieving. They often use art to their advantage, making art that acts as a symbol for awareness of an issue or that contains a message hidden in plain sight. One example of this is protest art, or social movement art, that is always meant to say something.

Social Movement Art

Social movement art, or activist art, is the official name for works of art created by social movements. The art I will be focusing on in this thesis is visual art, anything that can be seen. I am not including performance art since while it can be seen and otherwise experienced, it is not tangible and videos or verbal accounts of it are merely copies of the original work.

Protests have always been about disrupting the status quo, bringing attention to an issue that the group that is protesting feels is important and that society needs to be educated about. Art is also an incredible disruptive force, forming a part of the culture around it that both is a product of its and the artist's environment but also is in conflict with an aspect of this environment (Benford 1999). It is a snapshot of the artist's creative expression at a certain time, something inspired by the world inside their head and their life experiences. In this way, art and protests/movements perpetuate each other, each pushing culture to evolve, art creating and furthering movements and movements allowing for more art to be created.

The idea behind social movement art is that it has to mean something that furthers the movement or protest it is associated with. This art is either created by an artist or multiple artists within the movement, its creation an act of protest in itself; created by an artist/artists outside of the movement that were

commissioned by movement leadership to create the art, or co-opted from existing artwork made by an artist who may not be aware of their art being used in this way.

Part of the appeal of making art in order to send a message of protest is that the act of creating art is accessible to anyone regardless of their demographics. Because everyone has the ability to create some form of art with very few resources, art is an inexpensive way to make a large impact on the world and have a cause be noticed and remembered. The artists that make these works often do not consider themselves artists, preferring to think of themselves as activists that are furthering their cause (Kester 2011). Because of this lack of conventional education or training in the visual arts, the art made by these activists can be considered outsider art with a distinctly political message.

There are numerous examples of protest art present in almost every documented protest or movement, as having an image to rally behind inspires people and reminds them why they are fighting for societal change. The art can also be used to communicate with members of a protest or movement, allowing for messages to blend into the background to the unknowing observer. This art brings communities together, especially if they had a hand in creating it (Lusini 2017). Finally and most importantly, the power of art is to make its audience feel something. This feeling could be anything, any reaction to the art means that its message has been received. In the case of protest art, this is to either make the authorities or those who oppose the goals of the movement feel fear, anger, or powerlessness, to inspire those who are indifferent or opposed to join the

movement, or to let those who are being victimized know that there is a group working to help change their circumstances for the better and bring hope for a better future.

The best kind of social movement art to get people motivated to be part of a movement has been shown to be positive and hopeful, not sugarcoating or making light of the issues that it is meant to spread awareness of, instead helping people believe that something can be done and that they can help (Sommer and Klöckner 2019). Another consideration that has to be taken note of when creating the most potent and inspiring piece of protest art possible is to make the image reproducible and easily simplified into something that can be put everywhere, both online and in the outside world. While murals and posters with beautiful and inspiring art serve movements well in spreading their message and provoking emotional reactions, small symbols that can be put everywhere are more memorable and easy for anyone who is part of the movement to recreate (Gorodezky 2019). This is about marketability, something that, while it seems very commercial and capitalist in its concept (after all, that is where the term originated and where this concept is used most frequently), is vitally important to give a protest or movement staying power.

The idea behind marketability is to make something, whether it be a logo, poster, shirt, or other piece of art capable of being shared and spread by creating it to be as widely applicable as possible. This does conflict significantly with a couple tenets of most movements, considering that they are about shaking up the status quo and making change happen, something that

companies want to avoid as much as possible in order to preserve their bottom line and avoid alienating part of their customer base. Only when an idea is widely accepted and mainstream (in other words, the movement has been successful) will companies feel safe supporting it and incorporating it into their advertisements.

Another drawback to taking the approach of marketability in the creation of protest art is the idea of borrowing from an oppressive system that is responsible for many of the issues that many movements were made to counteract. Even if it is in the service of pushing the movement forward, the tools of marketability can seem tainted and harmful to some activists. Despite this, there is power in reclaiming tools and ideas that were once used to cause pain and reshaping them into instruments for social good (Hartle and White 2022). Finally, marketability requires making an idea available and comprehensible to a wide audience. This can mean simplifying the movement's purpose and mission, which can leave details that are unsavory to some out in order to appeal to as many people as possible.

With the advent of social media, many movements have become hybrid or exclusively online, choosing to make use of the Internet through search engine optimization to spread their messages and organize (Lim 2014). This turn to the Internet and online communities has forced the hand of many movements in prioritizing not only marketability but also what will get the most attention. Attention-seeking has always been the cornerstone of a good protest or movement, protests existing in the first place to make people aware that

something is wrong and call their attention to it. The Internet has both helped and hindered this aim, allowing images and messages to be shared much more effectively at the cost of them being potentially diluted or taken out of context to further someone else's view.

Art is very easy to share online and less subject to dilution of meaning than text (or perhaps is subject to a different type instead), leading to recent movements and protests making use of memes. These can act as a form of protest art, though they are only recognized as such within online spaces. Most memes utilized by movements and protests, in contrast to physical protest art, were not created by them. Memes being public images by nature allows for someone to push an agenda with them and can be more useful to a movement than creating their own art or images, since if the protest goes sour or the image is once again co-opted from them, they can easily cut their losses. The image was not theirs to begin with and it will stay in the public domain forever unless retired by the artist, so its loss is not too important.

Just as memes are part of Internet culture, social movement art is part of culture. It is the voice of the people who create culture by making their voices heard through artistic representation, or in other words, counterculture is still part of culture. While memes are not often concerned with ethical views and their employment in movements represents a shift in activism strategy, this is the future of protest. Speaking of protest and sharing images online, how can those combine?

Social Movements and Social Media

Social media and social movements are inextricably linked, just as everything is to social media and the Internet at large. However, social media seem like an almost perfect match with social movements, especially when considering that social media reward those who drive traffic and clicks to their sites and social movements are all about getting attention.

The algorithms that drive social media sites are specifically designed to promote and encourage this kind of thing to happen, for like-minded people to find each other, become friends and create online networks, and then bring these networks into the outside world in the form of a meetup or demonstration. For example, people who have beliefs and want to discuss politics but cannot do so in-person take to social media to find others to join their groups, reflecting the increased personalization and individualization of politics on the Internet (Mattoni 2017). After all, social media sites are meant to help people find online friends and facilitate communication about shared interests (Tufekci 2018).

The reason why users are able to put their favorite things on their pages on sites like Facebook is so that others can see them and connect with them, leading to the creation of things like fan groups and groups dedicated to the hatred or eradication of something. One of the most dangerous aspects of the algorithms that drive this online connection is the bubble that users are put into by liking content. While this seems innocuous, the algorithm will make a note of

what the user likes and give them more like it, thus increasing the amount of time that they stay on the site and therefore the more advertising they are exposed to (encouraging more advertisers to host advertisements on the site. (Cinelli, Galeazzi, Quattrociocchi, and Starnini 2021).

Over time, the user is only recommended to consume things that the algorithm is very sure that they will like, insulating them from any content that they have not already expressed interest in and are most likely to engage with. The echo chamber is created, creating a rabbit hole that the user falls into where they only see what they want and form their opinions on the world and its current events based on the limited information they have been recommended. People become isolated as they find like-minded others who have been put through the same process as them and have come to the same conclusions about the world because of what they are recommended (Nguyen 2018).

In this way, people become activists through social media and are radicalized about a specific issue that they find important for better or worse. One of the main reasons that users use these sites so often and spend long periods of time on them is that they are able to quickly get updated information about the things they care about in the first place and discuss these things with others, so of course people would join together if they feel that a thing they are invested in could be in danger.

This is not to say that some of these people would find each other anyway, people who are concerned about something and want others to know about it have been organizing and protesting since the dawn of humanity.

Internet bulletin boards were able to attract people before any forums or recommendation algorithms existed, the groups that used these simply growing more slowly and having to put in a lot more effort to hold in-person meetups.

However, the ease of making a group and getting people interested in a topic online with the help of recommendation algorithms has enabled many who would otherwise not be able to physically create a movement and recruit to do so. The use of bots also helps, not all social movement activists are humans (Young, Selander, and Vaast 2019). Technology is most important when a social movement is being created, though it continues to be useful throughout the movement's lifespan. After all, many early adopters of new technology are protestors looking for a place where they can strategize without being monitored, especially if they live in a country with Internet restrictions (Tufekci 2018).

Those who create these groups and engage in online networking to grow them, the leaders of these decentralized movements, are often one person deciding to organize an aspect of a movement or protest and then contacting others through social networks to spread their message or intention. Some defacto leaders definitely intended for this and the movement was their idea in the first place, so they want credit. They are attempting to create something completely new, usually in response to current events or because a new technology is changing the world¹.

¹ It is ironic then, that they retreat to older technology that they are more comfortable with to organize against newer technology.

The other kinds of de-facto leaders are trying to either revive an earlier movement or take control of one that they feel has lost its way, having been diluted or split into splinter groups or lost credibility because of the actions of a previous leader. For example, the past waves of feminism were very progressive for their time but appear comparatively tame when looking back from where we are now. Leaders of the groups that comprised these waves sometimes made controversial decisions or were revealed to have personal lives that were harmful to others. Even today, this kind of thing happens often and any movement can be derailed by the actions of its leaders (Malinowska 2020).

The movements of today, even though they begin online, typically have in-person meetups or demonstrations as part of raising awareness about the issues their members are concerned about. Despite the belief many have about those who discuss seeking change on the Internet wasting their time and not going outside, online organization does cause things to happen in the outside world. More and more protests and demonstrations now begin online or are hybrid creations, the latter done by organizations that may have experience in real-world recruitment and planning but are looking to reach more potential members by maintaining an online presence (Jackson and Foucault Welles 2020).

While the movement being discussed here was exclusively online in both instances, its ramifications in the real world bring up a few questions that I hope to address here. It all comes down to the nature of Reddit, a place that is both a social media site and one of the furthest things from one.

Social Movements, Art, and Social Media

One of the most popular social media sites but, at the same time, one of the least recognized as such is Reddit. Known for its high volume of users, relative age in comparison to many newer social media sites, and history of controversy, it is a site that has enabled a wide variety of events. Reddit is a website entrenched in Internet history, both for the incredibly good deeds and horrific crimes of its users (Proferes, Jones, Gilbert, Fiesler, and Zimmer 2021). Of course, it being a social media website that offers the ability to create communities around anything simply by creating a subreddit, it has played host to many social media movements on all sides of the political sphere.

Somewhat ironically, the platform seems to have a problem of limiting movements in comparison to other social media. Despite being a gathering place for users to unite around a common cause, its upvote/downvote system and anonymity can break movements apart before they are able to do anything in the outside world (Buyukozturk, Gaulden, and Dowd-Arrow 2018). The upvote/downvote system (and Reddit as a whole) works like this: a user makes a post, whether it be an image, text, or video, and after submitting, it appears on a subreddit and can be voted on by other users of the subreddit after a short period of time.

The default² post ranking system in subreddits is Hot, meaning the posts that were the most upvoted recently compared to other posts will appear at the top. Similar to the YouTube algorithm, posts that are upvoted the most will rise higher and higher, becoming more likely to make the front page of Reddit (r/all) or be the first thing people see on their dashboard when they log into Reddit. The dashboard consists of top posts from every subreddit that a user has joined, acting as a sort of infinitely scrollable content feed similar to Facebook, Instagram, and YouTube. More views and engagement means more exposure, resulting in a potentially viral post that nets the user who posted it thousands of karma³.

Posts that are immediately downvoted en masse are candidates for deletion based on reports sent by the subreddit users to moderators⁴. Comments that are downvoted en masse become hidden automatically and have to be manually revealed. The system rewards those who consistently gain mass amounts of karma through what is known as 'karma farming' by inviting those who reach a hundred thousand points to r/centuryclub, an exclusive private subreddit.

Awards are also more likely to be given to those who make high-karma posts, some of them giving the recipient and the subreddit that they posted to Reddit Coins that can be used to purchase awards for other users and a time

²There are options, but these have to be chosen manually.

³ These are the points displayed on a user's profile on the site, consisting of upvotes minus downvotes on comments and posts.

⁴ These are users who monitor the posts on a subreddit to ensure they follow the subreddit rules.

period of Reddit Premium status (for example, receiving a Platinum Award gives one hundred coins and a week of Reddit Premium). Reddit Premium is a paid subscription that enables the user to buy more types of awards, gives access to avatar items and seven hundred Coins per month, removes advertisements, and invites them to r/lounge⁵.

The main unit of Reddit is the subreddit, a forum or board that is dedicated to a discussion topic. These can be very vague, like r/gaming or r/movies, or incredibly niche like r/KeqingMains⁶.

Since Reddit has been around since 2005, there are subreddits dedicated to almost anything that people would want to discuss. I say almost because, just like other social media sites, there are taboo and illegal topics that are either outright banned on Reddit or whose subreddits dedicated to them have been removed from the site.

The subreddit that is of importance to this study is r/place, the home of the r/place canvas [Figure 1]. This subreddit was created in 2011 but was first used to host the canvas in 2017 as part of Reddit's April Fools' Day celebration. When it is active



Figure 1: the r/place homepage

(it is currently archived), the canvas is visible at the top and the button to 'place

⁵This is an exclusive subreddit for Reddit Premium users, it serves as a smaller version of r/all.

⁶This is a subreddit for players who primarily use the character Keqing in the game *Genshin Impact*. Told you it was specific.

a tile' (the word for pixel) is superimposed over the area in which the user last placed a tile. When the button to 'place a tile' is pressed, the canvas fills the

The countdown to placing another tile is shown at the bottom and the coordinates of the selected pixel are at the top, along with the amount of magnification of the canvas and some standard buttons (the exit screen button, the share button,

screen.





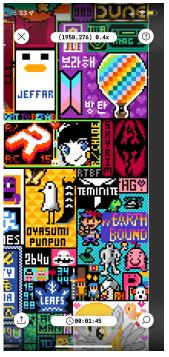


Figure 3: the countdown to placing another tile

the information button, and the search button). When a

tile is selected, a color spectrum pops up. Every five minutes, the user can place a tile before the timer activates and replaces the color selection tool [Figures 2, 3].

The initial r/place event took place from April 1st through April 4th, spanning seventy-two hours before the canvas disappeared from the top of the subreddit and it was archived. It was announced on r/announcements, the place for official Reddit announcements, on March 31st of 2017 with a vague poem about the purpose of the r/place subreddit and a link to it [Figure 4]. Once the event began, users of the subreddit began to place tiles on a blank white canvas

that was 1000 x 1000 pixels. The countdown between tile placement varied from five to ten to twenty minutes during the three days, though the sixteen-color palette remained the same.

While innovative since it was done on such a large scale, r/ place was not the first experiment concerning people placing pixels.

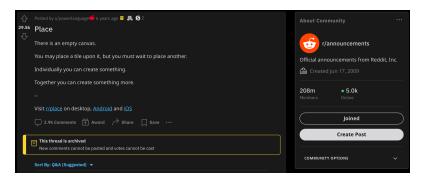


Figure 4: the vague poem

Some previous

examples include the Poietic Generator [Figure 5] and the Million Dollar Homepage [Figure 6], the first a computer game created in 1986 by an artist named Olivier Auber and the second a website homepage made in 2005 that allowed users to place pixels on a 1000 x 1000 canvas hosted on a webpage for the price of a dollar per pixel.



Figure 5: the Poetic Generator

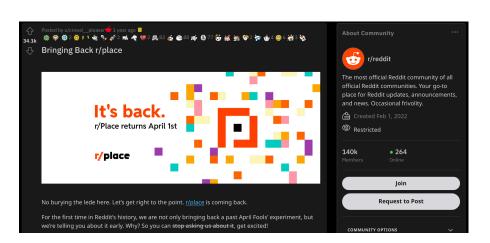


Figure 6: the Million Dollar Homepage

Experiments inspired by the Poietic Generator were displayed publicly, notably in the Georges Pompidou Center and projected on a building in Belgium (Levrel 2007). As for the Million Dollar Homepage, it is still accessible, though according to the website itself, all of the pixels have been sold (and most links are dead).

On March 28th of 2022, an announcement was made on r/reddit, the official Reddit news page, that r/place was returning on April 1st [Figure 7]. This prompted news outlets to report on it and spread the word all over the Internet, allowing people to organize and plan for the unarchiving of the subreddit. The 2017 r/place canvas was visited by 1.2 million Redditors (Reddit users) and 16.5

million pixels
were placed,
according to
Reddit (the
canvas
consisted of
one million



pixels, so each

Figure 7: the announcement of r/place

pixel was changed an average of 16.6 times) (Reddit 2022).

This time, 10.6 million Redditors placed 160 million pixels on a canvas that was originally 1000×1000 but later was expanded on the second day to 2000×1000 and then 2000×2000 on the third day. Considering the canvas ended up four times larger than in 2017, of course the numbers would be higher the second time around, yet this does not change the fact that the number of

Redditors who placed at least one pixel jumped massively. In addition, there were a couple more tricks that Reddit had up its sleeve. First off, the canvas was available for placing for four days instead of three. Second, there was a slightly different sixteen-color palette that was expanded twice, once to twenty-four on the second day and then to thirty-two on the third day.

Finally, in the last few hours of the fourth day, the only color available to users was white. Slowly, all of the art that had been created and fought over disappeared until the canvas returned to its original state. The r/place subreddit was re-archived soon after, leaving Redditors to wonder if it will ever reopen. However, the subreddit and the canvas hosted on it live on as important Internet cultural phenomena and examples of what can be created when people work together. I know that for me, this was an unforgettable experience.

My Account of r/place

Now that I have done an overview of Reddit and r/place, I am now going to make the assertion that the second iteration of r/place was much more successful than the first for a couple of reasons. For one, the combination of the sheer number of users that placed at least one pixel and the increases in canvas size would, of course, help spread the word about the event going on. After all, the record number of Reddit accounts created either right before or during the first day of r/place tell a story⁷. The difference between the amount of users in 2017 versus in 2022, 1.2 as opposed to 10.6 million, is close to a tenfold increase, and the amount of pixels placed follows a similar almost-tenfold pattern. Daily active users on the Reddit mobile app were also the highest in Reddit history and the app was ranked number one in three countries for the first time (Sensor Tower 2022).

These record numbers brought media attention to the subreddit, letting people who were unable to participate in the 2017 version know about r/place's return through free advertising. Those who had taken part in the first r/place got excited about it coming back as well and were able to prepare and organize into groups. The first iteration of an event (at least, a fun event) typically has the lowest turnout when compared to subsequent iterations, the second time around proving more popular since people know what is going on and want to

⁷ This is anecdotal, as is much of this section. Many users of r/place, me included, noticed that many users who placed pixels had Reddit accounts that were only a day old.

experience it. The advertising that Reddit did on its site and app helped too, giving preparation time to people like me who had never heard of the subreddit before seeing something about it while browsing the app.

The second reason why r/place was more successful the second time around was the collaboration that went into it. While this collaboration and the intra- and inter-community dynamics can be shown and described here numerically, numbers have to have context. The collaboration here was done between people and so instead of solely relying on data, I will give an account of the experiences I had while contributing to the r/place canvas myself and interacting with others online.

A couple days before r/place began, I was made aware of it after seeing an advertisement for it. It was in the form of an icon that I did not recognize on my dash, so I clicked on it to figure out what it was. After reading the description, I became interested, so I looked up r/place using Google Search and read a couple of articles. Now my interest was piqued. Ironically, the day after I learned about this and got excited, one of my best friends came to stay for a few days in my apartment, so she had to put up with my newfound obsession for the four days that she was there. In other words, I was never alone while I was placing tiles in r/place, something that I felt applied to everyone else who placed as well.

April 1st came and I was very excited to be a part of history. I woke up early, consumed an energy drink, and logged into Reddit half an hour before the start time to make sure that I did not miss it. At 9:00 AM EST, it began. While I

do not have records of my phone usage during this time (particularly, usage of Reddit's and Discord's mobile apps), I guarantee that they massively spiked. To put this in context, I have statistics of how many pixels I placed over the course

of the canvas being
available. Since all of the
data relating to r/place
was released by Reddit

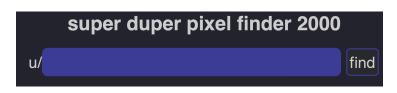


Figure 8: a pixel-counting website

itself soon after the event ended, those experienced in making sense of it created websites dedicated to matching the user with the pixels they placed by cross-referencing their username with the ID they were assigned in the official CSV files and then counting the pixels associated with the ID [Figure 8].

For my part, over a total of four days, I placed ninety-four pixels with three surviving to the end. I do not remember sleeping more than five hours a night during those three nights since every minute that I was not carefully observing my placed tiles, I felt like I was missing out. When I was not on the subreddit's canvas either placing tiles or looking at the evolution of the greater picture, I was looking up references and following the memes and posts on the subreddit itself. Every post and meme had context that could only be understood if you had been there since the beginning, save for those relating to organizing people to create a larger picture.

Unfortunately, since I did not sleep more than five hours a night, I missed the final part of r/place 2022: the whiteout [Figure 9]. I fell asleep around 4:30 PM on April 4th, exhausted from the past few days of non-stop r/place, and

when I woke up, there were memes and posts everywhere made by people panicking that they were destroying their own creations or wondering if there was a glitch that only gave the user the option to place one color of tile. I will be honest, I am still a little sad that I missed out on that portion. However, I am very grateful to have been able to participate in Internet and art history.



Figure 9: the whiteout

Part of this feeling is due to the togetherness I felt when I was placing tiles and interacting with others. I will put it this way: because there were so many posts asking for help littering the subreddit on the first day, a megathread8 had to be created by the moderators for the remainder of the time that the subreddit was open. Clearly, I was not alone in not wanting to join and lead groups to make bigger art. After all, if you can only place one tile every five minutes, you will have a difficult time working alone to create something. If you want to have the best possible chance of having your tiles survive, you have to find other users willing to help. There are multiple ways to do this, from creating a Discord server to asking those in a subreddit to help create something that represents the subreddit's interests, or by weaponizing an online following.

⁸This is a post created by moderators for the purpose of keeping a subreddit clean by condensing all of the threads relating to a topic into one post with a comment section. It is typically created for FAQs, requests for help, or to provide multiple links to outside information.

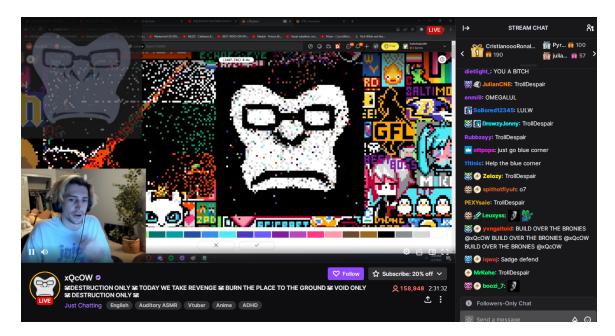


Figure 10: xQc destroying artwork on a Twitch stream

I was a part of two of these, I never responded to any content creator's call to place tiles en masse in a pattern but I did join Discord servers and use shared Google Docs with coordinate maps to help create images. I also participated in subreddit discussions with the same goal of immortalizing the subreddit in the r/place canvas. The third way to get users to help, the weaponizing one, was a trick used by one popular Twitch⁹ streamer. xQc, a Canadian gaming streamer who received death threats for his campaigns against r/place communities [Figure 10], had the twin goals of voiding¹⁰ and getting his channel icon on the canvas by destroying smaller art pieces. He was someone who quickly made an enemy of most of the r/place subreddit for this and even managed to attract the attention of the moderators.

⁹ This is a streaming platform owned by Amazon and a major competitor to YouTube that hosts livestreams. Its largest streamers are mostly gaming content creators.

¹⁰ This is a term created by r/place participants, it refers to the deliberate destruction of art by placing black tiles over the existing work to erase it and create a 'void'.

Most moderator-removed art pieces referenced some kind of bigotry, though xQc and a couple of his fellow streamers were able to become the exception to the rule by leading their followings to create a realistic female behind. xQc was the main antagonist of r/place in the eyes of everyone who did not follow his lead, though he enjoyed incredible viewer numbers on his r/place streams for his part.

I also accidentally became an antagonist to someone while placing tiles, as I am sure many other users did. A few minutes after placing, I received a

direct message request from a random user. The two words of the message told me everything I needed to know: a common expletive intensifier directed at me. I guess I must have placed a tile over theirs.

There were many other 'battles' and organized groups that became synonymous with the event and I joined a few of them, so I can provide a small amount



Figure 11: the Void

of insight. Many of the groups were formed during r/place 2017 and returned to claim their spot in the 2022 canvas, the battles unique to the different iterations of the event. My personal favorite groups were the Void¹¹ [Figure 11], the Blue

¹¹ The Void is the absence of color, a mass of black that seeks to erase artwork. In the end, those who chose the path of the Void won, since everyone was made to join their team and place only white tiles.

Corner¹² [Figure 12], the Osu!¹³ community [Figure 13], and Rainbow Road [Figure 14].

The Void is unique, as it is one of the two sides available to take at the beginning of the canvas' availability. While the canvas is white by default, those who place tiles have a choice to make: color or black (which is all of the colors together but also the absence of any). Ultimately, those on the side of placing colored tiles always prevail, though sometimes 'Void monsters' are created in retaliation later [Figure 15].

In the beginning, all tiles placed were disconnected from any existing artwork. Every pixel was its own piece of art until greater patterns began to form. These patterns were exactly what you would expect, the canvas mostly composed of flags, memes and references, existing artwork, fictional characters, and logos. They ranged from political statements to advertisements for subreddits to memorials, some obvious and some inscrutable to the user who is not part of the community that united to create it. As is to be



Figure 12: the Blue Corner



Figure 13: Osu!



Figure 14: Rainbow Road

¹² This is exactly what it sounds like, this group dedicating itself to making a corner of the canvas blue.

expected, the larger number of participants compared to r/place 2017 made

¹³ This is a free-to-play rhythm game with community-made beatmaps, it has been around since 2007. While most r/place participants were not familiar with the game, they rallied around its fans and made supportive memes since they were constantly attacked by others (in particular, xQc and his followers).

more elaborate artworks possible (though the increased canvas size did not hurt).

Nevertheless, everyone fighting over a 1000 x 1000 pixel canvas is bound to lead to toes being stepped on and battles being fought for the limited space. For example, I was part of a couple of subreddits that were created for the purpose of organizing to create an image that represented a fandom. These subreddits were then made into Discord servers for discussion, sharing of a Google Doc with a



Figure 15: the retaliatory Void monster

pixel map of the image and a browser extension for overlaying the pixel map on

the r/place canvas, and pings to defend the image from being erased when another image began to encroach.

Alliances were formed between subreddits as well, resulting artwork that combined different fandoms and groups. Venti from *Genshin Impact* made it into the final r/place canvas wearing a Dutch hat by being



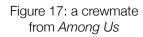
Figure 16: Venti from *Genshin Impact* against the Dutch flag

superimposed over the Dutch flag [Figure 16]. Mexico and Italy made a truce and Mexico got to take the bottom portion of the Italian flag (the colored stripes on their flags are the same). Everything was on top of everything else and everyone was okay with it as long as they got some space for their favorite thing. These alliances did require serious-seeming negotiations, however; the

Discord server owners and subreddit moderators contacting each other and drafting terms to make these official. It really felt like you were part of a large movement that was making something cool happen.

The most dedicated group had the most mysterious goal: to place Among Us¹⁴ characters everywhere.

[Figures 17, 18] These are called crewmates, and they



were stealthily added to nearly every large piece of artwork on the canvas. Some

people even made a game out of spotting as many as they could.

All of this that I described, it is only a small portion of the full r/place canvas. Every one of the one million pixels is part of the story, each contributing to a team whether the user who placed it knew it or not.



Figure 18: an example of how crewmates can be hidden in plain sight

¹⁴ This is a social deduction game similar to Werewolf or Mafia, it was released in 2018 but became popular in 2020 during the pandemic.

Part 2: Preparing the Finished Work for Display

Exhibiting Time-Based Media Art

What does all this discussion of r/place mean to a museum that is interested in creating an exhibit around it? One easy way (that comes with a lot of drawbacks) is to just get a projector and mount it to the ceiling of the gallery, point it at a wall, connect it to a computer with the video, and project a time-lapse video of the r/place 2022 canvas on a loop. Simple, right? Sure, if your intention is to be done with things as quickly as possible. Will it stay true to the spirit of the original art and offer information to the museum visitor beyond a video that they could have found on YouTube if they had wanted to? Absolutely not. Museums are cultural institutions that offer knowledge and seek to put art into context for everyone who comes in, so just projecting the video will do almost nothing.

Here are some of the many things a curator has to take into account when accessioning a new piece of art: physical space, theme/relevance, and cost. Each piece of art takes up a certain amount of wall space or floor space, some even taking up whole rooms (this is especially the case when it comes to new media art). Every physical building has limited space, so only some pieces in the museum's permanent collection can be displayed at a time. If a piece of art no longer fits with the theme or mission of the museum, it can be

deaccessioned (sold at auction or exchanged for another piece) or put into storage. Theme and relevance are related to this, as each museum has a theme that it collects pieces to further reinforce. This could be a period of time, a location, a culture, a medium, or an object. Finally, cost is for acquiring the art in the first place and then spending money to restore it or to create an exhibit to house it within (Thompson 2022).

There is also the matter of provenance, or making sure that the art is authentic and has not been stolen before arriving at the museum. While verifying provenance is a very important step in accessioning, modern art museums have less to worry about than museums that display art ranging from ancient to premodern. In most cases, modern art museums work with the artists or the manager of their estate when acquiring art, so less research on the legitimacy and legal status of an artwork has to be done (ETHCOM 2020).

Digital items, or time-based media, have to be thought of in a completely different way than physical items. Time-based media conservation is an emerging field where every guideline is up in the air and is constantly being evaluated and improved upon¹⁵. However, there are sets of proven guidelines for

¹⁵ Of course, this is also the case for every set of guidelines and protocols for accessioning physical museum objects, though those have at least been generally agreed upon for a long time.

accessioning time-based media, some of which I have collated into a list sourced from multiple art museums' policies on these items¹⁶ ¹⁷.

There are three steps in the process of accessioning a piece of time-based media art: pre-acquisition, acquisition, and post-acquisition. The first part of pre-acquisition is researching a piece for basic information and to obtain the contact information necessary to begin the process. During this period, expertise (either in-house or from consultants) needs to be gathered as well. Then comes the proposal to the board, where the curator interested in acquiring the item talks about what equipment would be necessary to exhibit the work, assesses and gives a report on its condition, discusses the difficulty of exhibition, and gives a detailed breakdown of the costs of acquisition, exhibition, conservation, and preservation. If the board approves, the process moves forward and a purchase agreement is made with either the artist or a representative from the artist's estate.

Acquisition is the next step, consisting of making sure that everything is straight with the purchase agreement, everything that was supposed to arrive has arrived and it is authentic and in good working order (in the case of equipment and software), and hashing out copyright licenses. Since time-based media art is partially digital and is therefore not a physical object, these rights

¹⁶ The most common time-based media is currently video/multimedia art, so these are sourced from published video protocols.

¹⁷ These come from the Smithsonian Institution, Tate Modern, The Museum of Modern Art, the San Francisco Museum of Modern Art, Matters in Media Art (a collaboration between Tate, The Museum of Modern Art, New Art Trust, and the San Francisco Museum of Modern Art), and the Solomon R. Guggenheim Museum.

are paramount to ensuring that the museum is able to display, sell, preserve, and loan out the work.

Finally, there is post-acquisition, or the aftermath. This involves interviewing the artist about the installation, collecting the information necessary to archive and preserve the artwork in the museum's databases, taking photos of the work, and beginning the process of installation. This step also includes conservation and perpetual preservation, meaning that the process never really ends (Matters in Media Art). Guidelines for cataloging and archiving artworks differ by museum, though most are similar enough that I feel comfortable summarizing the Smithsonian Institution's guidelines here as an example.

When cataloging, make sure to get the highest quality files (this includes images, audio, video, software, etc.) possible. These files are known as the archival file. If the files are not immediately compatible with the systems that the museum uses, then they are known as the acquisition format and can be converted later. The archival file then needs to be checked for data integrity, security, and the correct metadata. There is also a standard for how the metadata should be written and what should be included, usually in the form of checklists or other forms. It is also recommended to get exhibition copies/derivatives if available, as well as documentation files (ex. interviews with the artist, pictures of the finished installation, technical documentation of video) for future installation guides and/or conservation strategies. Finally, a security policy has to be put in place for the safeguarding of each archival file, involving conservation staff subscribing to the file and being notified when it is accessed

or edited. There are audits of each archival file performed once a year, the purpose being to investigate any strange activity and to see if anything needs to be replaced due to obsolescence of the equipment required to exhibit the artwork (Smithsonian Institution 2015).

Now we come to conservation and preservation, defined as monitoring and mitigating changes to the artwork, striking a balance between the artist's intention and the technical components of each media-based artwork (Guggenheim Museum). The Tate's definition is much more descriptive, describing time-based media conservation as assessing the potential risks to the work, constructing a preservation strategy for each work, and making display copies of the work for installations (Tate Modern 2022). The extra steps that have to be taken here after the normal procedures are video assessment and component inventorying, as well as fixing any technical problems between pieces of the artwork or equipment.

For a while, the field of art conservation was focused on the material nature of the art, though the context that the art is in as well as its use are now more often taken into account. After all, the artist's intent and the public's experience of a piece of art are incredibly important to the proper preservation of time-based media. To add to the ephemerality of time-based media, it only exists in a space if the technology that allows it to be experienced is working. Despite this drawback, at least art made of data can have identical backup copies (Falçao and Ensom 2019).

Conservation is about documentation, all of the steps that I outlined earlier (actions taken to preserve the artwork considering the content of the condition of the work, the context it is in) factoring into this. Some argue that documentation could become its own field of study with the advent of time-based media, considering that the process is unique for each piece and has so many parts that are specific to one work. Depending on the aims of the museum engaging in conservation and preservation, they will either seek to document the work for future study or even for future recreation. No matter what, good conservation and later ongoing preservation requires collaboration between the artist, the museum, and the place where the artwork was previously exhibited (Noordegraaf, Saba, Le Maître, and Hediger 2013).

Overall, the processes of accessioning and the conservation/preservation of time-based media are more complicated versions of existing physical artwork processes, only tailor-made for the emerging branch of art that is multimedia.

Now that I have gone into the protocol difficulties of time-based media art, I will discuss here the physical limitations of the museum building to adequately house time-based media artworks. For one, a museum is a three-dimensional building. It has limited space and is designed with the purpose of exhibiting art objects that can take up space. While there are walls for projection, there is still a size limitation (and therefore virtual art can only be displayed up to a certain resolution).

Some museums have gotten around these issues by either being designed and constructed with the express purpose of exhibiting time-based

media or by creating supplemental exhibit space online. One museum even planned an infinite virtual space that could expand or contract as necessary, another would allow for users to submit artwork online to be digitally displayed on screens in the building. Unfortunately, these avant-garde museum ideas were either theoretical or scrapped due to not having the technology needed or being too difficult to create. Despite this, museums like the Pompidou Center exist to help bridge the gap between the digital and the physical, it being an example of a museum that was built relatively recently and therefore able to reflect more modern ideas of art media (Barranca 2016).

Difficulties also exist when attempting to pull information about a time-based media art piece for archival purposes. Physical art objects always come with background information¹⁸, such as where the object was found and which artist(s) made it, its dimensions, provenance records, et cetera. All of these are important parts of the art object's identity, as every art object is unique and so having this information upon accessioning is vital to being able to trace the object's history before the museum and while there. This background information is also important for scholarship both within and outside of the museum or institution.

What about digital art objects? Just as provenance and descriptions of their physical counterparts are necessary, metadata and context documentation is needed for digital art. Of course, digital art objects can only be exhibited with the use of physical objects (projectors, computers) and those can be

¹⁸ Or, at least, they should. Otherwise, issues around legality and authenticity come up.

documented and described without trouble, but the digital nature of this type of art can present interesting challenges. For example, how would a museum collection specialist preserve the metadata associated with a software program artwork or conserve a website that autonomously creates art? These are questions that have been discussed since the dawn of the first computers, the answers never infinitely applicable¹⁹.

Difficulty is to be expected here, as these are problems with no easy solutions. One of the most widely used approaches, taken from information science, is digital forensics. First used in archives and libraries to pull data from obsolete forms of physical data storage, it is now being used in museums to ensure that digital art retains records of its context and the metadata that the art piece contains (which could be useful for the future once the technology used to display it is no longer widely used).

Most of the tools used to accomplish this are open-source and have been created in the last couple of decades, though they can only be utilized on a few of the most common systems (Lee, Woods, Kirschenbaum, and Chassanoff 2013).

The one that everyone is familiar with is emulation, a common method of preservation for video games and older operating systems that has recently come into use in archival practice. This uses installed software to allow a computer to function like another computer, giving users the ability to run old programs or get information off of an obsolete medium. So far, digital forensics

¹⁹ Same as time-based media art, which I discussed in the previous section. Everyone came up with their own answers and had to create widely-accepted standards later.

tools are some of the best chances archivists have at getting information out of old storage media. One day, if the exhibit I have planned here becomes reality, archivists and museum collections specialists will have to transfer my work to new media as well.

Past Time-Based Media Exhibits

Now that I have gone through the benefits and inherent difficulties of preserving, conserving, and exhibiting time-based media art, I feel that in preparation for my explanation of my museum exhibit, I should describe some of the inspirations and influences that I used when drafting my plan. These past exhibits are a mix of contemporary (in the past two decades) and older, all related by way of being a blend of digital and physical art.

The first one I used I found while looking for information on exhibiting time-based media art. The exhibit is called *Written in Stone: a net.art archaeology* and it was curated by Per Platou with contributions from artists Olia Lialina, Alexei Shulgin, Vuk Ćosić, Heath Bunting, and Jodi [Figure 19]. It was exhibited in the Oslo Museum of Contemporary Art in



Figure 19: Written in Stone: a net.art archaeology in the Oslo Museum of Contemporary Art

2003 and consisted of physical objects (called ephemera) that connected to stories available for reading on the companion website. These objects included wall-mounted stone tablets (the stars of the exhibit), T-shirts, booklets, photographs, and framed art pieces, the website serving as the context tying these together (Hannan 2022). The idea I took from this exhibit was displaying

physical objects that connected to some of the art created on the r/place canvas.

The second was

Eclogue for

[in]HABITABILITY, a timebased media art piece by

Sondra Perry that was



Figure 20: *Eclogue for [in]HABITABILITY* in the Seattle Art Museum

exhibited in the Seattle Art Museum in 2017-2018 [Figure 20]. It explores the intersection between virtual and physical spaces (through the lenses of race and science fiction) and is a multidimensional representation of a pastoral poem about the human body split into nature, labor, manufacturing, and urban planning. It consists of a backhoe with screens and a disheveled chair, as well as three video projections with sound (Seattle Art Museum, Perry 2017). This artwork inspired me to have a sculpture in my exhibit design that represented the collaboration of r/place.

Finally, there is *Multiverse*, created by Leo Villarreal in 2008 [Figure 21].

This is an installation in the National Gallery of Art that takes up an entire hallway (and is the hallway), known as a light sculpture. Made up of white LEDs embedded in metal that turn on and off in patterns, it offers a unique experience for every viewer. This artwork is by far the largest of the three, measuring two hundred feet in length and consisting of forty-one thousand LEDs (National

Gallery of Art, Villarreal 2008).

Multiverse inspired me to think about adding light to a space something that interacts with a viewer and contributes to the feeling of being in multiple dimensions at once.



Figure 21: Multiverse in the National Gallery of Art

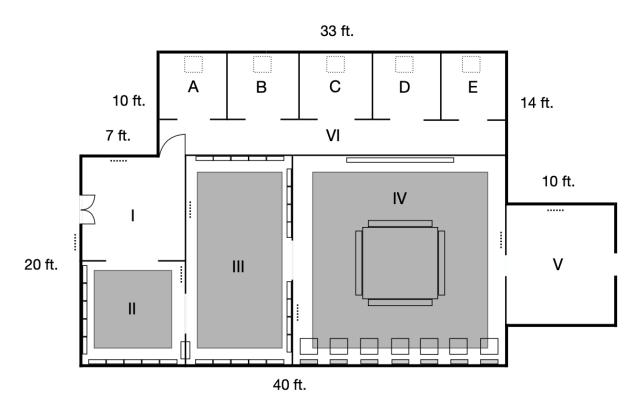
All three of these artworks

were instrumental in guiding my efforts to create an exhibit that could make the viewer feel as though they were inside of the r/place canvas.

Part 3: Exhibiting the Art

The Exhibit

Speaking of my work, onto the exhibit plan. There are five primary rooms and six secondary, split into the main exhibit and the VR r/place atlas experience.



Clear square panels in floor in 16/24/32 colors	Museum labels	Interactive scre		Physical objects representing iconic pieces of r/place	
3D heat map with benches	VR r/place atlas	Posters behind physical objects	Metal panels/pos of r/place	eters	

I is the first room, it has the r/place announcement post made by the moderators on the wall but otherwise the room is empty. The walls, ceiling, and floor are bright white. I and II both measure 10 x 10 x 10 feet, representing the initial size in pixels of the canvas (also, the cubic nature of the rooms resembles one giant pixel).

Il is the second room, it has metal posters on the walls that show slices of r/place on the first day and its label is the post made by the moderators to announce the first day of r/place. The floor is tempered glass over LEDs in the sixteen colors available on day one.

III is the third room, it has metal posters from the second day of r/place and its label is the second day announcement. It is twice the size of the previous rooms,

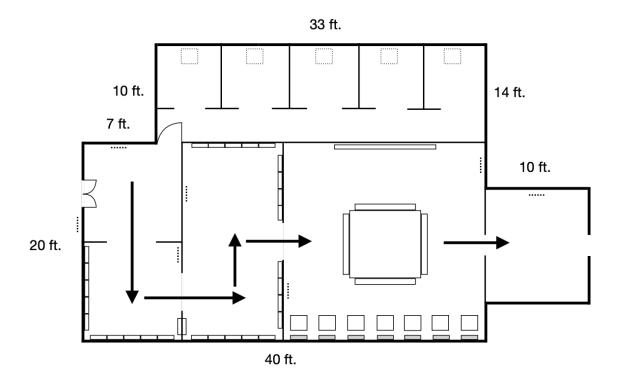
representing the canvas expansion done on the second day. The floor has twenty-four colors instead of sixteen, as the color palette was expanded as well.

IV is the fourth room, it has metal posters and the announcement post from day three. It is twice as big as the third room and four times as big as the first and second rooms, representing the final canvas expansion. The floor LEDs are also increased to thirty-two since the color palette was also expanded one final time. It features a wall with seven posters and physical objects that are tied to them, each taken from the r/place canvas. In the middle of the room is a three-dimensional heat map sculpture of r/place at its highest number of users and on the other wall is an interactive screen that allows visitors to place their own tiles on a museum-hosted website. On the wall next to the next room is the day four post.

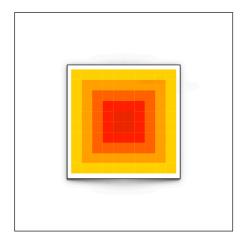
V is the final main room, it is back to $10 \times 10 \times 10$ feet and the walls and floor are completely white. On the left wall is the post that r/place has ended.

VI is the virtual reality (VR) experience that ties in with the r/place atlas, it consists of five experience rooms and one hallway that allows for access to the interactive screen. The VR experience allows visitors to explore the r/place canvas from all four days of activity and lets them highlight the image they want to learn more about. Upon highlighting, an entry will explain who created it and what it signifies.

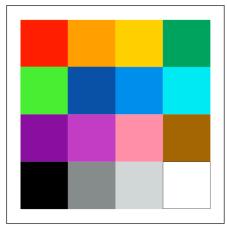
The flow of visitors through the exhibit goes like this:



The themes of this exhibit are interactivity and the space between the digital and physical, giving visitors the chance to experience what it was like to participate in r/place. The overlap of digital and physical space are exemplified by the VR experience, the interactive screen, and the physical objects/posters. Interactivity is in the VR experience as well, the LED floor panels adding to the feeling of being inside the canvas. I wanted to combine being inside the canvas with seeing it from the outside, letting everyone have their own experience just like everyone who participated in r/place did. The exhibit tells a story, but it also lets visitors imagine their own contributions and narratives.



The heat map on the floor of room IV, not including the LEDs below



The sixteen initial colors of r/place as LEDs shining through tempered glass, located on the floor of room II



Metal posters from day four of r/place, mounted to the wall of room IV



Isolated art pieces and the objects that are associated with them in room IV



The interactive screen in room IV

Conclusion

r/place 2022 was a multidimensional experience for me and everyone else who participated, exciting us and then having us destroy the creations that we had worked so hard to create and defend. It is the intersection between social media, social movements and collaboration, and art history, a once-in-a-lifetime event that allowed people to work together and create something that represents the Internet. The canvas acts as a time capsule for Internet culture in 2022, nearly every piece of art requiring background Internet knowledge to fully comprehend.

I hope that my exhibit plan has done it justice and that future research is done on r/place, it is far too interesting and multidimensional to leave off here.

Bibliography

- "Acquiring Media Art." n.d. Mattersinmediaart.org. http://mattersinmediaart.org/acquiring-time-based-media-art.html.
- Barranha, H. (2016). Between the Virtual and a Hard Place: The Dilemma of Digital Art Museums. Electronic Visualisation and the Arts, 229–236.
- Benford, Robert. (1999). The Art of Moral Protest: Culture, Biography, and Creativity in Social Movements by James Jasper: The Art of Moral Protest: Culture, Biography, and Creativity in Social Movements. American Journal of Sociology AMER J SOCIOL. 104. 1835-1837. 10.1086/210235.
- Buyukozturk, Bertan & Gaulden, Shawn & Dowd-Arrow, Benjamin. (2018). Contestation on Reddit, Gamergate, and movement barriers. Social Movement Studies. 1-18. 10.1080/14742837.2018.1483227.
- Chan, Stephanie. 2022. "Reddit's Mobile App Usage Reaches All-Time High, up 25% Year-Over-Year." Sensortower.com. April 2022. https://sensortower.com/blog/reddit-dau-all-time-high.
- Cinelli, Matteo, Galeazzi, Alessandro, Quattrociocchi, Walter, and Michele Starnini. "The echo chamber effect on social media." *Proceedings of the National Academy of Sciences 118*, no. 9 (2021): e2023301118. Accessed April 14, 2023. https://doi.org/10.1073/pnas.2023301118.
- Digital Asset Management System Branch, OCIO Office of Systems
 Modernization. 2015. "TBMA Package Definitions Smithsonian Digital
 Asset Management System (DAMS)." Si.edu. Smithsonian Institution.
 November 2015. https://www.si.edu/tbma/sites/default/files/downloads/tbma_resources-dams_tbma_packagedefinition.pdf.
- "Documenting Media Art." n.d. Mattersinmediaart.org. http://mattersinmediaart.org/assessing-time-based-media-art.html.
- ETHCOM. 2020. "Standards on Accessioning of the International Council of Museums Standards on Accessioning of the International Council of Museums INTRODUCTION the Following Guidelines Elaborate upon the

- Principles Expressed in the ICOM Code of Ethics for Museums Concerning the Acquisition and Accessioning of Objects for Museum Collections." https://icom.museum/wp-content/uploads/2022/03/Accessioning-Standards_EN.pdf.
- Falcão, P., Ensom, T. (2019). Conserving Digital Art. In: Giannini, T., Bowen, J. (eds) Museums and Digital Culture. Springer Series on Cultural Computing. Springer, Cham. https://doi.org/10.1007/978-3-319-97457-6_11
- Gorodezky, Sylvia. 2019. "El Arte Chicano Como Cultura de Protesta." MA Thesis, Universidad Nacional Autonoma de Mexico. https://ru.micisan.unam.mx/handle/123456789/16569?show=full.
- Hannan, J. (2022). Exhibiting net-based art IRL: On the presentational challenges net-based art presents, and the solutions to be found in past exhibitions of cybernetic, conceptual, and net-based artworks. https://studenttheses.uu.nl/handle/20.500.12932/476
- Hartle, Stephanie, and Darcy White. 2022. Visual Activism in the 21st Century. Bloomsbury Publishing.
- Jackson, S. J., Bailey, M., & Foucault Welles, B. (2020). #Hashtag Activism: networks of race and gender justice. The MIT Press.
- Kester, G. H. (2011). The One and the Many: Contemporary Collaborative Art in a Global Context. United Kingdom: Duke University Press.
- kthompson. 2022. "Art Term Tuesday: Accessioning & Deaccessioning." Fort Wayne Museum of Art. August 15, 2022. https://fwmoa.blog/2022/08/15/art-term-tuesday-accessioning-deaccessioning/.
- Lee, C., Woods, K., Kirschenbaum, M., & Chassanoff, A. (2013). From Bitstreams to Heritage: Putting Digital Forensics into Practice in Collecting Institutions. BitCurator. https://bitcurator.net/wp-content/uploads/sites/1099/2018/08/bitstreams-to-heritage.pdf
- Levrel, Julien. "Jean-Paul Fourmentraux, Art Et Internet. Les Nouvelles Figures De La Création." Sociologie du travail49, no. 3 (2007): 432–33. https://doi.org/10.4000/sdt.22702.
- Lim, M. (2014). Seeing spatially: people, networks and movements in digital and urban spaces. International Development Planning Review, 36(1), 51–72. https://doi.org/10.3828/idpr.2014.4
- Lusini, V. (2017). Collaborative Art Practices and Their Dynamics. *Visual Ethnography*, 6(2), 9–19. https://www.academia.edu/36649143/

- Collaborative_Art_Practices_and_their_Dynamics?auto=download
- Malinowska, Ania. (2020). Waves of Feminism. 1-7. 10.1002/9781119429128.iegmc096.
- Mattoni, A. (2017). A situated understanding of digital technologies in social movements. Media ecology and media practice approaches. Social Movement Studies, 16(4), 494–505. https://doi.org/10.1080/14742837.2017.1311250
- Nguyen, C. Thi. 2018. "Escaping the Echo Chamber." *Aeon Magazine*, April 9, 2018. Aeon Media. https://aeon.co/essays/why-its-as-hard-to-escape-an-echo-chamber-as-it-is-to-flee-a-cult.
- Noordegraaf, J., Saba, C. G., Barbara Le Maître, & Vinzenz Hediger. (2013). Preserving and exhibiting media art: challenges and perspectives. Amsterdam University Press.
- Perry, Sondra. n.d. "Eclogue for [In]Habitability at the Seattle Art Museum Sondra Perry." Sondraperry.com. Accessed April 17, 2023. https://sondraperry.com/Eclogue-for-In-habitability-at-the-Seattle-Art-Museum.
- Place Atlas contributors (original by Roland Rytz). n.d. "The 2022 R/Place Atlas." Place-Atlas.stefanocoding.me. Accessed March 17, 2023. https://place-atlas.stefanocoding.me/#twunc3/153.
- Proferes, Nicholas & Jones, Naiyan & Gilbert, Sarah & Fiesler, Casey & Zimmer, Michael. (2021). Studying Reddit: A Systematic Overview of Disciplines, Approaches, Methods, and Ethics. Social Media + Society. 7. 205630512110190. 10.1177/20563051211019004.
- Sommer, Laura & Klöckner, Christian. (2019). Does activist art have the capacity to raise awareness in audiences?—A study on climate change art at the ArtCOP21 event in Paris.. Psychology of Aesthetics, Creativity, and the Arts. 15. 10.1037/aca0000247.
- Tate. 2022. "Time Based Media." Web.archive.org. January 21, 2022. https://web.archive.org/web/20220121032346/https://www.tate.org.uk/about-us/conservation/time-based-media.
- "Time-Based Media." n.d. The Guggenheim Museums and Foundation. https://www.guggenheim.org/conservation/time-based-media.
- Tufekci, Z. (2018). TWITTER AND TEAR GAS: the power and fragility of networked protest. Yale University Press.

- u/Drunken_Economist. 2017. "R/Redditdata Place Datasets (April Fools 2017)." Reddit. 2017. https://www.reddit.com/r/redditdata/comments/6640ru/place_datasets_april_fools_2017/.
- u/kisielo85. n.d. "Pixel_finder." Kisielo85.Cba.pl. Accessed March 13, 2023. http://kisielo85.cba.pl/place2022/result.php?nick=reynadunoctis.
- u/paul_that. 2022. "R/Place R/Place Datasets (April Fools 2022)." Reddit. 2022. https://www.reddit.com/r/place/comments/txvk2d/rplace_datasets_april_fools_2022/.
- Villareal, Leo. 2008. "Multiverse." National Gallery of Art. 2008. https://www.nga.gov/collection/art-object-page.142055.html.
- — . n.d. "Multiverse, 2008 National Gallery of Art, Washington, D.C." LEO VILLAREAL. Accessed March 15, 2023. http://villareal.net/multiverse-2008-national-gallery-of-art-dc.
- Young, Amber, Lisen Selander, and Emmanuelle Vaast. 2019. "Digital Organizing for Social Impact: Current Insights and Future Research Avenues on Collective Action, Social Movements, and Digital Technologies." *Information and Organization* 29 (3): 100257. https://doi.org/10.1016/j.infoandorg.2019.100257.