Latent Possibilities, Latent Responsibilities, Latent Spaces

an essay by

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1. Introduction

Years ago, my very first job as a freelance sound engineer was working for various drag performances during the Yo!Sissy festival in Berlin, and it was also my very first real encounter with this kind of performance. I was immediately mesmerized by how the performances dealt with socio-cultural issues, pop culture and gender identity. It was not my last job of this kind and I came into contact with many like-minded and beautiful people who dedicate their passion and energy to the practice of drag.

With the impact of Covid-19, many things changed, not only in the larger global perspective, but also personally, which eventually led me to stop working the long nights and being in touch with Berlin's queens and kings. Nevertheless, this time was also the starting point for experiments with generative output using neural networks. Although I was never brave enough to create a drag persona for myself, I used Nvidia's StyleGAN2 to create speculative portraits and avatars, far from its intended purpose of generating photorealistic faces.

Now in 2023, text-to-image generators have become very powerful, easily accessible and widely available. *Stable Diffusion* and *Midjourney* (to name a few) will change the way images are edited and content is created. However, they also raise awareness of where the training data for those models comes from and how this relates to our online activities. While the act of sharing content serves the purpose of engaging and interacting with families, friends or audiences, it is also possible to create large datasets from shared content on which these text-to-image generators are trained. A few months ago I spotted a poster for the 2023 edition of *KRAKE* Festival, a "*Berlin based festival challenging electronic music*". (KRAKE Festival, 2023) This year the focus was on inclusion and how electronic dance culture does or does not include people from the disabled community. While at first I thought I might meet some old friends – I was sure I had spotted one of their drag identities on the festival poster – someone pointed out that all the images had been prompt engineered and none of them were actually real. They were origin of *Midjourney* using prompts, created by design studio *Hillmeneutik*. (*OCTO Posse*, 2023)

In this essay I will first draw a metaphorical connection between queerness and the output of an altered generative adversarial network to understand how the possibilities of this technology can assist in visualizing speculative horizons and imaginations. With a few examples I will relate to José Esteban Muñoz' definition of the term *queer* and Sara Ahmed's *Queer Phenomenology.* Following an introduction to text-to-image generators, I would like to point out the potential pitfalls of using machine learning technology to create photorealistic images of people who are members of the disabled and queer community by analyzing the poster campaign for the 2023 edition of *KRAKE* Festival. Judith Butlers concept of *performativity* will be transferred to the practice of

prompt engineering for text-to-image generators and I will argue how this technology is capable of appropriating the visual identity of drag culture.

2. Latent Possibilities – Queer Lines Between Points

By modifying the code of NVIDIA's StyleGAN2 – a generative adversarial network (GAN) – I want to show a way to explore the so-called latent space as a source of speculative ideas and imagination. In particular, StyleGAN2 is known for its ability to generate high quality and highly detailed images. (NVLabs, 2019) It allows to control different aspects of the style, such as age, gender and hairstyle. It has gained popularity in 2020 thanks to its open access for non-commercial use and has been used for various conceptual, visual and acoustic works as well as practice-based artistic research. The data stored for StylGAN2 are parameters and weights that represent the features of the data. Depending on the recognized features (similarities) within the data, they are ordered and stored in a multidimensional matrix called latent space. A representative example is the *Latent Walk*. By visualizing the data between two points in the latent space, a video can be created that fades between two different faces. (NVIDIA Developer, 2020) In addition, StyleGAN can be trained on more than just faces – it can be trained on custom data or access publicly available models based on images of anime characters, cars or visual patterns. (Awesome Pre-trained StyleGAN2, 2020)

Using queerness as a theoretical basis to explore the possibilities of interacting with artificial intelligence was also discussed and experienced in Grace L. Turtle's publication *Mutant in the Mirror: Queer Becomings with Artificial Intelligence*. While Turtle's motivation has an autotheoretical background (Turtle, 2022). The following experiments are brief presentations of études through interaction with machine learning technology. According to cultural theorist and scholar José Esteban Muñoz and his work on queer and performance studies, queerness goes beyond the definitions of sexual or gender identity. Muñoz understands queer aesthetics as carrying opportunities "f*or blueprints and schemata of a forward-dawning futurity*" (Muñoz, 2009, p.1).

Sara Ahmed describes being queer as not being "in line" (Ahmed, 2006, p. 66) with a straight/normative line. Ahmed uses the example of tracing paper. If the lines on the tracing paper are in line with the lines on the paper that has been traced, then the lines on the tracing paper are no longer visible. They do not stand out from the normative structures. The lines of the tracing paper "*disappear by the process of alignment*". "*When one thing is "out of line" with another, the "general effect" is "wonky, or even queer*". (Ahmed, 2006, p. 66)

By altering the directions of the line crossing the latent space, we allow for speculative constellations, entering hidden layers and playing with possible fusions between species or shifting

one's gender in various directions. This makes it possible to navigate between the visual features of persons, genders and any other objects and life forms. While we still rely on a mathematical line between two points, and are actually interested in everything the line crosses, altering the code can help us change the direction of the line between two points within the dataset. Either by applying truncation. This will have an effect on the image quality, but allows increasing diversity beyond what is even in the real distribution of data. (See Figure 1. Truncation #1 & #2) While the developers intended to create photorealistic images of human faces, it can also be used to imagine speculative merges between humans and any other species by trying to draw a line between any point in the latent space and the direction towards the desired destination/species. (see Figure 1. Origin & Direction)

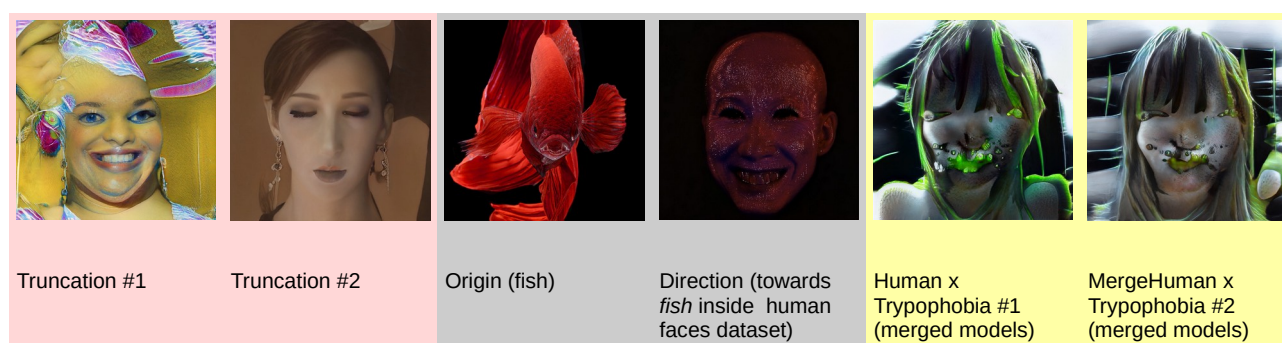| Truncation #1 | Truncation #2 | Origin (fish) | Direction (towards *fish* inside human faces dataset) | Human x Trypophobia #1 (merged models) | MergeHuman x Trypophobia #2 (merged models) |

Figure 1.

Another approach was to merge models of human faces with a model based on a dataset of images with irregular natural patterns or clusters of small holes and bumps, creating organic, almost inhuman portraits that still resemble facial features such as eyes, nose, mouth and hair (see Figure 1. Human x Trypophobia #1 & #2). Any other combination of models is possible, and by changing the code of StyleGAN2 it we are able to imagine different aesthetic possibilities, constellations and concepts. Muñoz understands queerness not as a single entity, but rather as a horizon, a vision of a word where different genders and ways of being are accepted. (Muñoz, 2009, p.1) This allows the output of those images to be interpreted as queer, since the act of altering the code of the algorithm extends its given features and blurs the boundary between genders and species.

These études and experiments were made in 2021. Directing the features required a great deal of fine-tuning, trial and error, and luck to achieve the desired output. While this output might have been good enough for a mood board to create and discover concepts and aesthetics – for example a fictional drag persona – in 2023 the capabilities of generative image generators have been revolutionized by text-to-image generators such as *Midjourney*, *Dall-E* and *Stable Diffusion*.

3. OCTO Posse

The previous experiment showed that it is possible to transform the output of a general adversarial network into queer aesthetics and speculative transformations. This is possible because the code is publicly available and can be run on a local machine or a hosted Python instance on cloud services (e.g. Google Colab provides *free* access to computational resources).

Text-to-image generators are trained on images as well as text data describing the content of the image. The only way to access and use *Midjourney* is through the interface of a chat application called Discord and by paying a monthly fee of at least $10. Higher tiers are available depending on computing power and requests. (Midjourney, 2023) The code is not public domain and is not open source. Requests are made by prompts, for example: "*/imagine a unicorn"* and it will return an output that can be tweaked towards the desired look or style by engineering a suitable prompt.

The *OCTO Posse* is a group of speculative personas printed on posters and flyers for the 2023 edition of KRAKE Festival. The avatars and lifeforms have derived from well-engineered prompts created by design studio *Hillmeneutik* and got entered into the *Discord* interface of *Midjourney*. (KRAKE Posse, 2023)

Example 3.1 (KRAKE Festival, 2023): KRAKE Festival website header

3.1. More than just Text-to-image

While downloading the website with all the pictures of the *KRAKE Posse*, I came across the file names. It seems that some of the images still contain parts of the prompts that were used to generate their content. "*k23_Full_body_portrait_photography_of_a_group_of_weird_97108.png*" and "*k23_Full_body_portrait_photography_of_a_group_of_weird_fff3dK.png*" *(OCTO Posse, 2023)*

Example 3.1.1 (OCTO Posse, 2023):
k23_Full_body_portrait_photography_of_a_group_of_weird_97108

Example 3.1.2 (OCTO Posse, 2023):
k23_Full_body_portrait_photography_of_a_group_of_weird_fff3dK

While in some contexts, the word weird may be used within queer spaces in a playful, affectionate, or even empowering manner. For example the event Berlin based platform *weeeirdos* is "*supporting queer artists since 2017*" (weeeirdos, 2023) with various formats of events and parties. Some individuals and communities might embrace the term as a way to celebrate uniqueness, non-conformity and the rejection of societal norms. It can be used to challenge conventional standards of normalcy and to celebrate the diverse identities and experiences within the queer community. Outside of this realm and in relation to normative structures, weird tends to have a more negative connotation: "*very strange and unusual, unexpected or not natural.*" (Cambridge Dictionary, 2023)

Recalling Ahmed's notion of queerness as being out of line and therefore outside the norm (Ahmed, 2006. p.67), it seems necessary to articulate queer aesthetics as strange in order to achieve the desired output for this campaign. While it was possible to queer StyleGAN2's output by transmorphing or altering it, the only way to interact with *Midjourney* is by using prompts that can be understood by the algorithm. Text-to-image generators are trained on data whose visual content and characteristics have been named, described and categorized. By naming things as strange and unusual, we enter the realm of othering. In the social sciences, othering is understood as the process by which individuals or groups are marginalized, stigmatized or treated as different or inferior because of their differences from the dominant or normative group. It manifests itself in social hierarchies, stereotypes and prejudices.

What is ambivalent here is that the designer could achieve a desired output by using a kind of language that confirms a way of mapping our reality with language. Butler writes on p*erformativity*, "*Within speech act theory, a performative is that discursive practice that enacts or produces that which it names.*" (Butler, 1993, p. 13). Although it is not visible on the output what prompts have been used, designers have no opportunity for immediate feedback to question or make the algorithm reflect on the words and their meaning in relation to its output. How these images are perceived and understood also depends on the user and the context. While the designer for this campaign is probably kin' with the culture of drag, what if someone just stumbled upon this output by using the word *weird* in conjunction with this prompt and got an output similar to the images we saw. The output is mapped to the meaning of the word and reproduced, just by being perceived by someone.

This example reveals a problem that comes with this technology – how it labels and maps our reality. By making it necessary to ask for something *weird* to get the desired output for the campaign, instead of being able to ask for a "*body portrait of a group, with two people in a wheelchair wearing pink hair and outfits that have features of a fusion between Nothing Hill Carnival and octopuses.*"

As an aside, it would be an interesting experiment to see if it is possible to achieve a desired result with two different approaches, using conscious and unconscious prompts.

3.2. Appropriating Data

Taking the KRAKE 2023 poster campaign as an example I would like to point out responsibilities by using this technology and highlight a general problem that the use of text-to-image generators implies. Not every member of the speculative *OCTO Posse* is drag. There are all sorts of transformations between human and octopus, so the following chapter is specifically about those members that resemble drag culture. (See Example 3.2.1 (OCTO Posse))

Example 3.2.1 (OCTO Posse, 2023): grid_0-33.jpg

Drag shares a performative and transformative spirit with the practice of sampling in music culture. It comments on pop culture, current affairs and challenges gender norms. This is expressed by incorporating references into performances, outfits or transforming musical pieces and their presentation. Although RuPauls Drag Race is not the only way in which drag can be lived and experienced – the show has also has controversial history, with RuPaul questioning whether trans women are even allowed to enter the competition, (Levin, 2018) while the participants are more often CIS men who create female characters. (Wintermayr, 2023) – it has also spread drag culture around the world with its growing popularity.

Nevertheless, in all these shows, the artists reveal the references of their outfits and performances during their *confessionals*. Much like the music business, where it has finally become common sense to publish references and pay royalties for samples used or appropriated. The current state of image data is still a legal grey area. Holly Herndon, an aspiring music artist who incorporates AI technology into her compositions, stated that "sampling led to hip hop – AI music has the potential to do something similar". (Hobbs, 2023) While this seems to be accurate, it still leaves out a crucial point when using text-to-image generators.

Most of the text-to-image datasets were scraped from web and social media. Looking at KRAKE's campaign, the viewer is suggested that this is an event that supports a community. While there is no doubt in this by supporting people from the disabled and queer community by hosting workshops, mentoring programs and performance opportunities, it is questionable to create "queer content" by utilizing text-to-image generators in the sensitive context of a community event. Especially *Midjourney*, whose website, at the time of writing, does not provide any information about the origin of its training data. (*Midjourney*, 2023)

From my conversations with queens and kings during my time in Berlin, they told me that drag is not just about the time, dedication and money that goes into performing. It is also about being brave enough to make yourself vulnerable by entering public space.

Since no one really knows where and from whom the data was scraped, we don't know if royalties have been paid. According to James Vincent, "t*he creators of AI art tools generally argue that training this software on copyrighted data is covered (at least in the US) by the fair use doctrine*" (Vincent, 2023). Fair use is a US copyright law that allows limited use of copyrighted material without the permission of the copyright holder. Knowing that a large number of people use Instagram, Facebook and TikTok to promote their online identity, it is reasonable to assume that most of the data comes from social media profiles hosted mainly by US companies such as Meta or X (formerly Twitter).

In this case, text-to-image generators are appropriating from a culture without paying royalties or respect to the people who have made themselves visible online to inspire other people out there with similar backgrounds, perspectives and troubles. The money goes to the developers and providers of text-to-image services, or to the people who use them for a design job. Not the culture or any individuals doing the work, or even worse – putting their health in danger simply by being queer. Friends shared their experiences of being harassed in supposedly safe places, such as taxis, when leaving home already dressed up, or being prejudiced by state authorities. According to the German *Bundesministerium für Familie, Senioren, Frauen und Jugend*, violence and hate crimes against people of the queer community have increased lately in Germany (BMFSFJ, 2023).

It is understandable the KRAKE *Posse* should have an affective power towards their audience by visualizing the potential speculative possibilities of human-machine interaction. Having untangled how the output of text-to-image generators is actually based on the creative ownership of individuals, the campaign is limited to becoming a tool for the agency of the prompt engineer and poster designer. Another approach might have been to incorporate this technology into workshops, allowing people to explore and play with different identities, and asking them to use the visual output of this interconnected experience as part of the campaign.

4. Conclusion

This essay has introduced the capability of using generative image generators (StyleGAN2) to create speculative ideas and possibilities from a queer understanding, and how machine learning can be a source of inspiration by altering its code and being open to different constellations of data. Presentations of different études helped to understand this abstract human-machine interaction. By examining the *KRAKE* Festival 2023 poster campaign, I wanted to demonstrate that text-to-image generators have become powerful, accessible and widely used tools. However, these developments raise ethical questions, which I highlighted through two examples. Firstly, the meaning of language and how it is mapped onto the visual output of text-to-image generators. Secondly, how these tools are able to appropriate culture by questioning the origin of the data and the context in which the output of these generators is used.

By no means do I want to discourage the initiators of KRAKE from doing what they are doing, but having a real-world example of how visual aesthetics and cultures are being appropriated by machine learning technologies shows that it is necessary to reflect on the responsibilities of how to navigate this technology. No matter how comfortable we become with it.

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Examples:

Example 3.1 (KRAKE Festival, 2023): KRAKE Festival website header https://krake-festival.de/ (last access: September 25, 2023)

Example 3.1.1 (OCTO Posse, 2023), Example 3.1.2 (OCTO Posse, 2023) https://krake-festival.de/oktoposse (last access: September 25, 2023)

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