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GLITCHY, CARING, TACTICAL: A RELATIONAL STUDY BETWEEN ARTISTIC TACTICS AND MINOR TECH

Abstract

This paper directs attention to the parameters of creative resistance to large-scale commercial digital platforms. It does so by enhancing the understanding of minor tech through the analysis and case study of the artwork, *VPN*. While minor tech might sound unfamiliar to the many, examples of its existence are at the same time incredibly familiar through examples of digital commoning, sharing of skills, and organisational systems. In the case of *VPN*, the work existed as a growing emancipatory multimedia archive, executed as a transparent server architecture revealing its technical workings to its users. This format exemplified tactics of intentional glitches through an artful inclusion of persons, space, and objects. By identifying the elements of tactics and care within the *VPN*, the paper draws parallels of overlapping tendencies within the movement of minor tech. Drawing on Olga Gorionova's research on 'Shadow librarians' and including former digital examples of knowledge sharing furthermore assists in sketching a web development towards the nature of minor tech and *VPN*. By analysing the significance of these initiatives, the paper raises the questions: What are the drives across creative resistance practices? And (how) do such creative contributions help to critically nuance various existing understandings of large-scale digital platforms?

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Introduction

As commercial digital platforms enable and constrain social action in various domains, their elusive structures increasingly govern spatially dispersed entities through digital devices, measurements, and registries. In order to critically engage with new developments at this scale, it is crucial to understand their drivers and, in this case, how resistant practices are helping to denote and substitute digital power structures critically.

In this paper, I discuss the parameters of creative resistance to large-scale commercial digital platforms. With a contemporary focus, I draw on historical examples of creative counter-tactics of digital knowledge sharing to address this tendency. By analyzing the participatory fileserver and artwork, *VPN*, I bring particular attention to the significance of its transparent server architectures and parallels with the care, conditions, and drives of the minor tech movement that critically rejects digital platform operations. What are the drives across creative resistance practices? And (how) do such creative contributions help to critically nuance various existing understandings of large-scale digital platforms?

The paper is divided into six sections: Diving straight into the personal encounter with *VPN*, I first introduce the artistic case study and theoretical framework that will unfold throughout the paper; secondly, I include a historical, technological context, which supports the following third section of introducing the concept and notion of minor tech; in the fourth section I look to the doings of *VPN* through the objective of artistic tactical media; and finally, the last sections consider the techno-cultural gestures between minor tech, knowledge sharing and artistic examples, including drives and the aspect of care and maintenance.

An emancipatory file server

Imagine a locally disrupted online platform: a scattered illustration turns up on your smartphone screen: the circular pattern turns into a globe, then an installation setting, and finally into the shape of a famous cartoon character, all happening along with a twisted interference of sounds and texts. Scattered letters start interfering with the scroll: “Nodes are elastic homes and links are dynamic roads, and each one is guiding you through a different story.” (*VPN* screen excerpt).

Figure 1: *VPN* documentation of installment.

The scene unfolding describes the features of the emancipatory file server, *VPN* (Virtual PUB Network) (fig. 1). If reaching this screen intervention, you have reached the landing page and are physically near one of the nodes connected to the *VPN* installation. From this spot, all visitors have access to read and contribute to the growing archive of written, visual, and recorded content of the artwork and emancipatory fileserver, *VPN*.

The first personal encounter with *VPN* was when it served the purpose of mapping and archiving the graduation show of the art and design postgraduate institution Sandberg Instituut (Amsterdam) (2019). However, whereas archives typically help to create order, the visual interfaces of *VPN* were location-dependent and coded to intentionally disrupt the user's scroll. Functioning as an open-source instrument, *VPN* was presented as a framework for circulating knowledge through shared visual, lingual, and vocal material.

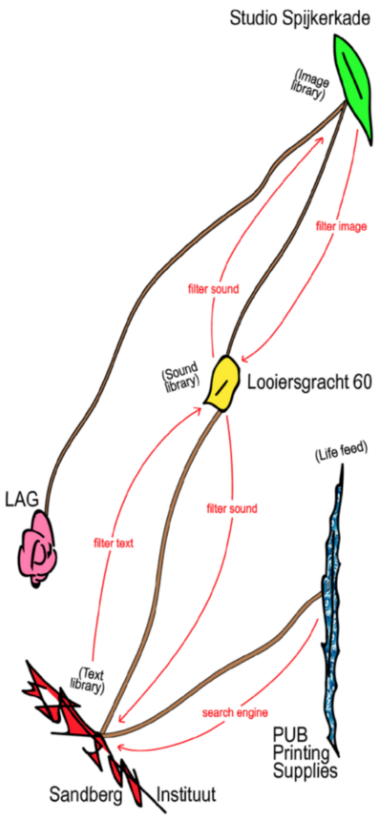

Figure 2: *VPN* Network map.

During the graduation show, this format allowed the nodes to serve as a live feed, growing collective archive, and local navigational information service across four fixed nodes and one nomadic unit connected to the network. Technically, one node functioned as a server; the second was for the live feed; a third would capture sound; the fourth hosted visuals; and finally, the fifth one was for the text. Across these structures, a proxy had been installed to replace the content provided at each location. With each node installed in various locations, the interface would accordingly adapt and present the archive differently depending on the specific location.

While *VPN* is site-specific and activated through physical interaction, the *VPN* is simultaneously scalable and can be installed to work in any context. With a technical set-up that relies on servers of its host institution (in this incident, the Sandberg Instituut), the IT department and the bureaucratic aspects of the internal academic digital network structures got challenged and exposed by the instalment of the *VPN*.

As the *VPN* both enacts a platform environment and exposes its infrastructural server architecture across different locations, it becomes relevant to consider the intertwined nature between infrastructure and platform studies to situate the *VPN* and minor tech within a broader context of media studies. A critical inspection of both infrastructures and digital platforms often requires considering the means for observing. Directing attention to the different ways of making infrastructures more approachable is nothing new. In the field of urban studies, this approach requires

seeing not only buildings, shapes and outlines but also the wires and operating systems that shape a city, including considering the conditions that produce such standardised systems (Easterling; Parks and Starosielski). Relatedly, although platform systems are most often systematically and algorithmically guarded, their shapes seem incomprehensible to grasp and are often only possible to imagine (Gillespie). If approaching the platform shape as an imaging technology, artworks such as *VPN* make possible a three-dimensional entrance to envision the technical actions behind the two-dimensional screen (Siegert). In this context, infrastructure studies contribute a valuable sociotechnical consideration of expansive and often governed systems and services related to digital platforms at various scales (Plantin, 2016).

The parallels between the artwork *VPN* and the movement of minor tech are strongly driven by the activation and exposure of critical infrastructures and the systematic distance to digital corporate platforms services. Approaching the *VPN* and minor tech as examples of an expanding relation between infrastructure and platformization studies possibly also reflects an expanding horizon within digitally related media studies that allows for an increase of alternative objectives such as artistic studies.

With reference to Kellers Easterlings' call for active, creative approaches to cooperate infrastructures, the example brought forward by the *VPN* provides a transparent server architecture which unveils an active format for exploiting software workings at a local scale. The drive of critically exposing infrastructural systems is attracting increasing attention from various sites of academic, spatial and artistic practice, and several recent artistic initiatives pursue like-minded, disobedient-action-driven research toward alternative narratives.

Such initiatives are, for instance, exemplified by the critical collaborative artistic and academic research inquiry the *Underground Division*, initiated by Helen Pritchard, Jara Rocha and Femke Snelting as a follow up to 'Possible Bodies' focus on complex relations of bodies in the context of technotools. Their doings are focused on (but not limited to) the intersection of physical ground and digital sphere, which for instance, is the case in their *Extended Trans*Feminist Rendering Program*, initiating collective skills for sensing data and investigating contemporary scanning practices through magnetic resonance, ultrasound, and computer tomography. Another related collective example is the *Cell for Digital Discomfort*, formed as a part of the 2021/2022 BAK fellowship for *Situated Practices*, which specifically looked into ways of refusing dominant digital platforms, referred to as "totalitarian innovation". This focus stressed the solution-oriented approach of mono-cultural and corporate digital platforms with little (if any) room for investigating otherwise. Similar to these projects is their critical, collective knowledge that points to the complex realities of discriminating and data mining tech environments.

Chronological tech

When recently attending a debate at the Danish parliament on the critical influences of digital and artificial intelligence at work, the meeting was joined by people from various backgrounds; unions and think tanks, lawyers, doctors, software developers, teachers, and academics sharing observations on the influence of digital developments in everyday life. While opposing opinions were shared, most concerns were reappearing: the protection of data, the lack of democratic process pace to align with technological developments, and finally, a quest for independent initiatives, be it through academic networks, critical workshops, or critical creativity. In a European context, reasons such as GDPR, the expansion of chat GPT, and critical media coverage boosted by whistleblowing and leaked private data probably all played a role in leveraging such critical digital awareness. The public debate brings forth an example of a possible increasing public engagement in digital development and alternatives to corporate digital power structures.

A rough outline of the web, from its anonymous and hardly accessible shape, to its seducing and omnipresent power structure of today, is relevant to understanding the involvement and drives of opposing and independent critical, creative tactics in order to contextualise the significance of minor tech historically.

While web history has many layers, its differences can, as pointed to by Prof. Bogna Konior, be simplified down to the drives for money, data, identity, and anonymity. Connecting these drives to the different web periods, Bogna presented “wormholes and hidden narratives” of the structure of the internet. When considering the significance and accomplishments of creative tactics and minor tech alternatives throughout web history, introducing early cyberspace that was imagined as wild, free and counter-cultural is relevant.

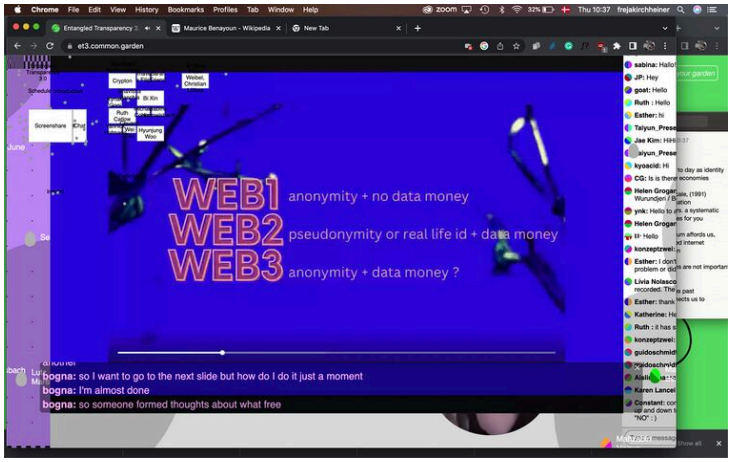

Figure 3: Performance lecture, Bogna Konior, Entangled Transparencies, The Center for Art and Media (ZKM), Screenshot: March, 2023.

Naturally, looking into the history of the internet reflects more than money, data, and identity but also the development of technologies, ethics, and values. From being an exclusive site of military initiatives and favourable ways to proceed with academic research, Web 1.0 presented a system of static one-way interactions that, despite developing into a public domain, had limited bandwidth and user access (Curran; Lovink). With Web 2.0 (2004), the world wide web introduced a digital platform for user interaction. Web 2.0, with its myriad of tracking algorithms and commercial drives, presented us with automated profile generations and data-hungry thriving digital platforms across various fields (social media, search engines, shopping). In this context, networking services created a structure within which user-produced content could thrive and where online shopping boosted online money-making.

In contrast to the financially driven hay-day giant platforms of Web 2.0, the introduction of Web 3.0 represented a web-based structure aimed at creating autonomous networks and increased privacy by implementing blockchain technologies and systems unchained from personalization. By proposing a cooperating solution, Web 3.0 exists as an alternative to the centralized structure of Internet 2.0 with its handful of dominant digital platforms (most notably Google, Amazon, Meta, Apple, and Microsoft). However, while Web 3.0 was introduced nearly a decade ago, most digital platforms (and users) were shaped in the context of the worldwide Web 2.0. Despite its decentralized mechanisms, Web 3.0 has not been adopted by most users but remains used by smaller, minor, counter-tech communities.

Minor Tech

In essence, the Internet is based on a protocol system. In general terms, protocols structure the relation, order, and chronology between all units embedded in the network. This approach arguably turns the accessible and readable code into a force of the movement. The development of minor tech draws links to organized protocols, conscious computing, and digital services that offer alternative platform usage. Minor tech is often organized around, within, and through small communities of users and often overlaps with significant movements of copyleft, Free/Libre + Open Source Software.

Admittedly the notion of 'Minor Tech' was unheard of to me before contributing to the workshop 'Towards a Minor Tech' organized by the Digital Aesthetics Research Center, Aarhus University, and the Centre for the Study of the Networked Image (LSBU). Before the workshop, I consulted a good friend and collaborator of mine with the intention of deepening my knowledge and discussing artistic practices concerning the topic. Instead, it turned out that the friend, too (active across various artistic and open-sourced initiatives and networks), needed to familiarize themselves with the notion of minor tech. While neither of us had come across the term before, the concept and values driving minor tech were familiar. When relating

this paper to the topic of minor tech, this personal encounter seems relevant to mention, as I have come to realize that it also reflects a part of the nature of minor tech: firstly, that minor tech is (at the moment of writing) not known to the mass but to the dedicated minorities, and secondly, that minor tech reflects a set of values more than a methodological set of rules. However, while minor tech might be unfamiliar to the mass, examples of its existence are at the same time incredibly familiar in examples of digital commoning such as knowledge-sharing platforms and socializing services, some of which will be returned to later in the paper.

With a nod to the digitally located *Damaged Earth Catalogue*, initiated by Marloes de Valk, the concept of minor tech is presented as "small" tech solutions that operate at a human scale and are motivated by a drive for digital privacy, resource minimalism, environmental consciousness, and collaborative communities. Minor tech presents solutions for everyday-platform navigation that do not involve commercial platforms and leans towards a DIY approach driven by a critical response to the current Web 2.0 corporate platform giants. As a kind of minor tech initiative in itself, the *Damaged Earth Catalogue* functions as an "evaluation and access device" for tracing actions and initiatives of collaborative and intimate counter-reactions to capital, commercial, and political power. While the movement of minor tech can be traced with a focus on political connotations, it is in the context of this paper, not so much the political theme that I draw on, but rather examples of the forms of the tactics in use that exploits, mimic, and reshapes existing online infrastructures in the quest of critical alternatives to corporate digital platforms.

Tactical tech

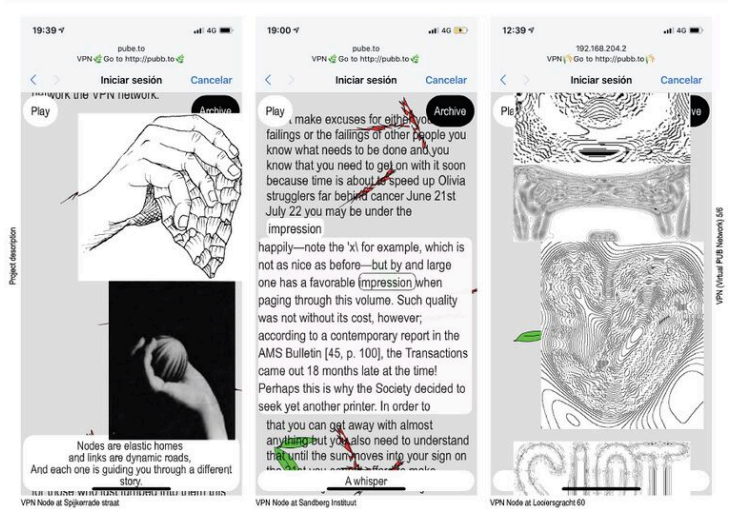

Figure 4: Page from *VPN* reader.

Despite the scattered illustrations mentioned in the first section, what makes the case study of *VPN* of interest is not so much the meaning of the content but the physically dependent disruption of it. Under regular conditions, a server remains static; however, due to the disrupted content of *VPN*, the server transformed into an active element of the experience. The artists describe these disrupting features to

display both "strength and weakness" (*VPN* reader). Thereby when generating a visual interface across the different locations, *VPN* revealed the physical process of the infrastructural system. By revealing the doings of the *VPN*, the *VPN* tactic was likewise inviting the user to understand the making of its infrastructure.

Tactical media is not a new interruptive genre to the web but has been explored by activists, journalists, artists, and academics across several contexts. With an overall drive towards possible socio-economical digital changes, Geert Lovink promptly researches critical artistic digital media practices as tactical media. Tactical media is, by Lovink considered as a term that "retain mobility and velocity and avoid the paralysis induced by the essentialist questioning of everything" (Lovink pp 271). In other words, tactical media opposes passive users of commercial digital norms and actively contributes to critical understandings and alternative environments. Besides existing as a critical method for approaching digital media environments, the creative nature of tactical media also require or triggers imagination from makers and users by changing the course of expectations and navigation. This link between general digital interaction and preassumed space is well-researched as "algorithmic imaginaries" by media researcher, Tania Bucher, to describe how mental representations and speculations about the workings of digital algorithms nudge users' behaviors, interactions, and navigation (Bucher). However, while Bucher focuses on social media mechanisms, the artistically provoked imagination makes possible limitless outcomes for the creative mind. With this in mind, *VPN*, as well as minor tech, intentionally disrupts the anticipated user interaction and challenges the traditional ways we imagine and interact with everyday digital media.

VPN exemplifies a tendency in contemporary artistic production that intentionally (mis-)read, mimic, and replicate digital platform logic and behaviors through an artful inclusion of persons, space, and objects. However, it is difficult to deny that the most parasitic presence is not caused by minor or artistic counter-movements but rather by the large corporate digital platforms themselves – platforms that have the capacity to expand across digital activities, extract data and adjust algorithms for commercial intentions. Take Google, for example; being the most extensive digital search platform, Google presents itself as a company for search engine technologies, consumer electronics, and software. Meanwhile, the actual business model is based on advertising and data mining. As noted by John Durham Peeters, Google is of such an omnipresent scale that "For many, Google is the internet" (Peeters 329). Similarly, the language and concepts of commoning practices, such as minor tech, are likewise misused and appropriated into capitalist systems (such as gift economy and digital management) (Federici).

Glitchy tech

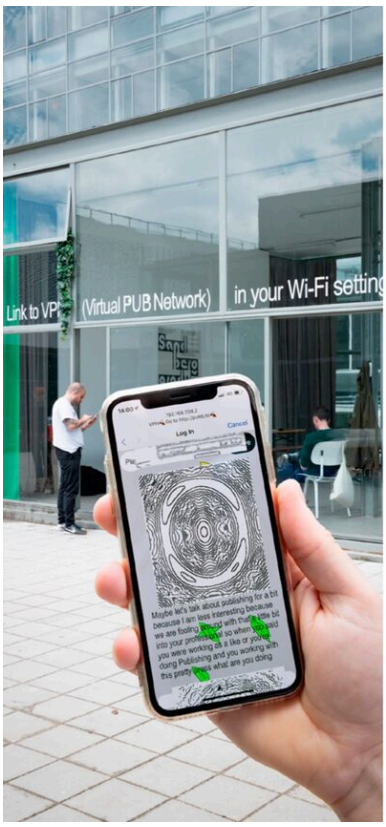

Figure 5: *VPN* Node at Sandberg Instituut, Amsterdam.

As you move through the different *VPN* nodes, the content starts flickering. What in the previous location accumulated a stream of photos now provokes the activation of sound or moving images. At this point, the pace of the *VPN* interface has become more familiar, and the repetition of content disruption makes it possible to start detecting the interface influence of the work.

While we often become aware of infrastructures only when they glitch or malfunction (Star and Ruhleder), reverting the glitch as an intentional tactic can be detected in various ways across critical, creative projects. One example is the creation of computational 'Algorythmics' by media researcher Shintaro Miyazaki, which as a technical tool, would trace and track algorithms by adding sounds to their workings and thereby also reveal their occasional malfunctions (Miyazaki); Ben Grossers 'Safebook' application, did not detect, but rather trigger an intentional malfunction of the Facebook interface by stripping its content down to its bare soft grey scroll; and finally, a digital platform initiative such as Cosmos Carl, which gathers and supports creative inventions that provoke glitches in conventional platform services through intentional misusage.

The broken interface that *VPN* presents us with allows a peak into the digital components that make up the interface, and by considering how these occupy and

create space and situate and guide their users, the *VPN* arguably pushes its users from knowing about the existence of the infrastructure to understanding that infrastructure.

However, while the ability to perceive, analyze, and engage with material matter is central to critical humanistic studies, a posthumanist approach to minor tech and artistic examples assists in contextualizing their drives and intentions. It includes a study that crosses the disciplinary boundaries between software studies, artistic platforms, and cultural production online and questions the role of art in the context of the technological matter (Gorionova, "Participatory Platforms and the Emergence of Art"). While the technical posthumanism that Olga Gorionova brings forth is introduced as a political tool for considering non-human species, it is helpful to consider how the *VPN*, for instance, presents and accumulates knowledge-sharing interventions as an attempt for renewed digital engagement. From this position, the *VPN* suggests a twisted instrumentality as an alternative to data-centred automated services, allowing glitches and failures to produce reasoning. Minor tech, and specifically the *VPN* if considered as a transparent server architecture for knowledge sharing, sets an interesting example of how to reconfigure the meaning and understanding of specific technologies and comes to echo an effort of digital commoning. While the commons often refers to the sharing aspects of land, natural resources, and related infrastructural systems (Federici), the thriving drive for radical movements and alternatives to capitalist models, along with aspects such as knowledge sharing, non-hierarchical organizing and collective decision-making processes likewise apply to the artistic contributions and minor tech presented in this paper. This inclusive nature follows the ongoing determination for transparency within mechanical transactions (Braidotti). In this context, the posthumanist lens inevitably contributes an intersection of both the material and immaterial, which in the context of minor tech, unveils the intersection of technological structures, collaborative practice, and non-hierarchical structures – be it through glitches, tactics or alternative tools.

Caring tech

Figure 6: *VPN* Network hardware, photo from *VPN* reader.

The technical complications of projects such as *VPN* exist of material limitations, from electricity plugs to internet connection. Starting as a software project, the *VPN* grew into a compilation of nodes, proxies, and hosting to become a system of maintenance and care eventually.

While the front-end presentation of *VPN* content seems distorted, the contributions of the *VPN* database were locally accumulated and made up of internal publishing initiatives across the Sandberg Institute. Ironically, the messy reality of the data-collecting process simultaneously worked as a cross-departmental knowledge-sharing of internal learning. Effectively, as more and more people were using the *VPN*, the more it became about maintenance, accessibility, and care.

To consider the significance of nurturing labour behind the *VPN* and minor tech, the work by Goriunova on 'Shadow librarians' enlightens the subject relevance for creative commoning knowledge sharing. To consider how knowledge commons, in this case, digital libraries, are generated and maintained, their subject positions are relevant in interactions with humans and non-humans. Defining 'meta librarians', 'public custodians', 'general librarians', 'underground librarians', 'critical public pedagogues', 'multiform bibliographers', 'fancy general archivists', and 'cultural analysts', Gorinova covers the understated tasks of amateur historians and librarians. 'Shadow librarians' provide and caretake online free and open infrastructures that enable users to share and debate digital texts and collections (Gorionova, "Uploading Our Libraries: The Subjects of Art and Knowledge

Commons"; Marcell and Medak). These tasks not only remind us of the previously mentioned Damaged Earth Catalog but also resemble knowledge-sharing and caring structures of several critical projects from the early digital era. Considering minor tech in the extension of former critical technical accomplishments helps sketch the longer-term relevance of minor tech accomplishments. However, to concretize and embed the tasks of the amateur historians and librarians close, we detour to a personal encounter;

Next to his computer engineering duties, the co-founder (and also my dad) of *Leksikon.org* fulfils the role of a guardian, custodian, and amateur historian of the critical and politically charged online Danish encyclopedia *Leksikon.org*. With a motto that 'doubt everything' and an About section that states how the encyclopedia 'is not, and does not, intend to be neutral', the tone is set.

Figure 7: Screenshot from Leksion.org landing page and Web1.0 look-a-like frontend.

Leksikon.org is a non-profit initiative run by volunteering engagement and initiated to produce an alternative narrative to those arriving from power positions. *Leksikon.org* originates in the Web 1.0 era and predates the much more famous encyclopedia, Wikipedia (which did not register its domain before 2001). While *Leksikon.org* is not driven as a counteraction to large-scale digital platforms like minor tech or the *VPN*, it draws on similar efforts for bottom-up knowledge generation and sharing. This approach to the encyclopedia is not unique but draws inspiration from the Norwegian leftist publishing initiative *PAX* (1978-82), which, through cheap printed catalogues, gathered and provided knowledge from an international radical left point of view. The organizational structure of *Leksikon.org* is made up of a large number of contributors and translations of selected texts. While everyone can contribute, the submissions are filtered by smaller editorial groups of the organizing team. Similar to many minor tech initiatives, the content is hosted on a private server, which reflects both financial constraints and protection from right-wing hacks. When scrolling through the different entries and the expansive country section (counting 247 entries), one inevitably stumbles on outdated spots, reflecting both how the process of updating such a project is immense and, at the same time also, the slower pace of caretaking that projects like *Leksikon.org* require. The work behind *Leksikon.org* consists of multiple late-night hours in front of a stationary

computer, nourishing the encyclopedia, researching, translating, writing, and maintaining coding. As counter-publics often occur when there is little or no room for independent participation (Warner), *Leksikon.org* exemplifies such a techno-cultural drive for knowledge sharing to an engaged public through the various tasks of ordering, converting, sorting, and translating knowledge. Through caring and sharing communal structures, counter practices, in these cases, become tools that demonstrate knowledge as a process of public-making. Despite its differences, *Leksikon.org* contributes an example of a digital predecessor to minor tech. It constitutes an example of disobeying conventional knowledge sources and forming new subject positions from which new sociopolitical directions can take form.

Conclusion

While we struggle to make sense of how corporate digital developments activate and direct, manipulate, and exhaust online environments - creative works show the potential to reveal such fabrics by visualizing, materializing, or simulating everyday software operations.

This writing presents artistic scenes unfolding in or around the peripheries of alternative artistic and technological practices. In this context, the *VPN* exemplifies a work that suggests how technical creative tactics may provoke interaction between the institution, the users, and their spatial surroundings. This kind of user interaction forms an analogy that makes us aware of the digital infrastructure and disrupts how most current corporate technology insists on smooth interaction that does not interrupt the experience. The *VPN* aims to downscale technology to a graspable level.

Ultimately, the *VPN* aims to downscale technology to a graspable level. Situating the *VPN* and minor tech in parallel with each other allows us to address large tech critically while learning about small-scale tech intimately.

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