vague notions like openness, transparency, and freedom. Third, the strong political coloring of source code challenges the existing understanding of

FLOSS. As previously mentioned, some of these efforts are driven by the desire to avoid the censorship and control of corporate social media platforms, while others explicitly seek to develop software for anti-fascist use. These efforts not only dispute the universality and global usefulness of large, general social media platforms, they also interrogate the supposed universality and neutrality of software. This is particularly true when software comes with politically explicit complementary terms, codes, and agreements for their users and developers to accept.

With its relatively diverse constituency of users, developers, agenda, software, and ideologies, the Fediverse is gradually becoming the most relevant system for the articulation of new forms of FLOSS critique. The Fediverse has become a site where traditional notions about FLOSS are confronted and revised by people who understand its use as part of a wider set of practices that challenge the status quo. Sometimes this happens in a reflective, discursive way across several communities, sometimes through the materialization of experiments and projects that directly challenge FLOSS as we know it. It has become the sprawling site where constructive critiques of FLOSS and a longing for its reimagination are most vivid. In its current state, FLOSS culture feels like a patched-up collection of irreconcilable pieces from another era, and it is urgent to revaluate many of its characteristics that have been taken for granted. If we can accept the much-needed sacrilege of thinking of free software without free software, it remains to be seen what could fill the void left by its absence.

Seven Theses On The Fediverse and The Becoming Of FLOSS

Aymeric Mansoux, Roel Roscam Abbing

Meet the Fediverse

In recent years, in the context of sustained criticism and general fatigue that surrounds large- scale corporate social media platforms[1], the desire to build alternatives has grown stronger. This has manifested through the emergence of a wide range of projects, driven by various motives. These projects introduce themselves by emphasizing what makes them distinct from corporate social media, whether it is their ethics, their organizational structure, their underlying technologies, their features, their source code access, or the special interest communities they seek to support. Although diverse, these platforms tend to have one common purpose: to directly question the vendor lock-in of the dominant social media landscape. As a result,

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[1] See Geert Lovink, *Sad by Design: On Platform Nihilism,* London: Pluto Press, 2019.

they call for different levels of decentralization and interoperability in terms of network architectures and data circulation. These platforms are colloquially known as the 'Fediverse', a portmanteau of 'federation' and 'universe'. Federation is a concept derived from political theory in which various actors that constitute a network decide to cooperate collectively. Power and responsibility are distributed as they do so. In the context of social media, federated networks exist as different communities on different servers that can interoperate with each other, rather than existing as a single software or single platform. This idea is not new, but it has recently gained traction and revitalized efforts toward building alternative social media[2].

Earlier attempts to create federated social media platforms came from Free/Libre and Open Source Software (FLOSS) communities[3]. They traditionally had an interest in providing *libre* alternatives to existing closed source and proprietary software. As such, these projects were originally promoted as similar in function to the corporate platforms but made with FLOSS. As they were mostly articulated around the openness of protocols and source code, these software platforms catered to a limited audience of users and software developers, who were largely concerned with issues typical of FLOSS culture. This lack of reach changed in 2016 with the introduction of Mastodon, a combination of client and server software for federated social media. Mastodon was quickly adopted by a diverse community of users, including many people usually under-represented in FLOSS: women, people of color, and queer-identifying people.

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[2] Throughout this text we use 'corporate social media' and 'alternative social media' as defined in Robert W. Gehl, 'The Case for Alternative Social Media', *Social Media + Society* 1.2 (22 September 2015), Journal

[3] Danyl Strype, 'A Brief History of the GNU Social Fediverse and "The Federation"', *Disintermedia*, 1 April 2017, Link.

Upon joining Mastodon, these less-represented communities questioned the social dynamics of existing FLOSS environments, as well as started to contribute both code and critique, which challenged the dominant one-size-fits-all narrative of corporate social media. It is no coincidence that this shift happened in the wake of Gamergate[4] in 2014, with the rise of the 'alt-right', and the 2016 US presidential elections. By the end of 2017, Mastodon counted more than one million users who wanted to try out the Fediverse as an alternative to corporate social media platforms. There, they could test for themselves whether or not a different infrastructure would lead to different discourses, cultures, and safe spaces.

Today the Fediverse is comprised of more than 3.5 million accounts distributed over almost 5,000 servers, referred to as 'instances', which use software projects such as Friendica, Funkwhale, Hubzilla, Mastodon, Misskey, PeerTube, PixelFed, and Pleroma, to name a few[5]. Most of these instances can be interconnected and are often focused on a specific practice, ideology, or professional activity. In view of this, the Fediverse demonstrates that a shift from universal gigantic social networks to small interconnected instances is not just technically possible, it also responds to a concrete need.

The current popularity of the Fediverse can be seen to be driven by two parallel tendencies. First, an interest in engaging with specific technical choices and concerns about closed protocols and proprietary platforms. Second, a wider willingness

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[4] For an exploration of #GamerGate and toxic technocultures, see Adrienne Massanari, '#Gamergate and The Fappening: How Reddit's Algorithm, Governance, and Culture Support Toxic Technocultures', *New Media & Society* 19.3 (2016): 329–346.

[5] Due to its distributed nature it is not easy to get exact numbers on the amount of users but a few projects do exist that try to quantify the network: The Federation; Fediverse Network; Mastodon Users, *Bitcoin Hackers*.

to recover agency as users of social media infrastructures. More specifically, while corporate social media platforms have allowed many to publish content online, the biggest impact of Web 2.0 has been the apparent decoupling of matters of infrastructure from matters of social organization. The mix of operating systems and social systems from which net culture first emerged[6], has been replaced by a system of limited user permissions and privileges. Those who engage with the Fediverse work to undo this decoupling. They want to contribute to network infrastructures that are more honest about their underlying ideologies. These infrastructures do not hide behind manipulative or delusional exploits of ideas like openness, universal access, or apolitical engineering. Although today it is too early to tell whether or not the Fediverse will live up to the expectations of its inhabitants, and how it will impact FLOSS in the long run, it is already possible to map current transformations, as well as the challenges faced in this latest episode of the never-ending saga of net and computational culture. To do so, we present seven theses on the Fediverse and the becoming of FLOSS, in the hope of opening up discussions around some of their most pressing issues.

1. The Fediverse as the Transition from Meme Wars to Network Wars

We acknowledge that any good reflection on net culture today must address memes in one way or another. But what can be added to the discussion of memes in 2020? It seems that

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[6] For an example of such early relationship, see Michael Rossman, 'Implications of Community Memory', *SIGCAS – Computers & Society* 6.4 (1975): 7–10.

discussions have been difficult to facilitate for reasons that go beyond the dogmatic nature of both free and open source software agendas. In fact they have been inconceivable because one of the most important aspects of FLOSS is that it was conceived as non-discriminatory in nature. To be sure, with non-discriminatory, we refer to FLOSS licensing, that permits anyone to make use of a FLOSS source code for any purpose.

There have been some efforts to try to tackle this problem, for example at the level of licensing – making discriminatory licenses to protect worker-owned productions, or to exclude use by the military and intelligence services[31]. These efforts were negatively received because of the non-discriminatory baseline of FLOSS and its discourse. To make things worse, the main concern of FLOSS advocacy has historically been about widespread adoption in administration, education, professional, and commercial environments, and depoliticization was seen to be key to achieving this goal. However more recently, the belief in, or the strategy of depoliticization has started to suffer in several ways.

First, the rise of this new kind of usership meant a new questioning of the archetypal models of governance of FLOSS projects, such as the benevolent dictator. Consequently, several long-standing FLOSS projects have been pressured to adopt accountability structures and migrate to community-oriented forms of governance such as co-ops or associations. Second, licenses now tend to be combined with other textual documents like copyright transfer agreements, terms of services, and codes of conduct. These documents are used to shape the community, make their ideological alignment clearer, and try to prevent manipulation and misunderstanding around

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[31] For instance, see Felix von Leitner, 'Mon Jul 6 2015', Fefes Blog, 6 July 2015, Link.

everything has already been argued, countered, and overexploited by both academics and artists. What else is left to do apart from constantly keeping up with new meme types and their meanings? One often overlooked point is that, crucially, memes do not exist in a vacuum. There are systems that enable their circulation and amplification: social media platforms.

Social media platforms have taken the democratization of meme production and circulation to a previously unseen scale. Moreover, these platforms have grown in symbiosis with internet meme culture. Corporate social media platforms have been optimized and engineered to favor material with memetic qualities. This material encourages reaction and recirculation and is part of a strategy of user retention and participation in surveillance capitalism. Consequently, in the environments used today for the vast majority of online communication, almost everything has become a meme, or needs to exhibit memetic properties to survive – or be visible – in the universe of algorithmic timelines and feeds informed by metrics[7].

Given that social media is geared toward communication and interaction, what was completely underestimated was how memes would become far more than either strategically engineered vessels to plant ideas, or funny viral things to share with peers. They became a language, a slang, a collection of signs and symbols through which cultural and subcultural identity could materialize. The circulation of such memes has in turn strengthened certain political discourses, which has become a growing concern for the platforms. Indeed, to maximize the exploitation of their user activity, corporate social media platforms must find the right balance between laissez-faire and regulation. They try to do so by means of algorithmic filtering, community feedback, and terms of services. The

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[7] Aymeric Mansoux, 'Surface Web Times', *MCD* 69 (2013): 50–53.

corporate platforms are increasingly faced, however, with the fact that they have created Petri dishes for all sorts of opinions and beliefs to circulate out of control, in spite of their efforts to reduce and shape discursive, user-generated content toward inoffensive, business-friendly, and otherwise trivial material. Regardless of what these platforms pretend in PR campaigns or hearings in front of legislators, it is clear that no amount of tech solutionism and no amount of outsourced precarious work by traumatised human moderators[8] will help them to get back into full control.

As a result of increased policing of corporate social media platforms, all those excluded from or harmed in these environments have become further interested in migrating to other platforms that they might control for themselves. The reasons for migrating vary. LGBTQ-affiliated groups seek safe spaces to avoid online bullying and harassment. White supremacists look for platforms where their interpretation of free speech goes unchallenged. Raddle, a radical left Reddit clone, grew out of the ban of its original Reddit forum; on the far-right, there is Voat, another Reddit clone[9]. Both developed their own FLOSS platform as a response to their exclusion. While access to source code, and FLOSS in general is valued in all these efforts, one of the key historical advantage of FLOSS practice is surprisingly ignored: the ability to benefit from and build upon each other's work. What seems to matter now is to write the same software for a limited audience, making sure the source code is not tainted with contributions from another community. This is a new development within FLOSS communities, who

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[8] Burcu Gültekin Punsmann, 'What I learned from three months of Content Moderation for Facebook in Berlin', *SZ Magazin*, 6 January 2018, Link.

[9] For source code, see Raddle; Postmill, 'GitLab'; Voat; Voat, 'GitLab'.

role of users in relation to alternative social media, as well as for the development of FLOSS culture[29].

7. The Fediverse as the End of Free/Libre and Open Source Software as We Know It

Until now, the vast majority of discussions around FLOSS licensing have remained locked in a tiresome comparison between free software's emphasis on user ethics versus the open source approach based on economics[30]. Whether motivated by ethics or economics, both free software and open source software share the ideal that their position is superior to closed source and proprietary modes of production. However in both cases, the foundational liberal drive at the base of these ethical and economic perspectives is rarely challenged. This drive is deeply rooted in a Western context that over the past few decades has favored individual freedom in the form of liberalism and libertarianism at the expense of equality and care. Questioning this drive is a pivotal step, as this would open up discussions about other ways to approach the writing and circulation of, and access to, source code. By extension this would stop the pretension that these practices are either apolitical, universal, or neutral. Unfortunately, such

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[29] Dušan Barok, *Privatising Privacy: Trojan Horse in Free Open Source Distributed Social Platforms*, master thesis, Networked Media, Piet Zwart Institute, Rotterdam/Netherlands, 2011.

[30] See the Stallman-Ghosh-Glott mail exchange on the FLOSS survey, 'Two Communities or Two Movements in One Community?', in Rishab Aiyer Ghosh, Ruediger Glott, Bernhard Krieger and Gregorio Robles, 'Free/Libre and Open Source Software: Survey and Study', FLOSS final report, International Institute of Infonomics, University of Maastricht, Netherlands, 2002, Link.

the Fediverse, for example, is analogous to the way in which content creators on streaming platforms in gaming communities are supported by their audience. Calls for better governance of software projects are also ongoing in FLOSS communities more widely. The development of codes of conduct (a key document for Fediverse instances to lay out their vision of their community and politics) was introduced in various FLOSS communities in the early 10s, in response to systematic misogyny and the exclusion of minorities from FLOSS spaces both on- and offline[28]. Codes of conduct also serve the need for generative forms of conflict resolution across cultural and language barriers.

Likewise, many of the moderation and community management practices seen in the Fediverse have been informed by experiences on other platforms, by the successes and failures of other tools and systems. The synthesis and coordination of all these practices has become increasingly visible in the Fediverse. In turn, issues and approaches represented in the Fediverse set a precedent for other FLOSS projects, encouraging transformation and discussions that were until now limited or difficult to initiate.

It is obviously not the case, given the diversity of usership models, that the entirety of the Fediverse operates along these lines. The developments described above do though suggest how many models of usership are yet to be discovered and how the Fediverse is a productive environment for their trial. The evolving nature of usership on the Fediverse shows how much space there is between the stereotypical extremes of the surveillance capitalist model and the self-inflicted martyrdom of free-labor-powered platforms. This has implications for the

have often argued that their work is apolitical[10]. This is why, if we're going to talk about memes today, we must talk about these social media platforms. We must talk about these environments that allow, for better or worse, the sedimentation of knowledge: what happens when a specific discourse accumulates online, the kind of community it attracts and fosters, via the feedback loops by which memetic assemblages form. We must talk about how this process is both enabled by, and impacts the perception of FLOSS.

Corporate social media platforms have decided to cut anything that could endanger their business, while remaining ambivalent about their claim of neutrality. But unlike the radical exodus and software-writing exile of some communities, the Fediverse offers instead a vast system in which communities can be independent while still interfacing with others over several servers. In a situation where either censorship or isolated exodus were the only options, federation opens a third way. It allows a community to engage with exchanges or have conflicts with other platforms while remaining true to its own scope, ideology, and interests. From here, two new scenarios are possible: One, where a localized online culture could be established and appropriated as part of the circulation of discourse within a shared communication network. Two: where radicalized memetic material would likely favor the emergence of thinking along axes of friends and enemies spread across instances, to the extent that simplistic meme wars and propaganda would be replaced with network wars.

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[28] Femke Snelting, 'Codes of Conduct: Transforming Shared Values into Daily Practice', in Cornelia Sollfrank (ed) The Beautiful Warriors: *Technofeminist Praxis in the 21st Century*, Colchester: Minor Compositions, 2019, pp. 57–72.

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[10] Gabriella Coleman, 'The Political Agnosticism of Free and Open Source Software and the Inadvertent Politics of Contrast', *Anthropological Quarterly* 77.3 (2004): 507–519.

2. The Fediverse as an Ongoing Critique of Openness

The concepts of openness, universality, and the free circulation of information have been central narratives for promoting technological progress and growth on the internet and the web. While these narratives have been instrumental in advocating FLOSS and free culture, they have also been crucial in the development of social media, where the goal was to create ever-growing networks, encompassing evermore people, freely communicating with one another. Following liberal traditions, this approach was believed to favor productive exchanges of opinions by providing ample space for free speech, access to more information, and the possibility for anyone to participate. However, these open systems were also open to capture by the market and exposed to the predatory culture of corporations. In the case of the web, this has led to business models that make use of both the structures and the content circulating across the network[11]. Fast forward to now: corporate social media leads in the surveillance of individuals and the prediction of their behavior, in order to convince them to buy into both products and political ideas.

Historically, alternative social media projects such as GNU Social, and more precisely Identi. ca/StatusNet, sought to salvage this situation by creating platforms that tackled this particular form of well-marketed openness. They created interoperating systems explicitly opposed to advertising and tracking. In doing so, they hoped to prove that it is still possible to have an ever-growing network while distributing responsi-

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[11] For a more thorough discussion on the multifaceted enabling aspect of openness but also a comment on openwashing, see Jeffrey Pomerantz and Robin Peek, 'Fifty Shades of Open', *First Monday* 21.5 (2016), Link.

example of this, where core features such as the '@' usernames and the '#' hashtags were first suggested by users. Forums like Reddit also allow users to set up and moderate boards, creating distinct and specific communities.

On alternative social media platforms like the Fediverse, particularly in its early days, these forms of participation move a step further. Users do not only engage in bug reporting, or help with the creation of the products' culture, they also become involved with scrutinizing the code, debating its effects, and even contributing code back. As the Fediverse grows in size and encompasses a greater diversity of cultures and software stacks, the behaviors of this usership are becoming even more comprehensive. People set up additional nodes in the network and work on the development of tailored codes of conducts and terms of services that aid the enforcement of community guidelines for that node. They also consider how to make these efforts sustainable through funding via the community.

This said, not all requests for change, including fully functional code contributions, are accepted by the main developers of the platforms. This is in part because the larger Fediverse platforms believe in well-considered default settings that work for diverse majorities, rather than the old archetypical model of FLOSS, to provide extensive customization and intricate options that appeal to programmers, but discourage many others. Thanks to the availability of source code, a rich ecosystem of modified versions of projects nevertheless exists, to extend, or limit, certain features while retaining a degree of compatibility with the wider network. Debates over the merits of features and the modified software they generate foster further discussion over the direction of such projects, which in turn leads to increased attention around their governance.

To be sure, these developments are neither new nor unique to the Fediverse. The way service facilitators are supported on

algoravers, 'safe spaces' for sex workers, gardening forums, personal blogs, and self-hosting cooperatives. These practices happen in parallel with the problem of data sharecropping and free labor, and represent part of the ongoing transformation of what it entails to be a software user.

The first software users, or users of computational devices, were also their programmers, and the ones who would then provide the tools and documentation for others to contribute actively to the development and usage of these systems[26]. This role was so important that the first user communities were fully supported and taken care of by hardware manufacturers. Fast forward a couple of decades and, with the growth of the computer industry, what it is to be a user has completely changed to a tamed consumer with limited opportunities to contribute or change the systems they use, beyond trivial or cosmetic customizations. It is this situation that helped shape much of the growing popularity of FLOSS in the 90s, as an adversary of proprietary commercial operating systems for personal computers, specifically reinforcing earlier concepts of users' freedom[27]. With the advent of Web 2.0, the situation changed again. Because of the communicative and ubiquitous dimension of the software behind corporate social media platforms, vendors have begun to offer a small window of opportunity to their users to give feedback, as a way to make their product more engaging and relevant to everyday activities. Users can usually easily report bugs, suggest new features, or help shape the platforms' culture through the conversations they have and content they share. Twitter is a well-known

bility over the ownership of data, and in theory to provide the means for various communities to appropriate the platforms' source code and contribute to protocol design. This was pretty much the shared belief in the Fediverse around 2016. This belief remained unchallenged because the Fediverse at the time had not changed much from its early days as a FLOSS social media federation project, started more than a decade before. Consequently, it was made up of a largely homogenous crowd, whose interests intersected technology, FLOSS, and anti-corporate ideologies. However, as the Fediverse's population grew more diverse when Mastodon attracted more heterogeneous communities, conflicts emerged between these different communities. This time it was the Fediverse's own idea of openness that was increasingly challenged by the newcomers. As part of this critique, a call emerged within the user community of Mastodon for the ability to block or 'defederate' with other servers in the Fediverse. Blocking means that users or administrators of servers could choose to prevent content from other servers in the network from reaching them. 'Defederation' in this sense became an additional option in the toolkit for strong community-based moderation, since it prevented confrontation with unwanted or harmful content.

At first the introduction of defederation caused a lot of friction with users of other Fediverse software. Frequent complaints that Mastodon was 'breaking the federation' underscored how the move was seen as a threat to the entire network[12]. In this view, the bigger and more interconnected the network could become, the more successful it might be as an alternative to corporate social media. Similarly, many saw

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[26] For instance, see Atsushi Akera, 'Voluntarism and the Fruits of Collaboration: The IBM UserGroup, Share', *Technology and Culture* 42.4 (2001): 710–736.

[27] Sam Williams, *Free as in Freedom: Richard Stallman's Crusade for Free Software*, Farnham: O'Reilly, 2002.

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[12] As an example of the discourse against defederating see the comment by Kaiser to the blog entry by robek 'rw' world, 'Mastodon Social Is THE Twitter Alternative For…', *Robek World*, 12 January 2017, Link.

blocking as limiting the possibilities for personal expression and the productive exchange of ideas, fearing filter bubbles and isolation as a consequence. By striving for selected disconnection and challenging the very idea that online discourse is necessarily generative, the communities advocating for defederation also challenged the broader liberal assumptions about openness and universality on which prior Fediverse software was built.

The fact that concurrently to these developments, the Fediverse grew from 200,000 to over 3.5 million accounts, at the time of writing, is unlikely to be a coincidence. Rather than thwarting the network, defederation, self-governing communities, and the rejection of universality allowed the Fediverse to accommodate even more communities. The presence of different servers representing very distinct communities that each have their local culture and agency over their own slice of the network, without being isolated from the larger whole, is one of the more interesting aspects of the Fediverse. However, almost one million of the total number of accounts are the result of the alt-right platform Gab switching to the Fediverse protocols, which shows that the network is still open to capture or domination by a single large party[13]. At the same time, this development immediately triggered a variety of efforts to strengthen the possibilities for servers to deal with this risk of domination. For example, the possibility for some server implementations to federate based on white lists, which allows servers to interconnect on an opt-in rather than opt-out

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[13] Around the time Gab joined the network, all Fediverse statistics jumped by approximately one million users. These numbers, like all Fediverse usage numbers, are contested. For context, see John Dougherty and Michael Edison Hayden, '"No Way" Gab has 800,000 Users, Web Host Says', *Southern Poverty Law Center*, 14 February 2019, Link and emsenn (graden and unionize), Mastodon post, 10 August 2019, 04:51, Link.

funding for non-predatory alternatives should be more actively discussed.

Finally, in some cases, non-technical tasks like moderation are remunerated by Fediverse communities. This raises the question of why some kinds of labor are compensated, and others not, if there is compensation at all. What about the vital early work of care and critique by members of marginalized communities in voicing how Fediverse projects should address a social understanding of privacy, for example? Without a doubt it was this work that enabled the Fediverse to reach the user base it has today. Then how can such work be measured? It happens in and throughout the network, in meta-discussion threads, or on issue trackers, which is not as quantifiable nor visible as code commits. So while there are some interesting shifts happening, it remains to be seen whether users and developers on the Fediverse can be made fully aware of these issues, and if economic models outside of surveillance capitalism can thrive to support non-exploitative solidarity and care across the whole stack.

6. The Fediverse as the Rise of a New Kind of Usership

One way to understand the Fediverse is as a signifier of a set of practices, or rather a set of expectations and demands about social media software, in which the disparate efforts of alternative social media projects converge into a shared network with roughly aligned goals. Diverse models of usership, shared between servers, range from venture-capital-backed alt- right platforms to Japanese imageboard systems, anarcho-communist collectives, political factions, live-coding

support their infrastructure specifically because of the direct and indirect monetization of their users' content and activity. In a system where this monetization is avoided, impossible, or actively resisted, the problem of labor and exploitation surfaces at the level of server administration and software development, and concerns all those contributing to the design, consideration, and support of these infrastructures.

In response to this problem, there is a tendency in the Fediverse toward making the costs of operation of a community server explicit. Users and administrators alike encourage funding the various projects through donations, therefore acknowledging that the production and maintenance of these platforms cost money. More prominent projects such as Mastodon have access to larger funds and have set up a system through which contributors can get paid for their work[24]. These attempts to compensate labor are a good step, however making them more widespread, and maintaining such projects in the long run, will require more structural support. Without substantial funding for ongoing development and maintenance, these projects will remain contingent upon the exploitation of the free labor of well-meaning individuals, or subject to the whims of people making time for their FLOSS hobby. At the same time there is increasing acknowledgement and precedent that much of FLOSS can be considered public utility goods, which should be funded from public sources[25]. In times when the regulation of corporate social media is on the table for its role in eroding public institutions, the lack of public

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[24] 'Mastodon', *Open Collective*, Link.

[25] For elements of discussion on the public funding of free software, as well as some analysis of earlydraft laws regarding the access of source code for software purchased with public money, see Jesús M. González-Barahona, Joaquín Seoane Pascual and Gregorio Robles, *Introduction to Free Software,* Barcelona: Universitat Oberta de Catalunya, 2009.

basis. Another proposed response is to extend ActivityPub, one of the most popular and most discussed protocols of the Fediverse, with stronger authorization methods based on an object-capability model of computer security, allowing parties to retroactively withdraw consent from other parties to see or use their data. What is unique about the Fediverse is this both technical and cultural acknowledgement that openness has its limits, and is itself open to wide-ranging interpretations dependent on context, which are not fixed in time. This is a fundamentally new point of departure for reimagining social media today.

3. The Fediverse as a Site for Online Agonistic Pluralism

As we have established, one of the most important traits of the Fediverse is that the different software stacks and applications that constitute it can be hosted by virtually anyone and for any purpose. This means that it is possible to create an online community that can interface with the rest of the Fediverse but that operates according to its own local rules, guidelines, modes of organization, and ideology. In this process, each community is able to define itself not only through its own memetic language, interests, and scope, but also in relation to the other, via difference. Such specificity might make the Fediverse seem like an infrastructural assemblage that follows the principles of agonistic pluralism. Agonistic pluralism, or agonism, was first articulated by Ernesto Laclau and Chantal Mouffe, who then further developed this political theory. In Mouffe's view, political consensus is impossible and radical negativity cannot be avoided in a system where diversity is lim-

ited to similar competing groups within the same hegemonic order[14]. Mouffe's thesis addresses democratic systems where politics that fall outside of what the liberal consensus deems acceptable are systematically excluded. However, this process is also visible on corporate social media platforms, in the way they shape and control discourse in order to stay within the bounds of what is acceptable for the liberal paradigm, which is aligned with their own business interests. This has led to the radicalization of those who are excluded.

The bet made by agonism is that by creating a system in which a pluralism of hegemonies is permitted, it is possible to move from an understanding of the other as an enemy, to the other as a political adversary. For this to happen, different ideologies must be allowed to materialize via different channels and platforms. An important prerequisite is that the goal of political consensus must be abandoned and replaced with conflictual consensus, in which an acknowledgement of the other becomes the foundational building block of new relationships, even if this means, for example, accepting non-Western views on democracy, secularism, communities, and the individual. Translated to the Fediverse, it is clear that it already contains a relatively diverse political landscape and that transitions from political consensus to conflictual consensus can be witnessed in the way communities relate to one another. At the base of these conflictual exchanges are various points of view on the collective design and use of the software stack and the underlying protocols that would be needed to further enable a sort of online agonistic pluralism.

This said, the fact that discussions around the aforementioned usage of instance blocking and defederation are fiercely

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[14] For an exhaustive introduction to Mouffe's writing, see Chantal Mouffe, *Agonistics: Thinking the World Politically*, London: Verso, 2013.

from corporate social networks since commercial services actively prevent others from exploiting their data silo. At present, it is quite simple to crawl the Fediverse and profile its users. Even though most Fediverse platforms are themselves against user tracking and data sharecropping, third parties can do so anyway because the Fediverse operates as an open network primarily designed for public posts. Additionally, as certain interests, notably political discussions, tend to be concentrated on specific servers, activist communities may be more readily exposed to intelligence. So while the Fediverse helps users to understand, or be reminded, that whatever is published online can and will escape their control, it cannot prevent all the habits and false sense of online security inherited from corporate social media from going on, after nearly two decades of digital privacy misinformation[22].

Furthermore, although the exploitation of user labor is not the same as that on corporate social media platforms, there are still issues surrounding labor in this network. To understand these issues, we must first acknowledge the damage done by the free-to-use wonder of corporate social media on the one hand, and the misunderstanding of FLOSS practices on the other; namely, how labor issues and workers' struggles have been obfuscated in these processes[23]. This situation has led people to believe that software production, server maintenance, and online services should be available free of charge. Corporate social media platforms are able to financially

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[22] For an ongoing survey of these issues, see Pervasive Labour Union Zine, Link.

[23] Even though framed in the context of Tumblr, for a thorough discussion on the tension between digital labour, post-digital communities, and activism, see Cassius Adair and Lisa Nakamura, 'The Digital Afterlives of *This Bridge Called My Back*: Woman of Color Feminism, Digital Labor, and Networked Pedagogy', *American Literature* 89.2 (2017): 255–278.

the age of entreprecariat[20] and quasi-mandatory network connectivity.

As we saw in the discussion of how a social understanding of digital privacy informed the initial design of Mastodon, the Fediverse offers a refreshing take on the question of surveillance capitalism. Discussions surrounding user data and how these issues are tackled at the level of protocols and graphical interface design are quite transparent and open. These discussions take place publicly on the Fediverse and on related software project issue trackers. The way data circulates is made explicit to new users by other users or their local admin when they are welcomed onto an instance. These greetings usually contain information on how federation works and how that affects the visibility and access of the data they share21. This echoes what Robert Gehl sees as one of the characteristics of alternative social media platforms – that both the network and its code have a pedagogical function, demonstrating how they can be used, and how one can move beyond the habitual mode of limited user-permissions to take part in coding, administrating, and organizing such platforms[21]. In this sense, users are encouraged to become active in ways other than simply posting and liking, and are made aware of the ways in which their data circulate.

Yet regardless of how the community of an instance is organized, empowered, and actively participating in the platform and network – not to mention the fact that getting into coding is easier said than done – more control over data is not guaranteed. It is still possible to easily scrape or collect information from these platforms, possibly even more so than

debated, and, at time of writing, with the seemingly irreconcilable presence of factions of radical left and alt-right in the Fediverse, the realities of antagonism will be highly challenging to resolve. The Fediverse's idea of a system in which different communities can find a place for themselves amongst others was concretely put to the test in July 2019, when the explicitly alt-right platform Gab announced it would change its code base, moving away from its proprietary system to instead rely on Mastodon's source code. As a project that explicitly takes a stance against the ideology of Gab, Mastodon was confronted with the neutrality of FLOSS licenses. Other Fediverse projects such as mobile phone clients FediLab and Tusky were also faced with the same issue; perhaps even more so, because the direct motivation for Gab's developers to switch to Fediverse software was to circumvent their ban from the Apple and Google app stores for violating their terms of service. By relying on generic FLOSS Fediverse clients, Gab would be able to escape such bans in the future, and also forge alliances with other ideologically compatible instances on the Fediverse[15]. As part of a larger anti-fascist strategy to de-platform and block Gab on the Fediverse, calls went out to software developers to add code that would prevent them from using their clients to log in to Gab servers. This resulted in extensive debates on the nature of FLOSS, the effectiveness of such measures on public source code modifications, given that they can be easily reverted, and on the political alignment of software maintainers.

At the heart of this conflict lies the question of the neutrality of the code, the network, and the protocols. Should – or even

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[20] Silvio Lorusso, *Entreprecariat – Everyone Is an Entrepreneur. Nobody Is Safe*, Onomatopee: Eindhoven, 2019.

[21] Throughout this text we use 'corporate social media' and 'alternative social media' as defined in Gehl,'The Case for Alternative Social Media'.

[15] Andrew Torba, 'Moving to the ActivityPub protocol as our base allows us to get into mobile App Stores without even having to submit and get approval of our own apps, whether Apple and Google like it or not', post to Gab, last accessed May 2019.

can – a client be neutral? Does doubling down on neutrality mean the maintainers condone alt-right ideology? What does it mean to block or to not block another instance? This latter question has created a complicated back-and-forth where some instances will demand other instances to explicitly take part in a conflict, by blocking specific other instances in order to avoid being blocked themselves. Neutrality, whether driven by ambivalence, unspoken support, hypocrisy, the desire to troll, a lack of interest, faith in apolitical technology, or by an agonistic desire to engage with all sides so as to reach a state of conflictual consensus, is very difficult to achieve. The Fediverse is the closest environment we currently have to a diverse global network of local singularities. However, its complex topology and struggle to deal with the infamous paradox of tolerance – what to do about the idea of free speech – shows the difficulty of reaching a state of conflictual consensus. It also demonstrates the challenge of translating a theory of agonism into a shared strategy for the design of protocols, software, and community guidelines. Tolerance and free speech have become volatile topics after nearly two decades of political manipulation and filtering within corporate social media; seeing how popular imageboards and discussion forums have failed to solve these issues does not make for a hopeful outlook for future experimentation.

Rather than reaching a state of agonistic pluralism, it could be that the Fediverse will create at best a form of bastard agonism through pillarization. That is to say, we could witness a situation in which instances would form large agonistic-without-agonism aggregations only among both ideologically and technically compatible communities and software, with only a minority of them able and willing to bridge with radically opposed systems. Regardless of the outcome, this question of agonism and of politics in general is crucial for net and

value for the platform owners: enter the world of surveillance capitalism[19].

So far regulating these products and services has been extremely difficult, in part because of effective lobbying from the platform owners and shareholders, but also, perhaps more importantly, because of the derivative nature of the monetization that takes place inside corporate social media. What is capitalized by these platforms is an algorithmic by-product, crude or not, of the activity and data uploaded by its users. This creates a distance that makes it ever-harder to grasp the relationship between online labor, user-generated content, tracking, and monetization. This distance effectively works in two ways. First, it obfuscates the exact mechanics at play, making it harder to regulate data capture and analysis. It allows for situations where these platforms can develop products that they can benefit from while still complying with privacy laws from different jurisdictions, and therefore promote their service as privacy friendly. The latter is often reinforced by giving their users all sorts of options to mislead them into believing they are in control of what they feed the machine. Second, by making it seem that no personally identifiable data is directly used for monetization; these platforms are hiding the economic transaction behind other types of transactions, such as personal interactions between users, professional opportunities, online community-managed groups and discussions, and so on. In the end, users are unable to make a connection between their social or professional activity and its exploitation because it is all derivative of other transactions that have become essential in our ever-connected lives, especially in

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[19] Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, New York: PublicAffairs, 2019.

social organizationand governance can no longer pretend to be decoupled from software.

What matters is that the Fediverse represents a shift from defining the issues of surveillance and privacy as technical problems to defining them as social ones. However, the focus on social aspects of privacy has so far resulted in placing a lot of trust in other servers and administrators to act respectfully. This can be problematic, as for example direct messages, with their implied privacy, would be far better managed with technical solutions such as end- to-end encryption. Further, many of the solutions sought in Fediverse software development seem to be based on the collective rather than on the individual. This is not to say that technical security considerations are of no concern at all. Fediverse servers tend to come with 'privacy by default' settings, such as required transport encryption and the proxying of remote queries in order not to expose individual users. Still, this shift to a social understanding of privacy remains young, and the discussion must continue at many other levels.

5. The Fediverse as a Way Out of Data Sharecropping and Free Labor

Corporate social media platforms with their focus on self-gratifying metrics and gamification are infamous for taking free labor as far as they can. Whatever information is fed into the system, will be used to directly or indirectly create models, reports, and new datasets that have core economic

computational culture. In the context of Western post-political systems and the way these are translated to the net, a sense of loss of political partisanship and agency has given the illusion, or delusion, that there is no longer a political compass. If the Fediverse teaches us anything, it is that the net and the FLOSS components of its infrastructure have never been more politicized than today. The politics that are generated and hosted on the Fediverse are not trivial but they are clearly articulated. What's more, as demonstrated by the proliferation of social media political celebrities and politicians actively using social media, a new form of representative democracy is emerging, in which the memetic language of post-digital cultures are effectively translated into the world of electoral politics and back[16].

4. The Fediverse as a Shift from a Technical to a Social Understanding of Privacy

In the past, debates around the risks of corporate social media have focused on the issues of privacy and surveillance, especially since the Snowden revelations in 2013. Consequently, many of the technical responses, particularly those born out of FLOSS communities, have focused on addressing privacy through security. This was exemplified by the post-Snowden proliferation of specialized applications for secure encrypted messaging and email[17]. In these communities, the perceived threat is the possibility of surveillance at the network level, by either government agencies or large corporations. Proposed

[16] David Garcia, 'The Revenge of Folk Politics', *transmediale/journal* 1 (2018), Link.

[17] hbsc & friends, 'Have You Considered the Alternative?', Homebrew Server Club, 9 March 2017, Link.

solutions are therefore conceived as tools that implement strong encryption of both the transmission and the content of messages, ideally making use of anonymity over peer-to-peer network topologies. These approaches, while thorough, require considerable technical knowledge on the part of users.

The Fediverse is then shifting from a predominantly technical to a more social understanding of privacy, as was clear in relation to discussions on issue trackers during the early stages of the development of Mastodon. The threat model discussed there is the one that consists of other users of the network, accidental associations between accounts, and the dynamics of online conversations themselves. This means that rather than focusing on technical features such as peer-to-peer topologies and end-to-end encryption, development has been centered around building robust moderation tools, granular visibility settings for posts, and the possibility to block other instances.

These features, which accommodate for a social understanding of privacy, have been developed and advocated for by members of marginalized communities, a substantial part of whom identify as queer. As Sarah Jamie Lewis notes:

> Much of the modern rhetoric around […] privacy tools is focused on state surveillance. Queer communities often wish to hide things from some of their family and friends, while also being able to share parts of their life with others. Making friends, dating, escaping abusive situations, accessing healthcare, exploring themselves and others, finding jobs, engaging in safe sex work are all aspects

of queer lives underserved by the modern privacy community[18].

So while everyone has a stake in considering the privacy implications that come from (involuntary) associations between online accounts, for example between an employer and an employee, marginalized communities are disproportionately impacted by such forms of surveillance and their consequences. As the development of newer Fediverse platforms such as Mastodon got underway, with members of such communities helping to build them, these issues were put on the agenda of software development roadmaps. All of a sudden, tools that were used to track and discuss technical defects during the development of FLOSS also became a discursive venue for social, cultural, and political issues. We will return to this point in section six.

The techniques that were eventually developed included server-wide blocks, advanced moderation tools, content warnings, and improved accessibility. This allowed for geographically, culturally, and ideologically disparate communities to share the same network on their own terms. As such, the Fediverse can be understood as different communities that rally around a server, or instance, so as to create an environment where everyone feels comfortable. Again, this represents a third way: neither the model of privacy where technically inclined individuals are in full command of their own communications, nor the model whereby the multitude believes they have 'nothing to hide' simply because they have no say nor control over the systems they depend on. In effect, the move to a social understanding of privacy has shown that the Fediverse is now a working laboratory in which questions of

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[18] Sarah Jamie Lewis (ed), *Queer Privacy: Essays From The Margin Of Society*, Victoria, British Columbia: Lean Pub/Mascherari Press, 2017, p. 2.