

Investigations in the Digital Realm: Social-technical Power

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Photo : Justin Sutcliffe

I have found popular attitudes toward the digital realm to be underwhelmingly nonchalant. Thoughtless digital engagement and consumption are the norms. Societal ignorance of digital usage, as well as my curiosity about the concept of the digital realm, formed the genesis of my research.

This essay aims to investigate the nature and implications of the digital realm through a socio-technical lens. I explore the technical features of the digital realm, specifically social platform features and security, and how they shape social relationships both in and out of the digital realm. I also discuss the visual medium of communication, expanding on researcher Chris Julien's concept of "evocative communication" (Julien, 2019). I examine the extent to which visual media shapes social relationships in different ways, depending on the context in which it is used. More specifically, I study these digital-social relationships and their effect on the established state and social power in Russia and Ukraine. I focus mainly on Ukrainian-Russian national power relations, but I also explore state and citizen power relations as well. Aliaksandr Herasimenka's concept of digital movements provides a theoretical framework for my social analysis. Though I plan to discuss specifically his categorized "segmented" and "connective" movements in the digital realm, I do not claim that these are the primary uses of the realm, merely that their prevalence and implications merit analysis (Herasimenka, 2020). The framework for my investigation works tangentially with sociologist Carl J. Couch's understanding of the digital realm, that the digital realm operates in complex and contradicting ways, and is not wholly a paradigm for one theory so much as an all encompassing entity which acts as a paradigm for many theories, depending on context and "digital location" (Julien, 2019). Similarly, I approach my digital investigation with an understanding that considers both the unique socio-political context and technical infrastructure that shapes the digital interactions I study.

Researcher Aliaksandr Herasimenka distinguishes anti-authoritarian movements (AAMs) from civil society organizations (CSOs). Anti-authoritarian movements do not seek involvement with the state as CSOs do, and they face censorship and surveillance that CSOs do not (Herasimenka, 2020). The differences in social-political contexts require different organizational models. Herasimenka attributes the shortcomings of hierarchical movements with "domino effect" disintegration as leaders are terminated.

Hierarchical movements are also more vulnerable to surveillance and censorship. Herasimenka theorizes that the architecture of anti-authoritarian movements consist of two parts: constructing non-hierarchical systems and managing the visibility of leaders and platforms. He categorizes anti-authoritarian movements into three types: connective, segmented, and hybrid. The Euromaidan movement in Ukraine in 2013, devolving from pro-Russian policies by the Ukrainian state, is an example of a connective movement (Herasimenka, 2020). The Ukrainian people used a digital framework of crowdfunding networks, social media, and streaming software to support further mobilization. Connective movements are intrinsic networks of peer-produced structures that facilitate rather than mobilize political activity. Leaders might assume the positions of platform-page administration and content posters. Segmented movements similarly rely on interconnected peer-produced structures, but deviate from connective movements by maintaining more structured organization, direct agenda, and established leaders (Herasimenka, 2020). I will focus primarily on connective and segmented socio-digital movements under Russian influence.

Arguably the most influential platform in the Russian-Ukrainian War is Telegram, as much of the discourse and sources surrounding the war reside in public and private channels of the platform, with two-thirds of Ukrainians using Telegram as their primary source of news (*"Personalities of Public Opinion"*, 2023). The popularity of the platform lies not only in its security, but also in its historical roots. Telegram was founded by Russian brothers Nikolai and Pavel Durov in 2013. This was the brothers' second established platform, with their first, a similar network VKontakte, having been seized by the Russian government in 2014, as it provided anti-Kremlin protestors a voice and a platform. The brothers fled Russia and created Telegram as a means to communicate outside of the Russian domain (Allyn, B, 2022). According to Pavel, "technology is there to set you free", and the structuring of his platform reflects this ideology (Allyn, B, 2022). The basic structure of Telegram allows for individual messaging, as well as group discourse through channels, which are private or publicly user driven pages where written posts, photographs, and videos can be shared. It is a prime tool to publicly broadcast content to an unlimited number of recipients. In other social networks, where one voice could easily be lost in the magnitude of posts, Telegram deviates and structurally establishes more straightforward and direct

communication . Another unique aspect of Telegram is how the flow of information is not determined by algorithms, nor does Telegram track or profile users based on their interaction with sponsored messages (Allyn, B, 2022). The company stated that “commodifying personal data would go against ethos”, and ads are an extremely accessible user feature, costing two euros per 1000 views for a channel-sponsored message. Pavel has been extremely transparent about the features of his platform, both in the media and through his company website. He also is clear about his ideology that bridges society, technology, and democracy, and simultaneously reflects this ideology in the structure of his secure platform for discourse. Funding for the platform comes privately from Pavel, who has explained that, “making profits will never be an end-goal for Telegram”. Though Telegram does make profit by selling sponsored messages and premium subscriptions, it has a very different business model than other popular platforms, such as Instagram, which commodifies personal data, systemically compromising security and prioritizing profit (Telegram revenue and Usage Statistics, 2023).

Given the repressive nature of Russian totalitarianism, freedom of speech has often been dangerous, if not impossible. Society has utilized technology to covertly preserve dissident culture and ideology. In the Soviet Union, reel-to-reel tape recorders were used in *magnitizdat*, the process of copying and redistributing recordings that deviated socially and politically from Soviet ideologies. In *magnitizdat*, there was no legal limit to the quantity of tape recorders Soviet citizens could own, and only the performers were responsible for the content. *Magnitizdat* was analogous to *samizdat*, the hand copying of written media, but the technical medium of *magnitizdat* granted greater legal freedoms. Alexei Yurchak, anthropology professor and Soviet researcher at University of California Berkeley, pointed to *magnitizdat* power to “elude state control by virtue of its technological availability and privacy” (Barker, 2005).

Similar tactics are used today, though on a grander scale. Democracy-seeking Ukrainians and Russians have access to a secure platform through which they further challenge state power structures that have defined many aspects of political, social, and cultural life. The access itself contradicts state tendencies of censorship and control. Still, security is always a concern in a political sphere where power

derives from silencing dissent. The consequences of speech against the Russian state are often defined by individual cases, with the state taking action in any way necessary to ensure every potential threat to its power be eliminated, and this historical brutality continues to create fear in citizens. This fear structurally upholds the power of the Russian state. The political context behind the usage of the platform highlights the importance for security. Telegram provides security in its technical features, but also through trust in Pavel, whose own experience with the authoritative state led him to create Telegram.

Though the SecretChat feature offers end-to-end encryption on voice, video, and individual messaging, since this is an optional feature, the company does have the ability to access content of unencrypted messaging. It can also be coerced to hand over that data (Allyn, 2022). Users who do not select the SecretChat feature inadvertently give potential power to the company, further emphasizing the importance of trusting company intentions. Another privacy concern are cyberattacks, in which chat data could be attained and exposed to the Russian government.

Though Telegram has increased citizens' freedom and power, it is important to recognize the ways that this power could be taken back by the state through cyberattacks, or indirectly through Telegram-State collaboration. Telegram was officially banned in Russian in 2018, but Russia has been unable to fully restrict access in the country, and Telegram remains a significant domain of political discourse. Telegram is one instance of digitalization transferring power from the state to users and digital companies. Even controlling accessibility to the platforms lies more so in the hands of the companies than it does the state.

The Russian Federation often controls narrative by manipulating statistics and information, most recently in the Russian invasion of Donbas and annexation of Crimea ("Personalities of Public Opinion", 2023). The digital realm has allowed for government and independently led fact checking projects that counter Kremlin disinformation.

The people of Ukraine have been significantly involved in the war, a process aided by the smartphone and digital realm. Since the start of the war, there has been an influx of visual documentation media: videos, photographs, and livestreams of the war and its effects ("The Smartphone War", 2023).

Politically, the Centre for Strategic Communication, under the Ministry of Culture and Information Policy of Ukraine, acts to counter digital information attacks by the Russian Federation . Similarly, the Centre for Countering Disinformation, under the National Security and Defense Council of Ukraine, aims to mitigate the spread of misinformation and propaganda (“How Russia's war on Ukraine is challenging our digital norms”, 2023). Outside of the political sphere, open-source intelligence (OSINT) accounts are seen across platforms, and have been an extremely influential use of Telegram in the war. OSINT accounts geolocate data shared and analyze photographs and videos for qualitative and quantitative data. Accounts often take media submissions that document various aspects of war (missile strikes, artillery and machinery, fighting), and work with a hive-minded approach to verify and contextualize the information use mapping software, commercial satellite images, and NASA’s fire monitoring data before posting the media with supplemented content onto OSINT platforms (“The Smartphone War”, 2023). Democracy Reporting International underscores the contribution of OSINT communities, emphasizing their ability to spread information despite Russian attempts to silence (“Personalities of Public Opinion”, 2023). This has been in part due to the development of high-resolution commercial satellite imagery and other SAR (synthetic aperture radar) technology and its ability to capture bombings, mass murder, and other visual images of war that could have previously been altered (“The Smartphone War”, 2023). This process authenticates public voice and eliminates traditional journalism barriers, such as means of production and credible stigma, involving citizens in the production and distribution of news.

OSINT accounts are the epitome of structural cells networking to form connective movement. Individual contributions of both data and data verification are self-motivated and independent of any larger organization or hierarchical structure. The process is made less centralized as the data is contributed by a variety of individuals independent of the OSINT accounts. Further, while the accounts synthesize data, the aim is to mediate rather than generate political activity. War documentation is not new, but now images and news are produced less entirely by media and military sponsored journalists, and more by

citizens (“The Smartphone War”, 2023). This allows citizens to speak for themselves and represent their experiences, and rely less on others to speak for them.

Ukrainian use of Telegram follows a trend of public involvement in the media that extends to other platforms in the digital realm. Dhiraj Murthy suggested Twitter represents a ‘demotic turn’, as ordinary people contribute news, media content, and opinions in the public sphere (Murthy, 2012). He analyzed the digital structure of Twitter’s ‘trending topics’ as a space for ordinary people and traditional media industries to co-contribute (Murthy, 2012). While Telegram deviates in digital structure slightly, it is a similar paradigm of co-contribution, as the entire platform is an established source of news in society. In this way, the power of the news and narrative is distributed from the state to the people, and is increasingly decentralized. The power of Ukrainian and Russian states to control information and narratives surrounding the war has decreased due to public ability to contribute through Telegram and other digital platforms.

Organizations such as Bellingcat and Mnemonic manage and address misinformation while still utilizing publicly contributed data, bridging the objectives of OSINT groups and political efforts. Bellingcat is an open-source investigation unit that utilizes digital data on the digital realm in investigations and journalism. In response to Russia’s invasion of Ukraine, Bellingcat and Global Legal Action Network (GLAN) launched a joint initiative that investigates Russian atrocity crimes (What is Bellingcat's Justice and accountability unit?, 2023). OSINT groups on Telegram and other media platforms are used primarily to organize, validate, and communicate data without government mediation. Though Bellingcat utilizes similar input content as OSINT groups, it aims to authorize its data legally and methodically in ways that OSINT groups do not. For example, the Justice and Accountability Unit is a collaboration between Bellingcat and GLAN to validate open source information in judicial processes. Investigators follow strict methodology which briefs professional and volunteer investigators on the process of digital investigations, and considers factors specific to the digital realm, such as algorithmic bias and browsing data. The company’s methodology document most notably details bias, data protection and privacy, legalities of digital evidence, and naming conventions of digital sources (Bellingcat Global

Legal Action Network, 2022). The organization's methodical approach has granted them greater legal power to mobilize using digital open-source content; the findings from the investigations are disclosed to national or international prosecutors through the database Uwazi. Bellingcat's publication "How Online Investigators Proved Video of Ukrainian Soldiers Harassing Woman was Staged" details the digital investigation that disproved a propaganda video that was circulating social media by prominent pro-Russian individuals. This is a recent example of Bellingcat investigations disproving Russian propaganda, and it continues to expose staged events and Russian attempts to manipulate information.

Mnemonic is also an independent organization with similar partnerships and philosophies as Bellingcat, but Mnemonic is less a journal and more an archive. The organization's main goal is to preserve digital evidence that could potentially be utilized to hold accountable those guilty of violating human rights. Their 'Ukraine Archive' documents digital investigations into the Russian invasion of Ukraine. Two investigations are cataloged: *Investigation into attack on Izium City Central Hospital* and *Investigation into attacks on public infrastructure in Zhytomyr*. Each archived investigation contextualizes open source material including geolocation, YouTube clips, satellite imagery, GoogleMaps, and Telegram posts. Sources often contextualize and build off one another.

Bellingcat and Mnemonic act within segmented movements, each organization being an independent cell with defined objectives and hierarchical organization. Both also engage in the political sphere; Bellingcat aims to legally authorize open-source data and Mnemonic aims to legally preserve this data. By doing so, they seek to legally address Russian war crimes. Bellingcat directly exemplifies the segmented nature of working within existing structures while simultaneously challenging others.

Despite efforts to control misinformation, the digital realm continues to create a space for the spread of propaganda. Telegram's secure platform and lack of content policing protects not only people spreading truth, but also those spreading misinformation, intentionally or not. After Russia's initial invasion of Ukraine, Pavel was concerned by the ways the platform was spreading misinformation and ethnic hatred (Allyn, 2023). His concern was valid; Russia uses Telegram channels to distribute misinformation and propaganda surrounding the war, and a common misinformation tactic was posting

valid and sourced media alongside manipulated content (Personalities of Public Opinion, 2023).

Anonymous Telegram channels play a significant role in discourse, and while these are not inherently harmful, the ambiguity of the channel's objective and validity can be misleading. On one end, "Ukrainian Online" channel provides cited content with occasional commentary. On the other, the "Rezident" channel spreads propaganda through manipulative posts. Numerous investigations disclosed the influence of pro-Kremlin channels on parliamentary decisions, and similar patterns have continued in the context of the war (Personalities of Public Opinion, 2023). The digital realm does not discriminate; it allows for truth as it allows for misinformation. It gives power to the state, and it gives power to those against the state. Though I primarily focus on the ways the digital realm has directly transferred power from the Russian state to the people and nations under their influence, I agree with Couch's encompassing understanding of an encompassing digital realm. In a broader social-technical context, the digital realm gives power to those who mobilize through it.

Communication platforms are the chassis of the digital network, providing digital infrastructure and resources that allow individuals to connect with other individuals and communities. Though language has an undeniable presence in the digital realm, the use of visual media to communicate extensively is a largely new phenomenon. Visual media has become a language of the digital, with platforms such as TikTok, Instagram, and SnapChat using it as their main method of communication.

Means of communication through language and cultural customs, though often foundationally similar, deviate to a point that can make effective cross cultural communication difficult. Visual media has the power to capture and communicate in ways that words cannot fully convey, and is more universal than language, as its roots lie in the human biology of optics. Chris Julien distinguishes between two types of communication via platforms: evocative and referential. He claims that evocative communication is similar to in person communication as similar emotions are shared, while referential communication is more symbolically and linguistically based (Julien, 2019). He theorizes communication type depends largely on the digital structures that facilitate the communication. In his study on the digital platform "Imager", in which the medium of communication is mostly "memes" and other visual content, the communication

style is evocative (Julien, 2019). The evolution and adoption of visual media as a means of communication offers a collective social embodiment that relies on human nature and emotional response to visuals more than it does a universal culture.

In the editorial *Exactly That Body; Images Against Oppression*, the author Kateryna Iakovlenko investigates the medium of photography in the digital realm. Iakovlenko speaks about her own relationships with photography from the Ukrainian conflict: “they evoke various strong feelings that manifest as ants crawling on my skin, a panic attack, anger, or a desire to leave the apartment and lock up my own body until it survives the grief that the photographs produce” (Iakovlenko, 2023). She describes this as a common phenomenon within her Ukrainian friends and colleagues, and she explores the ability to express thought and emotion evoked by war through visual media. American philosopher and political activist Susan Sontag explores photographs of war and social responses to visual media of human suffering. Sontag examines the stability of visual communication by posing photographs as rhetorical; a photograph’s meaning and effect depends on viewer perception (Sontag, 2004). Even if meaning is agreed upon, there still remains a possibility of material alteration (Schilb, 2004). Digitalization has provided greater variety and accessibility to manipulative tools. Tools such as Photoshop are financially and physically accessible to use to alter images. A plethora of visual editing tools exist on the digital realm, and their intended use can range from aesthetic to manipulative. Manipulating images is a power that is universal to those in the digital realm. Russian manipulation of visual media to create propaganda and misinformation proposes Russian power to manipulate not only information, but also evocative reactions. The visual medium gave both the Russian state and their opponents informational and narrative power through OSINT groups and Russian uses of misinformation. Similarly, the visual medium simultaneously provides both groups with emotional power over individuals and groups.

Evocative communication in the digital realm is used to promote Ukrainian connection and nationalism. On September 16, 2022, Ukrainians posted a photo taken by Yurii Larin of a decomposed hand found at a burial site created during the Russia-Ukraine War. There was a blue and yellow bracelet around the wrist, a tribute to Ukraine. Dozens of Ukrainians responded to the post with a photo of their

own hand, producing a foil that recognized their position of similarity (Iakovlenko, 2023). Visual media mediated this flashmob of solidarity and emphasized unity in the sameness of the physical body. Iakovlenko describes Ukrainians viewing and reposting cruel images and media as “not exploiting the pain of others, [but] experiencing their own pain” (Iakovlenko, 2023). Where Ukrainians could not have physically orchestrated a protest without threat of harm, they took to the digital realm where they transcended the political and physical power structures that limited their physical protest. Ephemeral digital protests, such as the hand flashmob in 2022, exemplify connective movements. Though less developed than OSINT connective movements in centralized organization, digital protests are short lived shapes that mediate political activity in a similarly evocative manner by which they communicate. The protest facilitates Ukrainian nationalism and unifies those affected by Russian authoritarianism.

It is interesting to examine the boundaries of evocative power. Research Professor Andrew Hoskins suggests a fallacy of false equivalence between mass action and digital mass movement. Hoskins evaluates the power of visual media by its ability to produce societal action (“Media and compassion after digital war”, 2021). Hoskins references social media interactions on the Syrian conflict, indicating the influx of visual suffering resulted in no significant mobilization efforts. He then proposes the evocative power of visual media to influence society is lost to the digital bystander effect, overload of content, and societal indifference (“Media and compassion after digital war”, 2021). However, the understanding of evocative power changes drastically if its power to influence society is understood parallel to the context of its power to influence individuals.

Another powerful use of evocative media are the films archived on FreeFilmers and Filma. FreeFilmers and Filma are two independent organizations originating in Ukraine. Filma and FreeFilmers are platforms of counterculture; their content derives from feminism, anti-racism, anti-colonialism, and inclusion. In the 2021 archive, *The Wonderful Years* produced by directors Svitlana Shymko and Galina Yarmanova, explores the lives of queer women during the late Soviet Union in Ukraine. Other issues *Radical Love*, *Origins and Echoes*, and *Possible Utopias* assembles international film to depict the intersectionality between social and state power, and gender, race, and identity discrimination. The

content of the films provide spaces where marginalized groups can explore identity and its intersections with Russian totalitarianism. Beyond theoretical means, the evocative medium also provides material means of expression to marginalized film directors. The organization's use of evocative media has disrupted existing social and professional Russian power structures.

In Herasimenka's connected and segmented categorizations, he focuses on movements rooted in referential communication, and fails to address emotionally abstract structures deriving from evocative communication, though they have equally significant capacities and socio-political effects. FreeFilmers and Filma act similarly to materially centered micro-movements, such as OSINT accounts, as they are independently hierarchic with clear incentives of producing and preserving marginalized film projects. The film projects produced by the organizations appeal to anthropomorphism as they address concepts of human nature such as sexual and gender identity. The use of visual media by FreeFilmers, Filma, and social media users extends their evocative power. Visual media becomes the foundation of various sub-social groups of Ukrainian nationalism, gender, and sexual identity. These social groups challenge the social power structures of the Russian state. Further, the mere preservation of culture disrupts Russian power to dictate history and the ability to define social culture and identity.

It is interesting to witness the duality technology provides; it provides freedom on a digital dimension, and it provides the ability to fight for freedom on a physical dimension. Ukrainian physical manifestations of digital freedoms are a testament to the potentials of technology, though Ukrainian experience is not wholly reflective of reality. In the future, if the digital realm comes under the control of digital cooperation and state legislative efforts, freedom will have to be fought for within the digital. I studied the ways that society mobilized in the physical using the digital, how society has used the digital as a tool. How will social-digital relations change if society mobilizes physically to fight for freedoms in the digital realm? This question speaks to a transition of socio-technical relations on a grander scale, and inquires if socio-technical relations define the digital as a tool, or as a realm.

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