

**Eyes Everywhere, All Against Enemies: Analyzing Non-Governmental Open-Source
Intelligence's (NGOSINT) Value for Ukraine in the 2022 Russo-Ukrainian War (RUW)**

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Technology has created new opportunities for intelligence creation and sharing, empowering civilians to become intelligence agents.¹ The 2022 Russo-Ukrainian War (RUW) is an intriguing contemporary history case study for evaluating digital Non-Governmental Open-Source Intelligence's (NGOSINT) military and humanitarian value. The research question is "In what ways did Non-Governmental Open-Source Intelligence (NGOSINT) contribute to Ukraine's resistance to Russia's 2022 invasion?". After analyzing primary and secondary sources, this paper presents a dual thesis. First, NGOSINT supported Ukraine's military resistance by giving the Ukrainian army insight into real-time troop movements and targets, which was valuable for military strategy.² Second, NGOSINT was vital for Ukraine to document Russian war crimes, with shared footage garnering international solidarity.³ Combining the two arguments, NGOSINT was crucial to dissipating the fog of war and establishing Ukraine's authentic domestic and global conflict narrative that it was defending its sovereignty against ruthless invaders.

This essay begins with a brief literature review, followed by NGOSINT concept definition. Next, this paper argues NGOSINT contributed to Ukraine's military strategy, with two Ukrainian government sources supporting this assertion. Afterwards, this essay discusses NGOSINT's importance for recording Russian war crimes, as demonstrated by civilian footage from Bucha and

¹ Ioannis Kotaridis and Georgios Benekos, "Integrating Earth Observation IMINT with OSINT Data to Create Added-Value Multisource Intelligence Information: A Case Study of the Ukraine–Russia War," *Security and Defence Quarterly* 43 no. 3 (2023): 1, doi:10.35467/sdq/170901.

² Natalie Musumeci, "Ukraine Says It Successfully Attacked Russian Vehicles in Kyiv Thanks to a Telegram Tip," *Business Insider*, March 8, 2022. <https://www.businessinsider.com/ukraine-attack-russian-vehicles-kyiv-telegram-tip-2022-3>; Yaroslav Druziuk, "A Citizen-like Chatbot Allows Ukrainians to Report to the Government When They Spot Russian Troops - Here's How It Works," *Business Insider*, April 18, 2022, <https://www.businessinsider.com/ukraine-military-e-enemy-telegram-app-2022-4>.

³ Connor Perrett, "Videos Showing Potential Russian War Crimes Flood Social Media, 'Overwhelming' Human Rights Experts Rushing to Document Them," *Business Insider*, March 20, 2022, <https://www.businessinsider.com/videos-showing-russian-atrocities-in-ukraine-flood-social-media-2022-3>.

Mariupol. This essay concludes that NGOSINT reinforced Ukraine's joint military and humanitarian purposes: to defend Ukraine and reveal Russia's crimes.

Existing literature discussing OSINT and NGOSINT contextualized the RUW. Henning Lahmann and Aaron Brantly argued OSINT enabled non-governmental actors to verify and question state narratives by tracing the intelligence chain to its source.⁴ Akin Ünver and Sofia Charania indicated the rise of the internet as an international information-sharing platform enabled NGOSINT's production and traceability.⁵ Civilian intelligence has been valuable throughout history, with agents delivering insights to officers in spoken or written form.⁶ However, telephone cameras have allowed civilians to document and share real-time activity, giving their claims credibility.⁷ Huw Dylan and Thomas Maguire expanded on these arguments, claiming NGOSINT is valuable ground-level information that raises national awareness and resilience, rallies support, incriminates adversaries, and informs action.⁸

Brantly, Ünver, and Charania argued NGOSINT presented a new attack vector for Russian disinformation.⁹ Schlomo Schapiro claimed misinformed intelligence before the full-scale invasion

⁴ Aaron Brantly, "Narrative Battles: The Impact Open-Source Intelligence on the Framing of Russia's War on Ukraine," *Social Science Research Network* (2022): 8, doi:10.2139/ssrn.4256772; Henning Lahmann, "Ukraine, Open-Source Investigations, and the Future of International Legal Discourse," *American Journal of International Law* 116, no. 4 (2022). Cambridge University Press: 810, doi:10.1017/ajil.2022.52

⁵ Akin Ünver, "Digital Open Source Intelligence and International Security: A Primer," *Centre for Economics and Foreign Policy Studies* (2018): 2, <http://www.jstor.org/stable/resrep21048>; Sofia Charania, "Social Media's Potential in Intelligence Collection," *American Intelligence Journal* 33, no. 2 (2016): 94. <https://www.jstor.org/stable/26497093>.

⁶ John Cecil Masterman, "Chapter 1: The Theory and Practice of Double-Cross," In *The Double-Cross System : In the War of 1939 to 1945* (New Haven: Yale University Press, 1972): 23.

⁷ Charania, "Social Media's Potential," 95; Gordan Akrap, Ivica Mandić, and Iva Rosanda Žigo, "Information Supremacy, Strategic Intelligence, and Russian Aggression Against Ukraine in 2022," *International Journal of Intelligence and Counterintelligence* (2022): 2. doi:10.1080/08850607.2022.2117577.

⁸ Huw Dylan and Thomas J. Maguire, "Secret Intelligence and Public Diplomacy in the Ukraine War," *Survival* 64, no. 4 (2022): 33, doi:10.1080/00396338.2022.2103257

⁹ Brantly, "Narrative Battles," 9; Charania, "Social Media's Potential," 96; Ünver, "Digital Open Source," 99.

indicated Russia had enough military and political power to conquer Ukraine.¹⁰ During the invasion, Illia Varzhanskyi discussed, and Ukrainian officials confirmed, how tremendous information volumes made it difficult to separate disinformation from useful intelligence.¹¹ However, all intelligence faces this issue. Finding valuable intelligence requires verification.¹² Huw, Maguire, and Lahmann explained NGOSINT allowed Ukrainians to undermine Russia's narratives by revealing its real capabilities.¹³

Analyzing NGOSINT requires defining concepts. Ongoing since Russia's 2014 Crimea annexation, the RUW became Europe's largest conflict since WW2 when Russia invaded Ukraine in February 2022.¹⁴ The invasion saw unprecedented digital activity, marking NGOSINT's significance.¹⁵ This essay's scope is the invasion's initial phase, from February to April 2022.

Agata Ziółkowska defined Open-Source Intelligence (OSINT) as a process of filtering through a growing amount of public information to derive useful insights.¹⁶ This essay conceptualizes NGOSINT as OSINT's subcategory, with intelligence stemming from civilian information shared on public online platforms.¹⁷ In the RUW, NGOSINT was raw information produced and shared

¹⁰ Liana Fix and Michael Kimmage, "What If Russia Wins?" *Foreign Affairs*, February 18, 2022, <https://www.foreignaffairs.com/articles/ukraine/2022-02-18/what-if-russia-wins>; Shlomo Shpiro, "Intelligence and the Ukraine War: Early Lessons and Research Roadmap," *National Security and the Future* 24, no. 1 (2023): 7, doi:10.37458/nstf.24.1.1.

¹¹ Illia Varzhanskyi, "Reflexive Control as a Risk Factor for Using OSINT: Insights from the Russia-Ukraine Conflict," *International Journal of Intelligence and Counterintelligence* (2023): 1, doi:10.1080/08850607.2023.2228489.

¹² Sohail Ahmed Khan, Jan Gunnar Furuly, Henrik Brattli Vold, Rano Tahseen, and Duc-Tien Dang-Nguyen, "Online Multimedia Verification with Computational Tools and OSINT: Russia-Ukraine Conflict Case Studies," *arXiv preprint* (2023). arXiv:2310.01978.

¹³ Dylan and Maguire, "Secret Intelligence," 44; Lahmann, "Ukraine, Open-Source Investigations," 816.

¹⁴ Jonathan Masters, "Ukraine: Conflict at the Crossroads of Europe and Russia," *Council on Foreign Relations*, February 14, 2023, <https://www.cfr.org/background/ukraine-conflict-crossroads-europe-and-russia>

¹⁵ Ünver, "Digital Open Source," 103.

¹⁶ Agata Ziółkowska, "Open Source Intelligence (OSINT) as an Element of Military Recon," *Security and Defence Quarterly* 19, no. 2 (2018): 65, doi:10.5604/01.3001.0012.1474.

¹⁷ Charania, "Social Media's Potential," 98; Interfax-Ukraine Staff, "Ministry of Digital Transformation Launches eVorog Chatbot in Telegram," *Interfax*, March 10, 2022, <https://en.interfax.com.ua/news/telecom/810765.html>.

by Ukrainian non-combatants, primarily Telegram, Ukraine’s popular instant messaging software.¹⁸ This essay asserts NGOSINT complemented other RUW intelligence forms.¹⁹

NGOSINT informed Ukraine’s defences by giving the army insight into real-time troop movements and targets, which they could use for military strategy and actions. Russia invaded Ukraine from the North, East, and South. Ukraine’s army went into full wartime operation. However, Russia was moving vast manpower and resources and Ukraine, with less of both, needed to understand which areas required the most resource allocation.²⁰ This required rapid insights into ground-level situations. Thus, on March 10, Ukraine’s Ministry of Digital Transformation announced the eVorog “eEnemy” chatbot on Telegram.²¹ Citizens could use it to share information about Russian military equipment and activity or suspicious behavior by uploading their geolocation, screenshots, or other relevant information. eVorog enforced user verification through Ukraine’s Diia “Action” application – a nationwide platform for accessing government documents, including a digital passport, and state services.²² The Ministry stated all eVorog data would be transferred to the Armed Forces of Ukraine (AFU). As such, civilians were given a government-sanctioned platform to become intelligence agents.²³

¹⁸ Vera Bergengruen, “Telegram Becomes a Digital Battlefield in Russia-Ukraine War,” *Time*, March 21, 2022, <https://time.com/6158437/telegram-russia-ukraine-information-war/>.

¹⁹ Kotaridis and Benekos, “Integrating Earth Observation,” 14.

²⁰ Jonathon Gatehouse and Albert Leung, “Ukraine Has Will, but Russia Has Might: How Their Military Forces Match up | CBC News,” *CBCnews*, February 26, 2022, <https://www.cbc.ca/news/world/ukraine-russia-military-comparison-1.6365115>

²¹ Interfax-Ukraine Staff, “Ministry of Digital Transformation.”

²² Lisa O’Carroll, “Meet Diia: The Ukrainian App Used to Do Taxes ... and Report Russian Soldiers,” *Guardian*, May 26, 2023, <https://www.theguardian.com/world/2023/may/26/meet-diia-the-ukrainian-app-used-to-do-taxes-and-report-russian-soldiers>.

²³ Bergengruen, “Telegram Becomes a Digital Battlefield.”; Interfax-Ukraine Staff, “Ministry of Digital Transformation.”

Simon Hogue condemned Ukraine's government for encouraging people to film incoming Russians because it compromised their safety.²⁴ However, all intelligence agent work requires risk acceptance. Ukrainian NGOSINT agents volunteered to contribute to the full-scale resistance effort.²⁵ The Ukrainian government also published guidelines on how to minimize risk, such as deleting footage after sharing it (Appendix A).²⁶

eVorog was the first government-developed NGOSINT collection-gathering application of this kind.²⁷ Its creation, and the Ministry's explicit statements, serve as initial evidence that Ukraine's government considered NGOSINT important to its military strategy. Ziółkowska explained how NGOSINT shapes military decisionmaking. She emphasized its value to military reconnaissance regarding geospatial awareness. Geographic Information System (GIS) studies allow the military to track enemy troop movements and plan actions, supporting the initial argument that eVorog was created for Ukraine's military to locate specific territories to defend.²⁸ Ziółkowska also cautioned opposition agents could plant disinformation to mislead military reconnaissance. eVorog's Diia verification intended to overcome this issue.

Evidence arose substantiating NGOSINT's RUW military use. On March 8, 2022, the Security Service of Ukraine (SSU) Tweeted "Your reports of enemy movement through the official chatbot...bring new trophies every day. This time we received the coordinates of the enemy

²⁴ Simon Hogue, "Civilian Surveillance in the War in Ukraine: Mobilizing the Agency of the Observers of War," *Surveillance & Society* 21, no 1 (2023): 108. doi:10.24908/ss.v21i1.16255.

²⁵ Bergengruen, "Telegram Becomes a Digital Battlefield.,"; Druziuk, "A Citizen-like Chatbot."

²⁶ Ministry of Digital Transformation of Ukraine / Мінцифра. "Повідомляєте про окупантів в eVorog? Згадайте правила безпеки". Telegram, August 2, 2022, 03:10. <https://t.me/mintsyfra/3286>

²⁷ Stephen J. Thorne, "New, Old and Otherwise, Ukraine Defence Arsenal Gets the Job Done," *Legion Magazine*, May 10, 2023, <https://legionmagazine.com/new-old-and-otherwise-ukraine-defence-arsenal-gets-the-job-done/>.

²⁸ Ziółkowska, "Open Source Intelligence (OSINT)," 68.

equipment marked "V" in the Kyiv region. The result is...fiery "greetings" to the occupiers.", accompanied by an image of destroyed Russian vehicles (Appendix B).²⁹ However, an SSU official conceded that despite successes, NGOSINT verification required time, supporting Charania, Ünver, and Varzhanskyi's arguments. Still, a few days later, the SSU released a quote to the "Ukrainian Truth" magazine asking citizens to "...pass the information about the location of the enemy to us, and the Ukrainian military personnel will ensure its destruction!", indicating that despite corroboration difficulties, NGOSINT was useful for the army.³⁰ These explicit declarations demonstrate NGOSINT's value in dispersing the RUW's fog of war and directing the Ukrainian army towards targets, further supporting Ziółkowska's arguments regarding military geospatial reconnaissance.³¹

The SSU's decision to showcase its military victory indicates its notable value. Asking civilians for additional NGOSINT denotes its importance in increasing the available military reconnaissance information range. Demonstrating this, on 16 April 2022, Mykhailo Fedorov, the Minister of Digital Transformation of Ukraine, Tweeted "New impressive statistics from @diiagovua: 257K Ukrainians used the chat-bot eVorog. People are actively reporting on military hardware, troops as well as war criminals...".³² This statement supports Hayman's work.

²⁹ Bergengruen, "Telegram Becomes a Digital Battlefield in Russia-Ukraine War."; Security Service of Ukraine / СБУ України / (ServiceSsu). "Ваші повідомлення про пересування ворога через офіційний чат-бот http://t.me/stop_russian_war_bot щодня приносять нові трофеї. Цього разу ми отримали координати ворожої техніки з позначками «V» на Київщині. Результат – на фото: полум'яні «привіти» окупантам," Twitter, March 8, 2022, 05:51, <https://twitter.com/FedorovMykhailo/status/1515323042771128332>.

³⁰ Musumeci, "Ukraine Says It Successfully."; Valentyna Romanenko, "Ukrainian Security Forces Apprehend TikTok User Who Posted Photos of Ukrainian Armed Forces Equipment in Kyiv," *Ukrainska Pravda*, March 21, 2022, <https://www.pravda.com.ua/eng/news/2022/03/21/7333379/>.

³¹ Ziółkowska, "Open Source Intelligence," 70.

³² Mykhailo Fedorov (@FedorovMykhailo), "New impressive statistics from @diiagovua: 257K Ukrainians used the chat-bot eVorog. People are actively reporting on military hardware, troops as well as war criminals. We work 24/7 to proceed the data. Every enemy will be found and destroyed. To report: https://t.me/evorog_bot," Twitter, April 16, 2022, 09:35, <https://twitter.com/FedorovMykhailo/status/1515323042771128332>.

He emphasized NGOSINT's value in fostering effective knowledge-sharing communities.³³ eVorog's vast number of users during the invasion suggests it involved various non-combatant Ukrainians across the country, strengthening the military's ability to direct its defences. Furthermore, as Minister Fedorov's Tweet suggested, NGOSINT publicised Russia's brutality.³⁴

NGOSINT was important to Ukraine's efforts to reveal Russian war crimes. Analyzing sources from the March 2022 Bucha massacre and the Siege of Mariupol supports the argument that NGOSINT spotlighted Russia's atrocities to the international community, garnering public support for Ukraine's continued resistance.³⁵

Dylan and Maguire questioned NGOSINT's value for war crime documentation because Ukrainian NGOSINT agents were biased, overstating Russian war crimes and underreporting Ukrainian ones.³⁶ However, Josie Cochrane investigated RUW NGOSINT agent incentives, finding the main motivation was desire to clarify the conflict's muddled information environment by verifying both states' information.³⁷ Many Russian war crimes were also verified through triangulating other intelligence, such as satellite imagery and communication records.³⁸

³³ TZ and Tamir Hayman, "Open-Source Intelligence and the War in Ukraine," *Institute for National Security Studies* (2023), [jstor:stable/resrep47006](https://www.jstor.org/stable/resrep47006).

³⁴ Mykhailo Fedorov (@FedorovMykhailo), "New impressive statistics."

³⁵ Becky Sullivan and Laurel Wamsley, "Mariupol Has Fallen to Russia. Here's What That Means for Ukraine," *NPR*, May 19, 2022, <https://www.npr.org/2022/05/18/1099885151/mariupol-falls-ukraine-russia-what-it-means>.

³⁶ Varzhanskyi, "Reflexive Control," 4.

³⁷ Josie Cochrane, "Citizen OSINT Analysts: Motivations of Open-Source Intelligence Volunteers," *Södertörn University* (2022): 3, [urn:nbn:se:sh:diva-49278](https://www.sodertorn.se/urn:nbn:se:sh:diva-49278).

³⁸ Michael Biesecker and Erika Kinetz, "Evidence of Russian Crimes Mounts as War in Ukraine Drags On," *AP News*, December 30, 2022, <https://apnews.com/article/russia-ukraine-war-crimes-government-international-criminal-court-a6edd7e6ed0de527b42a1790dccc33ea>.

Initial NGOSINT from Bucha revealed Russian atrocities from an unfiltered, humane perspective, attracting sympathy for Ukraine's cause.³⁹ Bucha was a small town located 30 kilometres away from Ukraine's capital, Kyiv. The Russian Armed Forces entered it on February 27, occupying the city throughout March. Following Ukraine's Bucha liberation on March 31, NGOSINT emerged showcasing Russia's occupation results.

One video, posted to Twitter on April 1, showed a street of dead bodies (Appendix C).⁴⁰ It was viewed and shared by thousands. Satellites and media verified the video's claims of violent killings.⁴¹ Sohail Ahmed Khan and Ivan Boryshenko investigated the benefit of using OSINT computational tools and techniques for verifying online multimedia content.⁴² They found that diverse computing resources, including social media platforms, geolocation tools, and Artificial Intelligence (AI), allowed investigators to process and corroborate the RUW's NGOSINT efficiently. This processing ensured accurate information dissemination, disrupting disinformation narratives denying Russia's war crimes.⁴³

³⁹ Hanna Arhirova and Elena Becatoros, "Ukraine Marks Grim Bucha Anniversary, Calls for Justice," *AP News*, April 28, 2023, <https://apnews.com/article/bucha-anniversary-russia-ukraine-war-3a6bab1d1b655f769f6c5c2c8e36b6f6>.

⁴⁰ Viktoriia (@ViktoriiaUAH), "My brother sent this to me. Town of Bucha northwest of Kyiv. The amount of dead citizens on one street alone...I just can't even process," Twitter, April 1, 2022, 16:07, <https://twitter.com/ViktoriiaUAH/status/1509985789404459011>

⁴¹ David L Stern, Meg Kelly, and Claire Parker, "Bodies, Rubble Line the Streets of Bucha Following Russian Retreat," *Washington Post*, April 2, 2022, <https://www.washingtonpost.com/world/2022/04/02/bucha-bodies-russia-retreat-kyiv/>; Mike Wall, "Mass Grave in Ukraine Seen from Space (Satellite Photos)," *Space.com*, April 4, 2022, <https://www.space.com/ukraine-mass-grave-bucha-satellite-photos>.

⁴² Khan, Furuly, Vold, Tahseen, and Dang-Nguyen, "Online Multimedia Verification," 5; Ivan Borysenko, "Ukrainian Military Shows Its Real-Time Intelligence Sharing Software," *New Voice of Ukraine*, July 3, 2023, <https://english.nv.ua/nation/ukrainian-military-shows-its-real-time-intelligence-sharing-software-news-50336283.html>; Ziółkowska, "Open Source Intelligence," 66.

⁴³ Borysenko, "Ukrainian Military Shows Its Real-Time Intelligence."; Khan, Furuly, Vold, Tahseen, and Dang-Nguyen, "Online Multimedia Verification," 16.

NGOSINT contributed to tracing and condemning Russia's actions during the occupation. Due to the situation's danger, this evidence would have been difficult to attain through other intelligence forms. Bucha residents filming Russians showed the dire ground-level situation, supporting Ukraine's narrative that Russia's invasion was ruthless.⁴⁴

One video filmed by a Bucha resident showed Ukrainian captives marched by Russian forces.⁴⁵ Another resident's security camera improved visibility (Appendix D).⁴⁶ The *New York Times* used this footage, amongst other sources, to identify and publicly condemn Russian soldiers who committed atrocities against civilians, supporting Khan et al.'s findings.⁴⁷

Underscoring NGOSINT's importance in documenting Russian war crimes, Ukraine's Digital Transformation Ministry requested technology companies to reconsider some content policy practices.⁴⁸ In an interview with *Time*, Minister Fedorov stated, "Some content which might not be permissible in peacetime could be instrumental to proving war crimes."⁴⁹ Closer to the crime scenes, Bucha resident Victor Shatylo stated, "My thought was I want to have evidence. So it's not only on testimonies, but it's documented on video."⁵⁰ These explicit statements indicate NGOSINT contributed to revealing Russian war crimes and advocating for international justice.

⁴⁴ Charania, "Social Media's Potential," 94.

⁴⁵ Yousur Al-hlou, Masha Froliak, Christoph Koettl, and Haley Willis, "Caught on Camera, Traced by Phone: The Russian Military Unit That Killed Dozens in Bucha," *New York Times*, December 22, 2022, <https://www.nytimes.com/video/world/europe/100000008299178/ukraine-bucha-russia-massacre-video.html>.

⁴⁶ Erika Kinetz, Oleksandr Stashevskiy, and Vasilisa Stepanenko, "How Russian Soldiers Ran a 'Cleansing' Operation in Bucha," *PBS*, November 3, 2022, <https://www.pbs.org/wgbh/frontline/article/russian-soldiers-cleansing-operation-bucha-ukraine/>.

⁴⁷ Al-hlou, Froliak, Koettl, and Willis, "Caught on Camera."; Khan, Furuly, Vold, Tahseen, and Dang-Nguyen, "Online Multimedia Verification," 24.

⁴⁸ Laura McQuillan, "Social Media Could Hold Evidence of Alleged Russian War Crimes in Ukraine | CBC News," *CBC News*, April 7, 2022, <https://www.cbc.ca/news/world/social-media-war-crimes-investigations-1.6410145>.

⁴⁹ Vera Bergengruen, "How Ukraine Is Crowdsourcing Digital Evidence of War Crimes," *Time*, April 18, 2022, <https://time.com/6166781/ukraine-crowdsourcing-war-crimes/>.

⁵⁰ Al-hlou, Froliak, Koettl, and Willis, "Caught on Camera."; Perrett, "Videos Showing Potential."

NGOSINT's importance in documenting war crimes and contributing to Ukraine's rightful international narrative was also demonstrated by Russia's successful Siege of Mariupol, a Southern port city.⁵¹ Lasting from February 24 to May 20, the Siege demonstrated NGOSINT's ability to sustain international support for Ukraine despite military defeats.⁵²

NGOSINT revealed both Russia's war crimes and Ukrainians' resilience, amplifying international attention to the crisis. One example was 15-year-old Alona Zahreba's video diary, posted to Telegram.⁵³ Zahreba filmed her family's apartment covered in glass and blood following an airstrike, with explosions heard in the background.⁵⁴ The videos attracted international media attention. In an interview with *RadioFreeEurope*, Zahreba explained she filmed to show Mariupol's situation, "Because when you tell someone, he can imagine it, but he needs to see the video to fully understand."⁵⁵ Her words support Hogue's work, which emphasized NGOSINT's agentic power.⁵⁶ He argued NGOSINT empowers organized resistance in occupied areas, cultivates national and international solidarity, and documents otherwise unseen war crimes.

Yuliia Paievska, a Mariupol medic, provided important NGOSINT even closer to combat. Paievska's bodycam documented army and civilian injuries, alongside Russian missile strikes on hospitals.⁵⁷ Her footage was smuggled out of Mariupol by the Associated Press, leading to its

⁵¹ Biesecker and Kinetz, "Evidence of Russian Crimes."

⁵² Arhirova and Becatoros, "Ukraine Marks Grim.;" Sullivan and Wamsley, "Mariupol Has Fallen."

⁵³ Alona Zahreba, "This Ninth-Grader Made a Video Diary in Mariupol," *RadioFreeEurope/RadioLiberty*, April 7, 2022, <https://www.rferl.org/a/ukraine-mariupol/31791422.html>.

⁵⁴ Perrett, "Videos Showing Potential.;" Sullivan and Wamsley, "Mariupol Has Fallen."

⁵⁵ Zahreba, "This Ninth-Grader Made a Video Diary in Mariupol."

⁵⁶ Hogue, "Civilian Surveillance," 109.

⁵⁷ Yuliia Paievska, "Ukraine War: Captured Medic's Bodycam Footage Shows Horror of Mariupol," *Sky News*, YouTube, May 19, 2022, <https://www.youtube.com/watch?v=d7qDqx4hKKI>.

international distribution. Her videos implicated Russians in targeting civilians and civilian infrastructure, supporting Lahmann's argument that NGOSINT is reshaping international law. Having visual evidence legitimizes NGOSINT agents as war crime witnesses.⁵⁸ Meanwhile, Paievska was captured by Russian forces shortly after sharing her videos, supporting Hogue's argument that Ukrainian agents faced immense dangers during intelligence collection.⁵⁹

Although NGOSINT did not incite direct Western RUW intervention, it was vital for sustaining Ukraine's international support. On March 9, President Volodymyr Zelenskyy Tweeted a civilian video from Mariupol's bombed maternity hospital alongside a plea to "Close the sky right now!" (Appendix E).⁶⁰ Western world leaders indicated intervention was not possible but condemned the hospital attack and reaffirmed their financial, humanitarian, and political support for Ukraine's resistance.⁶¹ Brantly's work supplemented these proceedings. His quantitative analysis found Ukrainian OSINT production was not correlated with American aid, however, he argued OSINT shaped Ukraine's successful national narrative, cultivating systematic international support (Appendix F).⁶²

⁵⁸ Lahmann, "Ukraine, Open-Source Investigations," 818.

⁵⁹ Lori Hinnant and Vasilisa Stepanenko, "Famed Ukrainian Medic Describes 'hell' of Russian Captivity," *AP News*, July 11, 2022, <https://apnews.com/article/ukraine-medic-yuliia-paievska-describes-captivity-5b6f6e727a0a1a2b90101640055c6b4b>; Hogue, "Civilian Surveillance," 111.

⁶⁰ Volodymyr Zelenskyy / Володимир Зеленський (@ZelenskyyUa), "Mariupol. Direct strike of Russian troops at the maternity hospital. People, children are under the wreckage. Atrocity! How much longer will the world be an accomplice ignoring terror? Close the sky right now! Stop the killings! You have power but you seem to be losing humanity," Twitter, March 9, 2022, 10:23, <https://twitter.com/ZelenskyyUa/status/1501579520633102349>.

⁶¹ Katie Balevic, "Zelenskyy Accuses Russian Troops of 'direct Strike' That Wrecked a Mariupol Maternity Hospital, Pleads to 'Close the Sky Right Now,'" *Business Insider*, March 9, 2022, <https://www.businessinsider.com/zelenskyy-condemns-russia-direct-strike-at-mariupol-maternity-hospital-2022-3>.

⁶² Brantly, "Narrative Battles," 7; Tom Simonite, "The Race to Save Posts That May Prove Russian War Crimes," *Wired*, April 11, 2022, <https://www.wired.com/story/open-source-russia-war-crimes-ukraine/>.

NGOSINT informed Ukraine's initial military strategy during the invasion and revealed Russian war crimes, evoking international support. Information about Russian troop movements and supplies directed Ukraine's successful battlefield defences.⁶³ Furthermore, NGOSINT also sustained international public support for Ukraine's resistance despite military losses, as exemplified by Russia's war crime documentation in Bucha and Mariupol.⁶⁴ During the initial invasion, NGOSINT contributed to Ukraine's successful national resistance, sending Russia a powerful message: All Eyes On U.

⁶³ Druziuk, "A Citizen-like Chatbot."; Thorne, "New, Old and Otherwise."

⁶⁴ Biesecker and Kinetz, "Evidence of Russian Crimes."; Perrett, "Videos Showing Potential."

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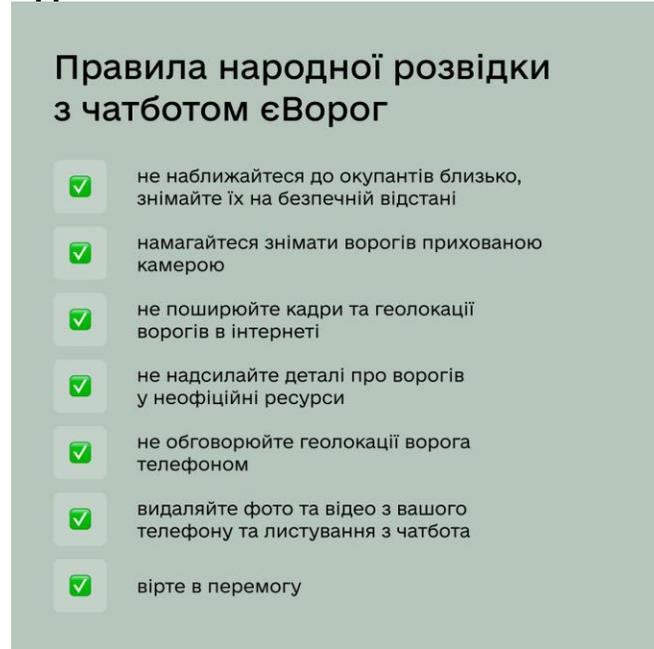
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Appendix: Appendix A:



Information published by the Ministry of Digital Transformation of Ukraine. Translated by Anna Lysenko:

“Rules of public intelligence with the chatbot eVorog

- Do not approach the occupiers closely, film them at a safe distance
- Try to film enemies with a hidden camera
- Do not share the footage and geolocation of enemies on the Internet
- Do not send details about enemies to unofficial resources
- Do not discuss enemy geolocations on the phone
- Delete photos and videos from the main phone and correspondence from the chatbot
- Believe in victory”

Appendix B:



СБ України
@ServiceSsu

...

Ваші повідомлення про пересування ворога через офіційний чат-бот
t.me/stop_russian_w... щодня приносять нові трофеї.

Цього разу ми отримали координати ворожої техніки з позначками
«V» на Київщині.

Результат – на фото: полум'яні «привіти» окупантам.

[Translate post](#)



5:51 AM · Mar 8, 2022

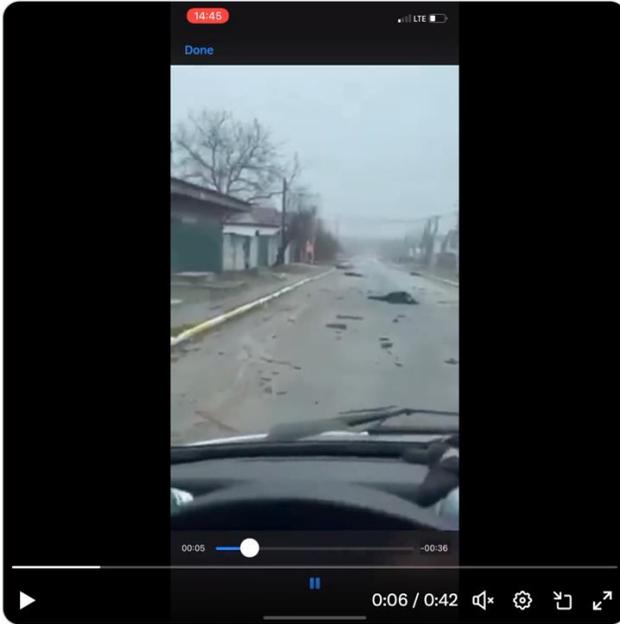
Tweet by the Security Services of Ukraine. Tweet translated by Anna Lysenko:
“Your reports of enemy movement through the official chatbot [Link] bring new trophies every day. This time we received the coordinates of the enemy equipment marked "V" in the Kyiv region. The result is in the photo - fiery "greetings" to the occupiers.”.

Appendix C:



Viktoriia
@ViktoriiaUAH

My brother sent this to me. Town of Bucha northwest of Kyiv. The amount of dead citizens on one street alone...I just can't even process.



4:07 PM · Apr 1, 2022

3.1K 20K 33K 2.8K

Appendix D:



Image from a Bucha civilian's security camera showing Russian soldiers escorting Ukrainian captives. Found online in "How Russian Soldiers Ran a 'Cleansing' Operation in Bucha." by PBS.

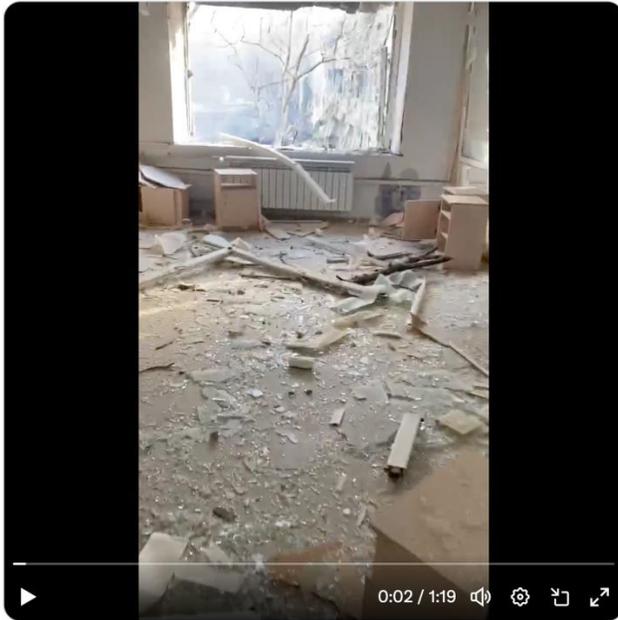
Appendix E:



Volodymyr Zelensky / Володимир Зеленський
@ZelenskyUa

...

Mariupol. Direct strike of Russian troops at the maternity hospital. People, children are under the wreckage. Atrocity! How much longer will the world be an accomplice ignoring terror? Close the sky right now! Stop the killings! You have power but you seem to be losing humanity.



10:23 AM · Mar 9, 2022

Appendix F:

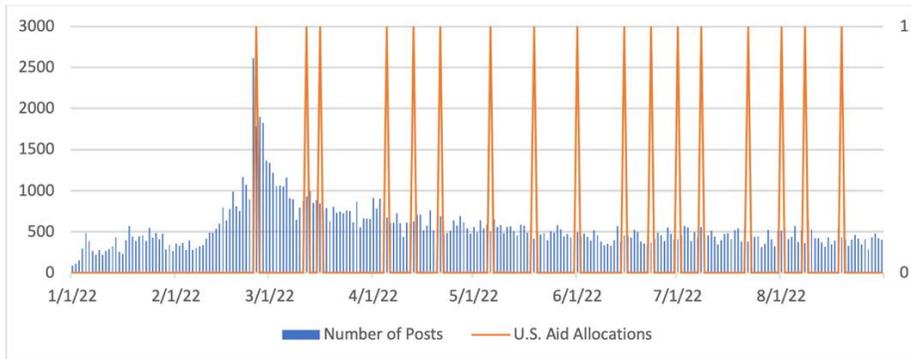


Figure 2: U.S. Aid Allocations to Ukraine Overlaid on OSINT Dissemination by 24 Identified Accounts

Image from the article “Narrative Battles: The Impact Open-Source Intelligence on the Framing of Russia’s War on Ukraine” by Aaron Brantly