

Live Free or Die:

Security in a World of Decentralized Arms Manufacturing

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In June 2012, law student Cody Wilson created his company Defense Distributed, an online, open-source organization dedicated to the manufacturing of 3D printed firearms.¹ In 2013, Wilson posted the blueprints online for his first design of a functional 3D printed firearm known as the Liberator.² Wilson, a self-described crypto-anarchist,³ viewed this as a human rights project and envisioned a world where everyone should be able to own a gun.⁴ In March 2020, a man using the pseudonym ‘JStark’ and his organization Deterrence Dispensed posted instructions online for how to print a semi-automatic 3D printed submachine gun chambered in 9x19mm, a handgun round.⁵ The FGC-9, or F*ck Gun Control-9mm, is one of the most well-known firearms designed by Deterrence Dispensed, an organization that believes in unconditional free speech and unrestricted access to firearms.⁶ Credit must be attributed to Jstark for the title of this paper.⁷ 3D printed firearm enthusiasts are often characterized as neo-nazis or anarchists, a misconception for a large number of the users and designers, rather they believe that gun ownership is a human right and an expression of free speech.⁸ They view themselves as answering the question posed by Nicholas Cage in *Lord of War*; “How do we arm the other 11?”⁹

The legality of these weapons is complicated and varies from case to case. The decentralization of these organizations that make blueprints is a means to circumvent gun control

¹ “Defense Distributed.” Defense Distributed. Accessed March 16, 2024. <https://defdist.org/>. n.d.

² Morelle, Rebecca. “Working Gun Made with 3D Printer.” BBC News, May 6, 2013. <https://www.bbc.com/news/science-environment-22421185>.

³ Danton Bryans, “Unlocked and Loaded: Government Censorship of 3D-Printed Firearms and a Proposal for More Reasonable Regulation of 3D-Printed Goods,” *Indiana Law Journal* 90, no. 2 (Spring 2015): 901-934

⁴ Jacobs, James B., and Alex Haberman. “3D-PRINTED FIREARMS, DO-IT-YOURSELF GUNS, & THE SECOND AMENDMENT.” *Law and Contemporary Problems* 80, no. 2 (2017): 129–47.

⁵ Basra, Rajan. Behind the Mask: Uncovering the Extremist Messages of a 3D-Printed Gun Designer (Report). International Centre for the Study of Radicalisation and Political Violence. October 19, 2023.

⁶ Hanrahan, Jake. “Plastic Defence: Secret 3D Printed Guns in Europe” *Popular Front*, posted November 23, 2020, YouTube video, 26:46. <https://www.youtube.com/watch?v=jlB2QV5wVxg>

⁷ *Ibid.*

⁸ *Ibid.*

⁹ Niccol, Andrew, director. *Lord of War*. Lions Gate Films, 2005.

laws that bar manufacturing or ownership of guns, but also as a means to increase the share of expert knowledge to create more sophisticated technology. A few main groups have taken up so-called ghost guns for their cause; far-right terrorists and anti-government rebels in Myanmar. This paper compares these groups using a lens of critical security studies to argue that despite the dangers of the democratization of arms production, 3D printed firearms represent a means for subaltern actors and oppressed groups to level the playing field against the state and gain emancipation through their own means. While there are inherent dangers in allowing anyone to print a firearm, that this paper will discuss, the technology can also be liberatory for oppressed peoples facing violent oppression. This paper builds on literature on the far-right as well as from the Welsh School of Critical Security Studies along with colonialism studies to argue that these weapons can be a liberatory tool.

3D printed guns generally use a kind of plastic that can be used in a printer, the printer is then given a blueprint file known as a computer-aided design (CAD) file.¹⁰ An organization called Solid Concepts used a metal printer to print a firearm, though plastic is much more common and accessible.¹¹ In more high-end designs, PLA plastic is used for its strength and better heat resistance.¹² The Liberator, the first majorly publicized 3D printed firearm was vastly underpowered compared to a conventional firearm, though it is still lethal.¹³ The Liberator was a single-shot pistol that would need to have the barrel replaced after a few rounds were fired through it but held up well in ATF testing.¹⁴ Recent developments in the technology mean that

¹⁰ Bryans, "Unlocked and Loaded: Government Censorship of 3D-Printed Firearms and a Proposal for More Reasonable Regulation of 3D-Printed Goods,"

¹¹ Ibid.

¹² Hanrahan, Jake. "91. Plastikov and the 3D Printed Gun Resistance." Popular Front. Audio Podcast. August 2020. <https://open.spotify.com/episode/6otZx6EBvvHBOgup3IR902?si=5e319b1803b24111>

¹³ Cook, Peter. "The International Security Implications of 3D Printed Firearms." In *Emerging Technologies and International Security*, 1st ed., 1:192–205. Routledge, 2021. <https://doi.org/10.4324/9780367808846-15>.

¹⁴ Greenberg, Andy. "3D-Printed Gun Stands up to Federal Agents' Testfiring--except When It Explodes (Video)." *Forbes*, November 16, 2013.

these weapons are much more sophisticated and much more durable. The Plastikov is a 3D printed AK pattern rifle made of plastic, chambered in 7.62x39mm, and capable of firing hundreds of rounds without issue.¹⁵ With a large enough 3D printer, anyone with an internet connection can print a man-portable 66mm multiple rocket launcher.¹⁶ 3D printers are also becoming increasingly affordable for people. Anyone can order a printer for less than \$500 USD and get a printer capable of producing good quality firearm prints.¹⁷ AR pattern rifles, Glock pattern handguns, full auto switches, suppressors, and all sorts of firearms have been and can be printed.¹⁸ In the United States, printing a firearm is largely legal, though the Department of State continues to claim posting the files violates arms trade laws, before his arrest Cody Wilson fought these suits numerous times.¹⁹ There is no good way to regulate the technology to begin with as it would be impossible to ban downloading CAD files, and regulating 3D printers would stifle a technology that has numerous civilian, medical, and industrial applications.²⁰ The US Supreme Court has also ruled that 3D printed guns fall under protection from the First and Second Amendments.²¹

<https://www.forbes.com/sites/andygreenberg/2013/11/14/3d-printed-gun-stands-up-to-federal-agents-testfi-ring-except-when-it-explodes-video/?sh=5ad9830d455c>.

¹⁵ "Plastikov V3 - 3D Gun Builder." 3D Gun Builder, <https://3dgunbuilder.com/rifles/plastikov-v3/> n.d.; Hanrahan, Jake. "91. Plastikov and the 3D Printed Gun Resistance."

¹⁶ "Accessories: M202 Flash Rocket Launcher." 3D Gun Builder. <https://3dgunbuilder.com/accessories/m202-flash-rocket-launcher/> n.d.

¹⁷ Hanrahan. "91. Plastikov and the 3D Printed Gun Resistance."

¹⁸ Daly, Angela, Monique Mann, Peter Squires, and Reece Walters. "3D Printing, Policing and Crime." *Policing & Society* 31, no. 1 (2021): 37–51. <https://doi.org/10.1080/10439463.2020.1730835>; Nopel. Odysee. https://odysee.com/@Nopel:6/M1337_VersionB1:5 n.d.; Plaboiiii. "Video" Twitter, March 15, 2024, 8:00 PM, <https://x.com/plaboiiii/status/1760678510010708243?s=20>.

¹⁹ Walther, Gerald. "Printing Insecurity? The Security Implications of 3D-Printing of Weapons." *Science and Engineering Ethics* 21, no. 6 (2015): 1435–45. <https://doi.org/10.1007/s11948-014-9617-x>; Jacobs and Haberman. "3D-PRINTED FIREARMS, DO-IT-YOURSELF GUNS, & THE SECOND AMENDMENT."

²⁰ Cook. "The International Security Implications of 3D Printed Firearms."; Bryans, "Unlocked and Loaded: Government Censorship of 3D-Printed Firearms and a Proposal for More Reasonable Regulation of 3D-Printed Goods,"

²¹ Berkowitz, Jessica. "Computer-Aided Destruction: Regulating 3D-Printed Firearms Without Infringing on Individual Liberties." *Berkeley Technology Law Journal* 33, no. 1 (2018): 53–88.

Of course, the focus of this paper is not to discuss the legality or processes of 3D printing firearms at length. Outside of broad coalition libertarians and anarchists that are involved in designing and printing firearms as a hobby and political statement, a few groups have taken a major interest in the technology as a means to further their specific political goals. Those groups being accelerationist neo-nazis and anti-junta rebels in Myanmar.

Accelerationism is a political ideology focused on using violent or forceful means in order to cause societal collapse. It rejects traditional political processes in favour of attempting to create mass instability to the point of collapse so that their ideology can rise.²² The term was coined by Noys, citing Deleuzian notions of deterritorialization and forcing capitalism's tendency towards collapse to work faster through historical processes in order to end capitalism.²³ Accelerationists focus on exploiting and advancing social cleavages and tensions and catalyze breakdowns of socio-political-economic structures.²⁴

Modern neo-nazis usually follow the ideology of James Mason that has been laid out in his collection of works known as *Siege*.²⁵ Mason denotes that the modern neo-nazi must have a 'siege mentality', that they must remain decentralized and act as guerillas while engaging in seemingly random acts of terror in order to accelerate societal collapse.²⁶ *Siege* calls for leaderless, underground, guerilla cells that fetishize violence as a core doctrine that will carry out

²² Beauchamp, Zack. "Accelerationism: The Obscure Idea Inspiring White Supremacist Killers around the World." Vox, November 11, 2019.

<https://www.vox.com/the-highlight/2019/11/11/20882005/accelerationism-white-supremacy-christchurch>.

²³ Noys, Benjamin. *The Persistence of the Negative a Critique of Contemporary Continental Theory*. Edinburgh: Edinburgh University Press, 2010.

²⁴ Loadenthal, Michael. "Feral Fascists and Deep Green Guerrillas: Infrastructural Attack and Accelerationist Terror." *Critical Studies on Terrorism* 15, no. 1 (2022): 169–208. <https://doi.org/10.1080/17539153.2022.2031129>.

²⁵ Hendry, John, and Anthony F. Lemieux. "The Visual and Rhetorical Styles of Atomwaffen Division and Their Implications." *Dynamics of Asymmetric Conflict* 14, no. 2 (2021): 138–59. <https://doi.org/10.1080/17467586.2021.1913203>.

²⁶ *Ibid.*; Ware, Jacob. "Siege: The Atomwaffen Division and Rising Far-Right Terrorism in the United States." International Centre for Counter-Terrorism, 2019. <http://www.jstor.org/stable/resrep19615>.

terror attacks in order to cause a race war.²⁷ White nationalists, neo-nazis, esoteric Satanists, and white supremacists have been increasing in activity, carrying out more mass casualty events and trying to radicalize others through the internet, often by worshiping their ‘martyred pantheon of saints’.²⁸ The far-right has been known to have a pantheon of so-called saints, people who have engaged in terror attacks to advance their cause.²⁹ For these people, nihilistic terror is a means to an end, however, they prefer to speculate and imagine attacks, providing information and targets in the hopes that someone will be just radicalized enough to engage in violence.³⁰

Groups like Atomwaffen Division, National Socialist Order, Tempel ov Blood, or the Order of 9 Angles rely on propaganda, images, symbols, and specific identifiers to spread their messaging.³¹ The online right-wing is an echo chamber of messaging, memes, and esoteric symbolism used to egg its followers on, never specifically saying what they do, just hoping that someone else will commit an act of terror.³² Unlike jihadists, neo-nazis never specifically order attacks, the decentralized nature of their ideology makes that taboo.³³ They also focus on using memes as a propaganda tool. Fashwave and amateurist irony have specific aesthetic markers, designed to be memorable and a call to action.³⁴

The online far-right has taken a major interest in the utility of 3D printed firearms. The ability to ‘mass’ produce at home creates a form of production that is free from standard regulation and has created a disruptive political imaginary that goes beyond standard political

²⁷ Ware. “Siege”

²⁸ Auger, Vincent A. “Right-Wing Terror: A Fifth Global Wave?” *Perspectives on Terrorism* (Lowell) 14, no. 3 (2020): 87–97.

²⁹ Walther, Samantha, and Andrew McCoy. “US Extremism on Telegram: Fueling Disinformation, Conspiracy Theories, and Accelerationism.” *Perspectives on Terrorism* (Lowell) 15, no. 2 (2021): 100–124.

³⁰ Loadenthal. “Feral Fascists and Deep Green Guerrillas”

³¹ Hendry and Lemieux. “The Visual and Rhetorical Styles of Atomwaffen Division and Their Implications.”

³² Jacob Ware. “Fighting Back: The Atomwaffen Division, Countering Violent Extremism, and the Evolving Crackdown on Far-Right Terrorism in America.” *Journal for deradicalization* Winter 20/21, no. 25 (2020): 74–116.

³³ *Ibid.*

³⁴ Hendry and Lemieux. “The Visual and Rhetorical Styles of Atomwaffen Division and Their Implications.”

economy disruptions due to the attention from the far-right.³⁵ 3D printing is not only disruptive since it allows anyone to print things, circumventing IP laws, it is also helping to fuel the violent imaginations of the far-right.

On October 12, 2022, 19-year-old Juraj Krajčík perpetrated a terrorist attack that killed two people and injured one outside a gay bar in Bratislava, Slovakia.³⁶ Krajčík's manifesto, along with his digital footprint, point towards an online subculture known as Terrorgram, a loose network of accelerationist neo-nazis on the social media app Telegram.³⁷ While the attack was carried out with a conventional firearm, he was heavily influenced by another Slovakian neo-nazi who went by the online nickname 'Slovakbro'.³⁸ Slovakbro was arrested in July 2022 for conspiracy to commit terror and for distributing blueprints for printing a firearm, upon search of his home by Slovakian police a 3D printer and parts for 3D printed firearms were seized.³⁹ The far-right organization Stormfront are also major supporters of 3D printed firearms. They believe either 3D printing guns will help them circumvent firearm laws, or that their political enemies will use the technology to heavily arm themselves, either way, the proliferation of illegal guns will help further their accelerationist views on social race war.⁴⁰ In an interview with journalist Jake Hanrahan, JStark did admit that there was a worry about nazis in the 3D printed firearm community, though the aggressive libertarian ethos of Deterrence Dispensed means they cannot stop people from accessing the technology as everyone should be able to own and make a

³⁵ Fordyce, Robbie. "Manufacturing Imaginaries: Neo-nazis, Men's Rights Activists, and 3D Printing." *Journal of Peer Production* 6 (2015).

³⁶ Kupper, Julia, Kacper Rekawek, and Matthew Kriner. "Terrorgram's First Saint: Analyzing Accelerationist Terrorism in Bratislava." *Accelerationist Research Consortium*. (2023).

³⁷ *Ibid.*

³⁸ Hanrahan, Jake. "168. The Bratislava Terrorgram Shooting." *Popular Front*. Audio Podcast. December 2022. <https://open.spotify.com/episode/3psWyLGuzsk9pRalnaYtTL?si=7180e13e2fa94732>

³⁹ "Slovak and Czech Authorities Take Action Against Right-Wing Terrorism." *Eurojust*. <https://www.eurojust.europa.eu/news/slovak-and-czech-authorities-take-action-against-right-wing-terrorism> July 08, 2024

⁴⁰ Fordyce. "Manufacturing Imaginaries"

firearm.⁴¹ In October 2019, neo-nazi Stephen Baille live streamed himself shooting two people dead at a synagogue in Germany with a 3D printed firearm.⁴² In July 2023, a four man cell in Finland was arrested for planning to carry out racially motivated terror attacks with the use of 3D printed firearms.⁴³ The group were adherents to Mason's *Siege* ideology and had posted photos of their use of an FGC-9 along with a series of photos of them in front of flags of the Third Reich holding FGC-9s.⁴⁴ As recently as February 2024, three men in Leeds were arrested for planning to carry out a terror attack on an Islamic community centre, police seized FGC-9s in the raid.⁴⁵

The danger however in the fetishization of 3D printed weapons by accelerationist neo-nazis is not actually in their possession of them. The true danger lies in their ideology. The black market for firearms in Europe and North America is massive enough that neo-nazis can and will possess firearms no matter what. The Small Arms Survey estimates that there are nearly 1 billion small arms in circulation around the world,⁴⁶ 1 gun for every 7 people. Independent researchers with Militant Wire have noted the vast prevalence of Albanian and Chinese surplus AKM and AK-74 pattern rifles in the French black market that have made their way to Islamic and nationalist militant groups.⁴⁷ The Greek black market is flooded with a wide variety of weapons including AK and G3 pattern rifles, MP5 pattern submachine guns, Chinese RPG

⁴¹ Hanrahan. "Plastic Defence"

⁴² Dearden, Lizzie. "3D Gun Print Used in Germany Synagogue Shooting." *The Independent*, October 10, 2019. Accessed March 16, 2024. <https://www.independent.co.uk/news/world/europe/3d-gun-print-germany-synagogue-shooting-stephan-baillet-neo-nazi-a9152746.html>

⁴³ Dass, Rueben. "3D-Printed Weapons and the Far-Right: The Finnish Accelerationist Cell." GNET, October 6, 2023. <https://gnet-research.org/2023/10/06/3d-printed-weapons-and-the-far-right-the-2023-finnish-accelerationist-cell/>.

⁴⁴ Ibid.

⁴⁵ Dodd, Vikram. "Three Men Charged over Far-Right Terror Plot Allegedly Involving 3D-Printed Gun." *The Guardian*, February 27, 2024. <https://www.theguardian.com/uk-news/2024/feb/27/three-men-charged-over-far-right-terror-plot-allegedly-involving-3d-printed-gun>.

⁴⁶ "Global Firearms Holdings." *Small Arms Survey*. Accessed March 16, 2024. <https://www.smallarmssurvey.org/database/global-firearms-holdings> n.d.

⁴⁷ War Noir. "Weapons of France's Illicit Arms Markets." *Weapons of France's Illicit Arms Markets* - by War Noir, February 22, 2024. <https://www.militantwire.com/p/weapons-of-frances-illicit-arms-markets>.

variants, and World War 2 era submachine guns and rocket launchers.⁴⁸ The real way to counter accelerationist extremism is in addressing the reasons why young men are becoming violently radicalized and countering the ideology of neo-nazism, rather than invoking strict law enforcement.⁴⁹ Addressing the attack on reason in American politics goes hand in hand with addressing the rise of the far-right.⁵⁰ The US far-right is also deeply entrenched in American history of anti-government sentiment and relies on provoking state violence to further their goals.⁵¹ Countering a decentralized ideology requires addressing the causes of why people become radicalized as these groups persist despite arrests of supposed leadership.⁵² The legal mechanisms in place to restrict small arms proliferation are unable to deal with the disruptive technology that is 3D printing guns. The information is publically available and would be impossible to get off the internet.⁵³ No regulation can feasibly cover every possibility in order to stem the flow of this information without being extremely difficult, if not impossible, to implement.⁵⁴ As will be argued in the rest of this paper, there are good reasons why this technology should not be regulated as it offers an important means for subaltern actors in the international system to engage in liberatory violence as a means to fight oppressive governments.

Guns are not simply weapons or tools of violence, but they are also symbols of power, primacy, and respect.⁵⁵ Many heavily armed non-state groups view the ownership of a firearm as

⁴⁸ War Noir and The Wannabewonk. "Guns and Grenades of the Greek Underground." *Militant Wire*, March 30, 2023. Accessed March 16, 2024.

<https://www.militantwire.com/p/guns-and-grenades-of-the-greek-underground>

⁴⁹ Ware. "Fighting Back"

⁵⁰ Niose, David. *Fighting Back the Right: Reclaiming America from the Attack on Reason*. New York: St. Martin's Griffin, 2014. Pg. 197

⁵¹ Robinson, Kaitlyn, Iris Malone, and Martha Crenshaw. "Countering Far-Right Anti-Government Extremism in the United States." *Perspectives on Terrorism* (Lowell) 17, no. 1 (2023): 73–87.

⁵² *Ibid.*

⁵³ Jacobs and Haberman. "3D-PRINTED FIREARMS, DO-IT-YOURSELF GUNS, & THE SECOND AMENDMENT."

⁵⁴ Bryans, "Unlocked and Loaded"

⁵⁵ Carr, Christopher. *Kalashnikov Culture: Small Arms Proliferation and Irregular Warfare*. Westport, Conn: Praeger Security International, 2008. Pg. IX

liberatory and a means to keep their community separate from a state they do not believe represents them.⁵⁶ Armed violence and struggle were the means to independence for a vast number of formerly colonized states that gained their independence through war.⁵⁷ Despite never being a specific core tenant of their ideology, the Palestinian Liberation Organization utilized armed struggle as a central means to gain some independence from Israel.⁵⁸ The language of armed struggle through the 60s and 70s helped to give substance to an imagined community of Palestinians who saw themselves as a revolutionary people.⁵⁹ Armed struggle helped preserve the PLO's status as virtually a state actor.⁶⁰ In the context of the Cuban Revolution, Che Guevara stressed the importance of guerilla warfare not only as the primary tactic of the revolutionary, but also as important for helping to build solidarity and community among the revolutionaries.⁶¹ In the Additional Protocols to the Geneva Conventions on the Laws of War, armed liberation groups were not given privileged belligerent status, justifying colonial wars to maintain imperialism.⁶² During the anti-colonial wars of the post-World War II world, liberatory struggles were treated by European states as domestic terrorism rather than an international war in order to justify harsh violence against colonized peoples.⁶³ One cannot expect to simply gain equality or humanity, sometimes one must physically take it through force. The politics of security create a situation in which some violence is permitted and other forms of violence are deemed terrorist or illegitimate, the logic of biopower prevails in a state-centric conception of security where only

⁵⁶ Ibid. pg. 15

⁵⁷ Consider the experiences of the United States, Algeria, Vietnam, Iraq, Afghanistan, and many more examples

⁵⁸ Sayigh, Yezid. "Armed Struggle and State Formation." *Journal of Palestine Studies* 26, no. 4 (1997): 17–32. <https://doi.org/10.1525/jps.1997.26.4.00p00037>.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Guevara, Che. *Guerrilla Warfare*. Edited by Brian Loveman and Thomas M. Davies. Translated by J. P. Morray. Lincoln: University of Nebraska Press, 1985.

⁶² Whyte, Jessica. "The 'Dangerous Concept of the Just War': Decolonization, Wars of National Liberation, and the Additional Protocols to the Geneva Conventions." *Humanity (Philadelphia, Pa.)* 9, no. 3 (2018): 313–41. <https://doi.org/10.1353/hum.2018.0017>.

⁶³ Ibid.

the state is allowed to use violence, and those on the receiving end of state violence are illegitimate in fighting back.⁶⁴ Colonialism, and by extension state centrism, combines disciplinary power and biopower with necropolitics, putting the colonized or oppressed subject in a state of limbo between life and death, where they remain at the ultimate power of the state.⁶⁵ In Kurdish resistance groups, the arming of women is a necessary means not only to achieve gender equality but also to fight against state oppression.⁶⁶ In the views of Abdullah Öcalan, women's empowerment is the only way that any oppressed peoples can truly be free.⁶⁷ Franz Fanon would also argue in *The Wretched of the Earth* that liberating counter-violence was necessary not only to end colonial violence but to help forge national identity through violent struggle against colonialism.⁶⁸

Governance of the arms trade and small arms proliferation also exerts power over non-state actors. Weapons manufacturing is for the most part under the auspices of the state, whether through state ownership or regulation.⁶⁹ Non-state armed groups are also not able to legally buy weapons from states.⁷⁰ While there is little transparency on the global arms trade, for the most part Western governments refuse to openly provide arms to non-state armed groups, something that NGOs have taken issue with in some cases.⁷¹ The UN arms embargo against Bosnia has been heavily criticized as aiding the Serbian-led genocide as the Bosnians had no

⁶⁴ Browning, Christopher S., and Matt McDonald. "The Future of Critical Security Studies: Ethics and the Politics of Security." *European Journal of International Relations* 19, no. 2 (2013): 235–55. <https://doi.org/10.1177/1354066111419538>.

⁶⁵ Columba Peoples and Nick Vaughan-Williams, *Critical Security Studies: An Introduction*, Third Edition (New York: Routledge, 2021). Chapter 5.

⁶⁶ Burç Rosa. "Non-Territorial Autonomy and Gender Equality: The Case of the Autonomous Administration of North and East Syria - Rojava." *Filozofija i Društvo* 31, no. 3 (January 1, 2020): 319–39.

⁶⁷ *Ibid.*

⁶⁸ Fanon, Frantz. *The Wretched of the Earth*. Translated by Richard Philcox. New York: Grove Press, 2004.

⁶⁹ Lock, Peter. "Armed Conflicts and Small Arms Proliferation." *Policy Sciences* 30, no. 3 (1997): 117.

⁷⁰ *Ibid.*

⁷¹ LUMPE, LORA. "Curbing the Proliferation of Small Arms and Light Weapons." *Security Dialogue* 30, no. 2 (1999): 151–64. <https://doi.org/10.1177/0967010699030002003>.

arms to defend themselves with.⁷² Arms could only be sold to the Yugoslav Army, sales to non-state armed groups were not allowed.

The Burmese military, referred to as the Tatmadaw, seized power in a coup conducted in February 2021.⁷³ Peaceful protest against the coup devolved into armed confrontation following the deaths of protestors by the Tatmadaw.⁷⁴ Of course, Myanmar has been in a near constant state of war for years, the Rakhine State in Myanmar has been the cite of guerilla conflict conducted by the Arakan Army and Rohingya groups, as well as a genocide carried out by the Tatmadaw.⁷⁵ These are not the only armed groups active in Myanmar, basically every region of the country has an active armed group, either aligned with the military, pro-democracy forces, or for national liberation. This section outlines the use of 3D printed firearms by anti-military armed groups in Myanmar.

Rebel forces in Myanmar have faced a major issue in their conflict, a lack of access to firearms, leading them to turn to 3D printing as a means to bridge the material divide.⁷⁶ The FGC-9 has an overhead cost between \$300-\$500 for the printer and the electromagnetic machining equipment, making it an extremely cheap option for mass producing weapons.⁷⁷ Jake Hanrahan has made note of the widespread usage of the FGC-9 by anti-junta rebels in

⁷² Gow, James. *Triumph of the Lack of Will : International Diplomacy and the Yugoslav War*. New York: Columbia University Press, 1997. Pg. 37

⁷³ Paddock. Richard C. "Myanmar's Coup and Its Aftermath, Explained" *The New York Times*. December 9, 2022. <https://www.nytimes.com/article/myanmar-news-protests-coup.html>

⁷⁴ *Ibid*.

⁷⁵ "Myanmar policemen killed in Rakhine border attack" *BBC News*, October 09, 2016. Accessed March 16, 2024. <https://www.bbc.com/news/world-asia-37601928>; "Myanmar: No Justice, No Freedom for Rohingya 5 Years On." *Human Rights Watch*, August 24, 2022. Accessed March 16, 2024.

<https://www.hrw.org/news/2022/08/24/myanmar-no-justice-no-freedom-rohingya-5-years>

⁷⁶ Molitch-Hou, Michael. "Myanmar Rebels Rely on 3D-Printed Guns to Fight Military Junta." *3DPrint.com*, August 25, 2023. Accessed March 16, 2024.

<https://3dprint.com/302100/myanmar-rebels-rely-on-3d-printed-guns-to-fight-military-junta/>

⁷⁷ *Ibid*.

Myanmar.⁷⁸ The civil war in Myanmar is a field test for the utility of these weapons,⁷⁹ showing that they have real combat applications and if made properly are just as deadly and functional as a manufactured metal firearm. Myanmar is not an easy place to get firearms. The country has been under an arms embargo since the beginning of the civil war.⁸⁰ However, this has done little to stop the flow of weapons from Russia and China.⁸¹ Myanmar is also not a state where gun ownership is rampant.⁸² This technology exemplified by Burmese rebels helps to show how sub-state actors can circumvent the governance of small arms and create their own mass produced arsenals without needing to rely on black or grey markets.⁸³ The FGC-9 is not the most powerful gun, only being chambered in 9mm, but when facing an oppressive dictatorship, having a plastic gun is better than not having one at all.⁸⁴ When facing a brutal, genocidal force like the Tatmadaw, rebels in Myanmar can mass produce their own guns at an extremely cheap cost that can give them a fighting chance. 3D printing is an important technology in a world where the means of production are increasingly being shored up by states and private corporations.⁸⁵ People no longer need to rely on clandestine or black market arms deals, people can secure power on their own, producing firearms in their own homes to fight oppression. Rebels in Myanmar usually use the weapons in ambush attacks, making use of guerilla tactics in order to capture the

⁷⁸ Daly, Max. "What Unites Organised Crime in Europe With Rebels in Myanmar? 3D-Printed Guns." Vice, May 22, 2023. Accessed March 16, 2024.

<https://www.vice.com/en/article/xgwyga/3d-printed-guns-gangs-rebels>

⁷⁹ Molitch-Hou. "Myanmar Rebels Rely on 3D-Printed Guns to Fight Military Junta."

⁸⁰ "UN Adopts Nonbinding Arms Embargo on Myanmar." Arms Control Association, July 2021. Accessed March 16, 2024.

<https://www.armscontrol.org/act/2021-07/news-briefs/un-adopts-nonbinding-arms-embargo-myanmar>

⁸¹ Ibid.

⁸² Carr. Kalashnikov Culture. Pg. 3

⁸³ Katsuya, Mathias. "Toy Guns and Rebel Groups: The Proliferation of 3D-Printed Armaments." Foreign Affairs Review, n.d. Accessed March 16, 2024.

<https://www.foreignaffairsreview.com/home/toy-guns-and-rebel-groups-the-proliferation-of-3d-printed-armaments>

⁸⁴ Daly. "What Unites Organised Crime in Europe With Rebels in Myanmar? 3D-Printed Guns."

⁸⁵ Molitch-Hou. "Myanmar Rebels Rely on 3D-Printed Guns to Fight Military Junta."

mass produced weapons used by the military.⁸⁶ As stated previously, these guns help to reduce technological divisions between states and rebels and present a means to fight back against tyranny and oppression.

The importance in comparing these two groups is that both seek to use 3D printed firearms as a political tool in order to further their cause, however, one finds its basis in terroristic violence against marginalized groups and the other seeks liberation from an oppressive state. Regulating 3D printing technology will not keep the far-right from carrying out terror attacks. America is one of the most heavily armed countries in the world, getting your hands on guns or explosives, black market or legal, is essentially trivial. The far-right needs to be ideologically countered, rather than taking legal or judicial action to target the symptoms of neo-nazism and white supremacy, that being accelerationist terror.⁸⁷ In fighting a violently oppressive government with a vast track record of human rights abuses, people have little recourse other than taking up arms and taking these rights for themselves.⁸⁸ The global governance that surrounds the arms trade is necessary, the proliferation of small arms in the world is already astronomical. However, adding another level of governance over 3D printing technology would not only be nearly impossible to implement, it would mean rebel groups in Myanmar, and other groups in the future, fighting tyranny would be greatly limited in their available sources to take up arms for their human rights. The technology can also help subaltern actors legitimize themselves and offers a recourse to the traditionally 'weak and powerless'. Through a traditional security lens, the subaltern actor, specifically the non-state actor, is often

⁸⁶ Hanrahan, Jake. "165. JStark's Legacy: 3D-Printed Guns of the Myanmar Rebels." Popular Front. Audio Podcast. November 2022.

<https://open.spotify.com/episode/4BBQPv2GdztNviXQIGLZzn?si=88c313a992184635>

⁸⁷ Ware. "Fighting Back"

⁸⁸ Hanrahan. "165. JStark's Legacy"

seen as the terrorist given their lack of options for recourse against oppressive state power.⁸⁹ With the help of mass produced 3D printed guns, the non-state rebel has a wider range of tactics and options available to them in order to fight the state.

3D printed drones have also started appearing on battlefields, including in Myanmar. A former network engineer turned insurgent that goes by the nom de guerre ‘3D’ has developed a printed drone for use by insurgents after witnessing anti-junta protests turn deadly in Myanmar.⁹⁰ He claims the 3D printing of weapons has helped the rebels who started out with nothing to fight back against a military force far superior to anything they could muster.⁹¹ In Ukraine, 3D printers have been used to create munitions to be dropped out of drones with greater effect than the standard hand grenades usually used.⁹² Ukrainians have also been 3D printing FPV drones in order to keep up production of these single-use weapons.⁹³ The technology has come a long way from the Liberator and is continuing to improve. Thousands of blueprints can be found online for all kinds of weapons. As Deterrence Dispensed member Ivan the Troll claims, there are hundreds of people around the world sharing knowledge and expertise, allowing these designs to be constantly refined and improved upon.⁹⁴ In both cases of Ukraine and Myanmar, 3D printing helps bridge gaps in productive and economic capabilities that the Ukrainians and the Burmese

⁸⁹ Columba Peoples and Nick Vaughan-Williams, *Critical Security Studies: An Introduction*, Third Edition (New York: Routledge, 2021). Pg. 88

⁹⁰ Wesdorp, Daphne. “The Rebel Drone Maker of Myanmar.” *Wired*, September 29, 2023. <https://www.wired.com/story/the-rebel-drone-maker-of-myanmar/>.

⁹¹ *Ibid.*

⁹² O’Donnell, Wes. “Ukraine Is Now 3D-Printing Bombs to Keep up with Demand.” *Medium*, August 2, 2023. <https://wesodonnell.medium.com/ukraine-is-now-3d-printing-bombs-to-keep-up-with-demand-70588843cf61>.

⁹³ Walsh, Nick Paton, Anna-Maja Rappard, Kosta Gak, and Brice Laine. “Russian Quad Bike Raids, 3D Printed Drones and a Lack of Ammo: Life on the Front Line in Ukraine’s Robotyne.” *CNN*, February 29, 2024. <https://www.cnn.com/2024/02/29/europe/drones-front-line-ukraine-robotyne-russia-intl/index.html>.

⁹⁴ Hanrahan, Jake. “3D-Printed Guns Are Back, and This Time They Are Unstoppable.” *Wired*, May 20, 2019. <https://www.wired.com/story/3d-printed-guns-blueprints/>.

rebels do not have in comparison to the Russian or the Burmese militaries. 3D printing is a low-cost, relatively low skill way for them to access guns and drones and fight for their freedom.

The security risks of these weapons have been wildly overestimated. While the technology has improved and become more accessible, 3D printing firearms still requires a degree of skill.⁹⁵ Some of the legal worries around the technology relates more to copyright law than it does any security risks of the technology.⁹⁶ There are hundreds of existing texts, manuals, and courses that can teach people how to manufacture conventional firearms, and in the US it is fully legal to do so as well.⁹⁷ US law doesn't explicitly forbid the technology either, since it is debatable whether or not posting CAD files online counts as exporting defence materials, which is a crime.⁹⁸ However it still remains a niche occurrence. While there have been some concerns in the US around a large influx of 3D printed, untraceable guns, and these also being used by cartels, both Americans and the cartels are already so heavily armed, there is no real need to 3D print guns.⁹⁹ The main security risk exists with the European far-right, where gun control laws are extremely restrictive and 3D printing a firearm is at least cheaper than purchasing one on the black market, if not easier as well. Though as argued throughout this paper, attempting to regulate the technology would have vast impacts, not only within fully legal civilian markets, but also to non-state armed groups fighting for freedom from oppression. People must be able to arm themselves in order to gain their freedom from tyranny. 3D printing allows this and should continue to be allowed

⁹⁵ Dass, Rueben, and Benjamin Mok. "Assessing the Impact of 3D-Printed Weapons on the Violent Extremist Milieu." GNET, February 20, 2023. <https://gnet-research.org/2023/02/20/assessing-the-impact-of-3d-printed-weapons-on-the-violent-extremist-milieu/>.

⁹⁶ Fordyce. "Manufacturing Imaginaries"

⁹⁷ Jacobs and Haberman. "3D-PRINTED FIREARMS, DO-IT-YOURSELF GUNS, & THE SECOND AMENDMENT."

⁹⁸ Bryans, "Unlocked and Loaded"

⁹⁹ Daly, Angela, Monique Mann, Peter Squires, and Reece Walters. "3D Printing, Policing and Crime."

This paper has examined the legal and technical regimes that surround 3D printing firearms, as well as assessing the two main actors who have been making use of the technology. While the global far-right and their ideology of accelerationist violence is a major concern for state and human security, defeating neo-nazism is more complicated than making arrests or scouring the internet for people downloading gun blueprints. The far-right has to be defeated in the ideological domain and the causes of radicalization must be addressed. For anti-junta rebels in Myanmar, JStark's FGC-9 is a tool for them to be able to challenge a brutal military dictatorship that has been well funded and armed. Without these weapons, Burmese rebels, and likely other rebel groups in the future, would stand little to no chance of defending themselves and gaining their freedom. The technology allows these actors to circumvent global governance surrounding the arms trade that has historically been deadly to subaltern actors, specifically non-state actors. 3D printed guns do not pose a major security risk, rather they facilitate armed, liberatory struggle for actors facing a vastly superior force.