

# **When Weapons are Speech**

**The State-of-the-Art and Constitutional Issues in Printed Arms**

**Robert Liu '20, presenting June 16th, 2020 for INTERFACE.**

# Agenda

## What you'll get out of listening to me

- What's currently possible with *craft manufacturing* of firearms?
- What political and Constitutional issues are contested?
- Who benefits from this new technology?
- How might this technology be wielded and controlled?

# Themes

- Craft firearm production
- Home manufacturing
- Dual-use technologies
- Centralization/decentralization
- Sovereignty

# An Emerging Technology

*Video: Deterrence Dispensed music video*

# Frontier

## What's possible?

- FGC-9 “F\*\*\* Gun Control”
- Plastic parts are printed using a \$200 3D printer
- Metal parts can be purchased from any hardware store
- Exception: AR fire control group (\$40)
- [Video: FGC-9 release trailer](#)



# Frontier

## What's possible?

- 80% lower: machine your own AR
- Full parts kit for \$600
- ATF: “An individual may generally make a firearm for personal use.”
- [Video: AR-15 full-auto conversion](#)
- [Video: Printed AR receiver push-up test](#)



# Manufacturing Innovations

- Additive manufacturing: plastic and metal
- Subtractive manufacturing: desktop CNC
- Home electrochemical machining
- Craft-produced suppressors
- 3D-printed tooling
- Home ammunition making (with Europe-available ingredients)

# Is gun control dead?

*Video: Project BWA*

# Cui bono?

*Video: Anti-Gas Kettle*

# Cui bono?

“Good” uses



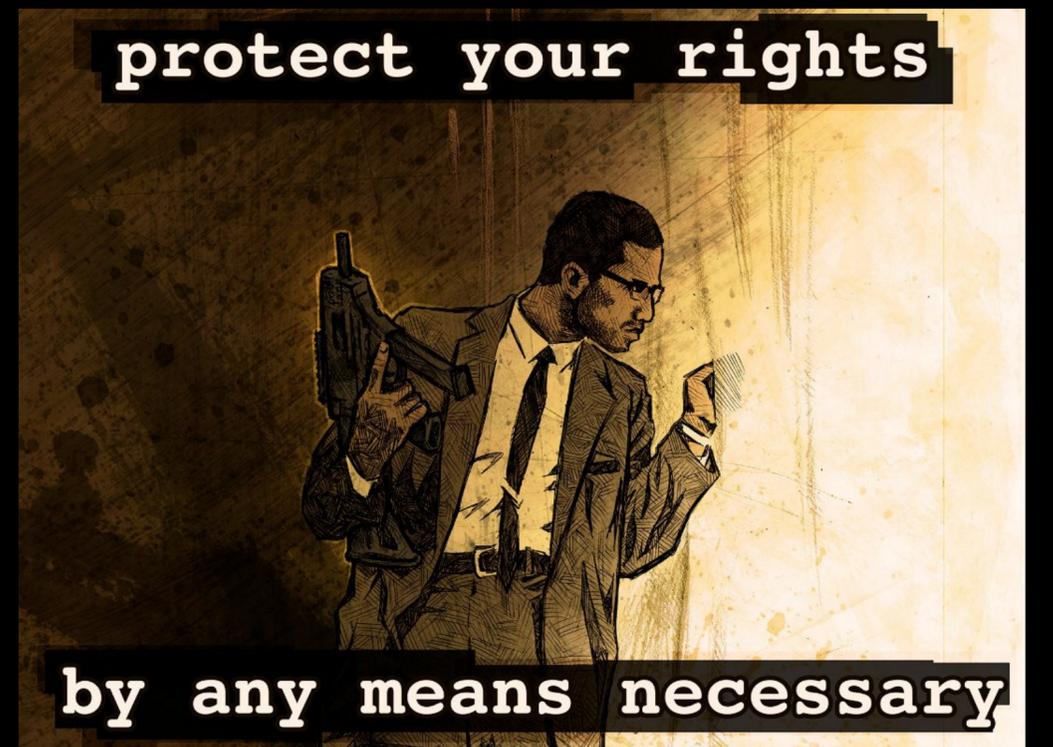
Decentralization ←

→ Centralization



“Bad” uses





# Citations

- [“FGC9 File Drop”](#), CTRL+Pew.
- [“Questions and Answers”](#), ATF.
- [“The Internet Won’t Kill Gun Control By Itself,”](#) Sonya Mann, Palladium Magazine, 4 March 2019.
- G. Hays, Ivan T., and N.R. Jenzen-Jones. *Desktop Firearms: Emergent Small Arms Craft Production Technologies* (Report No. 8). Armament Research Services.
- [“Lifehacker: Tarek Loubani on 3D-Printing in Gaza.”](#) *Logic Magazine*, Issue 8: Bodies, 3 August 2019.
- “If you're a person in harm's way and need access to hard power (for protection of self or property), regardless of who your aggressor is - the state, the feds, violent instigators who couldn't give a damn less about George Floyd - here's the thread for you: how to make an AR15.” Ivan T., [Twitter thread](#).