With regards to the Consultation ("Protecting people from illegal harms online") and the sections relevant to **3D-printed firearms**, I believe Ofcom is in an important position of being able to witness the emergence of a new threat and to implement countermeasures to help mitigate some related harms.

I wish to offer the following thoughts:

Availability of digital blueprints for 3D-printed firearms
Ever since the first 3D-printed firearm (the “Liberator”) was released in 2013, the advancements in 3D-printed firearms have been remarkable. It is now possible to create a functional, semi-automatic, hybrid 3D-printed firearm at home simply by following step-by-step instructions that are freely distributed online. The digital blueprints (typically in the STL file format) for 3D-printed firearms and firearm components are crucial in this process. The prevalence and accessibility of such digital blueprints is one of the most alarming issues concerning the spread of 3D-printed firearms. In many cases, a simple Google search for the name of the design reveals links to platforms/websites that host the STL files.

Indeed, there is a dedicated community of 3D-printed gun designers and enthusiasts (who are often motivated by an anti-state, libertarian ideology) who are dedicated to making the digital blueprints as accessible as possible. Many of the leading figures within the 3D-printed gun subculture, such as Cody Wilson (designer of the Liberator) and Jacob Duygu a/k/a JStark1809 (designer of the "FGC-9" hybrid 3D-printed gun), have publicly espoused the view that such blueprints should be widely available on the Internet (e.g., *“‘Wiki Weapon Project’ Aims To Create A Gun Anyone Can 3D-Print At Home”, Forbes, 23 August 2012*).

For this reason, the proposed measure No.8 / Ref. 4A ("Systems and processes are designed so that search content that is illegal content is deprioritised or deindexed for UK users") is a vital step in reducing the accessibility of the digital blueprints. While deprioritising or deindexing will not stop all traffic flow to the digital blueprints, I believe it will nonetheless help stem the flow of some traffic to the platforms/websites that host the digital blueprints or signpost to others where such digital blueprints can be found.

Overlaps between misogynist incels and 3D-printed firearms
It is important to note that taking action against 3D-printed firearms can also help mitigate other related risks. This is partly because overlaps can occur between 3D-printed firearms and other niche, potentially dangerous Internet subcultures. One such overlap concerns misogynist incels (involuntary celibates). My research has highlighted how JStark1809, a pioneer in the 3D-printed gun world and the designer of one of the most popular hybrid 3D-printed firearms (the "FGC-9"), self-identified as an incel and expressed violent misogynist incel attitudes online. He described himself as "a ticking time bomb" and, at times, endorsed violence against women (see *Rajan Basra, "Behind the Mask: Uncovering the Extremist Messages of a 3D-Printed Gun Designer", International Centre for the Study of Radicalisation, 2023*). While he did not publicly espouse the use of 3D-printed firearms to carry out gender-based violence, his example shows how lone actors or small cells can simultaneously be interested in 3D-printed firearms and a misogynist incel worldview.

It is unlikely JStark1809 is the only example of such a crossover. On one of the premier incel forums (www.incels.is), I have recently observed some instances of users encouraging others to make 3D-printed guns or enquiring about how they might make them (e.g. **REDACTED ✂]**). While these instances are rare, and most self-identifying incels do not engage in gender-based violence, they nevertheless demonstrate how such crossovers can exist online and have the potential for real-world violence. Taking action against the prevalence of 3D-printed firearm blueprints online can therefore help mitigate some of these potentially dangerous crossovers.

Overlaps between terrorists and 3D-printed firearms

Similarly, there exist overlaps between 3D-printed firearms and terrorism. As a researcher at King's College London, I have catalogued how terrorists have begun interacting with this technology ever since the first such instance occurred in October 2019 (with a shooting in Halle, Germany, by Stephan Balliet, a white nationalist). Since then, there have been at least 15 instances of violent extremists across Europe sharing the digital blueprints, or attempting to make, acquire, or use 3D-printed guns. These cases are the first of their kind and should serve as early warning signs; they offer a glimpse into a potential future where such occurrences may become routine.

The vast majority of these cases (12 of 15, or 80%) have, thus far, involved individuals with extreme right-wing mindsets. The remainder have involved an anti-Covid lockdown extremist in Germany, a dissident republican paramilitary in Northern Ireland, and an anti-authority anarchist in England. In my opinion, several factors contribute to the prevalence of right-wing extremists. The digital blueprints have been shared in digital ecosystems used by right-wing extremists (such as Pavol Beňadik's Telegram channels), and right-wing extremists have been encouraged to make 3D-printed firearms. Right-wing extremist ideology also emphasises the prospect of a "race war" and encourages its adherents to stockpile weapons to prepare for a future conflict. There is also the possibility that right-wing extremists have been inspired by the 2019 Halle attack, which is, thus far, the only terrorist shooting to have involved 3D-printed components.

Eight of the 15 cases involved variations of the FGC-9 (or a modified version, the FGC-22). This semi-automatic firearm is notable as its construction requires no regulated parts. That was a deliberate design choice of its creator JStark1809. The FGC also has the most extensive instructional guide of all 3D-printed firearms I have seen, which features step-by-step guidance on the gun's printing, assembly, and function. In my opinion, the detail in the FGC documentation is highly impressive and could encourage a novice to attempt to make the firearm. As such, there is a need to prioritise action against the prevalence of illegal content and digital blueprints relating to the FGC-9 and FGC-22.

I hope these comments are useful and can help focus attention on specific areas and concerns that relate to Ofcom's proposed regulations vis a vis 3D-printed firearms. If anything is unclear or requires further clarification, I will be happy to assist.

Best,
Rajan

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