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AMANDA TURNBULL: Printing violence -- 3D technology a two-edged sword

Contributed

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Guest Opinion

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Although manufacturing "ghost guns" made with 3D printing technology is an offence under the Criminal Code of Canada, we continue to facilitate their illegality. We saw proof of this recently in East Preston, N.S., when a woman was wounded in an incident involving a 3D-printed firearm.

Ghost guns are non-serialized and untraceable firearms that are usually assembled by the user rather than purchased or assembled through component parts.

They are produced through digital fab-

rication technology, which is similar in process to inkjet printing -- hence, the moniker "3D printing." A file tells the printer where to put the printing materials. The print head deposits material -- often a liquid, or a powder that is heated to its melting point -- then it is allowed to harden. The process then involves making multiple passes. As layers of material accumulate, a three-dimensional object is created.

Amanda Turnbull: "The 3D printing industry shifts the role of the manufacturer to the consumer. This alters our economic supply chain, which has implications for job security."- Contributed

3D printing alters how we understand and use everyday things. From the speed at which we can produce parts with higher accuracy than traditional manufacturing to the potential in health care, the possibilities of 3D printing are astounding.

This technology allows us to become creators of practically anything through the open-design movement. This movement is based on the idea that through openly sharing ideas and intellectual property, we can forge ahead and solve

many of our pressing issues in a spirit of collaboration, transparency, recycling, and free access. 3D printing leverages this, hyping equipment, and its creation into the mainstream.

But for all its seeming promise, 3D printing brings with it ethical concern. It raises concerns about intellectual property theft since the technology makes duplicating patented and copyrighted objects feasible.

3D printing provokes worry about the economy since it disrupts the way we have traditionally understood the manufacturing process. The 3D printing industry shifts the role of the manufacturer to the consumer. This alters our economic supply chain, which has implications for job security.

There are also repercussions in terms of product safety. The regulatory checks and balances that we have in place for product testing are based on centralized manufacturing. Factories are also routinely inspected to ensure that their premises and products are in line with their original safety inspections. This centralized framework, however, may not endure, as one of the attractions of

3D printing is that it may all be done at home, thus spreading manufacturing machinery throughout society.

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Undeniably, the biggest ethical concern with the 3D printing industry is the ability to create weapons, particularly firearms. While unauthorized manufacturing of firearms is prohibited in Canada, there is no legislation that prohibits a person, licensed or not, from possessing downloads of 3D printable files. And even if we contemplated regulating software to prevent the distribution of unsafe plans, we know that regulating information online is difficult. The Internet is built on a global framework and our regulations are domestic. Users would simply go to other sites in search of the product that was not available to them in their particular jurisdiction.

What is more is that we need to be better attuned to ethical considerations at the level of design. 3D printing can facilitate violence. Technology that functions as a means of perpetuating and amplifying existing forms of violence, particularly, gender-based violence is a rapidly expanding issue that is evolving concurrently with emerging technologies.

While regulating firearms and software is part of the solution to the concerns raised by the 3D printing industry, we cannot ignore the fundamental principle for creating good technology: ethical by design. In the case of 3D printing, we must start with an ethical undertaking: we cannot allow printing to be the facilitator of violence.

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