

ANGELA DALY, SOCIO-LEGAL ASPECTS OF THE 3D PRINTING REVOLUTION (Palgrave Macmillan, 2016)

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SOCIO-LEGAL ASPECTS OF THE 3D PRINTING REVOLUTION

“Additive manufacturing or ‘three-dimensional (3D) printing’ has emerged into the mainstream in the last few years, with much hype about its revolutionary potential as the latest ‘disruptive technology’ to destroy existing business models, empower individuals, and evade any kind of governmental control.”¹

Written by Angela Daly, *Socio-Legal Aspects of the 3D Printing Revolution* is one of the first books reviewing how the disruptive technology of 3D printing will be regulated by various jurisdictions. Daly analyzes how 3D printing interacts with specific aspects of law, including intellectual property law, gun regulations, product liability, and privacy laws. The author concludes that present laws handling the issues resulting from 3D printing are not a precise fit and lawmakers will likely have to develop new laws and regulations.

Angela Daly is a Postdoctoral Research Fellow focused on socio-legal analysis of technology in respect to intellectual property, privacy, and regulation in several

¹ See ANGELA DALY, SOCIO-LEGAL ASPECTS OF THE 3D PRINTING REVOLUTION 1 (Palgrave Macmillan 2016).

jurisdictions.² Daly's research is supported by the Swinburne Institute for Social Research in Australia and the Tilburg Institute of Law, Technology, and Society in the Netherlands.³

To understand the question of how 3D printing will interact with various aspects of law, it is first important to understand 3D printing itself. The technology of 3D printing can be traced back to the 1970's.⁴ Many different technologies were developed, for example, additive printing, where plastic is added progressively to a base to create a shape, is the method of 3D which has advanced past the industrial market to the consumer market. Since 2009, companies such as RepRap and MakerBot have progressively advanced the technology and decreased the equipment costs to allow home consumers to purchase machines and 3D print a range of products.⁵

Socio-Legal Aspects of the 3D Printing Revolution is broken up into three major parts. First, Daly looks at how intellectual property law interacts with 3D printing in several jurisdictions. In the United States, intellectual property protects products of the mind through copyright, trademark, and patent laws. Intellectual property laws could protect progressive steps within the process to create a 3D printing product: (1) computer-aided design code and the files, which interact with the 3D printing machine; (2) the artistic creation which is coded in the file; and (3) the printing product itself. Copyright in the United States protects work-product, which is in a tangible media and sufficiently creative. Software code has been litigated and found to be protectable under copyright laws as sufficiently creative. Additionally, copyright will likely protect the

² See Daly, *supra* note 1, at back cover.

³ See Daly, *supra* note 1, at back cover.

⁴ See Daly, *supra* note 1, at 5.

⁵ See Daly, *supra* note 1, at 5.

artistic product within the code and the final printed product. Patents protect innovations, which are novel and nonobvious and must be registered. Possible infringement would occur if a user prints a product, which is protected by an issued patent. Patent law would likely not protect the code and the artistic subject. Trademark law would likely be infringed if a product is printed which embodies the trademark of a company.

The second section of Daly's book focuses on how 3D printing is allowing for the possibility of consumers creating products that are inherently dangerous and regulated. In 2013, Defense Distributed published online blueprints to 3D print components of the Liberator, a gun.⁶ Shortly after the blueprints were posted, the US State Department ordered the files to be taken down. Defense Distributed is still fighting for their right to publicize the blueprints. In the United States the Second Amendment protects citizens the right to bear arms. Through litigation and regulations, this right has been limited for non-law enforcement citizens. The First Amendment protects citizen's rights to free speech, which includes posting information onto the Internet. Public blueprints of a gun raise the issue of consumer protection and products liability. If the consumer 3D prints a defective gun, it is then a risk to not only the target but also the shooter. It is unclear who would be liable for a defective 3D printed gun.

The third section focuses on the issues of privacy as 3D scanning becomes more accessible. 3D scanning is where a 3D printer reproduces an object or person who has been photographed by cameras positioned 360 degrees around the product or person. Under United States copyright law, it is unlikely that the 3D printed item would be protected by copyright if it were just an exact copy. The 3D printed object would require sufficient creative input to be protected under copyright law. 3D scanning would open

⁶ See ,Daly, *supra* note 1 at 50.

the door to more patent infringement, because consumer could 3D scan patented parts or products and reproduce them. Additionally, since 3D scanning and then 3D printing would result in a lower quality part, there is an increased risk of defective products. Additionally, 3D scanning could lead to privacy concerns once the technology can scan persons in public and that data could then be used without consent.

Daly analyzes how 3D printing presently interacts with several aspects of law. Generally, 3D printing is not clearly regulated by United States laws and could allow for an increase in intellectual property infringement, product liability, and privacy actions. To date many of the 3D printing involved cases involve copyright infringements of code posted on the Internet. The primary method of action for the copyright owners is to submit Digital Millennium Copyright Act (DMCA) takedown notices. Copyright protection through the DMCA has been used as a blanket instrument for all intellectual property cases. Future concerns will include other forms of intellectual property and regulation, and laws will have to develop around the new technology.

Daly presents a well thought out analysis of present and future concerns of 3D printing when interacting with several aspects of law for students and legal scholars alike. 3D printing is a disruptive technology that poses many advantages to the consumers to create new and innovative products, but also allows products to be copied. The case law in the United States is not suited for 3D printing specifically and will have to develop through litigation and enacted regulations. Along with United States laws, Daly presents other jurisdictions as a comparison. The United States has the most developed intellectual property laws, which are partially compatible with 3D printing.

Daly's book is a valuable contribution to the fields of intellectual property, product liability, and privacy law in the context of a disruptive technology, such as 3D printing. 3D printing at a consumer level is still in its infancy and thus laws and regulations will have to develop around future actions brought by plaintiffs. I would strongly recommend this book for students and legal scholars to start thinking about the complications that 3D printing could present to the field of law.