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## IS A 3-D PRINTED OBJECT A PRODUCT?

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### ❖ NOTE ❖

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#### Abstract

*This Note argues that a 3-D printed object and its design file should be considered products, and thus potential defendants be held strictly liable for any defects. Based on the growing popularity of home-based 3-D printing, the potential harms that will arise from defective objects requires that action be taken now to define these objects and their design files as products. Currently, the American Law Institute (ALI) and their persuasive Restatements do not completely cover home-based 3-D printing. This Note examines what the ALI can do when releasing a new version of their Restatement of Torts. Additionally, this Note proposes a solution that will balance the need to help injured parties, while protecting innocent hobbyists.*

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#### I. INTRODUCTION

Loading a .357 Magnum bullet into the plastic gun, cocking back the rubber bands, and squeezing the trigger, the tension in the rubber bands

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releases and drives a roofing nail into the bullet.<sup>1</sup> The bullet does exactly what it was designed to do. It fires.<sup>2</sup> The barrel of the plastic gun splits down the middle.<sup>3</sup> The YouTube Reviewer was lucky. In this case, the gun barrel slightly snaps.<sup>4</sup> At 9 minutes and 31 seconds into the video, it can be seen that the barrel of the gun has been split down the middle, half way down the entire barrel length.<sup>5</sup> In the future, he may not be so lucky.

If this was a normal gun that had exploded in his hands, the Reviewer would likely have a *prima facie* case for strict liability against the gun manufacturer and designer. The purpose of strict liability in products liability cases is “to be that the seller, by marketing his product for use and consumption, has undertaken and assumed a special responsibility toward any member of the consuming public who may be injured by it . . . .”<sup>6</sup> With strict liability, the potential plaintiff “is entitled to the maximum of protection” by accidental injuries caused to him or her by a defective product.<sup>7</sup> The first step he would need to show is that the gun is a “product.”<sup>8</sup> A product can be defined as “. . . tangible personal property distributed commercially for use or consumption.”<sup>9</sup> In terms of distributed commercially, the consumer would have purchased it from a dealer, who in turn purchased it from a distributor, who in turn purchased it from a manufacturer. Most likely, a court would agree that the hypothetical gun is a product, and then the plaintiff would move on to other strict liability arguments. But this is no ordinary firearm.

The novel thing about the gun in the YouTube video: it was printed from the comfort of the Reviewer’s own garage.<sup>10</sup> The Reviewer was able to go on GitHub and download a computer-aided design (CAD) file from James R Patrick.<sup>11</sup> From there, he used a home-based 3-dimensional (3-D) printer to print out each piece of the gun.<sup>12</sup> By adding a rubber band and a roofing nail,

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<sup>1</sup> Guy in a garage, *Songbird 3D Printed Piston*, YOUTUBE (Sep. 1, 2016), <https://www.youtube.com/watch?v=1jFjtE7bzeU> [hereinafter YouTube Reviewer].

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> RESTATEMENT (SECOND) OF TORTS § 402A cmt. b (AM. LAW. INST. 1965).

<sup>7</sup> *Id.*

<sup>8</sup> RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 19 (AM. LAW. INST. 1998).

<sup>9</sup> *Id.*

<sup>10</sup> See YouTube Reviewer, *supra* note 1.

<sup>11</sup> James R. Patrick, *PM422 Songbird .22LR Pistol*, GITHUB, [https://github.com/maduce/fosscad-repo/tree/master/Firearms/PM422\\_Songbird\\_22lr\\_Pistol\\_v2.1-JamesRPatrick](https://github.com/maduce/fosscad-repo/tree/master/Firearms/PM422_Songbird_22lr_Pistol_v2.1-JamesRPatrick) (last visited Jan. 13, 2017).

<sup>12</sup> See *id.*

the Reviewer, with the help of James R Patrick's design, was able to manufacture a working, single-shot pistol.<sup>13</sup> In this case, the Reviewer was his own distribution chain. The design was digital and never in tangible form. In the classic sense, the 3-D printed gun is not a "product." But if the classic definition of product always ruled, then any item printed on a personal 3-D printer would not be a product, even though it is a tangible object. Such a definition would bar all strict liability claims from going any further in court.

Strict liability "does not depend on proof of negligence or intent to do harm but that is based instead on a duty to compensate the harms proximately caused by the activity or behavior subject to the liability rule."<sup>14</sup> Defective products can be considered under the theory of strict liability.<sup>15</sup> As the Second Restatement of Torts (R2d (Torts)) states: "One who sells any product in a defective condition unreasonably dangerous to the user . . . ."<sup>16</sup> Under traditional products liability, a product goes through a distribution chain before it reaches a consumer.<sup>17</sup> This is also echoed in the Third Restatement of Torts (R3d (Torts)): "One engaged in the business of selling or otherwise distributing products who sells or distributes a defective product is subject to liability for harm to persons or property caused by the defect."<sup>18</sup> This means that for strict liability, a basic threshold that a plaintiff will need to pass is if the digital file or software used to produce the 3-D printed object is, itself, a product or not. Currently, there is no clear-cut answer here. Some commentators have suggested that courts have already laid the groundwork for a digital file to be considered a product.<sup>19</sup> However, there are no court cases that explicitly define a digital file used in home-based 3-D printing as a product.

The purpose of this Note is to explore the question of whether 3-D printed objects and their designs are products. Part II of this Note explores the background of 3-D printing. Part III analyzes if a 3-D printed object is an object by delving into what is a product (Section A) and if 3-D printed objects are part of the analysis (Section B). Part IV proposes solutions to how 3-D printed objects could be considered products.

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<sup>13</sup> See *id.*

<sup>14</sup> *Liability*, BLACK'S LAW DICTIONARY (10th ed. 2014).

<sup>15</sup> *Product Liability*, BLACK'S LAW DICTIONARY (10th ed. 2014).

<sup>16</sup> RESTATEMENT (SECOND) OF TORTS § 402A (AM. LAW. INST. 1965).

<sup>17</sup> *Id.* cmt. f.

<sup>18</sup> RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 1 (AM. LAW. INST. 1998).

<sup>19</sup> David Berke, *Products Liability in the Sharing Economy*, 33 Yale J. on Reg. 603, 610 (2016).

## II. BACKGROUND: 3-D PRINTING INDUSTRY

Industrially, 3-D printing has been around since 1981, and was dubbed “Additive Manufacturing.”<sup>20</sup> Mostly, it did not disrupt the normal distribution chain on manufacturing, which meant that product liability did not change. If a person was injured based on a design flaw, there was an identifiable tortfeasor and defendant. In essence, the courts could move forward business as usual.

The 3-D revolution has centered around the desktop printer that can be purchased on Amazon for as low as \$219.<sup>21</sup> To put things in perspective, a modern gaming system will cost more than a 3-D printer.<sup>22</sup> This means that anyone with a computer and a credit card can become his or her own manufacturer.<sup>23</sup> All he or she needs to do is purchase the 3-D printer and learn how to work the printing software.<sup>24</sup> Now, aided by an Internet connection, people can download thousands of CAD files and start making objects. Users generate most of the objects that can be created.<sup>25</sup> On Thingiverse, an online distributor provided by MakerBot (which is a 3-D printer manufacturer), a user can upload and download as many designs as he or she would like. Thingiverse has a “Verified Prints” program, where the company tests some of the 3-D designs and authenticates their utility.<sup>26</sup> However, most of the designs on the site are not verified, but the company states that “[e]xperimental works-in-progress are a key part of what makes Thingiverse amazing.”<sup>27</sup>

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<sup>20</sup> Dana Goldberg, *History of 3D Printing*, REDSHIFT (Sep. 5, 2014), <https://redshift.autodesk.com/history-of-3d-printing/>.

<sup>21</sup> *Monoprice Select Mini 3D Printer*, AMAZON, [https://www.amazon.com/Monoprice-Select-Printer-Heated-Filament/dp/B01FL49VZE/ref=sr\\_1\\_3?s=industrial&ie=UTF8&qid=1484155891&sr=1-3&keywords=3d+printer](https://www.amazon.com/Monoprice-Select-Printer-Heated-Filament/dp/B01FL49VZE/ref=sr_1_3?s=industrial&ie=UTF8&qid=1484155891&sr=1-3&keywords=3d+printer) (last visited Feb. 19, 2017).

<sup>22</sup> *Sony PlayStation 4 500GB*, AMAZON, [https://www.amazon.com/Sony-PlayStation-4-500GB-Console/dp/B00BGA9WK2/ref=sr\\_1\\_4?s=videogames&ie=UTF8&qid=1484156542&sr=1-4&keywords=playstation+4](https://www.amazon.com/Sony-PlayStation-4-500GB-Console/dp/B00BGA9WK2/ref=sr_1_4?s=videogames&ie=UTF8&qid=1484156542&sr=1-4&keywords=playstation+4) (last visited Feb. 19, 2017).

<sup>23</sup> Dana Goldberg, *History of 3D Printing*, REDSHIFT (Sep. 5, 2014), <https://redshift.autodesk.com/history-of-3d-printing/>.

<sup>24</sup> See Dana Goldberg, *supra* note 19 *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Thingiverse Verified Prints*, MAKERBOT (Oct 16, 2013), <https://www.makerbot.com/media-center/2013/10/16/thingiverse-verified-prints>.

<sup>27</sup> *Id.*

The 3-D printing industry is growing.<sup>28</sup> In 2016, the projected revenue worldwide was \$15.9 billion.<sup>29</sup> In 2017, it is \$20.7 billion, and in 2020, \$35.4 billion.<sup>30</sup> The uses of 3-D printing are literally growing, too. In China, a construction company is printing two-story homes.<sup>31</sup> In Amsterdam, a bridge builder is printing the first 3-D printed bridge.<sup>32</sup> The trend is that the uses and types of 3-D printing are growing and becoming more complex.

As the growth in 3-D printing continues, the demographic of users will likely grow from interested hobbyists to everyday Americans.<sup>33</sup> Eventually, websites like Thingiverse and independent object designers will become a major part of the new manufacturing distribution chain. Instead of buying a toy from Mattel, a user will be able print his or her toys at home. As an example of scale, Thingiverse has over 700,000 digital files that can be downloaded and printed.<sup>34</sup> As the growth of 3-D printing entails a circumvention of the traditional distribution chain, it is important to properly define the design files and printed objects properly for strict liability purposes.

### III. ANALYSIS

#### A. Product Liability: What is a Product?

In a classic design defect case, *Filler v. Rayex Corp.*, a teenage baseball player was wearing Rayex's baseball sunglasses when he was struck in the face with a fly ball.<sup>35</sup> The glass portion of the product shattered into pieces, splintering into the baseball player's right eye.<sup>36</sup> The court applied the § 402A of R2d (Torts).<sup>37</sup> The court held that "here the thinness of the lenses made

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<sup>28</sup> Alexis Kramer, *3-D Printing Leaps Ahead of Product Liability Law*, BLOOMBERG (Sep. 28, 2016), <https://www.bna.com/3d-printing-leaps-n57982077638/>.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> Clare Scott, *Chinese Construction Company 3D Prints an Entire Two-Story House On-Site in 45 Days*, 3DPRINT.COM (Jun. 16, 2016), <https://3dprint.com/138664/huashang-tengda-3d-print-house/>

<sup>32</sup> Michael Molitch-Hou, *Construction of World's 1st 3D Printed Bridge Begins in Amsterdam*, 3D PRINTING INDUS. (Oct. 16, 2015), <https://3dprintingindustry.com/news/construction-of-worlds-1st-3d-printed-bridge-begins-in-amsterdam-60110/>.

<sup>33</sup> Nicole D. Berkowitz, *Strict Liability for Individuals? The Impact of 3-D Printing on Products Liability Law*, 92 WASH. U.L. REV. 1019, 1027 (2015).

<sup>34</sup> *About*, THINGIVERSE, <http://www.thingiverse.com/about/> (last visited Feb. 19, 2017).

<sup>35</sup> *Filler v. Rayex Corp.*, 435 F.2d 336, 338 (7th Cir. 1970).

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

them unreasonably dangerous to users, so that the doctrine of strict liability is applicable.”<sup>38</sup> For strict liability, the overarching rule is that a “seller” is responsible for defective products.<sup>39</sup> While “[p]roducts liability statutes vary by state, but the ‘seller’ is generally defined as ‘any person or entity that is engaged in the business of selling products, whether the sale is for resale, or for use or consumption.’ Thus, this definition of ‘seller’ covers not only retailers, but also manufacturers, wholesalers, distributors, and designers of products.”<sup>40</sup> The glasses were marketed as a protective gear for baseball, even though the company knew that it would not protect against this type of force.<sup>41</sup> This is a model example of a “seller” being held liable for a design defect in a product. A “seller” sold a product in a defective condition. In this situation, any “sellers” in the distribution chain could be held strictly liable for the defective product. The remedies available for defective products are thus closely linked to the product’s distribution chain.

Defining what is and what is not a “product” can sometimes be difficult. R2d (Torts) defines the liability for “[o]ne who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer. . . .”<sup>42</sup> It does not specifically define what a “product” is. In the commentary, it is discussed as:

It extends to any product sold in the condition, or substantially the same condition, in which it is expected to reach the ultimate user or consumer. Thus the rule stated applies to an automobile, a tire, an airplane, a grinding wheel, a water heater, a gas stove, a power tool, a riveting machine, a chair, and an insecticide. It applies also to products which, if they are defective, may be expected to and do cause only “physical harm” in the form of damage to the user’s land or chattels, as in the case of animal food or a herbicide.<sup>43</sup>

Most likely, because R2d (Torts) was written back in 1965, the products described in the comment are all tangible.

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<sup>38</sup> *Id.*

<sup>39</sup> RESTATEMENT (SECOND) OF TORTS § 402A (AM. LAW. INST. 1965).

<sup>40</sup> Nicole D. Berkowitz, *Strict Liability for Individuals? The Impact of 3-D Printing on Products Liability Law*, 92 Wash. U.L. Rev. 1019, 1027–28 (2015).

<sup>41</sup> *Filler*, 435 F.2d at 338.

<sup>42</sup> RESTATEMENT (SECOND) OF TORTS § 402A (AM. LAW. INST. 1965).

<sup>43</sup> RESTATEMENT (SECOND) OF TORTS § 402A cmt. d (AM. LAW. INST. 1965).

R3d (Torts) defines “product” as:

A product is tangible personal property distributed commercially for use or consumption. Other items, such as real property and electricity, are products when the context of their distribution and use is sufficiently analogous to the distribution and use of tangible personal property that it is appropriate to apply the rules stated in this Restatement.<sup>44</sup>

In both Restatements, products are typically tangible, and bought or sold. Like in *Filler v. Rayex Corp.*, the sunglasses were tangible and commercially bought and sold.<sup>45</sup> Under these definitions, the commonality is that a manufacturer makes an item and then sells it. Therefore, a primary characteristic of a product is that it is part of a distribution chain. Since most manufacturers do not directly sell to their consumers, it is important for potential plaintiffs to identify each link in the distribution chain, because each link may be strictly liable. Under R2d (Torts), this means that every link in the distribution chain that

is engaged in the business of selling products for use or consumption [may be liable under strict products liability]. It therefore applies to any manufacturer of such a product, to any wholesale or retail dealer or distributor, and to the operator of a restaurant. It is not necessary that the seller be engaged solely in the business of selling such products.<sup>46</sup>

For a strict liability case, it is then important to identify the entire distribution chain to find potential defendants that may be liable for a product’s defect as each producer along the chain may be liable. For example, the manufacturing of a tire is very complex from sourcing rubber, the design, the mold, and finally quality control.<sup>47</sup> Before it reaches the consumer, it has gone through a formal prototyping and testing process. It has also been shipped to a distributor, then taken to a store, and sold commercially. Typically, this formal manufacturing and distribution chain defines which products may be held to strict liability. The tire manufacturer, distributor, and store may be held strictly liable for a

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<sup>44</sup> RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 19(a) (AM. LAW. INST. 1998).

<sup>45</sup> *Filler v. Rayex Corp.*, 435 F.2d 336, 338 (7th Cir. 1970).

<sup>46</sup> RESTATEMENT (SECOND) OF TORTS § 402A (AM. LAW. INST. 1965).

<sup>47</sup> *How is a Tire Made?*, MICHELIN, <http://www.michelinman.com/US/en/help/how-is-a-tire-made.html> (last visited Feb. 19, 2017).

tire's defects. Whereas, an occasional seller would not be held to the same standard.<sup>48</sup> The neighbor who sells his or her car to another neighbor would not be held liable in the distribution chain.<sup>49</sup>

These descriptions of a product do not easily translate into the new digital economy. A design file that can be downloaded at any time from GitHub's servers is not the same type of product as an airplane or a gas stove. True, the 3-D printer and the filament are both products under the definitions, but the question of whether the raw design file is a product is more complicated. It could be argued that there was a formal process to make the file,<sup>50</sup> and that it went through a distribution process. Unlike a tire, it is not definite that a design file is a product. If it is not a product, then it could be argued by a defendant that the object made from the file is also not a product, even if the plaintiff paid to download the file.

Digital files on their own are not tangible, but when the data is transferred to a 3-D printer, they are made tangible. There is more leeway in R3d (Torts) for design files to be considered products. The purpose of a design file for 3-D printing is to be "consumable." It is meant to be downloaded and then printed. Further, like electricity which is a necessary component of another product (e.g. a blender), a design file is an essential part of the 3-D printed object. Also, a design file is distributed in a way that can be analogized to traditional distribution. A consumer can walk into a Target and purchase an item that Target distributes. A consumer can also log onto Thingiverse and download a file that Thingiverse distributes. For this argument, 3rd party platforms that transmit digital design files will therefore be treated as "online distributors" because, like a store, they act as the gateway between the designer and consumer.

## B. 3-D Printed Objects as Products

As an overview, there is a distinct line between the objects printed at home and those that you can buy online. First, it is important to look at what objects would currently be classified as products under the Restatements, because it will help lay the groundwork for homebased 3-D printed objects being included as products. On Shapeways, another online distributor that sells designs and objects, a customer can purchase a pre-printed item from

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<sup>48</sup> RESTATEMENT (SECOND) OF TORTS § 402A cmt. f (AM. LAW. INST. 1965).

<sup>49</sup> *Id.*

<sup>50</sup> *What is the Engineering Design Process?* VEX ROBOTICS, <http://curriculum.vexrobotics.com/curriculum/intro-to-engineering/what-is-the-engineering-design-process> (last visited Feb. 19, 2017).



Shapeways.<sup>51</sup> For example, a customer can buy a 3-D printed miniature catapult and have it shipped to them.<sup>52</sup> Unlike Thingiverse, the transaction of collecting money, printing an object, and then sending it to the consumer makes Shapeways a producer of goods. In court, Shapeways may argue that they are just a service provider and that their products do not come under the Restatements' definition of product. But this argument will not likely prevail because they are ultimately sending consumers a finished object. Overall, there is a much clearer path that the printed catapult is a product.

The printer and the printing material are also both products. A consumer can purchase a desktop 3-D printer from a manufacturer, like MakerBot.<sup>53</sup> On April 4th, 2016, MakerBot sold their 100,000th 3-D printer.<sup>54</sup> Traditional strict liability laws would give consumers a remedy for possible design flaws. Many different manufacturers, including MakerBot, sell the filament material.<sup>55</sup> If there were manufacturing or design defects in the filament, a consumer would also be protected by traditional strict liability laws. If the printer and filament are operating correctly, then the final litigation area to explore would be the design of the object, i.e. the design file.

For a digital file to be considered a "product," it may depend on if the court views the design as a highly technical tool, like an Aeronautical chart, or as a how-to guide, like a cookbook. In *Saloomey v. Jeppesen & Co.*, the Second Circuit held that maps could be considered products, and thus the company could be held liable for the wrongful deaths of those in a plane crash.<sup>56</sup> The court reasoned:

The charts, as produced by Jeppesen and supplied to Wahlund by Braniff, reached Wahlund without any individual tailoring or substantial change in contents—they were simply mass-produced. The comments to § 402A, *supra*, envision strict

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<sup>51</sup> About Us, SHAPEWAYS, <http://www.shapeways.com/about?li=footer> (last visited Feb. 19, 2017).

<sup>52</sup> Stefano Alberti, *Catapult, the ultimate weapon*, SHAPEWAYS, <http://www.shapeways.com/product/CZAYASA2K/catapult-the-ultimate-weapon-watch-the-video?optionId=42612343&li=marketplace> (last visited Feb. 19, 2017).

<sup>53</sup> About MakerBot, MAKERBOT, <https://www.makerbot.com/about-us/> (last visited Feb. 19, 2017).

<sup>54</sup> *MakerBot Reaches Milestone: 100,000 3D Printers Sold Worldwide*, MAKERBOT (Apr. 4, 2016), <https://www.makerbot.com/media-center/2016/04/04/makerbot-reaches-milestone-100000-3d-printers-sold-worldwide>.

<sup>55</sup> *Makerbot Filament*, MAKERBOT, <https://www.makerbot.com/filament/> (last visited Feb. 20, 2017).

<sup>56</sup> *Saloomey v. Jeppesen & Co.*, 707 F.2d 671, 671 (2d Cir. 1983).

liability against sellers of such items in these circumstances. By publishing and selling the charts, Jeppesen undertook a special responsibility, as seller, to insure that consumers will not be injured by the use of the charts; Jeppesen is entitled—and encouraged—to treat the burden of accidental injury as a cost of production to be covered by liability insurance.<sup>57</sup>

For a how-to guide or a cookbook, courts have stated that the book itself is a product, but the ideas contained inside the book are intellectual property and not a product. Referencing *Jeppesen*, in *Winter v. G.P. Putnam's Sons*, the Ninth Circuit distinguished between how-to guides and an aeronautical chart:

Aeronautical charts are highly technical tools. They are graphic depictions of technical, mechanical data. The best analogy to an aeronautical chart is a compass. Both may be used to guide an individual who is engaged in an activity requiring certain knowledge of natural features. Computer software that fails to yield the result for which it was designed may be another. In contrast, *The Encyclopedia of Mushrooms* is like a book on how to use a compass or an aeronautical chart. The chart itself is like a physical “product” while the “How to Use” book is pure thought and expression.<sup>58</sup>

In the case, mushroom enthusiasts were injured by ingesting poisonous mushrooms.<sup>59</sup> The book in question identified the mushrooms as safe.<sup>60</sup> The court sided with the book publisher because the book itself, the paper and binding, was the product.<sup>61</sup> The ideas were intellectual property and not a product.<sup>62</sup>

A design file could be argued to be a step-by-step guide like a cookbook. It would then be considered intellectual property and not a product, and thus the end result object is also not a product. There is some merit to this argument. A design file, or “computer program,” or a cookbook can be

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<sup>57</sup> *Id.* at 676–77.

<sup>58</sup> *Winter v. G.P. Putnam's Sons*, 938 F.2d 1033, 1036 (9th Cir. 1991).

<sup>59</sup> *Id.* at 1034.

<sup>60</sup> *Id.*

<sup>61</sup> *Id.* at 1036.

<sup>62</sup> *Id.*

copyrighted.<sup>63</sup> Courts have held that a computer program is a “work of authorship” and the silicon chip is the “tangible medium of expression.”<sup>64</sup> The copyright statute even defines a computer program, which is a design file, as “a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.”<sup>65</sup> It could then be argued that the design is the intellectual property, like the cookbook, and that any object 3-D printed is just like a user following a recipe. If the recipe comes out bad, it is not the fault of the intellectual property.

In reality, however, the design file is not a step-by-step guide for the user to follow. Rather, it is an instruction manual to tell the printer what to print. The design’s purpose is to transmit specific data to a printer, and then for the printer to create using that data. It is more analogous to a design for physical construction of the cookbook and how it should be bound. Overall, the consumer is absent from the design and printing process. In contrast, in a cookbook, the consumer is present for all of the steps.

There are several court cases that have designated software as a product. In the footnote of *Hou-Tex, Inc. v. Landmark Graphics*, the Court of Appeals of Texas (14th District) stated “[w]e accept that the SeisVision software is a product for purposes of this appeal because, as shown by the undisputed summary judgment evidence, it is a highly technical tool used to create a graphic representation from technical data.”<sup>66</sup> Similarly, 3-D printing design files are highly technical and made specifically to print an object.

Courts have also distinguished between the intellectual property and product of software. In a case where a child harmed another child based on what he saw in a video game, the court held that the intellectual property was not appropriate for strict liability.<sup>67</sup> The court stated, “the line drawn in these cases is whether the properties of the item that the plaintiff claimed to have caused the harm was ‘tangible’ or ‘intangible.’”<sup>68</sup> In the case of a video game, the “tangible” product is the physical game: the plastic cartridge that transmits the data to the gaming device. The “intangible” is the content or storyline of the game, which is not considered a product. For 3-D printing, the design starts as intangible data and then moves into the tangible world. This is why a 3-D printing design file is distinguishable from the content found in a video game.

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<sup>63</sup> *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 875 (3d Cir. 1982).

<sup>64</sup> *Tandy Corp. v. Pers. Micro Computers, Inc.*, 524 F. Supp. 171, 173 (N.D. Cal. 1981).

<sup>65</sup> 17 U.S.C. § 101 (2010).

<sup>66</sup> *Hou-Tex, Inc. v. Landmark Graphics*, 26 S.W.3d 103, 107 (Tex. App. 2000).

<sup>67</sup> *Wilson v. Midway Games, Inc.*, 198 F. Supp. 2d 167, 173 (D. Conn. 2002).

<sup>68</sup> *Id.*

One other hurdle that potential plaintiffs will need to cross is that most of the design files offered now are free of charge. The cost of a product may matter because R2d (Torts) focuses on one who “sells” a product, which implies that there has been some transaction.<sup>69</sup> Indeed, R3d (Torts) defines free items as “giveaways” specifically for promotional purposes.<sup>70</sup> Under R3d (Torts), a plaintiff receiving a free item would not have a claim against the final distributor of the free product, for example, a store giving away a free sample would not be liable for the sample.<sup>71</sup> Instead, a plaintiff would have a claim against the other “commercial sellers who sold the product in a defective condition.”<sup>72</sup> Under this definition, it would bar a plaintiff against recovery from an online distributor like Thingiverse, while still allowing for a potential recovery from the individual designer. Thingiverse offers the design files as free downloads. Consumers can “tip” a designer, but ultimately, the design files are available for free.<sup>73</sup> For a plaintiff, this is important because most individual designers will be judgment proof because they are either occasional sellers or do not have the money to pay for potential injuries. For Thingiverse and other websites, they are in a better position to insure against this kind of liability.

Some courts have held that strict liability can attach to free-of-charge products. In *Perfection Paint & Color Co. v. Konduris*, an employee was killed when lacquer reducer caught fire.<sup>74</sup> The defendant argued that the remover was given to the store free-of-charge and thus was exempt from the imposition of strict liability.<sup>75</sup> The Appellate Court of Indiana (Division No. 2) held that free-of-charge items could still be considered products for strict liability.<sup>76</sup> The court reasoned:

The Restatement does not attempt to define those commercial transactions which may or may not constitute a ‘sale’ for purposes of imposing strict liability. Rather, the Restatement Comments (see 2 Restatement of Torts, 2d, s 402A at 348-358) refer in context to ‘a special rule applicable to sellers of products’ and emphasize that the rule of strict liability ‘extends to any product sold in the condition, or substantially the same condition, in which it is expected to reach the ultimate

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<sup>69</sup> RESTATEMENT (SECOND) OF TORTS § 402A (AM. LAW. INST. 1965).

<sup>70</sup> RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 20 cmt. b (AM. LAW. INST. 1998).

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> *User-to-User Payment Terms*, THINGIVERSE, <http://www.thingiverse.com/legal/user-payments> (last visited Feb. 19, 2017).

<sup>74</sup> *Perfection Paint & Color Co. v. Konduris*, 147 Ind. App. 106, 112–13 (1970).

<sup>75</sup> *Id.*

<sup>76</sup> *Id.*

consumer'. The instification [sic] for the rule of 'strict liability' rests upon the premise 'that the seller, by marketing his product for use and consumption, has undertaken and assumed a special responsibility toward any member of the consuming public who may be injured by it; that the public has the right to and does expect, in the case of products which it needs and for which it is forced to rely upon the seller, that reputable sellers will stand behind their goods; that public policy demands that the burden of accidental injuries caused by products intended for consumption be placed upon those who market them . . .'.<sup>77</sup>

For 3-D printing, the designer is "marketing" his or her design by making it available on an online distributor, and in turn, the distributor is marketing its services to consumers across the Internet. The designer and distributor intend for the design to be consumed. It could be argued that, although the download is free, that does not mean that the designer or distributor should be exempt from strict liability.

For online distributors, most of the terms of service treat the digital file as "content."<sup>78</sup> For example, Thingiverse has over 701,000 digital files that can be downloaded and printed.<sup>79</sup> In Thingiverse's terms of service, it describes this content as such:

3.1 User Content. You retain all your intellectual property rights in your User Content. "User Content" means any and all information and content that a User submits to, or uses with, the Sites or Services (e.g., content in the User's profile or postings). You are solely responsible for your User Content. *You assume all risks associated with use of your User Content, including any reliance on its accuracy, completeness, or usefulness by others, or any disclosure of your User Content that makes you or any third party personally identifiable...*<sup>80</sup>

The terms of service for people downloading software on Thingiverse is as follows:

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<sup>77</sup> *Perfection Paint & Color Co. v. Konduris*, 147 Ind. App. 106, 112–13, 258 N.E.2d 681, 685 (1970).

<sup>78</sup> *Makerbot Terms of Use*, THINGIVERSE (Apr. 28, 2016), <https://www.thingiverse.com/legal/terms>

<sup>79</sup> *About*, THINGIVERSE, <http://www.thingiverse.com/about/> (last visited Feb. 191, 2017).

<sup>80</sup> THINGIVERSE, *supra* note 71 (emphasis added).

6.2 Other Users. Each User is solely responsible for any and all of its User Content. Because we do not control User Content, you acknowledge and agree that we are not responsible for any User Content and we make no guarantees regarding the accuracy, currency, suitability, or quality of any User Content, and we *assume no responsibility for any User Content*. Your interactions and transactions with other Users are solely between you and such User. You agree that the Company will not be responsible for any loss or damage incurred as the result of any such interactions...<sup>81</sup>

Thingiverse is mimicking other websites' terms of service to provide a legal barrier between claims against the site and its users. It is trying to be another digital platform for users to share content, like Instagram or SnapChat. Unlike those platforms, users of Thingiverse will be able to download the User Content and make tangible objects, like the YouTube Reviewer's plastic gun.<sup>82</sup> On Instagram, the user experiences the content visually, which is considered "media speech" and "[f]rom a products liability perspective, this facet of the software is untouchable."<sup>83</sup> Based on the nature of the user content, Thingiverse becomes an online distributor and should be limited in their ability to contract around liability.

Design files for 3-D printing should be considered a product. Items, including electricity, when taken into the context of their use are also considered products.<sup>84</sup> Here, the goal of the design file is to be used to create a physical object. The context of the data is to create something tangible. The designer's intentions are for users to create tangible objects. It would only be logical for the designer to take responsibility for the design file and the 3-D printed object.

#### IV. PROPOSAL

If a 3-D printed gun is not a "product" for strict products liability purposes, when it explodes in a user's hand, then the user could be financially responsible for his or her own injuries. For popular designs, serious design flaws could result in thousands of people being maimed without a path for legal recourse. If the 3-D printed object is a "product," injured plaintiffs will have

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<sup>81</sup> *Id.* (emphasis added).

<sup>82</sup> YouTube Reviewer, *supra* note 1.

<sup>83</sup> See David Berke, *supra* note 19 at 616.

<sup>84</sup> RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 19 (AM. LAW. INST. 1998).

strict liability open as a bright line remedy for their damages. There would be an easy and legally cognizable path for injured plaintiffs to be made whole.

This Note's first recommendation is to amend R3d (Torts) or introduce a new Restatement to better address the digital world as a whole. The American Law Institute (ALI) is drafting new revisions to R2d (Torts) for International Personal Torts,<sup>85</sup> and Economic Loss.<sup>86</sup> R3d (Torts) was published in 1998;<sup>87</sup> thus, when the Restatements were written, there were no consumer 3-D printers.<sup>88</sup> Instead, all of the 3-D printers were exclusively used commercially, and 3-D prints went through the same process as many manufactured goods.<sup>89</sup> Most likely, the drafters would not have predicted that someone sitting in a garage could download the designs to a gun and have it printed in a few hours. R2d (Torts), which is still used by many courts, was written in 1965.<sup>90</sup> This has forced the courts to determine, alone, if software is or is not a product for products liability cases.

In R2d (Torts), the drafters commented that strict liability extends to "any product sold in the condition, or substantially the same condition, in which it is expected to reach the ultimate user or consumer."<sup>91</sup> On its face, this would not include objects that are printed at home. The design file and 3-D printed object would be viewed as separate parts of the transaction. The downloaded file would be in the same condition as it is expected to reach the user, and it could be argued that the transaction between seller and user is over. The "consumption" would be the act of printing and not the final outcome. In R3d (Torts), the definition of the product stretches to "[ot]her items, such as ... electricity . . . [and] are products when the context of their distribution and use is sufficiently analogous to the distribution and use of tangible personal property."<sup>92</sup> However, R3d (Torts) does not build on this definition to include software or intangible forms of communication done on a computer.<sup>93</sup> The

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<sup>85</sup> *Torts: Intentional Torts to Persons*, AM. LAW INST., <https://www.ali.org/projects/show/torts-intentional-torts-persons/> (last visited Feb. 19, 2017).

<sup>86</sup> *Torts: Liability for Economic Harm*, AM. LAW INST., <https://www.ali.org/projects/show/torts-liability-economic-harm-3rd/> (last visited Feb. 19, 2017).

<sup>87</sup> RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 19 (AM. LAW. INST. 1998).

<sup>88</sup> *A Brief Historical View of Additive Manufacturing*, ACADEMY OF AEROSPACE QUALITY, <http://aaq.auburn.edu/node/1353> (last visited Feb. 19, 2017).

<sup>89</sup> *Id.*

<sup>90</sup> RESTATEMENT (SECOND) OF TORTS § 402A (AM. LAW. INST. 1965).

<sup>91</sup> *Id.*

<sup>92</sup> RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 19 (AM. LAW. INST. 1998).

<sup>93</sup> *Id.*

Restatements are not binding law; however, they are highly persuasive and are written by the ALI. The ALI's mission is "to promote the clarification and simplification of the law and its better adaptation to social needs, [and] to secure the better administration of justice. . . ."<sup>94</sup> The ALI woefully did not predict the ability of thousands of people to buy a defective design with a few clicks on a website. To stay true to its mission, the ALI should update the Restatements to reflect digital design files.

In the Restatements, there needs to be a modernizing shift to cover digital torts. Currently, the document has the classic distribution chain covered, but it needs to expand to include digital and personal creations to keep up with the expansion in new technology. The benefit of a new section in the Restatement is that the drafters can contemplate and fully discuss how the digital world impacts strict liability. If other characteristics stay the same, including the caveat for occasional sellers, then the occasional designer will be protected from a strict liability case if the jurisdiction follows the Restatement.

The negatives of waiting on the ALI are that a new draft will take years to publish.<sup>95</sup> A change might also force online distributors to add adequate warnings and more explicit terms of service. Eventually, if the change was made, there would be a challenge to the platforms on their liability. This might force the platforms to carry adequate insurance to cover their liability. If the goal of tort litigation is to make the injured party whole, the positives outweigh the negatives. Without a change to the Restatements, injured parties' complaints will have more difficulty convincing courts that digital files are products within the meaning of state products liability laws.

The second solution is to persuade the courts to interpret "electricity" in R3d (Torts) as "software." The positive to this approach is that it can happen almost immediately. A plaintiff could argue that the software, like electricity, is transferred from a creator to a consumer as a product. The negative to this approach is that each jurisdiction is an island, and if there is no guiding light by the ALI's Restatement, then outcomes across jurisdictions will be less uniform and therefore less predictable for businesses and consumers.

This solution needs to be implemented before 3-D printing becomes as common as an inkjet printer. As more Americans become makers, the long-term consequences will be harder to litigate in court. There would be no specific guidance from the Restatements, and the courts could begin to declare that a 3-D printed object is not a product under strict liability. The decisions

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<sup>94</sup> *Creation*, AM. LAW INST., <https://www.ali.org/about-ali/creation/> (last visited Feb. 19, 2017).

<sup>95</sup> *See Current Projects*, AM. LAW INST., <https://www.ali.org/projects/> (last visited Feb. 19, 2017).



will then bind the court in the future, when 3-D printing is commonplace. Eventually, there will be a designer who sells a toy design specifically to one user on Thingiverse. Then that maker will become a part-time manufacturer, printing toy-after-toy. The maker then will sell the toys over Etsy, an online marketplace for individuals and manufacturers to sell unique goods, profiting off the wares.<sup>96</sup> There will be no testing, prototyping, or oversight. Then that toy will eventually hurt some child. Courts will then have to wrestle with who is liable out of the four possible defendants: designer, maker, Thingiverse, and Etsy. We need solutions before millions of individuals become part-time manufacturers.

## V. CONCLUSION

Currently, 3-D printed objects in the home would most likely not be considered products. A product goes through a distribution chain before it reaches a consumer under the current strict liability rules.<sup>97</sup> Courts will likely view a homebased 3-D printed as not a product. They would view the same object as a product if it was printed by Shapeways and then shipped to the consumer. For the consumer, both objects are the same, but the courts would view them as different. 3-D printed objects circumvent the traditional products distribution chain and strict liability imposed on that chain. Unless there is nothing wrong with the printer or the printing material, injured parties may not have a claim for relief. Therefore, there needs to be a change in how strict liability law views products: the Restatements should be expanded to include digital products. In that way, the court system can properly respond to an evolving, or disappearing, distribution chain.

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<sup>96</sup> *About Etsy*, ETSY, <https://www.etsy.com/about/> (last visited Feb. 19, 2017).

<sup>97</sup> RESTATEMENT (SECOND) OF TORTS § 402A (AM. LAW. INST. 1965).