



Tilburg University

Tilburg Institute for Law, Technology & Society

Legal Studies Research Paper, LL.M. Law & Technology

Supervisor: Mr. M.H.M. Schellekens

Summer 2014

**Protecting Fashion: an Examination of Fashion Design
Protection & the Realities of 3D Printed Fashion Designs**

Lorena Velasco Cruz

(950897)

ABSTRACT

The fashion industry is a big and popular business in the United States. With the role of fashion commentary throughout the Internet and the popularity of high fashion designers, the public is willing to massively follow fashion. Unfortunately, it is not always affordable to individuals. Mass clothing retailers have identified this problem and provide desirable high fashion designs at a lower price, which results in mass infringements of the rights holders' rights.

The tendency of protecting the rights of fashion designers has entered into debate. Unfortunately, current intellectual property rights have not yet shown the ability of completely protecting these rights, and the future does not raise hope when it concerns a well-protected fashion rights regime. New technologies are being developed and that makes it even easier to copy fashion designs. These technologies are making it able for us to 3D print fashion designs. The 3D printers are headed into peoples home's, where they freely can share files over the Internet and print the designs privately.

This paper tries to contribute to current literature by examining past, current and future legal problems that arise in the fashion industry. It lays down a framework on which further research can hopefully move forward from. The author also examined the development of IP law from a technological perspective, and tries to stress the importance of it keeping up with that development.

TABLE OF CONTENTS

1. INTRODUCTION.....	5
2. FASHION AND INTELLECTUAL PROPERTY RIGHTS.....	10
1. Fashion Design Protection in Current Law.....	12
1. Copyright Law.....	12
2. Patent Law.....	15
3. Trademark Law & Trade Dress.....	16
4. Sui Generis Protection.....	20
2. Overlapping Intellectual Property Right Protection.....	25
3. Why is Fashion Design Protection Necessary?.....	27
3. THREE-DIMENSIONAL PRINTING & THE FASHION INDUSTRY	31
1. Three-Dimensional Printing.....	31
2. Positive Consequences of Three-Dimensional Printing.....	34
1. Home Three-Dimensional Printing.....	35
3. Limitations to Three-Dimensional Printing in the Fashion Industry.....	37
1. Legal Framework: Intellectual Property Rights Implications	37
1. Trademark Law & Trade Dress.....	38
2. Patent Law	38
3. Copyright Law	39
2. Liability for Fashion Design File Sharing.....	42
1. Comparison of File Sharing in the Music & Fashion Industry.....	42
2. What we can Learn from Illegal File Sharing in the Music.....	
Industry.....	45
4. CONCLUSION.....	47
5. BIBLIOGRAPHY.....	49

LIST OF ABBREVIATIONS

3D	Three-dimensional
CAD	Computer-aided Design
DIY	Do It Yourself
DPPA	Design Piracy Prohibition Act
IDPPPA	Innovative Design Protection and Piracy Prevention Act
IP	Intellectual Property
ISP	Internet Service Providers
P2P	Peer-to-Peer
PGS-works	Pictorial, graphic, and sculptural works
RIAA	Recording Industry Association of America
VHDPA	Vessel Hull Design Protection Act

INTRODUCTION

The fashion industry is one of United States most important creative industries and fastest growing businesses in the retail business (in 1992 it had annual sales of 120 billion dollars and in 2011 the annual sale grew to 230 billion dollar¹), but it does not get the legal protection other industries benefit from. Even though these other industries, like the music and books industry², do not have the capacity of growing like the fashion industry does.

The debate about the need for intellectual property (hereinafter: IP) protection for fashion designs has been going on for years. Current IP laws do not seem to keep up with the fast growing fashion industry and they are not able to give proper legal protection. At the same time, a constant stream of lawsuits is going on. One example is Forever 21, one of United States biggest clothing retailers and selling their products throughout the planet. It is one of the biggest notorious design thieves, known for copying high fashion designs and selling it for half the price. The company has been accused of infringing designer's intellectual properties in more than fifty lawsuits in a time period of three years.³ Nevertheless, Forever 21 continues to get away with it; the chain has never lost one of these cases in court. Forever 21 has been able to settle all dispute over copying, which always has been successful because of big financial compensations and agreements. As the law has been so reluctant to focus on fashion specifically as an appropriate subject for protection, the clothing retailer can continue copying. This is why additional law is required to protect fashion designs.⁴

Like in other forms of art, there is the need to protect the applied art⁵ of fashion designs, but still, it is not clear how this goal should be achieved and which IP right can fully protect a fashion design. Copyright and trademark law protect certain elements of fashion designs, such as unique fabrics and logos, but the protections do not extend to the general shape and appearance of it. On the other hand, patent law presents difficult statutory barriers, a design must be novel and nonobvious, and can only gain protection after a lengthy registration process.⁶ Moreover, the intellectual property rights that can protect a fashion design can overlap, meaning that a fashion design could be protected by one of the IPRs, like

¹ United States Census Bureau: Estimated Annual Sales of U.S. Retail and Food Services Firms by Kind of Business: 1992 Through 2011.

² Books, periodical and music business had an annual sale of 15,363,000,000 in 1992 and 17,201,000,000 in 2011.

³ S.R. Ellis, 'Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic', Tennessee Law Review, Vol. 78, 2010, p. 165.

⁴ See J. Sauer, 'How Forever 21 Keeps Getting Away With Designer Knockoffs' in JEZEBEL (July 20, 2011) available at <http://jezebel.com/5822762/how-forever-21-keeps-getting-away-with-designer-knockoffs>.

⁵ S.R. Ellis, 'Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic', Tennessee Law Review, Vol. 78, 2010, p. 187.

⁶ T. Wong, 'To Copy or Not To Copy, That is the Question: the Game Theory Approach to Protecting Fashion Designs', University of Pennsylvania Law Review, Vol. 160, 2012, p. 1140.

copyright, while another similar design is being protected by another IP, like design patent. This makes it even more problematical to provide an adequate fashion design protection.⁷

Nowadays, the possibilities within technology are endless. Technology is able to make the impossible possible, like the three-dimensional (hereinafter: 3D) printers that are able to translate a digital file into an actual physical object.⁸

This technique, which is already being used to produce entire fashion collections, will even make it harder to legally protect a fashion design.

The latest collection of the Dutch designer Iris van Herpen⁹, which has entirely been produced with 3D printers, shows that this new technology is heading to catwalks and will probably eventually head to the streets.¹⁰

3D printing could be seen as an emerging technology that has the potential to transform the global manufacturing industry. The mass production model of manufacturing could easily be changed by enabling human beings and companies to download a design from the Internet and turn it into a physical object themselves.¹¹ This means that the fashion industry will have to protect its trademarks and designs from illegally being scanned, their files from being shared online and 3D printed by users.

There is no doubt about the technical capabilities 3D printers have and how life changing these things could be for society, but are we also aware of which legal framework is needed to protect fashion designs? How will the fashion industry be legally protected, since IPRs already draw a lack of protection. With the rise of digital technologies like 3D printers that facilitate copying, it seems like this is becoming an even more complex problem. Since fashion designers use all these innovative techniques, fashion design protection is needed more than ever. Are IPRs an adequate protection given the advent of the 3D printer?

Moreover, when an infringement has been identified, the question rises who could be held liable for the infringement; the user that has printed the fashion design at home or the peer-to-peer (hereinafter: P2P) network that has provided the users the network to share these files?

⁷ A. Beckerman-Rodau, 'The Problem With Intellectual Property Rights: Subject Matter Expansion', Yale Journal of Law and Technology, Vol. 13, No. 35, 2010, p. 76.

⁸ A. Sissons & S. Thompson, 'Three Dimensional Policy: Why Britain needs a policy framework for 3D printing', The Big Innovation Centre, October 2012, p. 6.

⁹ Iris van Herpen presented her first 3D printed work in her collection of July 2010, which she created in collaboration with architect Daniel Widrig and was printed by .MGX. From then on the designer has always been using the technology of the 3D printers to elaborate her designs. See Iris van Herpen, About, Collections, available at <http://www.irisvanherpen.com/about#collections>.

¹⁰ See A. Fisher, '3D Printed Fashion: off the Printer, Rather Than off the Pegg', in The Guardian (October 13, 2013) available at <http://www.theguardian.com/technology/2013/oct/15/3d-printed-fashion-couture-catwalk>.

¹¹ A. Sissons & S. Thompson, 'Three Dimensional Policy: Why Britain needs a policy framework for 3D printing', The Big Innovation Centre, October 2012, p. 3.

This situation can be compared with the music industry, where music files have been shared on the Internet by P2P networks and downloaded at home by thousands of individuals.¹²

Would this mean that in the fashion industry, the user that has downloaded an illegal file from the Internet will not be liable, but the P2P system that provided the file on the Internet? Or will both parties be liable for the infringement?

This article focuses on the 3D printing of fashion items as one of the most important technological developments IP law has to cope with in the near future. 3D printing in general is still in its early stage of development, so naturally the same holds for the 3D printing of clothing and fashion items. Because of this early stage, little to practically no literature has been written about the subject when examining it together with IP law. For that reason, the author would like to expand the literature in this field of research, because of the importance for IP law to cope with this and with future technological developments in a proper way.

To be able to examine the dynamic between 3D printing, fashion and IP law, it is important to first get a straightforward and clear overview of what kind of protection the field of law in its current form offers. Where things are working correctly, but more important, where potential problems arise. For that reason, the first part of this article will examine fashion and IPRs in general. Why is protection needed, what kind of protection does IP law currently offer and how has this been practically working until today, are some of the topics that will be covered in this first part. The author wants to stress the importance of obtaining a structured view of fashion and IP law with hindsight, because the system logically forms the fundamental for evaluating/handling future developments. The first question that therefore arises is: *Does Intellectual Property Law in its Current Form Offer Adequate Protection for the Fashion Industry?*

When this part has been covered the second part will dive into the current development of the 3D printing of fashion items. The author will use the findings of fashion and IP law in general and examine opportunities and threats that could possibly arise from the use of 3D printers. Therefore, the second question that arises is: *Is Intellectual Property Law in its Current Form Able to Handle Technological Developments Like 3D Printing in a Proper Way?*

As a last side step, the author will make clear the importance of a well-set legal protection for the fashion industry by examining the developments of file sharing in the music industry. As the music industry is an industry that has been suffering from technological developments over the past years, the fashion industry could learn from this by anticipating on potential problems.

When taking into account the two questions that arise, an important third question more or less sums up all the important elements that will be discussed in this article. Therefore, the main problem definition of this article is: *Does Intellectual*

¹² J.E. Cohen, 'The Place of the User in Copyright Law', Fordham Law Review, Vol. 74, 2005, p. 347-349.

Property Law have to Change its Structure to Keep Up With Technological Developments and Offer Adequate Protection to the Fashion Industry, and if so, in What Way it Would Have to Change?

The author will try to present adequate recommendations based on this problem definition, as well as on the other problems presented in this article. It is important to keep in mind that the main goal of this article is not to present one final solution for the given problems (because the field of research is too complicated and new for this), but to present multiple adequate and well-thought-of possible roads to go down to in the future. By doing this, the article tries to present a framework of insights from which further research can move forward from and hopefully legislators can use as a source of information in the future.

The author has done his research by the use of text-based doctoral legal research, whereby the author has made use of articles based in legal journals, international treaties, legislation and case law. Note that this article focuses primarily on Intellectual Property Law in the United States of America; therefore American Law regimes are examined and discussed.

This article proceeds as follows; the first part (Chapter 2) enters the debate about the lack of protection given by the Intellectual Property Rights and other sui generis protections for fashion designs, focusing on American Law regimes. In light of this limited scheme of protection, another problem rises that makes it even harder to protect a fashion design. Paragraph 2 shows that in a variety of circumstances, it is possible for the owner of a work to obtain the protections of more than one form of intellectual property. This has led to overprotection of intellectual property in the form of overlap, which allows multiple bodies of intellectual property law to simultaneously protect the same subject matter. Accordingly, in paragraph 3 an analysis about the necessity of protection of fashion designs is made. The main aim is to convince the reader of the importance of a well-set legal protection for the fashion industry.

In the second part (Chapter 3) of the Article, an analysis will be made on what could happen to the fashion design protection with the use of the new technology of 3D printing. Paragraph 1 gives a brief explanation of what 3D printing technology consists of and how a 3D print processes. In paragraph 2 an examination of the positive consequences of the use 3D printers in the fashion industry will be made. While paragraph 3 focuses on the limitations 3D printers brings to the fashion industry. Accordingly, these limitations will be examined in the sub-section 3.1 to the intellectual property rights regime. Moreover, some initial observations will be made in sub-section 3.2 about the implications for the liability of infringers, by making a comparison to the music industry. By comparing file sharing in the music industry to file sharing of fashion designs in the fashion industry, a prediction could be made of what the fashion industry will have to combat.

2. FASHION AND INTELLECTUAL PROPERTY RIGHTS

From the perspective of a fashion designer, “fashion” can be articulated as a form of art.¹³ Fashion reflects people’s values, the fashion industry is a unique industry that bridges a variety of fields that represent both the practical and the aesthetic.¹⁴ Consumers desire and producers provide articles that are on trend,¹⁵ while other designers often copy designs that are on trend. The Council of Fashion Designers of America has described this piracy phenomenon as, “the increasingly prevalent practice of enterprises that seek to profit from the invention of others by producing copies or original designs under a different label.”¹⁶ In the fashion industry, piracy is known in the following forms: trend imitation, counterfeit goods, and style piracy of knockoffs.¹⁷

Trend imitation can be described as copying a high fashion overall trend, such as a color or product shaping, to a less expensive local corner. This form of imitation cannot be considered as an infringement, because those who imitate contribute their own creativity into the work. On the other hand, counterfeit goods are infringements, as these products are illegal goods that are passed off to the public as being original goods. Knockoffs are intended to replicate the original product line for line, using the same overall look, and even using almost the identical name of the designer.¹⁸ This article focuses on counterfeit goods and style piracy of knockoffs.

Unfortunately, there are always people that do not see the harm of copying fashion items, like Professor Raustiala and Sprigman state in their legal analysis of fashion copying *The Piracy Paradox*, which analyses why and how the American fashion industry has managed to survive despite the massive volume of copying. Accordingly, *The Piracy Paradox*-argument asserts that copying promotes innovation in the fashion industry by making a trend immediately accessible to a large group of people.¹⁹ As high fashion is a value of positional good and has worth as a communicator of status, buyers go to boutiques to buy

¹³ M. McGurrin Ehrhard, ‘*Protecting the Seasonal Arts: Fashion Designs, Copyright Law, and the Viability of the Innovative Design Protection & Piracy Prevention Act*’, Connecticut Law Review, Vol. 45, No. 1, 2012, p. 298.

¹⁴ A. Akanegbu, ‘*Fashion’s Moral Dilemma: Exploring How a Lack of Moral Rights in the United States Disproportionately Harms Emerging Fashion Designers*’, Howard University, Working Paper No. 09-63, 2012, p. 2.

¹⁵ C. Scott Hemphill & J. Suk, ‘*The Law, Culture and Economics of Fashion*’, Stanford Law Review, Vol. 61, 2009, p. 1159.

¹⁶ A. Akanegbu, ‘*Fashion’s Moral Dilemma: Exploring How a Lack of Moral Rights in the United States Disproportionately Harms Emerging Fashion Designers*’, Howard University, Working Paper No. 09-63, 2012, p. 12.

¹⁷ S.R. Ellis, ‘*Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*’, Tennessee Law Review, Vol. 78, 2010, p. 166.

¹⁸ S.R. Ellis, ‘*Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*’, Tennessee Law Review, Vol. 78, 2010, p. 167-169.

¹⁹ L. Schutte, ‘*Copyright for Couture*’, Duke Law and Technology Review, No. 011, 2011, p. 5.

clothes.²⁰ They argue that through knockoffs, the designs of high fashion are widely distributed to less expensive segments of the market, robbing high fashion designs of their seductive exclusivity and turning what was once a unique garment or accessory into a “commonplace” item. This dissemination causes purchasers of high fashion to buy the next “new look” in order to regain the valuable social status conferred by wearing a high fashion garment. Concluding that by pushing the trend cycle forward, knockoffs induce more buying, ultimately benefiting designers, manufacturers and retailers.²¹

Luckily not everybody shares the opinion that even though the fashion industry has survived without good legal protection, it does not need well-elaborated IP protection. *The Piracy Paradox* tempts to focus only on determining how the fashion industry has continued to grow. Actually, the prevalence of knockoffs may provide some benefits to long-standing and well-established brands, but eventually it ultimately harms innovation, because it hinders a new generation of designers from emerging.²²

Others find fashion wasteful and may believe that we would be better off if fashion did not exist and if clothing were used only for the literal purpose of covering the body or keeping warm.²³ And even though fashion is not widely regarded as one of the “fine arts,” it is undeniably a creative good that has expressive features.²⁴ The fact is that nowadays it is hard to imagine that there is a place in social life—whether it is in the arts, the sciences, politics, academia, entertainment, business, or even law or morality— that does not exhibit fashion in some way. People seem to communicate and express themselves through fashion.²⁵

²⁰ K. Raustiala & C. Sprigman, ‘*The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*’, *Virginia Law Review*, Vol. 92, No. 1687, 2006, p.1718.

²¹ K. Raustiala & C. Sprigman, ‘*The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*’, *Virginia Law Review*, Vol. 92, No. 1687, 2006, p.1762-1765.

²² L. Howard, ‘*An Uningenious Paradox: Intellectual Property Protection for Fashion Designs*’, *Columbia Journal of Law and the Arts*, Vol. 32, No. 3, 2009, p. 131.

²³ C. Scott Hemphill & J. Suk, ‘*The Law, Culture and Economics of Fashion*’, *Stanford Law Review*, Vol. 61, 2009, p. 1161.

²⁴ C. Scott Hemphill & J. Suk, ‘*The Law, Culture and Economics of Fashion*’, *Stanford Law Review*, Vol. 61, 2009, p. 1162.

²⁵ C. Scott Hemphill & J. Suk, ‘*The Law, Culture and Economics of Fashion*’, *Stanford Law Review*, Vol. 61, 2009, p. 1149.

1. Fashion Design Protection in Current Law

As with other creative goods, intellectual property plays a role in shaping the quantity and the direction of innovation produced by the fashion industry and is made available for consumption by people who wear clothing, which definitely is a group larger than those who consume art, music, or books.²⁶ In this perspective, intellectual property rights are based on a utilitarian theory rather than a natural rights or labor theory.²⁷

Unfortunately, the intellectual property regime (copyright, patent, trademark and trade dress) seems inadequate to protect these goods. Piracy does not only infringe someone's rights, it also lowers monetary earnings²⁸ within the fashion industry.²⁹ In its current form, IP law does not provide a specific protection for fashion designs, fashion designers must seek protection from the existing institutions of copyright, patent, trademark law and trade dress for relief from copying. However, each of these sources of law present obstacles to a plaintiff fashion designer.³⁰

1. Copyright Law

Copyright protection under the United States Code applies to "original works of authorship fixed in any tangible medium of expression". Works like literature, musical works, pictorial, graphical and sculptural works fall under this scope.³¹ To receive copyright protection the work must be "original", which requires a bit of creativity and independent expression. The design that "provides a distinguishable variation over prior work pertaining to similar articles which is more than merely trivial and has not been copied from another source"³², can be considered to be original. This means that a work may be original even though it closely resembles other works, as long as the similarity is not the result of copying.³³ The Copyright Act grants the author the exclusive right to reproduce, distribute, perform, or display the protected work, and to create derivative works from the protected work.³⁴

²⁶ C. Scott Hemphill & J. Suk, *The Law, Culture and Economics of Fashion*, Stanford Law Review, Vol. 61, 2009, p. 1151.

²⁷ A. Beckerman-Rodau, *The Problem With Intellectual Property Rights: Subject Matter Expansion*, Yale Journal of Law and Technology, Vol. 13, No. 35, 2010, p. 10.

²⁸ Design piracy results in 2008 an estimated \$12 billion worth of loss to the fashion industry; L.J. Hendrick, *Tearing Fashion Design Protection Apart at the Seams*, Washington and Lee Law Review, Vol. 65, No. 1, 2008, p. 218.

²⁹ L.J. Hendrick, *Tearing Fashion Design Protection Apart at the Seams*, Washington and Lee Law Review, Vol. 65, No. 1, 2008, p. 217-220.

³⁰ T. Wong, *To Copy or Not To Copy, That is the Question: the Game Theory Approach to Protecting Fashion Designs*, University of Pennsylvania Law Review, Vol. 160, 2012, p. 1142.

³¹ U.S. Code, title 17, ch. 1, § 102.

³² U.S. Code, title 17, ch. 13, § 1301.

³³ L.J. Hendrick, *Tearing Fashion Design Protection Apart at the Seams*, Washington and Lee Law Review, Vol. 65, No. 1, 2008, p. 228.

³⁴ U.S. Code, title 17, ch. 1, § 106.

However, protection is not available for “pictorial, graphical, or sculptural”³⁵ works -which among other things include fashion designs & three-dimensional works- when the original features cannot “be identified separately from, and are not capable of existing independently of, the utilitarian aspects of the article”³⁶. In other words: if these works are considered to be “useful articles”, copyright protection denies protection to any work having an “intrinsic utilitarian function”³⁷.

“Pictorial, graphical, or sculptural” fall under the scope of “useful articles”, and as fashion products fall neatly within the statutory definition of useful items, because their function is not “merely to portray the appearance of the article or to convey information”³⁸, they do not receive copyright protection. To obtain this protection, fashion designs must have an original aspect capable of being separated from the function of covering the human body.³⁹

A design or pictorial work that can be separated from the functionality of an item is a “separable design” and is eligible for copyright protection. The Supreme Court introduced the conceptual separability doctrine in 1954 in the case *Mazer v. Stein*.⁴⁰ The case involved a decorative lamp, in which the Court found that, because the statuettes were works of art that were physically separable from the lamp itself, they were entitled to copyright protection even though the creator intended to reproduce the work as part of a utilitarian object.⁴¹ The doctrine allows copyright protection for a work of art that is functional as long as the “art” can be conceptually separated from any functional aspects that the product may have⁴². This was the first time copyright protection was extended to a wider range of products and also was applicable for other kind of products, like costume made jewelry.⁴³ Nevertheless, fashion designs have not yet fallen within the ambit of this scope.⁴⁴

Separability has developed two tests for its application, the physical and conceptual tests, which measure the separation between “art” and “utility”

³⁵ U.S. Code, title 17, ch. 1, § 113.

³⁶ U.S. Code, title 17, ch. 1, § 101.

³⁷ S.R. Ellis, ‘*Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*’, *Tennessee Law Review*, Vol. 78, 2010, p. 170-174.

³⁸ U.S. Code, title 17, ch. 1, § 101.

³⁹ K.V. Tu, ‘*Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original Fashion Designs and Designer Knockoffs*’, *Texas Intellectual Property Law Journal*, Vol. 18, No. 3, 2010, p. 425-427.

⁴⁰ S.R. Ellis, ‘*Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*’, *Tennessee Law Review*, Vol. 78, 2010, p. 171-172.

⁴¹ *Mazer v. Stein*, 347 U.S. 201 (1954).

⁴² L. Schutte, ‘*Copyright for Couture*’, *Duke Law and Technology Review*, No. 011, 2011, p. 3.

⁴³ S. Scafidi, ‘*Intellectual Property and Fashion Design*’, *Intellectual Property and Information Wealth*, Vol. 1, No. 115, 2006, p. 120.

⁴⁴ T. Wong, ‘*To Copy or Not To Copy, That is the Question: the Game Theory Approach to Protecting Fashion Designs*’, *University of Pennsylvania Law Review*, Vol. 160, 2012, p. 1145.

features.⁴⁵ Conceptual separability is the one mechanism within current copyright protection through which portions of a fashion design may find minimal protection. Unfortunately, fashion designs are not so easily separated from their utilitarian function, which makes it hard for courts to draw a line between “use” and “art” in fashion designs.⁴⁶ Though this exception to the general exclusion of clothing from copyright provides a pocket of design protection, it can be considered to be truly meaningless, as most designs do not satisfy the separability tests.⁴⁷ Therefore, the separability criteria often has been criticized for being unclear, impossible to carry out non-arbitrarily, and has been considered to be a subject of manipulation.⁴⁸

We could expect copyright law being applicable to fashion designs, because by statutory definition its subject matter includes “original works of authorship fixed in any tangible medium of expression.” However, an article of clothing, which represents an original design in a fixed form, cannot receive copyright protection because clothing is considered to be “utilitarian” by nature.

Concluding, the Copyright Act fails to provide adequate protection because its protection is generally limited to non-utilitarian designs⁴⁹, and since clothing in general is considered to be functional or useful, copyright protection is often denied.⁵⁰

Nevertheless, some articles can receive copyright protection, which are limited to their artistic elements, but the entire article will unfortunately not qualify. In the light of copyright’s goal of promoting the useful arts, the law should look past the difficulty of separating the creative elements of a fashion design from its functional elements, and protect the sufficiently original creations of a fashion designer as a whole.⁵¹

In addition to fashion designs, it can be noted that copyright law can apply to the two-dimensional representations of fashion designs, like photographs or drawings.⁵²

⁴⁵ O. Fischman Afori, *Reconceptualizing Property in Designs*, *Cardozo Art & Entertainment Law Journal*, Vol. 25, No. 3, 2008, p.1121.

⁴⁶ K.V. Tu, *Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original fashion Designs and Designer Knockoffs*, *Texas Intellectual Property Law Journal*, Vol. 18, No. 3, 2010, p. 425-427.

⁴⁷ L.J. Hendrick, *Tearing Fashion Design Protection Apart at the Seams*, *Washington and Lee Law Review*, Vol. 65, No. 1, 2008, p. 229.

⁴⁸ O. Fischman Afori, *Reconceptualizing Property in Designs*, *Cardozo Art & Entertainment Law Journal*, Vol. 25, No. 3, 2008, p.1121.

⁴⁹ K.V. Tu, *Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original fashion Designs and Designer Knockoffs*, *Texas Intellectual Property Law Journal*, Vol. 18, No. 3, 2010, p. 420.

⁵⁰ A. Beckerman-Rodau, *The Problem With Intellectual Property Rights: Subject Matter Expansion*, *Yale Journal of Law and Technology*, Vol. 13, No. 35, 2010, p. 79.

⁵¹ K.V. Tu, *Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original fashion Designs and Designer Knockoffs*, *Texas Intellectual Property Law Journal*, Vol. 18, No. 3, 2010, p. 447.

⁵² S. Scafidi, *Intellectual Property and Fashion Design*, *Intellectual Property and Information Wealth*, Vol. 1, No. 115, 2006, p. 123.

2. Patent Law

The intellectual property right patent gives inventors the right to “exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States”⁵³

There are three types of patents: (1) utility, (2) design and (3) plant patent. Fashion designs can get intellectual property protection within the scope of utility and design patents.

Utility patents may be granted to “anyone who invents or discovers any new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof”.⁵⁴ Whereas design patent is granted to “anyone who invents a new, original, and ornamental design for an article of manufacture”.⁵⁵ Design patent covers the decorative aspect of an article instead of its utility.⁵⁶

The legal requirement that a design patent has to be “ornamental”, was generally interpreted to necessitate artistry or an aesthetically pleasing effect.⁵⁷ For example, a slogan prominently displayed on the front of a t-shirt may be considered to be merely ornamental, but not everything that is printed in front of clothing merely is considered to be ornamental. It depends on which size, location, dominance and level of significance the print has to determine whether the design is ornamental.⁵⁸

In order for an invention to be patentable, it must meet two requirements. First of all, the invention must be novel, which means that it cannot be known, used or otherwise be available to the public, or already be patented in another country prior to the filing for patent protection.⁵⁹ Moreover, a patent must be nonobvious, meaning that the invention may not "have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."⁶⁰

The main barrier for fashion designs to obtain design patents lies in the nonobviousness requirement, which requires more than a trivial advance over what has been done before from the perspective of someone skilled in the relevant art. To determine what is obvious, a court would consider all pertinent prior

⁵³ U.S. Code, title 35, ch. 14, § 154.

⁵⁴ U.S. Code, title 35, ch. 10, § 101.

⁵⁵ U.S. Code, title 35, ch. 16, § 171.

⁵⁶ S.R. Ellis, ‘*Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*’, Tennessee Law Review, Vol. 78, 2010, p. 178.

⁵⁷ A.W. Torrance, ‘*Beauty Fades: An Experimental Study of Federal Court Design Patent Aesthetics*’, University of Kansas, Journal of Intellectual Property Law, Vol. 19, No. 2, 2012, p. 393.

⁵⁸ See United States Patent and Trademark Office, Trademarks, Law and Regulations, “ornamental” Refusal and How to Overcome This Refusal, <http://www.uspto.gov/trademarks/law/ornamentalclothing.jsp>.

⁵⁹ U.S. Code, title 35, ch. 10, § 102.

⁶⁰ U.S. Code, title 35, ch. 10, § 103.

existing designs that have been made by the designer, this could be alone or in combination with each other. If it turns out that a subsequent design resulted from a combination of the prior designs that required no more creativity and skill than that possessed by a designer within that genre, it would not receive protection.⁶¹ This is problematic, as many apparel has been reworked and are not new inventions. For over years, human beings have been wearing jeans, tees, vests, knitwear, shoes etc.⁶² Therefore, it is unlikely that a new fashion design meets the qualifications of being novel and nonobvious and therefore could be patentable at this point. Even if a fashion design meets these requirements, an invention that can be patented normatively speaking is a technological idea and a fashion design cannot be considered to be a technological idea, since designs are based on aesthetic appearance.⁶³

Even though the design fulfills all the legal requirements, the practice has taught us that the patent application process makes it hard to receive a patent on a fashion design. First of all, the designer has to provide lots of information per item if the designer wants to get a patent. It is generally too time consuming to comply with every individual item as fashion collections exist of hundreds of different kind of items. Moreover, the costs are very high. If the fashion design falls under a utility patent, the application fee will cost \$ 280 per item.⁶⁴ Ultimately, the average patent application pendency is 24.6 months,⁶⁵ while the fashion cycle rotates very quickly and designers make several collections per year. If it would take this long to know if their design has received patent protection, it can be expected that others already have copied the design.

3. Trademark & Trade Dress

Given the shortcomings of copyright and patent law, many designers have turned to **trademark law** to obtain design protection. Any “word, name, symbol, device or combination of these, that are being used or is intended to use by a person”, can receive trademark protection.⁶⁶ Designers are generally eligible for protection under the Lanham Act⁶⁷ for trademark infringement and trademark dilution, which has as purpose to protect the designer’s exclusive right to use its mark in commerce. It also seeks to protect consumers from misleading labels and

⁶¹ S.R. Ellis, ‘*Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*’, Tennessee Law Review, Vol. 78, 2010, p. 178-179.

⁶² L.J. Hendrick, ‘*Tearing Fashion Design Protection Apart at the Seams*’, Washington and Lee Law Review, Vol. 65, No. 1, 2008, p. 223.

⁶³ O. Fischman Afori, ‘*Reconceptualizing Property in Designs*’, Cardozo Art & Entertainment Law Journal, Vol. 25, No. 3, 2008, p. 1122.

⁶⁴ See United States Patent & Trademark Office, Patents, View Fee Schedule, <http://www.uspto.gov/web/offices/ac/qs/ope/fee010114.htm>.

⁶⁵ See United States Patent & Trademark Office, Patent FAQs, <http://www.uspto.gov/main/faq/p220026.htm>.

⁶⁶ U.S. Code, title 15, ch. 22, § 1127.

⁶⁷ U.S. Code, title 15, ch. 22, § 1125.

confusion concerning to the source of goods.⁶⁸

Whenever a trademark is inherently distinctive or acquires distinctiveness through secondary meaning (which arises when a consumer associates a mark or product with a single source⁶⁹), certain elements or individual features of a fashion design can be protected under trademark law, such as name, logo or even a color.⁷⁰ The primary tool fashion designers use to distinguish their designs is a trademarked logo or name, which usually is placed inside an item of apparel. Thus, designers that enjoy the use of conspicuous logo's and exterior labels (like the two back-to-back C's used by Chanel) make their mark more distinctive and therefore better protected. Accordingly, to the extent that they are influenced by legal concerns, designers are willing to feature their logos as prominently as possible and incorporate them into their designs to the greatest degree customers are willing to accept.⁷¹ Likewise, colors can enjoy trademark protection, as shown in the Christian Louboutin case. Louboutin sued Yves Saint Laurent for trademark infringement for the sale of shoes with a red sole. The Court ruled that the shoe designer Christian Louboutin had a valid trademark on the red outsole of his designed shoes, since the look had the requisite distinctiveness to merit trademark protection.⁷² This means that trademark owners have the possibility to claim trademark protection to a single color and that this can serve as a trademark in the fashion industry.⁷³

Trademark protection mainly prohibits one from putting another's name on his product, but as the Louis Vuitton Malletier vs. Dooney & Bourke Inc. case has shown us, it does not necessarily prohibit them from putting their own name on a product that has "obvious similarities" to another's product, as long as those similarities are not "confusingly similar."⁷⁴ A product can be considered to be counterfeit whenever a "spurious mark is used in connection with trafficking in any goods, services, labels, patches, etc. and is identical with, or substantially indistinguishable from a mark registered on the principal register in the United States Patent and Trademark Office and in use."⁷⁵

⁶⁸ K.V. Tu, 'Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original Fashion Designs and Designer Knockoffs', Texas Intellectual Property Law Journal, Vol. 18, No. 3, 2010, p. 430.

⁶⁹ See Legal Information Institute, Cornell University Law School, search definition: secondary meaning. http://www.law.cornell.edu/wex/secondary_meaning.

⁷⁰ Louboutin v. Yves Saint Laurent Am. Holding, 2012 WL 3832285 (2d Cir. Sept. 5, 2012).

⁷¹ S. Scafidi, 'Intellectual Property and Fashion Design', Intellectual Property and Information Wealth, Vol. 1, No. 115, 2006, p. 212.

⁷² B. Weiser, 'Shoe Designer Can Protect Its 'Pop' of Red, Court Says', in New York Times, (September 5, 2012), available at <http://www.nytimes.com/2012/09/06/nyregion/court-rules-louboutin-can-enforce-a-trademark-on-its-red-outsoles.html>.

⁷³ S.E. Hollander, 'Louboutin's Red Sole Shoe Mark: Trademark Protection for Single Colors in the Fashion Industry', Legal Insight K&L Gates, 7th of September 2012.

⁷⁴ S.R. Ellis, 'Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic', Tennessee Law Review, Vol. 78, 2010, p. 175.

⁷⁵ U.S. Code, title 18, ch. 113, § 2320.

Trademark law has been extended to the point that (at least in some circumstances) it protects utilitarian items of an arguably minimal original nature because of the recognizable nature of the item. Although trademark law has been extended to utilitarian items in some cases, only a small portion of designs will ever reach the level of recognition and notoriety required for this type of protection.⁷⁶ Under these circumstances, trademark law functions to protect designs that would otherwise have fallen under the scope of copyright law.⁷⁷ As noted, trademark law protects a certain object of a fashion design (usually a brand's label), but unfortunately it does not protect the entire design. In addition, trademark law offers a competitive advantage to the more established companies with, for example, better-known logos than for emerging young-designers.⁷⁸ To gain protection for the entire design, designers have to turn to trade dress protection an extension of trademark law, which refers to the "overall look and feel"⁷⁹ of a product.

The doctrine of **trade dress** has emerged as the front-runner of available alternatives to a copyright extension for the protection of fashion design⁸⁰. The design and shape of the materials in which a product is packaged, and even the product itself, can gain protection with trade dress.⁸¹ For the fashion industry, trade dress is the total image of a good as defined by its overall composition and design, including size, shape, color, texture, and graphics of the design.⁸² In essence, trade dress includes the totality of elements in which a product is presented. Therefore, when the overall appearance of a counterfeit design is so similar to an original design that it could cause confusion as to the origin, the original designer can claim for trade dress.⁸³

Under the trade dress doctrine, a product can receive protection (as required in trademark law) when it is inherently distinctive or has secondary meaning in

⁷⁶ K.V. Tu, 'Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original fashion Designs and Designer Knockoffs', Texas Intellectual Property Law Journal, Vol. 18, No. 3, 2010, p. 420.

⁷⁷ K.V. Tu, 'Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original fashion Designs and Designer Knockoffs', Texas Intellectual Property Law Journal, Vol. 18, No. 3, 2010, p. 423.

⁷⁸ S. Scafidi, 'Intellectual Property and Fashion Design', Intellectual Property and Information Wealth, Vol. 1, No. 115, 2006, p. 121.

⁷⁹ K.V. Tu, 'Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original fashion Designs and Designer Knockoffs', Texas Intellectual Property Law Journal, Vol. 18, No. 3, 2010, p. 430.

⁸⁰ W. Potter, 'Intellectual Property's Fashion Faux Pas: A Critical Look at the Lack of Protection Afforded Apparel Design Under the Current Legal Regime', University of San Francisco Intellectual Property Law Review, Vol. 16, No. 1, 2011, p. 78.

⁸¹ See Legal Definition Institute, Cornell University Law School, Definitions: Trade dress, http://www.law.cornell.edu/wex/trade_dress.

⁸² S.R. Ellis, 'Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPA are a Step Towards the Solution to Counterfeit Chic', Tennessee Law Review, Vol. 78, 2010, p. 176.

⁸³ K.V. Tu, 'Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original fashion Designs and Designer Knockoffs', Texas Intellectual Property Law Journal, Vol. 18, No. 3, 2010, p. 434.

minds of consumers and when it meets the further requirement of non-functionality.⁸⁴ Distinctiveness is the ability of a mark to distinguish and identify the source of goods and services. Following a finding of inherently distinctiveness, the test for infringement is whether the use of the disputed mark creates a likelihood of confusion among the consuming public in the market place. In the *Wal-Mart Stores v. Samara Brothers* case, Wal-Mart sent photographs of the Samara Brothers designs to one of its suppliers, which then copied sixteen of the garments with only minor changes and then sold these knockoffs at lower prices. The Court determined that product design, as opposed to product packaging, cannot be inherently distinctive and therefore must have achieved secondary meaning to be protected.⁸⁵ As fashion designs are rarely inherently distinctive, the design becomes distinctive only upon a showing of secondary meaning. Secondary meaning occurs when “in the minds of the public, the primary significance of a mark is to identify the source of the product rather than the product itself”. But a design does not have immediately secondary meaning; it takes time to obtain secondary meaning. During the period that it takes for a design to get secondary meaning and therefore protection, it is thinkable that the product could have been copied already for several times. It is not easy for a fashion designer to prove its design is inherent distinctive and has secondary meaning, especially for a fashion designer with limited resources.⁸⁶

Moreover, to gain protection under the trade dress doctrine, a designer must “establish the non-functionality of the design feature”⁸⁷, which generally means that useful product features are not protectable.⁸⁸ As the shape and form of a clothing article are generally considered to be essential to the use or purpose, clothing is generally considered to have function and falls outside the scope of trade dress protection.⁸⁹ To determine whether a product is functional, it has to succeed the functionality test. In *Qualitex Co. v. Jacobson* the Court stated that “a product feature is functional if it is essential to the use or purpose of the article or if it affects the cost or quality of the article, that is, if exclusive use of the feature would put competitors at a significant non-reputation-related disadvantage”.^{90 91} In the *TraFFix*⁹² case the Supreme Court gave a more recent word on functionality, a design feature is functional whenever “it is essential to the function of the product or affect the costs or quality; and when the feature is a competitive

⁸⁴ S.R. Ellis, ‘*Counterfeiting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*’, *Tennessee Law Review*, Vol. 78, 2010, p. 176.

⁸⁵ *Wal-Mart Stores v. Samara Brothers, INC.* 529 U.S. 205 (2000).

⁸⁶ T. Wong, ‘*To Copy or Not To Copy, That is the Question: the Game Theory Approach to Protecting Fashion Designs*’, *University of Pennsylvania Law Review*, Vol. 160, 2012, p. 1143.

⁸⁷ U.S. Code, title 15, ch. 22, § 1125 (a)(3).

⁸⁸ See USPTO, Trademarks, Examination Guide 2-00, Marks that are Functional, <http://www.uspto.gov/trademarks/resources/exam/guide2-00.jsp>.

⁸⁹ T. Wong, ‘*To Copy or Not To Copy, That is the Question: the Game Theory Approach to Protecting Fashion Designs*’, *University of Pennsylvania Law Review*, Vol. 160, 2012, p. 1143.

⁹⁰ *Qualitex Co. v. Jacobson Prods. Co.*, 514 U.S. 159, 34 USPQ2d 1161, 1163-64 (1995)

⁹¹ USPTO <http://www.uspto.gov/web/offices/com/sol/foia/ttab/2eissues/2006/78259826.pdf>.

⁹² *TraFFix Devices, Inc. v. Mktg. Displays, Inc.*, 532 U.S. 23 (2001).

necessity”.⁹³ Product designs that have aesthetic or utilitarian functionality generally are not protectable under trade dress.⁹⁴ However, the purpose of a fashion design is to be beautiful, if a design’s sole purpose is to be aesthetically pleasing, it is barred from receiving trade dress protection.⁹⁵

In practice, a design that uses an easily visible logo on the outside of the product enjoys full protection. While young designers that have not developed yet an inherent logo or rather use logos in the interior of the clothes, will not gain this same protection.⁹⁶

Therefore, these requirements make obtaining trade dress protection for a fashion design almost impossible.⁹⁷ In sum, the most universally applicable and flexible mechanism for the protection of fashion design is trademark law. Whether on an interior label or as an exterior design element, virtually all apparel items incorporate trademarks in some form. The ease of trademark registration, combined with limited protection for even unregistered marks, assures that virtually all designers have access to protection for the names and logos affixed to their goods. Whereas, trade dress law extends the protection of trademark law, unfortunately trade dress protection is not comprehensive and fails to cover the design protection in whole. Therefore, despite both trademark and trade dress as avenues for protection, they are insufficient to protect designs from the types of copying they may face.⁹⁸

4. Sui Generis Protection

American law offers what has been described as a “patchwork of protection” for fashion designs. The intellectual property law system provides neither a specific nor a comprehensive scheme of protection for fashion designs.⁹⁹ It partially protects designs, but overall fails to provide adequate protections to guard against designs piracy for the creators of fashion designs. Courts and Congress have taken this matter seriously and have made numerous attempts to pass laws for the

⁹³ B.I. Johnson, *Trade Dress Functionality: a Doctrine in Need of Clarification*, Campbell Law Review, Vol.34 No. 125, 2011, p. 129.

⁹⁴ K.N. Andrews, *the Most Fascinating Kind of Art: Fashion Design Protection as a Moral Right*, New York University Journal of Intellectual Property & Entertainment Law, Vol. 2, No. 188, 2012, p. 190.

⁹⁵ S.R. Ellis, *Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*, Tennessee Law Review, Vol. 78, 2010, p. 178.

⁹⁶ S. Scafidi, *Intellectual Property and Fashion Design*, Intellectual Property and Information Wealth, Vol. 1, No. 115, 2006, p. 120.

⁹⁷ S.R. Ellis, *Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*, Tennessee Law Review, Vol. 78, 2010, p. 176.

⁹⁸ S. Scafidi, *Intellectual Property and Fashion Design*, Intellectual Property and Information Wealth, Vol. 1, No. 115, 2006, p. 120.

⁹⁹ T. Wong, *To Copy or Not To Copy, That is the Question: the Game Theory Approach to Protecting Fashion Designs*, University of Pennsylvania Law Review, Vol. 160, 2012, p. 1142.

protection of fashion design, they have taken up the matter on repeated occasions since 1914, and unfortunately most of them have been unsuccessfully.¹⁰⁰

In 1930 Congress considered modifying copyright law to include protection for designs, this is when the House of Representatives passed the **Design Copyright Bill**, which would have provided protection for dressmakers as well as designers of other useful articles. Ultimately, the Bill was never enacted. Over the next years the Senate tried to pass other design protection bills, each of which proposed protection for "original ornamental designs of useful articles." These bills all failed to pass the House.¹⁰¹

Congress has long considered offering *sui generis*¹⁰² protection for designs of useful articles, and came close to enacting such legislation as part of the Copyright Act of 1976. In 1998, as part of the Digital Millennium Copyright Act, Congress enacted legislation for protection to the designs of vessel hulls. The Vessel Hull Design Protection Act (hereinafter: VHDP) was established in 1998 and offers protection to utilitarian designs, traditionally excluded from copyright protection, and affords narrower protection than that provided by copyright law.¹⁰³

It made it possible to create certain new design rights for a much wider variety of creative works. The scope of protection afforded by the VHDP is appropriate if it will extend for designs that must balance creativity with practicality, such as fashion designs.¹⁰⁴ It aimed to protect an original design of a useful article, which makes the article attractive or distinctive in appearance to the purchasing or using public.¹⁰⁵ As the act recognizes a boat hull as a "useful article", which is exactly the element of fashion design that has been the basis for keeping it outside the realm of protection, the VHDP is especially promising.¹⁰⁶

Furthermore, in 2006 the **Design Piracy Prohibition Act** (hereinafter: DPPA) was introduced to amend Chapter 13 of Title 17 of the U.S. Code, which especially provided the protection for fashion design and was the first proposed extension to the Copyright Act.¹⁰⁷ Although several well-known designers and the Council of Fashion Designers of America supported the Bill, there were opponents that raised concerns about the standards that were created for protection and infringement being too vague. Furthermore, they argued that the DPPA would

¹⁰⁰ See Statement of the United States Copyright Office, Protection for Fashion Design, July 27, 2006, <http://www.copyright.gov/docs/regstat072706.html>.

¹⁰¹ L. Howard, 'An Uningenious Paradox: Intellectual Property Protection for Fashion Designs', Columbia Journal of Law and the Arts, Vol. 32, No. 3, 2009, p. 125.

¹⁰² Sui Generis: the term refers to a special form of protection regime outside the known IPRs framework. It can also be viewed as a regime especially tailored to meet a certain need.

¹⁰³ U.S. Code, title 17, ch. 13, § 1301 (a)(2).

¹⁰⁴ L. Howard, 'An Uningenious Paradox: Intellectual Property Protection for Fashion Designs', Columbia Journal of Law and the Arts, Vol. 32, No. 3, 2009, p. 125-127.

¹⁰⁵ U.S. Code, title 17, ch. 13, § 1301.

¹⁰⁶ W. Potter, 'Intellectual Property's Fashion Faux Pas: A Critical Look at the Lack of Protection Afforded Apparel Design Under the Current Legal Regime', University of San Francisco Intellectual Property Law Review, Vol. 16, No. 1, 2011, p. 88.

¹⁰⁷ L.T. Loangkote, 'Fashioning a New Look in Intellectual Property: Sui Generis Protection for the Innovative Designer', Hastings Law Journal Vol. 63, No. 297, 2012, p. 318.

only encourage frivolous lawsuits against its members and place unnecessary burdens on designers and administrators. For these and other reasons the Act did not pass.¹⁰⁸

There has always been a lack of information about how the fashion industry actually functions and all these bills failed for reasons that are mainly cultural and political.¹⁰⁹ The DPPA was revised in its successor, the **Innovative Design Protection and Piracy Prevention Act** (hereinafter: IDPPPA)¹¹⁰ which was introduced in 2010 by the fashion industry. Like the DPPA, it proposes to amend Chapter 13 of Title 17 of the U.S. Code and extend a sui generis form of copyright protection to new and original designs for apparel and accessories, and this was endorsed in 2011.¹¹¹ But the DPPA differed from the IDPPPA in several ways, there were differences among definitions in the Bill, requirements for registration and a searchable database, criteria for infringement and exceptions.¹¹² The IDPPPA limits protection for three years¹¹³ to works that "are the result of a designer's own creative endeavor," and "provide a unique, distinguishable, non-trivial and non-utilitarian variation over prior designs for similar types of articles."¹¹⁴ Because of requiring a high level of originality, the act protects economically fragile avant-garde¹¹⁵ work. A big difference to copyright law is the three years term of protection.¹¹⁶ After the three years time, a work can be reproduced freely and fully as part of the public domain, with copyright protection it runs for the life of the author plus seventy years after his death.¹¹⁷ The Bill includes a "substantially identical" standard, which gives the designer the right to prohibit a design "so similar in appearance as to be likely to be mistaken for the protected design and which contains only those differences in construction or design which are merely trivial." The biggest success of the Bill resides in its ability to strike balance between protecting design and on the other hand incentivize innovation. This balance is achieved by only giving protection to designs that are truly original, meaning that it maintains designers' incentive to try

¹⁰⁸ A. Eguchi, 'Curtailling Copycat Couture: the Merits of the Innovative Design Protection and Piracy Prevention Act and a Licensing Scheme for the Fashion Industry', Cornell Law Review, Vol. 97, No. 131, 2012, p. 146.

¹⁰⁹ L. Schutte, 'Copyright for Couture', Duke Law and Technology Review, No. 011, 2011, p. 7.

¹¹⁰ H.R. 2511, 112th Cong. (2011-2012).

¹¹¹ A. Landers, 'The Anti-Economy of Fashion: An Openwork Approach to Intellectual Property Protection', Fordham Intellectual Property, Media & Entertainment Law Journal, Vol. 24, No. _ Draft version 2013, Forthcoming 2014, p. 44.

¹¹² L. Schutte, 'Copyright for Couture', Duke Law and Technology Review, No. 011, 2011, p. 13.

¹¹³ H.R. 2511, 112th Cong. (2011-2012), §2(d).

¹¹⁴ H.R. 2511, 112th Cong. (2011-2012), §7(a).

¹¹⁵ Definition: New and experimental ideas and methods in art, music, or literature. See <http://www.oxforddictionaries.com/definition/english/avant-garde>.

¹¹⁶ A. Landers, 'The Anti-Economy of Fashion: An Openwork Approach to Intellectual Property Protection', Fordham Intellectual Property, Media & Entertainment Law Journal, Vol. 24, No. _ Draft version 2013, Forthcoming 2014, p. 45.

¹¹⁷ U.S. Code, title 17, ch. 3, § 302 (a).

to create original pieces. As a result, these originality standard functions protect only a narrow range of designs from direct copying. Disappointingly, the Bill does not go as far as inhibiting the “inspired by” designs, accordingly these designers will not face liability under the Bill’s provisions. Furthermore, for consumers the Bill will result in more options and a wider array of trends from which to choose, as the IDPPPA spurs creativity for the mass retail sector (like ZARA, H&M etc., who currently rely on copying designs from the latest trends). As these designers will no longer be able to blatantly copy original high fashion designs, they will most likely put more resources into creating unique products and establishing distinctive design branches within their own companies. The IDPPPA seems to be focused on addressing the specific problems prevalent in the fashion industry. Thus, the IDPPPA confers considerable benefits, which provide a step forward for on the one hand the fashion industry and on the other hand U.S. IP law.¹¹⁸

The main concern is that with its stringent originality standard, the IDPPPA only matters in specific cases because only a small amount of designs falls under the Bill’s protection.¹¹⁹ Professor Scafidi estimated in an interview with Bloomberg, that due to its heightened standard for originality the Bill would realistically only affect 10% of what actually goes down the runway.¹²⁰

Other critics argue that due to hidden costs in regards to the time and money designers will need to spend enforcing their copyrights, that the Bill could have a disproportionate impact to small fashion companies and emerging designers it aims to protect.¹²¹

As concluded above, the positive laws; copyright, patent and trademark law, are not tailored to the exact nature and characteristics of designs. Thus, even though the IDPPPA bill does not meet with all the protection needed, it is the optimal solution for designs, but they are still trying to optimize it.¹²² Still, it is not tailored enough to provide the adequate protection, thus modifications have tried to perfectionize the Bill.

Fortunately, in 2012, a bill known as the **Innovative Design Protection Act** (hereinafter: IDPA) was introduced to the Senate, which is a revised version of the previous IDPPPA. The IDPA is largely the same as the IDPPPA, but includes some takedown notable additions. The Bill would not completely banish piracy in the fashion industry, but it would certainly have some impact on reducing these

¹¹⁸ A. Eguchi, ‘*Curtailing Copycat Couture: the Merits of the Innovative Design Protection and Piracy Prevention Act and a Licensing Scheme for the Fashion Industry*’, Cornell Law Review, Vol. 97, No. 131, 2012, p. 149-150.

¹¹⁹ A. Eguchi, ‘*Curtailing Copycat Couture: the Merits of the Innovative Design Protection and Piracy Prevention Act and a Licensing Scheme for the Fashion Industry*’, Cornell Law Review, Vol. 97, No. 131, 2012, p. 151.

¹²⁰ See Bloomberg,

http://search1.bloomberg.com/search/?content_type=all&page=1&q=susan%20Scafidi%20

¹²¹ A. Akanegbu, ‘*Fashion’s Moral Dilemma: Exploring How a Lack of Moral Rights in the United States Disproportionately Harms Emerging Fashion Designers*’, Howard University, Working Paper No. 09-63, 2012, p. 17.

¹²² O. Fischman Afori, *Reconceptualizing Property in Designs*, Cardozo Art & Entertainment Law Journal, Vol. 25, No. 3, 2008.

activities. Some claims would probably have different outcomes with the IDPA, like the *Louboutin v. Yves Saint Laurent* case discussed above. In which at first, before the trademark was granted, under current law the District Court held that allowing Louboutin to have an unlimited claim to the color red was far too broad and would hinder competition in the industry. However, if the claim could have been brought under the IDPA, Louboutin would have to show that the YSL shoes in question were “substantially identical in overall visual appearance to and as to the original elements” of one of Louboutin’s shoes and he would have received protection right away and not after years of procedures.¹²³

Opponents of the Bill argue that a few things should change for the Bill being completely effective. Most significantly, the definition of “fashion design” seems to be too vague, which is stated in section 2(a)(2)(B) and says that it must consist of “original elements” and that, among other requirements, it must “provide a unique, distinguishable, non-trivial and non-utilitarian variation over prior designs for similar types of articles.” The concerns are made on the word “non-trivial”¹²⁴. The nature of fashion designs as tangible objects make the concept of “trivial” much more open to various forms of interpretation and the vagueness of the term will undoubtedly lead to different kind of interpretations across jurisdictions, plaintiffs and judges. Meaning that it makes it problematic to use the IDPA to protect fashion items. Others oppose that the Bill is weak and inadequately because the IDPA only serves for damages from sales done after the infringement is noticed, not for damage done prior to the notification.¹²⁵

All these revised bills show that the adequate protection has not been found. By trying to improve the bills step by step, copyright protection could eventually protect fashion designs. But as technology innovates and with the advent of new technologies like the 3D printer, fashion designers struggle with new protection dilemma’s that even revised bills will inadequately protect.

¹²³ C.E. Callahan, *‘Fashion Frustrated: Why the Innovative Design Protection Act is a Necessary Step in the Right Direction, But Not Quite Enough’*, Brooklyn Journal of Corporate Financial and Commercial Law, Vol. 7, No. 1, 2012, p. 213.

¹²⁴ Definition Trivial: of little value of importance,
<http://www.oxforddictionaries.com/definition/english/trivial>.

¹²⁵ C.E. Callahan, *‘Fashion Frustrated: Why the Innovative Design Protection Act is a Necessary Step in the Right Direction, But Not Quite Enough’*, Brooklyn Journal of Corporate Financial and Commercial Law, Vol. 7, No. 1, 2012, p. 215-218.

2. Overlapping Intellectual Property Right Protection

Historically, copyright, patent and trademark law protected very different types of works; the three areas of law occupied three separate realms and there was little or no overlap between them. Maybe the lines between the three areas may not always have been perfectly drawn, but it was generally understood that for any particular creative or inventive work only one type of protection was available.¹²⁶ Now, in a variety of circumstances, it is possible for the owner of a work to obtain the protections of more than one form of intellectual property. This has led to overprotection of intellectual property in the form of overlaps, which allows multiple bodies of intellectual property law to simultaneously protect the same subject matter.¹²⁷

Overlapping protection can arise in two different ways. First of all, intellectual property owners may seek concurrent coverage of more than one form of protection or secondly, they may request sequential protection.¹²⁸

Different intellectual property rights can protect different aspects of a product, the functional aspect of a product can be protected by patent law, while the name or logo of the same product by trademark law and the nonfunctional ornamental exterior by design patent.¹²⁹

In most circumstances overlapping rights have consequences, which create overprotection of intellectual property by undermining rationales on which a particular body of law is based and by avoiding some of the developed doctrines designed to limit protection under a specific body of intellectual property law.¹³⁰

Such overlapping protection is problematic because it interferes with the carefully developed doctrines that have evolved over time to balance the private property rights in intellectual creations against public access to such creations.¹³¹ In each of the overlapping IPRs, overlapping protection gives rise to the same set of problems and concerns. First of all, it deprives the public of the benefits meant to flow from the grant of intellectual property rights, including a decrease in the number of works entering the public domain, disrupting the incentive structures commanded by the American Constitution and established by Congress, and

¹²⁶ V.M. Moffat, *Mutant Copyrights and Backdoor Patents: The Problem of Overlapping Intellectual Property Protection*, Berkeley Technology Law Journal, Vol. 19, No. 1473, 2004, p. 1475.

¹²⁷ A. Beckerman-Rodau, *The Problem With Intellectual Property Rights: Subject Matter Expansion*, Yale Journal of Law and Technology, Vol. 13, No. 35, 2010, p. 36.

¹²⁸ V.M. Moffat, *Mutant Copyrights and Backdoor Patents: The Problem of Overlapping Intellectual Property Protection*, Berkeley Technology Law Journal, Vol. 19, No. 1473, 2004, p. 1499.

¹²⁹ A. Beckerman-Rodau, *The Problem With Intellectual Property Rights: Subject Matter Expansion*, Yale Journal of Law and Technology, Vol. 13, No. 35, 2010, p. 74.

¹³⁰ A. Beckerman-Rodau, *The Problem With Intellectual Property Rights: Subject Matter Expansion*, Yale Journal of Law and Technology, Vol. 13, No. 35, 2010, p. 74.

¹³¹ A. Beckerman-Rodau, *The Problem With Intellectual Property Rights: Subject Matter Expansion*, Yale Journal of Law and Technology, Vol. 13, No. 35, 2010, p. 36.

undercutting the right to copy.¹³² Moreover, overlapping protection causes unnecessary costs on intellectual property owners, litigants, third parties, and the public.¹³³

In the fashion industry, case study shows us that a hat with a fried egg as the design has been judged by the U.S. Patent and Trademark Office to be protected by utility patent and that the functionality or use of the hat can be considered to be “as an attention-getting item”¹³⁴. This same designation can obviously also be used on many items currently protected by other IPRs, like trademark or copyright law. Interestingly, another hat but then with a hamburger design has granted design patent protection, which means that it’s determined to be ornamental and non-functional. This is a big contrast to fried egg hat that has granted utility patent, while both items are the same. The type of protection granted is important for a designer and this has significant differences. Design patent for example provides protection for fourteen years¹³⁵ from the date the design patent is granted, while provides protection for twenty years^{136 137}.

The availability of overlapping intellectual property protection in all of its forms shows us that it presents a serious threat to the goals and purposes of federal intellectual property policy and makes it even more difficult to fully protect a fashion design.¹³⁸ Whenever IPRs framework for fashion designs has been developed properly and it would be clear which law specifically protects a fashion items, the overlapping phenomenon will not be a problem.

¹³² V.M. Moffat, ‘*Mutant Copyrights and Backdoor Patents: The Problem of Overlapping Intellectual Property Protection*’, Berkeley Technology Law Journal, Vol. 19. No. 1473, 2004, p. 1520.

¹³³ V.M. Moffat, ‘*Mutant Copyrights and Backdoor Patents: The Problem of Overlapping Intellectual Property Protection*’, Berkeley Technology Law Journal, Vol. 19. No. 1473, 2004, p. 1512.

¹³⁴ See U.S. Patent No. 5,457,821, United States Patent and Trademark Office, http://www.uspto.gov/web/patents/classification/uspc002/defs002.htm#C002S1_95000.

¹³⁵ U.S. Code, title 35, part II, ch. 16, § 173.

¹³⁶ U.S. Code, title 35, part II, ch. 14, § 154 (a)(2).

¹³⁷ A. Beckerman-Rodau, ‘*The Problem With Intellectual Property Rights: Subject Matter Expansion*’, Yale Journal of Law and Technology, Vol. 13, No. 35, 2010, p. 76-80.

¹³⁸ V.M. Moffat, ‘*Mutant Copyrights and Backdoor Patents: The Problem of Overlapping Intellectual Property Protection*’, Berkeley Technology Law Journal, Vol. 19. No. 1473, 2004, p. 1476.

3. Why is Fashion Design Protection Necessary?

Although trends often are developed through inspiration and creation of derivative works, copying line-by-line is harmful to the industry. Some argue that fast-fashion chains benefit the public by providing desirable designs at lower prices. In fact, these fast-fashion chains could still sell cheap fashion by selling their own designs.¹³⁹ The difficulty of extending intellectual property protection lies in striking a proper balance between granting enough protection to spur innovation while not influencing on the public benefits arising from intellectual property creations.¹⁴⁰ When taking all aspects into account, the arguments in favor of a well-protected intellectual property system certainly outweigh the counter-arguments.

Primarily, designers take great risk and cost in creating an entire fashion line, while style pirates may ride on the coattails of the designers' work and success, costing designers potentially huge sums of revenue.¹⁴¹ Furthermore, the piracy activity has resulted in great losses within lost sales, lost brand revenue, which consequences in reduced incentives to invest in new designs.¹⁴²

Moreover, piracy protection hurts the industry in the long run by curbing designers' incentives to innovate and more important, it hinders a new generation of designers from emerging. High fashion chains that are already popular to the public only may suffer from negative image, and even though they will suffer from financial losses they will manage to keep up and produce new collections. Whereas young designers that have their first fashion trend debut, will not be able to survive from financial losses that rise from massive imitations of their products. Electronic communication and express shipping ensure that prototypes and finished articles can be brought to market extremely quickly. As a result, thousands of inexpensive copies of a new design can be produced from start to finish, in only a few weeks, with the fast-fashion copying phenomenon.¹⁴³ These knockoff fashion designs can be purchased at the familiar stores in the local malls, like ZARA, H&M, Forever 21, etc.¹⁴⁴ The most striking consequence of low-cost, high-scale, rapid copying is that the copies reduce the profitability of originals, thus they reduce the prospective incentive to develop new designs in the first place. The reduced profits have a negative effect on the amount of innovation. Designers that are unprotected against design copying see a disproportionate

¹³⁹ L. Schutte, 'Copyright for Couture', Duke Law and Technology Review, No. 011, 2011, p. 7.

¹⁴⁰ A. Beckerman-Rodau, 'The Problem With Intellectual Property Rights: Subject Matter Expansion', Yale Journal of Law and Technology, Vol. 13, No. 35, 2010, p. 45.

¹⁴¹ K.V. Tu, 'Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original Fashion Designs and Designer Knockoffs', Texas Intellectual Property Law Journal, Vol. 18, No. 3, 2010, p. 446.

¹⁴² L. Schutte, 'Copyright for Couture', Duke Law and Technology Review, No. 011, 2011, p. 16.

¹⁴³ C. Scott Hemphill & J. Suk, 'The Law, Culture and Economics of Fashion', Stanford Law Review, Vol. 61, 2009, p. 170-171.

¹⁴⁴ L. Howard, 'An Uningenious Paradox: Intellectual Property Protection for Fashion Designs', Columbia Journal of Law and the Arts, Vol. 32, No. 3, 2009, p. 101.

effect on their profitability, and hence are discouraged from innovating.¹⁴⁵ When faced with the prospect that their design will be stolen immediately and used to yield profits for someone else before they even have a chance to put it on the market, designers may ask themselves why they should bother to put so much effort into creating new designs.¹⁴⁶ As new designs are what furthers innovation within the fashion industry, protection is what extends beyond the design creator's use could potentially stifle innovation within the design field. Therefore, a shortened window of protection is not only practicable, but also necessary for the economic and innovative viability of the fashion industry.¹⁴⁷

With the advent of digital technologies and the Internet, the balance has shifted, making the debate around design protection even more pertinent than before. Fashion shows can be streamed online and websites such as Vogue.com and Style.com and social media such as Twitter, Facebook, Instagram have photos of each runway look immediately after or within a few hours of each show.¹⁴⁸

Fashion copycats are not only able to take digital photographs of new fashion items, transmit them to overseas factories for reproduction, and place these designs on the market before the company that originated the style can, but with the advent of 3D printers they can even easily download the file created by the designer and print the design in a trice. This results in affecting competition.¹⁴⁹

Thus, consistent with the perception that protection is necessary for encouraging creativity of designers within the industry, it seems necessary to protect their rights.¹⁵⁰ One sign of the current regime governing the fashion industry being less than optimal, can be seen in the hurdle it creates for new designers seeking to enter the fashion industry. Small fashion companies that operate with independent designers (and that have to build credibility in the marketplace through the strength and cohesiveness of its designs) are significantly hindered to the extent that they are competing with low-priced knockoffs or designs being copied.¹⁵¹ Therefore, piracy disproportionately harms young designers who for example do not have established trademarks for their brands and must rely purely on creativity

¹⁴⁵ C. Scott Hemphill & J. Suk, *'The Law, Culture and Economics of Fashion'*, Stanford Law Review, Vol. 61, 2009, p. 171-172.

¹⁴⁶ C.E. Callahan, *'Fashion Frustrated: Why the Innovative Design Protection Act is a Necessary Step in the Right Direction, But Not Quite Enough'*, Brooklyn Journal of Corporate Financial and Commercial Law, Vol. 7, No. 1, 2012, p. 210.

¹⁴⁷ M.M. Ehrhard, *'protecting the Seasonal Arts: Fashion Design, Copyright Law, and the Viability of the Innovative Design Protection & Piracy Prevention Act'*, Connecticut Law Review, Vol. 45, No. 1, 2012, p. 306.

¹⁴⁸ C. E. Callahan, *'Fashion Frustrated: Why the Innovative Design Protection Act is a Necessary Step in the Right Direction, But Not Quite Enough'*, Brooklyn Journal of Corporate Financial and Commercial Law, Vol. 7, No. 1, 2012, p. 208.

¹⁴⁹ A. Eguchi, *'Curtailling Copycat Couture: the Merits of the Innovative Design Protection and Piracy Prevention Act and a Licensing Scheme for the Fashion Industry'*, Cornell Law Review, Vol. 97, No. 131, 2012, p. 142-145.

¹⁵⁰ O. Fischman Afori, *'Reconceptualizing Property in Designs'*, Cardozo Art & Entertainment Law Journal, Vol. 25, No. 3, 2008, p. 1134.

¹⁵¹ L. Howard, *'An Uningenious Paradox: Intellectual Property Protection for Fashion Designs'*, Columbia Journal of Law and the Arts, Vol. 32, No. 3, 2009, p. 119-120.

to launch their designs into the market.¹⁵²

Moreover, with the lack of IP protection (which results in freely made knockoffs), it also helps perpetuate a taste monopoly in which only the most expensive high-end players in the market dictate what “fashion” is, as the knockoffs only imitate these fashion items. The lack of diversity in the market helps to reinforce the trends themselves, tightening the control the fashion elite has over taste.¹⁵³

A well-created fashion design protection system can ensure the elimination of these consequences.

In sum, the first part of this article has shown us the incapacity of intellectual property rights in protecting the fashion industry. Even though the main goal of copyright law is promoting the useful arts, it fails to protect fashion designs. The law should look past the difficulty of separating the creative elements of a fashion design from its functional elements, and protect the sufficiently original creations of a fashion designer as a whole.

Patent law has taught us that the main barrier for fashion designs to obtain design patents lies in the fact that much apparel has been reworked and is not a new invention. Therefore, it is unlikely that a new fashion design meets the qualifications of being novel and nonobvious and therefore could be patentable at this point.

While trademark law protects a certain object of a fashion design (usually a brand’s label), it unfortunately does not protect the entire design. In addition, trademark law offers a competitive advantage to the more established companies with, for example, better-known logos than for emerging designers. To gain protection for the entire design, designers have to turn to trade dress protection, which refers to the “overall look and feel” of a product and this is an extension of trademark law. Unfortunately trade dress protection is not comprehensive and fails to cover the design protection in whole.

Moreover, a variety of bills have tried to extend fashion protection, but these bills show that the adequate protection has not been found yet. By trying to improve the bills step by step, it could be expected that copyright protection could eventually protect fashion designs.

The fact that the current intellectual property rights framework does not specifically protect a fashion design in its whole, but instead the item currently can partly be protected by several rights at the same time, leads to overlapping laws. This makes it even harder for a fashion design to obtain IPR protection.

Note, that the protection of fashion is necessary; cost wise, for innovation reasons, to prevent great losses within lost sales and lost brand revenue.

The main purpose of the first part of this article was to evaluate if *Intellectual Property Law in its Current Form Offers Adequate Protection for the Fashion*

¹⁵² L. Schutte, ‘*Copyright for Couture*’, Duke Law and Technology Review, No. 011, 2011, p. 1.

¹⁵³ L. Howard, ‘*An Uningenious Paradox: Intellectual Property Protection for Fashion Designs*’, Columbia Journal of Law and the Arts, Vol. 32, No. 3, 2009, p. 121-122.

Industry. After examining relevant topics it is clear that this question can be answered negatively. The author's viewpoint therefore is, that the fundament of the intellectual property rights is good but would need to be adapted to fulfill proper protection to the fashion industry. Specific laws that are only applicable for fashion are therefore needed.

3. THREE-DIMENSIONAL PRINTING & THE FASHION INDUSTRY

1. Three-Dimensional Printing

Around the mid 1980s, pioneers such as Charles Hull (the founder of 3D systems) and Scott Crump started developing a range of technologies now known as 3D printing.¹⁵⁴ Basically, a 3D printer is a machine that can turn a design made with a computer program into a physical object.¹⁵⁵ 3D printers output objects within width, height and depth.¹⁵⁶ The technique on which 3D printing is based is additive manufacturing, which involves building whole products layer by layer with the use of a range of different materials.¹⁵⁷ The process of a 3D printed item starts by the creation of a representation of an object by 3D scanning an existing object or by making a design from scratch into a computer program, commonly known as a computer-aided design file (hereinafter: CAD). The 3D printer software uses this information about the object to build up series of slices through the object. These multiple layers are being printed one on top of the other, which eventually becomes a thin slice of the finished item.¹⁵⁸ As 3D printers create objects by building them up layer-by-layer, they are even able to create objects with internal movable parts.¹⁵⁹ The “ink” being used to print the product can vary from plastic, metal paste, ceramic paste, food, and even human cells.¹⁶⁰

3D printing is an emerging technology that is already having an enormous and profound impact on how products are made and sold.¹⁶¹ The difference between traditional manufacturing in fabrics and additive manufacturing with 3D printers is how the product is formed. With traditional manufacturing the development of a product occurs by using a subtractive approach that includes a combination of grinding, forging, bending, molding, cutting, welding, gluing and assembling the product. In contrast, a 3D printer can produce a product by using one single

¹⁵⁴ V. Srinivasan & J. Bassan, ‘3D Printing and the Future of Manufacturing; Remaking Manufacturing’, CSC Leading Edge Forum, 2012, p. 5.

¹⁵⁵ B. Rideout, ‘Printing the Impossible Triangle: the Copyright implications of Three-Dimensional Printing’, *Journal of Business, Entrepreneurship & the Law*, Vol. 5, Issue 1, 2011, p. 163.

¹⁵⁶ S. Jones, M. McMorro & G. Stokes, ‘Clone Wars: 3D Printing and Intellectual Property’, DLA Pipers, 2011, p. 1.

¹⁵⁷ A. Sissons & S. Thompson, ‘Three Dimensional Policy: Why Britain needs a policy framework for 3D printing’, The Big Innovation Centre, October 2012, p. 8.

¹⁵⁸ S. Jones, M. McMorro & G. Stokes, ‘Clone Wars: 3D Printing and Intellectual Property’, DLA Pipers, 2011, p. 1-3.

¹⁵⁹ B. Rideout, ‘Printing the Impossible Triangle: the Copyright implications of Three-Dimensional Printing’, *Journal of Business, Entrepreneurship & the Law*, Vol. 5, Issue 1, 2011, p. 163.

¹⁶⁰ L.S. Osborn, ‘Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms’, San Diego Law Review, 2013, p. 5.

¹⁶¹ D.H. Brean, ‘Asserting Patents to Combat Infringement via 3D Printing: It’s No “Use”’, *Fordham Intellectual Property Media & Entertainment Law Journal*, Vol. 23, No. 771, 2013, p. 774.

operation, layer by layer. The product may need some post-production work such as, cleaning and baking, but it will not require assembly.¹⁶²

3D printers have already shown us their ability in printing the most significant products you can imagine. For example, the engineers of the University of Exeter which were the first to develop a way of applying 3D printing to chocolate and have now developed all kinds of chocolate objects without the use of expensive molding tools.¹⁶³ Another peculiar project is the “3D Print Canal House”, where an international team of partners collaborate in ‘research & doing’ linking science, design, construction and community, by 3D printing a canal house at an expo-site in the very heart of Amsterdam.¹⁶⁴

In the fashion industry 3D printers have shown their capacities in several cases. The Dutch designer Iris van Herpen is the first fashion designer that made use of 3D printers for the creation of her collection. These creations are the first created with a 3D printer to glaze the catwalk. They were loved and worn by big celebrities like Lady Gaga. However, these pieces are great for stage shows, but not that practical for daily use.¹⁶⁵

Moreover, the largest lingerie retailer Victoria’s Secret used computer-generated angel wings and corsets that looked like snowflakes on the runway.¹⁶⁶ A project that is more interesting for the public is the jewelry collection of Jacqueline Leib. She produced a collection of intricate, geometric necklaces and bracelets made from waves of sinuous silver strands, and all this was entirely created by the use of 3D printers.¹⁶⁷ These are just a bunch of examples and the range of designers that are using the technology of 3D printing for the production of their designs are emerging day by day. Therefore 3D printers are expected in a not so far future to be commonly used by companies and individuals.

Admittedly, as the product is in its infancy and the technology rarely supports the development of large volumes of products, 3D printing is not going to take over the entire manufacturing process for products such as fashion designs. However, like all technology, 3D printing will continue to evolve and could eventually take

¹⁶² V. Srinivasan & J. Bassan, ‘3D Printing and the Future of Manufacturing; Remaking Manufacturing’, CSC Leading Edge Forum, 2012, p. 5.

¹⁶³ See University of Exeter, University news, University of Exeter Announces Spin Out Company for 3D Chocolate Printing available at https://www.exeter.ac.uk/news/university/title_201237_en.html.

¹⁶⁴ See 3D Print Canal House available at <http://3dprintcanalhouse.com/what-is-the-3d-print-canal-house-1>.

¹⁶⁵ See A. Fisher, ‘3D-printed fashion: off the printer, rather than off the peg’ in The Guardian (October 13, 2013) available at <http://www.theguardian.com/technology/2013/oct/15/3d-printed-fashion-couture-catwalk>.

¹⁶⁶ See D. Scott, Taking Fashion to a New Dimension With 3D Printing, Clothing That Leaves Out the Sewing Machine in The New York Times (December 13, 2013) available at <http://www.nytimes.com/2013/12/15/fashion/3D-Printing-Clothing-fashion.html?adxnml=1&adxnmlx=1398866528-L0qPVisz+s98QqoMw4axOg>.

¹⁶⁷ F. Craddock, New Technology Opens Horizons at a Lesser Cost in The New York Times (May 15, 2013) available at <http://www.nytimes.com/2013/05/16/fashion/jewelry-makers-turn-to-3-d-printing.html>.

the development over, therefore we should be aware of the consequences it could bring.¹⁶⁸

Note, that the use of 3D printers is not limited to big manufacturers because simpler and cheaper versions of 3D printers have become available to individuals. Consumers can download digital representations of products over the Internet and print them in their own homes.¹⁶⁹ Since 3D printers make it possible for consumers to create physical objects from digital blueprints, infringements of intellectual property rights might have direct impact. Personal 3D printing might be the first step towards a future where consumers can download every product they can think of from the Internet and then print them out privately at home.¹⁷⁰ Nevertheless, 3D printing technologies are still at a very early stage of development for widespread consumer use, but we can expect this to emerge in the future. And even though being at this early stage, several incidents have already emerged involving accusations of copyright infringement of consumer 3D printing. However, it seems too early to describe the emergence of 3D printing as a new industrial revolution, but the future of additive manufacturing shows us that its impact could potentially be enormous.¹⁷¹ The availability of 3D printers will probably revolutionize society, affecting manufacturing, the environment, three-dimensional art, entrepreneurship, and global trade. To many, these consequences probably bring hope of new freedoms, innovation, and creativity. Unfortunately, decentralized infringement of products protected by intellectual property law and excessive use to print illegal products like weapons are consequences we also have to think of.¹⁷² Also, the technology is entering the mainstream faster than we expect. Microsoft added 3D printing capabilities to version 8.1 of its Windows operating system, and retailers like Staples, Amazon, and Microsoft stores are selling 3D printers to the public.¹⁷³

Therefore, before home printing gets commonly available to the public it is

¹⁶⁸ V. Srinivasan & J. Bassan, '3D Printing and the Future of Manufacturing; Remaking Manufacturing', CSC Leading Edge Forum, 2012, p. 5-6.

¹⁶⁹ D.H. Brean, 'Asserting Patents to Combat Infringement via 3D Printing: It's No "Use"', Fordham Intellectual Property Media & Entertainment Law Journal, Vol. 23, No. 771, 2013, p. 771.

¹⁷⁰ H.W. Frandsen, 'Personal 3D Printing & Intellectual Property Rights: How 3D Printing Technology Challenges the Effectiveness of Copyright and Design Law in Relation to the Protection of Objects of Applied Art', University of Copenhagen, Faculty of Law, 2014, p. 8.

¹⁷¹ See J. Chalmers, '3D Printing Not Yet a New Industrial Revolution, But Its Impact Will Be Huge', in The Guardian (December 10, 2013) available at <http://www.theguardian.com/commentisfree/2013/dec/11/3d-printing-not-yet-a-new-industrial-revolution-but-its-impact-will-be-huge>.

¹⁷² L.S. Osborn, 'Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms', San Diego Law Review, 2013, p. 5-7.

¹⁷³ L.S. Osborn, 'Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms', San Diego Law Review, 2013, p. 7.

beneficent to have a well-developed legal regime on the use of 3D printers.¹⁷⁴

2. Positive Consequences of 3D Printing

With 3D printing, the possibility of making anything in one day, at anytime, out of almost any material, is becoming increasingly more feasible.¹⁷⁵

There are a number of potential advantages and huge opportunities with this technique, as to the manufacturing of fashion designs. First of all, 3D printing is a digital technology with open and democratic properties that sets a great stage for innovation. With the use of 3D printers, new unexpected products and services are being created, supporting greater levels of collaboration and fostering disruptive market entrants.¹⁷⁶

Moreover, it creates opportunities for the manufacturing process, it makes the manufacturing of complex objects with complex materials and shapes possible and it reduces the waste of a product, while a traditional manufacture technique could be more complex to apply to certain items.¹⁷⁷ A 3D printer makes it possible to manufacture a product anywhere in the world. Where traditionally a good is manufactured in one particular place and then has to be shipped elsewhere around the world, 3D printers make it possible to manufacture the item where it is actually needed by sending a blueprint of the design to the place where it is needed. This automatically means that with the use of 3D printers, companies save costs for things like transport and logistics.¹⁷⁸

With respect to the fashion industry, a 3D printer can also reduce the inventories of fashion stores. By only producing what they actually need, a fashion company can operate with less stock instead of having to stockpile large numbers of products and try to predict sales. Moreover, the fashion industry could benefit from 3D printing now that they offer a greater scope for customizing a product according to the needs of the consumer. Think of the shape, appearance, color, and material of a garment that customers can customize to their taste or needs.¹⁷⁹

¹⁷⁴ C. Finocchiaro, 'Personal Factory or Catalyst for Piracy? The Hype, Hysteria, and Hard Realities of Consumer 3D Printing', *Cardozo Arts and Entertainment Law Journal*, Vol. 31, No. 473, 2013, p. 477-478.

¹⁷⁵ B. Rideout, 'Printing the Impossible Triangle: the Copyright implications of Three-Dimensional Printing', *Journal of Business, Entrepreneurship & the Law*, Vol. 5, Issue 1, 2011, p. 162.

¹⁷⁶ V. Srinivasan & J. Bassan, '3D Printing and the Future of Manufacturing; Remaking Manufacturing', *CSC Leading Edge Forum*, 2012, p. 26.

¹⁷⁷ A. Sissons & S. Thompson, 'Three Dimensional Policy: Why Britain needs a policy framework for 3D printing', *The Big Innovation Centre*, October 2012, p. 8

¹⁷⁸ A. Sissons & S. Thompson, 'Three Dimensional Policy: Why Britain needs a policy framework for 3D printing', *The Big Innovation Centre*, October 2012, p. 8

¹⁷⁹ A. Sissons & S. Thompson, 'Three Dimensional Policy: Why Britain needs a policy framework for 3D printing', *The Big Innovation Centre*, October 2012, p. 9

1. Home Three-Dimensional Printing

3D printers are not just revolutionary within the manufacturing of products for big manufacturers, it has also created a new generation of Do It Yourself (hereinafter: DIY) manufacturers, a broad collection of people engaged in the creation, modification or repair of objects without the aid of paid professionals.¹⁸⁰ Many 3D printers are evolving rapidly and can now compete with some commercial 3D printers. They make it economically possible to create unique products and personalize them in people's homes by printing this product with a 3D printer. Nowadays 3D printers can be purchased by individuals for around \$2000¹⁸¹, the consumer market is buzzing with affordable custom products, and in the future it is expected to see 3D printing stores in shopping malls. Home 3D printing signifies the democratization of manufacturing. Until now, the production of products always required the use of expensive machinery. This posed a barrier, preventing good ideas from being developed.¹⁸² By pairing 3D printing with the Internet, it allows users instantaneously to share CAD files of innumerable devices around the world. Users can find files on the web, download it, modify it if they want to, and print the resulting object.¹⁸³ Who had thought to be able to wear the famous sneaker of the movie *Back to the Future*? Filaflex developed a way to home 3D print a sneaker inspired by the futuristic *Back to the Future* sneaker. They are the first sneaker you can print at home, in any desirable color.¹⁸⁴ This is one of the many to follow fashion products that can be developed with home 3D printing.

Numerous articles about consumer 3D printing make broad claims regarding its potential, but it definitely also has its pitfalls. Translating a copyright-protected object into a format recognizable by a 3D printer still remains difficult, but more common in the future.¹⁸⁵ With this new technology, a DIYer or a fashion designer can create a design and then make that design available to the public in the form of a digital file. Ideally speaking, the consumer would have to purchase the file and would then be able to print the product. Unfortunately, it is thinkable that these files will be widespread freely over the Internet. Consumers can immediately download, use, and benefit from those ideas. It then becomes easy

¹⁸⁰ D. Doherty, 'Downloading Infringement: Patent Law as a Roadblock to the 3D Printing Revolution', *Harvard Journal of Law & Technology*, Vol. 26, No. 1, 2012, p. 354.

¹⁸¹ See TopTenReviews, 3D Printers, reviews and comparisons available at <http://3d-printers.tiptenreviews.com/>.

¹⁸² V. Srinivasan & J. Bassan, '3D Printing and the Future of Manufacturing; Remaking Manufacturing', *CSC Leading Edge Forum*, 2012, p. 14-17.

¹⁸³ L.S. Osborn, 'Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms', *San Diego Law Review*, 2013, p. 6.

¹⁸⁴ See M. Prigg, 'The "Back to the Future" 3D Printed Sneakers you can Make at Home- and Simply Scrunch Up to Put in Your Bag', in the *Daily Mail* (March 14, 2014) available at <http://www.dailymail.co.uk/sciencetech/article-2581335/The-Back-Future-3D-printed-sneakers-make-home.html>.

¹⁸⁵ C. Finocchiaro, 'Personal Factory or Catalyst for Piracy? The Hype, Hysteria, and Hard Realities of Consumer 3D Printing', *Cardozo Arts and Entertainment Law Journal*, Vol. 31, No. 473, 2013, p. 489-491.

for anyone to replicate the work of the DIYer, either by sending the digital file to a third party or by printing the design on personal hardware.¹⁸⁶

The social benefits of creativity and innovation must remain paramount in calculating the resulting balance with the IP problems. And the conflict between the DIY community and intellectual property holders is not a question that can be relegated to some far future¹⁸⁷, therefore it is important to take into account what the consequences can be anticipate on them.¹⁸⁸

¹⁸⁶ D. Doherty, '*Downloading Infringement: Patent Law as a Roadblock to the 3D Printing Revolution*', Harvard Journal of Law & Technology, Vol. 26, No. 1, 2012, p. 354.

¹⁸⁷ In a period time of a half-year MakerBot Replicator sold 5.500 units of consumer-level 3D printer in 2012.

¹⁸⁸ D. Doherty, '*Downloading Infringement: Patent Law as a Roadblock to the 3D Printing Revolution*', Harvard Journal of Law & Technology, Vol. 26, No. 1, 2012, p. 354.

3. Limitations to Three-Dimensional Printing in the Fashion Industry

As noted, these amazing abilities are also vulnerable to several restrictions. These restrictions mainly consist of practical, safety, regulatory and liability problems. Take the production process, 3D printers are typically self-contained units that can only produce one object at a time, since each copy has to be finished and removed from the printer before a new project may begin. This generally means that 3D printers are less appropriate for mass production and that it limits the size of objects that can be produced. This makes it practically problematic for big fashion chains that develop mass collections all around the world to make use of the 3D printing technique for the production of their products.¹⁸⁹

Regarding safety, the 3D printer makes it possible to produce beside products like fashion items also banned products like weapons. How could we possibly prevent and control users from making these kinds of products when they make a print in the privacy of their homes?

However, the restrictions concerning 3D printed fashion mainly consist of intellectual property related problems. Without a clear legal framework that deals with infringement issues, consumer's confidence will probably be undermined in 3D printed fashion and it obviously will create stifling legal disputes. By understanding how current IP Law relates to 3D printing in general, it could help us understand what this means to 3D printed fashion.¹⁹⁰

Furthermore, questions regarding liability issues will arise. The main concern is who could be held liable for the caused infringement?¹⁹¹ Now that most infringements in 3D printed fashion will be caused by illegal file sharing of fashion designs and to predict how legal disputes will combat these infringements, a comparison to file sharing in the music industry will be made.

In the following part the author focuses on examining the regulatory and liability limitations to 3D printed fashion.

1. Legal Framework: Intellectual Property Rights Implications

New technologies tempts to make infringements easy as laws may be unfamiliar with the technology and do not know how to provide proper protection.¹⁹² With the advent of the 3D printers, policies in particular around intellectual property are likely to make significant strains. The world of intellectual property is now

¹⁸⁹ C. Finocchiaro, 'Personal Factory or Catalyst for Piracy? The Hype, Hysteria, and Hard Realities of Consumer 3D Printing', *Cardozo Arts and Entertainment Law Journal*, Vol. 31, No. 473, 2013.

¹⁹⁰ M. Weinberg, 'It Will be Awesome if They Don't Screw it up: 3D Printing, Intellectual Property, and the Fight Over the Next Great Disruptive Technology', *Public Knowledge*, 2010, p. 1.

¹⁹¹ A. Sissons & S. Thompson, 'Three Dimensional Policy: Why Britain needs a policy framework for 3D printing', *The Big Innovation Centre*, October 2012, p. 20.

¹⁹² D.R. Desai & G.N. Magliocca, 'Patents, Meet Napster: 3D Printing and the Digitization of Things', *Georgetown Law Journal*, No. 2013-37, 2013, p. 22.

spinning with speculation and concern about the degree of impact the 3D printer will have on intellectual property rights.

There are three intellectual property rights that have an interest in the use of 3D printers, namely, copyright, patent and trademark.¹⁹³ An examination will be given of how these IPRs currently provide legal protection to 3D printed items. Focusing on what this would mean for 3D printed fashion.

1. Trademark Law & Trade Dress

Trademark law is designed to identify and distinguish a person's goods, it protects the integrity of the mark instead of the intellectual property per se, like the other IP rights tempt to do. A trademark can be described as a symbol of a company that helps consumer identify products and brands.

Trademark protection may play a small role where individuals seek to duplicate identically previously trademarked objects. Simply producing the same item without a logo would circumvent trademark protections. Therefore, trademark law is not expected to protect the right holders' work against 3D printed items.¹⁹⁴

In addition, it is reasonable to predict that individuals will demand access to customized brand-name goods. Now, trademark law does not seem to address that problem, trademark owners would be wise to offer for a valuable price to the public their own certified 3D printable and customizable files.¹⁹⁵

Thus, trade dress protection has been afforded to objects like the Coke bottle. With 3D printing people will be able to make product shapes that look like an established trade dress. But again, by not mentioning the brands name on the printed object, trade dress will not protect the printed object.¹⁹⁶

2. Patent Law

Useful and functional three-dimensional objects fall under the scope of patent law protection. Patents protect, the right of inventors to "exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States".¹⁹⁷ Manufacturers or consumers that 3D print an inventory of patented products and go on to "use, offer for sale, sell, or import" those products plainly are direct infringers. "Printing" falls under this scope of "making, using, offering for sale, or selling" the invention now the Supreme Court has stated that "the right to make can scarcely be made plainer by

¹⁹³ S. Bradshaw, A. Bowyer & P. Haufe, *The Intellectual Property Implications of Low-Cost 3D Printing*, Scripted, Volume 7, Issue 1, April 2010, p.14.

¹⁹⁴ M.A. Susson, *Watch the World "Burn": Copyright, Micropatent and the Emergence of 3D Printing*, Chapman University School of Law, 2013, p. 23.

¹⁹⁵ L.S. Osborn, *Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms*, San Diego Law Review, 2013, p. 29.

¹⁹⁶ D.R. Desai & G.N. Magliocca, *Patents, Meet Napster: 3D Printing and the Digitization of Things*, Georgetown Law Journal, No. 2013-37, 2013, p. 29-30.

¹⁹⁷ U.S. Code, title 35, ch.14, § 271.

definition, and embraces the construction of the product invented, which defines “making” under § 271 (a). Since the 3D print technique contains of building up an object layer-by-layer, the print satisfies the broad definition of “making”. Therefore, if the object is patented, it constitutes direct infringement as an unauthorized making of the invention.¹⁹⁸ As a result, the patentees can meaningfully enforce patents against the infringers. However, such claims can only be efficiently enforced against the direct infringer. Likely, companies can sell CAD files to individuals, these individuals print the products with their own printers. Which makes them direct infringers, instead of the actual seller of the CAD file. As these distributors do not “make” the actual product, they cannot be held liable.¹⁹⁹ Making and selling a CAD file cannot be considered as a sale of “the patented invention” under the scope of U.S. Code § 271. As the CAD file is not a “component” of the product, and the distribution of the files is not a “use” of the product since it does not put the product into service²⁰⁰. Therefore, patent law leaves the patentees helpless to combat the made infringements.²⁰¹

And again, even though the CAD file gained patent right protection, to successfully avail oneself of patent protection, one must file an application for an invention that is new to society, which is difficult to make and highly costly.²⁰² It is not valuable for fashion designers to file an application for every file that could be 3D printed, as fashion collections consist of hundreds of items per season.

3. Copyright Law

As copyright protection is available for both CAD files and 3D printed objects themselves, copyright law represents a better, but still imperfect, opportunity to prevent unlawful infringement of protected properties.²⁰³

Copyright law protects “original works of authorship”. For a work to be “original” it must be “independently” created and it must possess a degree of “creativity”. As noted, CAD files can be constructed in two different ways. First of all, someone can create a depiction of the three-dimensional object directly in a CAD program by, for example, drawing a design. Secondly, someone can make use of a 3D

¹⁹⁸ D.H. Brean, ‘*Asserting Patents to Combat Infringement via 3D Printing: It’s No “Use”*’, Fordham Intellectual Property Media & Entertainment Law Journal, Vol. 23, No. 771, 2013, p. 788.

¹⁹⁹ D.H. Brean, ‘*Asserting Patents to Combat Infringement via 3D Printing: It’s No “Use”*’, Fordham Intellectual Property Media & Entertainment Law Journal, Vol. 23, No. 771, 2013, p. 789.

²⁰⁰ U.S. Code, title 35, ch. 28, § 271

²⁰¹ D.H. Brean, ‘*Asserting Patents to Combat Infringement via 3D Printing: It’s No “Use”*’, Fordham Intellectual Property Media & Entertainment Law Journal, Vol. 23, No. 771, 2013, p. 804.

²⁰² M.A. Susson, ‘*Watch the World “Burn”*: Copyright, Micropatent and the Emergence of 3D Printing’, Chapman University School of Law, 2013, p. 23-24.

²⁰³ M.A. Susson, ‘*Watch the World “Burn”*: Copyright, Micropatent and the Emergence of 3D Printing’, Chapman University School of Law, 2013, p. 26.

scanner to scan the exact same object, allowing a computer to create the CAD file. The first method would likely be “independently” created just like any other painting, whereas the second method may not qualify as an independent creation now that the scanner rather than a person does all the work. The last method of CAD file creation may constitute infringement.

The necessity that the work needs to have a minimal degree of “creativity” seems easily achievable for the first method.²⁰⁴ Hence, the file is protectable as it likely falls under the category of “pictorial, graphic, and sculptural works” (hereinafter: PGS works). Copyright law protects “original works of authorship”, which, among other things, include “literary works” and “pictorial, graphic, and sculptural works”.²⁰⁵

CAD files can be characterized as “literary works”, as computer programs are considered protectable as literary works under the U.S. Code.²⁰⁶ A computer program can be defined as “a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result”, CAD files fall under this scope. A CAD file contains all the information (“instructions”) to be used by a printer (“computer”) to print a 3D object (“bring about a certain result”). Hence, a CAD file falls within the definition of a computer program under the copyright statute.²⁰⁷

Moreover, CAD files can be qualified as “pictorial, graphic, and sculptural works”. PGS works are defined under the U.S. Code § 101 as, “two-dimensional and three-dimensional works of fine, graphic, and applied art, photographs, prints and art reproductions, maps, globes, charts, diagrams, models, and technical drawings, including architectural plans”, CAD files fall under this scope and therefore gains copyright protection.²⁰⁸

However, in the second case the goal is to get an exact and accurate scan of the object, whereby the “creativity” lacks. Scanning does not create a new copyright, as the creative object itself is already protected by copyright.²⁰⁹

Even if the CAD file meets the “originality” requirement, the requirement of “useful article” may cause problems. PGS works are not protected under copyright law, the design of a useful article will be considered a PGR work only if such design incorporates pictorial, graphic, or sculptural features, that can be identified “separately” from, and are capable of existing independently of, the

²⁰⁴ L.S. Osborn, ‘*Of PhDs, Pirates, and the Public: Three- Dimensional Printing Technology and the Arts*’, Texas A&M Law Review, draft version January 15, 2014, p. 20.

²⁰⁵ U.S. Code title 17, § 102 (a).

²⁰⁶ Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1247- 48 (3d Cir. 1983); see also U.S. Code, title 17, § 117.

²⁰⁷ L.S. Osborn, ‘*Of PhDs, Pirates, and the Public: Three- Dimensional Printing Technology and the Arts*’, Texas A&M Law Review, draft version January 15, 2014, p. 16-17.

²⁰⁸ L.S. Osborn, ‘*Of PhDs, Pirates, and the Public: Three- Dimensional Printing Technology and the Arts*’, Texas A&M Law Review, draft version January 15, 2014, p. 17-18.

²⁰⁹ M.A. Susson, ‘*Watch the World “Burn” : Copyright, Micropatent and the Emergence of 3D Printing*’, Chapman University School of Law, 2013, p. 32.

utilitarian aspects of the article.²¹⁰ CAD files, like technical drawings, simply “convey information”. When a CAD program displays the file on a computer screen, the file merely conveys information regarding what it would look like if printed. Of course, the file also tells the printer how to print the object, but this could likewise be defined as the CAD file merely “conveying information” to the printer regarding what to print. This would mean that CAD files are considered to be useful articles and therefore will not gain copyright law protection.²¹¹

The reality is that if the law does not directly protect CAD files for creative works, and instead only protects the printed object, the rights holders of the fashion designs will have a very difficult time protecting their works. It could be expected that the unprotected CAD file with a fashion design in it will be reproduced, posted on the Internet, and shared around the world without the rights holders’ consent.²¹² The main issue concerning copyright law is the potential of wide spreading personal manufacturing of copyrighted objects. The biggest challenge would therefore be to identify these individuals that make use of home 3D printing and infringe the copyrights of the rights holders in the privacy of their homes. Which at this point seems impossible.²¹³

In sum, all the existing intellectual property rights do not address the problem of the infringements that fashion designers will have because of the use of 3D printers. Whenever consumers develop a clothing item by downloading an existing CAD file, they can customize the product and choose to leave the brand name out. In this case, trademark law cannot protect the rights holders. Patent law leaves the patentees helpless to combat the made infringements now that claims can only be efficiently enforced against the direct infringers. The consumer that has downloaded the file from a third party will be considered to be the direct infringer instead of the actual infringer that has provided the file. To really combat the infringement that has been made, the third party that has provided the file should be held liable, but unfortunately this is not easy.

This leaves us with copyright law, which at first represented an opportunity to prevent unlawful infringements, but even if the CAD file meets the “originality” requirement, the requirement of “useful article” may cause problems and will leave copyright protection aside.

The second question that has risen in the introduction of this article: “*Is Intellectual Property Law in its Current Form Able to Handle Technological Developments Like 3D Printing in a Proper Way?*”, can also be answered

²¹⁰ U.S. Code, title 17, ch. 1, § 101.

²¹¹ M.A. Susson, ‘*Watch the World “Burn”: Copyright, Micropatent and the Emergence of 3D Printing*’, Chapman University School of Law, 2013, p. 31.

²¹² L.S. Osborn, ‘*Of PhDs, Pirates, and the Public: Three- Dimensional Printing Technology and the Arts*’, Texas A&M Law Review, draft version January 15, 2014, p. 24-27.

²¹³ See M. Barnett, ‘*The Next Big Fight: 3D Printing and Intellectual Property Rights*’ in the Technology Law Source (January 31, 2014) available at <http://www.technologylawsource.com/2014/01/articles/intellectual-property-1/the-next-big-fight-3d-printing-and-intellectual-property/>.

negatively. We already saw that IPRs in general are not set out to give suitable protection to the fashion industry, and the situation becomes even more problematic when examining technological developments like 3D printing. IPRs definitely cannot keep up with evolving technology and therefore a well-set framework for 3D printed items (and most probably also for other technological developments) should be constructed.

2. Liability for Fashion Design File Sharing

As noted, the new technology of 3D printing has disruptive effects on intellectual property systems. In order to contemplate the potential effects of 3D printing on IP, it is helpful to examine how we have dealt with the effects of other transformative technologies in the past.²¹⁴ The music industry can help us to better understand which effects 3D printing eventually could have, because of the fact that in the music industry, we also had to deal with illegal file sharing.

1. A Comparison of File Sharing in the Music Industry & the Fashion Industry

With the advent of the Internet and P2P networks, methods for finding and experiencing music expanded radically. The P2P networks have made public distribution of music through the Internet to the entire world possible. This has resulted in easier and almost costless mass reproduction and dissemination of copyrighted works. Music became digital in MP3 files, which were distributed to the public on P2P intermediaries such as Napster or Internet Service Providers (hereinafter: ISP's). Napster created a centralized open access database where almost every thinkable song was available and where users shared their files freely. This resulted in huge infringements of the rights holders' copyrights. Copyright owners have aggressively litigated against unauthorized music distribution and the discussion whether the users that shared their files or the P2P networks that made available file sharing were liable had risen. Eventually, networks like Napster²¹⁵ were shut down and were held liable as indirect infringers for the users' infringements.²¹⁶ Accordingly, Courts decided that, as music files were downloaded millions of times on the P2P networks, it could be expected that the networks knowingly and purposefully had let users shared their files. At least, they were "constructively aware" of the users actions and had

²¹⁴ C. Finocchiaro, 'Personal Factory or Catalyst for Piracy? The Hype, Hysteria, and Hard Realities of Consumer 3D Printing', *Cardozo Arts and Entertainment Law Journal*, Vol. 31, No. 473, 2013, p. 480-481.

²¹⁵ *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (2001).

²¹⁶ F. Pasquale, 'Beyond Napster: Using Antitrust Law to Advance and Enhance Online Music Distribution', *Boston University Journal of Science and Technology Law*, 2002, p. 5-9.

provided the facilities for the infringements. With this in mind Napster could be held liable for secondary²¹⁷ liability as a contributory infringer.²¹⁸ The issue of secondary liability for copyright infringement also came before the Supreme Court in the MGM Studios v. Grokster case²¹⁹. The Court decided that file sharing networks could be held liable whenever ‘one who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, is liable for the resulting acts of infringement by third.’ This is what is considered to be the “inducement theory”. Liability would not attach to ‘mere knowledge’ of potential or actual infringing uses. It is expected that companies attempt to reduce infringement by using filtering tools or other similar mechanisms. In the Grokster case, Grokster enabled users to share copyrighted works and was therefore held liable.²²⁰

In sum, these two cases have shown us that P2P networks are liable for contributory infringement only if they (1) have specific knowledge of infringement at the time at which they contribute to the infringement, and (2) has taken affirmative steps to foster the infringement.²²¹

After the consequences these cases brought, P2P networks had find their ways to mislead the DMCA rules by newly developed P2P networks. Whereas the music industry turned to litigation efforts suing thousands of individuals who had downloaded copyrighted music without the right holder’s permission.²²² The Recording Industry Association of America (hereinafter: RIAA) filed legal actions against at least 30.000 individuals who made use of the services of P2P networks.²²³

Moreover, the “fair use doctrine” was often used in the music industry. Fair use of copyrighted works is a tool that is used in the music industry for permitting the unauthorized sharing of works of creative expression²²⁴. It enables use for purposes important to the public interest, such as criticism, comment, parody, and news reporting. However, in general courts have not been very receptive to fair use arguments raised in the context of the music distribution technologies. They have often reasoned that because copyright owners are already licensing (or expect to license their copyrighted works for use online), there is less justification

²¹⁷ Liability that is placed on a person who did not directly infringe the copyright but who helped the infringer or benefited from the infringer.

²¹⁸ P.K. Yu, ‘P2P and the Future of Private Copying’, Michigan State University College of Law, Research Paper No. 02-08, 2005, p. 659.

²¹⁹ MGM Studios, Inc. vs. Grokster, Ltd., 545 U.S. 913 (2005).

²²⁰ M. A. Carrier, *The Pirate Bay, Grokster, and Google*, Rutgers School of Law, Journal of Intellectual Property Rights, Vol. 15, 2010, p. 12-13.

²²¹ M.A. Lemley & R.A. Reese, ‘*Reducing Digital Copyright Infringement Without Restricting Innovation*’, University of California, Berkeley School of Law, Research Paper No. 525662, 2004, p. 35

²²² L.S. Osborn, ‘*Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms*’, San Diego Law Review, 2013, p. 56.

²²³ See RIAA v. The People: Five Years Later (September 30, 2008) in Electronic Frontier Foundation available at <https://www.eff.org/wp/riaa-v-people-five-years-later>.

²²⁴ U.S. Code, title 17, § 107.

for fair use. Therefore, the fair use doctrine is an often-used exception in the music industry.²²⁵

As a result, file sharing has led to substantial losses in the traditional market of CD sales, whereas the biggest CD/DVD retailers²²⁶ are shutting down.²²⁷

²²⁵ F. Pasquale, *'Beyond Napster: Using Antitrust Law to Advance and Enhance Online Music Distribution'*, Boston University Journal of Science and Technology Law, 2002, p. 13.

²²⁶ See A. Covert, Free Record Shop Nederland is opnieuw failliet en sluit alle winkels (April 22, 2014) in the NRC available at <http://www.nrc.nl/nieuws/2014/04/22/free-record-shop-is-failliet-en-sluit-alle-winkels-in-nederland/>.

²²⁷ G.R. Faulhaber, *'File Sharing, Copyright, and the Optimal Production of Music'*, Mich. Telecomm Technology Law Review 77, 2006.

2. What we can Learn From Illegal File Sharing in the Music Industry

The music industry has shown us that the open nature of the Internet is difficult to control. In terms of 3D printing this means that it will be easy for individuals to access and share the designs and technical information of physical products freely. This is similar to the difficulties we have seen in controlling P2P sharing of copyrighted works in the music industry.²²⁸ The P2P copyright battles have special salience for 3D printing, as the technological advances that catalyzed them are also highly relevant to 3D printing. You could think of digitization, the Internet, and P2P networks. By comparing file sharing of music files with CAD files, we could really learn how to deal with 3D file sharing on the Internet, and it can help us in predicting regulatory battlegrounds.²²⁹

First of all, the digital music litigation demonstrated that in a world of P2P networks it is very difficult to identify who actually makes available the files.²³⁰

In terms of 3D printed fashion, this will have the same consequence.

Secondly, if the P2P networks that make available the fashion designs were to be held liable and for that reason were shut down, other or new P2P networks will find their way to keep on making the files available to the public.

Moreover, the digital music industry has demonstrated that individuals were sued by organizations like the RIAA. These legal actions do not seem to have effect, because individuals keep downloading their music freely instead of buying an album.²³¹ The chances that any given person will be sued for direct infringement are extremely low.²³²

But what is possibly a bigger issue for 3D printing that we have to keep in mind is the fact that people will not simply make exact copies of trademarked goods. Instead, they are able to shape and personalize them, leading them to feelings of ownership and entitlement. This will make it even harder to sue them for the made infringement.²³³

In the music industry we have seen that, in some cases, the fair use exception is applicable. It would not be a good idea to create a fair use exception for 3D printing technology. As we have seen that this exception has failed the music industry.

The question “what can the Fashion Industry Learn From Illegal File Sharing in

²²⁸ A. Sissons & S. Thompson, ‘*Three Dimensional Policy: Why Britain needs a policy framework for 3D printing*’, The Big Innovation Centre, October 2012, p. 22.

²²⁹ L.S. Osborn, ‘*Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms*’, San Diego Law Review, 2013, p. 3.

²³⁰ L.S. Osborn, ‘*Of PhDs, Pirates, and the Public: Three- Dimensional Printing Technology and the Arts*’, Texas A&M Law Review, draft version January 15, 2014, p. 27.

²³¹ See RIAA v. The People: Five Years Later (September 30, 2008) in Electronic Frontier Foundation available at <https://www.eff.org/wp/riaa-v-people-five-years-later>.

²³² D.R. Desai & G.N. Magliocca, ‘*Patents, Meet Napster: 3D Printing and the Digitization of Things*’, Georgetown Law Journal, No. 2013-37, 2013, p. 39.

²³³ L.S. Osborn, ‘*Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms*’, San Diego Law Review, 2013, p. 28.

the Music Industry?” could after the given examination be answered as follows. First of all, the reality is that the digital distribution of 3D objects will undoubtedly raise similar piracy challenges as in the music industry.²³⁴ This helps us predict that it will cost much effort to combat the infringements made by 3D printing. We have seen the music industry change radically. If we do not want the same to happen to the fashion industry, we can conclude that we have to handle differently than before. This requires a well-set legal regime that integrates with the new technology, because whether we like it or not, the technology is forthcoming. Before 3D printing can profit from technological potentials, regulators, must address the intellectual property implications before the technology can reach the point of ubiquity.²³⁵

Instead of trying to sue it out of existence, it is time to think in solutions,²³⁶ which might be taking the practice one step further by creating programs and trafficking selling code the way iTunes and Spotify sell songs. At first, the music industry adopted a heavily litigious approach instead of embracing the Internet and the possibilities of new digital revenue streams.²³⁷ Programs like iTunes and Spotify have shown us that the world is willing to pay for the works, but that people need software that makes this possible. By developing software where individuals can easily buy fashion design files, it could be expected that individuals will contribute and stimulate fashion designers as they do with music artists.²³⁸ This would mean that not only regulators have to task of adapting and creating laws to protect the fashion industry. The fashion industry themselves will have to work as a unity and develop software that makes it practicable for individuals to download documents with fashion designs to a reasonable price.

²³⁴ D.H. Brean, ‘*Asserting Patents to Combat Infringement via 3D Printing: It’s No “Use”*’, Fordham Intellectual Property Media & Entertainment Law Journal, Vol. 23, No. 771, 2013, p. 781.

²³⁵ M.A. Susson, ‘*Watch the World “Burn”: Copyright, Micropatent and the Emergence of 3D Printing*’, Chapman University School of Law, 2013, p. 20.

²³⁶ M.A. Susson, ‘*Watch the World “Burn”: Copyright, Micropatent and the Emergence of 3D Printing*’, Chapman University School of Law, 2013, p. 40.

²³⁷ M.A. Susson, ‘*Watch the World “Burn”: Copyright, Micropatent and the Emergence of 3D Printing*’, Chapman University School of Law, 2013, p. 41.

²³⁸ See R. Hiscott, ‘*Will 3D Printing Upend Fashion Like Napster Crippled the Music Industry?*’ in Mashable (March 3, 2014) available at <http://mashable.com/2014/03/03/3d-printing-fashion/>.

4. CONCLUSION

The protection of fashion design has been a difficult part of IPRs. Even though it is currently one of the fastest growing and most important creative industries in the USA, it does not yet get the legal protection other industries benefit from. In a country that has a well-developed system of IP protection and actively punishes violations of those protections, one would expect protection for fashion creations. Not only is proper protection desired from an ethical point of view, it most definitely is important because of monetary and innovation reasons

The first part of this article has tried to present a clear overview of what kind of protection IPRs in its current form offers and how this currently relates to fashion design in general. Copyright, patent, trademark and trade dress have been discussed.

Copyright fails to protect fashion designs. Even though the main goal of copyright is promoting the useful arts. The law should look past the difficulty of separating the creative elements of a fashion design from its functional elements, and protect the sufficiently original creations of a fashion designer as a whole.

The main barrier for fashion designs to obtain design patents lies in the fact that many apparel has been reworked and are not new inventions. Therefore, it is unlikely that a new fashion design meets the qualifications of being novel and nonobvious and therefore could be patentable at this point.

Trademark law protects a certain object of a fashion design (usually a brand's label), but unfortunately it does not protect the entire design. In addition, trademark law offers a competitive advantage to the more established companies with, for example, better-known logos than for emerging designers. To gain protection for the entire design, designers have to turn to trade dress protection, which refers to the "overall look and feel" of a product and this is an extension of trademark law. Unfortunately trade dress protection is not comprehensive and fails to cover the design protection in whole.

A variety of bills have also tried to extend the protection, but these bills show that the adequate protection has not yet been found.

Like mentioned earlier in this article, the conclusion on the general part of IPRs and fashion law is that property law in its current form does not offer adequate protection for the fashion industry.

As technology innovates and with the advent of new technologies like the 3D printer, fashion designers struggle with new protection dilemma's that even revised bills will inadequately protect. The continuing tension between intellectual property protection and technological innovation is acknowledged. The difficulty of extending intellectual property protection lies in striking a proper balance between granting enough protection to spur innovation, while not influencing

public benefits arising from intellectual property creations.

With a 3D printer, fashion designs can be easily printed and there is a strong possibility that this technology is eventually heading to peoples homes. The 3D printers have shown its merits and pitfalls. Concerning fashion designs, the 3D printer benefits from offering a greater scope for customizing a product according to the needs of the consumer. Unfortunately, the major drawback of the 3D printer is that files will probably be widespread freely over the Internet. Consumers can immediately download, use, and benefit from those ideas. Without a clear legal framework that deals with infringement issues, consumer's confidence in 3D printed fashion (and maybe even in the industry as a whole) is at stake, and it most likely will be a source of stifling legal disputes.

The second part of this article examined IPRs when linked to 3D printing technology specifically. Potential opportunities and threads have been discussed on the basis of the different elements of IP law

Trademark law is not expected to protect the right holders' work against 3D printed items as consumers can produce the same design without a logo and circumvent trademark law.

Patent law leaves the patentees helpless to combat the made infringements now that claims can only be efficiently enforced against the direct infringers. The consumer that has downloaded the file from a third party will be considered to be the direct infringer instead of the actual infringer that has provided the file. To really combat the infringement that has been made, the third party that has provided the file should be held liable, but unfortunately this is not easy.

This leaves us with copyright law, which at first represented an opportunity to prevent unlawful infringements, but even if the CAD file meets the "originality" requirement, the requirement of "useful article" may cause problems and leaving copyright protection aside.

The main problem definition that has been formulated in the introduction of this article is: *"Does Intellectual Property Law have to Change its Structure to Keep Up With Technological Developments and Offer Adequate Protection to the Fashion Industry, and if so, in What Way it Would Have to Change?"*

After examining all the elements as discussed in this article, it is safe to say that intellectual property law certainly has to change its structure. It currently does not offer adequate protection for fashion design, and this will become even harder if technology moves on (and it will move on). If IP laws do not adapt soon, the fashion industry could collapse because of large monetary losses or because of a lack of innovation. At least we can expect it to change radically, like file sharing in the music industry has taught us, but it is to the USA legislators to cope with this change.

A few recommendations for further research have surfaced when taking into account all the findings of this article.

The fundament of IPRs is good but it needs to adapt to fulfill proper protection in the fashion industry. Specific laws that are only applicable for fashion are therefore needed. Copyright protection has probably the most potential for success because it can possibly, after adjustments, protect a fashion design in its whole rather than only elements of it. This could be achieved by strengthening copyright protection, therefore increasing its scope and improving enforcement. From a practical point of view, it has been proven to be hard to change current law, so an alternative would be to revise existing bills and change things step by step.

Like already mentioned, there is little literature available on 3D printing and IP law relating to fashion, so further research will have to expand the field. But by examining other industries like the music industry, another possible effective recommendation can be given. Programs like iTunes have helped the music industry emerging and have shown us that consumer are willing to pay for files they want to make use of. Key here is that the music industry, and then in this case Apple, has taken initiative by creating software to fight the known problems of illegal file sharing. The fashion industry can learn from this by operating as a collective and addressing potential future problems as a whole. This does not only apply for this example, but also for trying to change the way fashion design is protected in general.

5. BIBLIOGRAPHY

A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004 (2001).

AKANEGBU (2012)

A. Akanegbu, '*Fashion's Moral Dilemma: Exploring How a Lack of Moral Rights in the United States Disproportionately Harms Emerging Fashion Designers*', Howard University, Working Paper No. 09-63, 2012.

ANDREWS (2012)

K.N. Andrews, '*the Most Fascinating Kind of Art: Fashion Design Protection as a Moral Right*', New York University Journal of Intellectual Property & Entertainment Law, Vol. 2, No. 188, 2012.

Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1247- 48 (3d Cir. 1983)

BARNETT (2014)

M. Barnett, '*The Next Big Fight: 3D Printing and Intellectual Property Rights*' (January 31, 2014) in the Technology Law Source available at <http://www.technologylawsources.com/2014/01/articles/intellectual-property-1/the-next-big-fight-3d-printing-and-intellectual-property/>.

BECKERMAN-RODAU (2010)

A. Beckerman-Rodau, '*The Problem With Intellectual Property Rights: Subject Matter Expansion*', Yale Journal of Law and Technology, Vol. 13, No. 35, 2010.

BRANDSHAW (2010)

S. Bradshaw, A. Bowyer & P. Haufe, '*The Intellectual Property Implications of Low-Cost 3D Printing*', Scripted, Volume 7, Issue 1, April 2010.

BREAN (2013)

D.H. Brean, '*Asserting Patents to Combat Infringement via 3D Printing: It's No "Use"*', Fordham Intellectual Property Media & Entertainment Law Journal, Vol. 23, No. 771, 2013.

CAMPBELL, WILLIAMS, IVANOVA & GARRETT (2012)

T. Campbell, C. Williams, O. Ivanova & B. Garrett, '*Could 3D Printing Change the World? Technologies, Potential and Implications of Additive Manufacturing*', Atlantic Council: Strategic Foresight Report, 2012.

CALLAHAN (2012)

C.E. Callahan, '*Fashion Frustrated: Why the Innovative Design Protection Act is a Necessary Step in the Right Direction, But Not Quite Enough*', Brooklyn Journal of Corporate Financial and Commercial Law, Vol. 7, No. 1, 2012.

CARRIER (2010)

M. A. Carrier, '*The Pirate Bay, Grokster, and Google*', Rutgers School of Law, Journal of Intellectual Property Rights, Vol. 15, 2010.

CARROL (2009)

M.W. Carrol, '*One Size Does Not Fit All: A Framework for Tailoring Intellectual Property Rights*', Ohio State Law Journal, Vol. 70, No. 6, 2009.

CHALMERS (2013)

J. Chalmers, '*3D Printing Not Yet a New Industrial Revolution, But Its Impact Will Be Huge*', in The Guardian (December 10, 2013) available at <http://www.theguardian.com/commentisfree/2013/dec/11/3d-printing-not-yet-a-new-industrial-revolution-but-its-impact-will-be-huge>.

COHEN (2005)

J.E. Cohen, '*The Place of the User in Copyright Law*', Fordham Law Review, Vol. 74, 2005.

DESAI & MAGLIOCCA (2013)

D.R. Desai & G.N. Magliocca, '*Patents, Meet Napster: 3D Printing and the Digitization of Things*', Georgetown Law Journal, No. 2013-37, 2013.

DINWOODIE, DREYFUSS & KUR (2009)

G.B. Dinwoodie, R. Dreyfuss & A. Kur, '*The Law Applicable to Secondary Liability in Intellectual Property Cases*', University of Oxford Legal Research Paper Series No. 51, 2009.

DOHERTY (2012)

D. Doherty, '*Downloading Infringement: Patent Law as a Roadblock to the 3D Printing Revolution*', Harvard Journal of Law & Technology, Vol. 26, No. 1, 2012.

EGUCHI (2012)

A. Eguchi, '*Curtailing Copycat Couture: the Merits of the Innovative Design Protection and Piracy Prevention Act and a Licensing Scheme for the Fashion Industry*', Cornell Law Review, Vol. 97, No. 131, 2012.

ELECTRONIC FRONTIER FOUNDATION (2008)

RIAA v. The People: Five Years Later (September 30, 2008) in Electronic Frontier Foundation *available at* <https://www.eff.org/wp/riaa-v-people-five-years-later>.

ELLIS (2010)

S.R. Ellis, '*Copyrighting Couture: An Examination of Fashion Design Protection and Why the DDPA and IDPPPA are a Step Towards the Solution to Counterfeit Chic*', Tennessee Law Review, Vol. 78, 2010.

FAULHABER (2006)

G.R. Faulhaber, '*File Sharing, Copyright, and the Optimal Production of Music*', Mich. Telecomm Technology Law Review 77, 2006.

FINOCCIARO (2013)

C. Finocchiaro, '*Personal Factory or Catalyst for Piracy? The Hype, Hysteria, and Hard Realities of Consumer 3D Printing*', Cardozo Arts and Entertainment Law Journal, Vol. 31, No. 473, 2013.

FISCHMAN AFORI (2008)

O. Fischman Afori, '*Reconceptualizing Property in Designs*', Cardozo Art & Entertainment Law Journal, Vol. 25, No. 3, 2008.

FISHER (2013)

A. Fisher, '*3D Printed Fashion: off the Printer, Rather Than off the Pegg*', in The Guardian (October 13, 2013) *available at* <http://www.theguardian.com/technology/2013/oct/15/3d-printed-fashion-couture-catwalk>.

FRANSEN (2014)

H.W. Frandsen, '*Personal 3D Printing & Intellectual Property Rights: How 3D Printing Technology Challenges the Effectiveness of Copyright and Design Law in Relation to the Protection of Objects of Applied Art*', University of Copenhagen, Faculty of Law, 2014.

HENDRICK (2008)

L.J. Hendrick, '*Tearing Fashion Design Protection Apart at the Seams*', Washington and Lee Law Review, Vol. 65, No. 1, 2008.

HISCOTT (2014)

R. Hiscott, '*Will 3D Printing Upend Fashion Like Napster Crippled the Music Industry?*' (March 3, 2014) in Mashable *available at* <http://mashable.com/2014/03/03/3d-printing-fashion/>.

HOLLANDER (2012)

S.E. Hollander, '*Louboutin's Red Sole Shoe Mark: Trademark Protection for Single Colors in the Fashion Industry*', Legal Insight K&L Gates, (September 7, 2012) available at http://m.klgates.com/files/Publication/4fd8c102-4dd4-4de2-a8ff-4a5b2518c11d/Presentation/PublicationAttachment/acd56656-783a-4d63-b0ab-ab1fb7d42a93/Alert_Louboutins_Red_Sole_Shoe_Mark.pdf

HOWARD (2009)

L. Howard, '*An Uningenious Paradox: Intellectual Property Protection for Fashion Designs*', Columbia Journal of Law and the Arts, Vol. 32, No. 3, 2009.

JONES, MCMORROW & STOKES (2011)

S. Jones, M. McMorro & G. Stokes, '*Clone Wars: 3D Printing and Intellectual Property*', DLA Pipers, 2011.

JOHNSON (2011)

B.I. Johnson, '*Trade Dress Functionality: a Doctrine in Need of Clarification*', Campbell Law Review, Vol.34 No. 125, 2011.

LANDERS (2014)

A. Landers, '*The Anti-Economy of Fashion: An Openwork Approach to Intellectual Property Protection*', Fordham Intellectual Property, Media & Entertainment Law Journal, Vol. 24, No. _ Draft version 2013, Forthcoming 2014.

LEMLEY & REESE (2004)

M.A. Lemley & R.A. Reese, '*Reducing Digital Copyright Infringement Without Restricting Innovation*', University of California, Berkeley School of Law, Research Paper No. 525662, 2004.

LOANGKOTE (2012)

L.T. Loangkote, '*Fashioning a New Look in Intellectual Property: Sui Generis Protection for the Innovative Designer*', Hastings Law Journal Vol. 63, No. 297, 2012.

Louboutin v. Yves Saint Laurent Am. Holding, 2012 WL 3832285 (2d Cir. Sept. 5, 2012).

Mazer v. Stein, 347 U.S. 201 (1954).

MCGURRIN EHRHARD (2012)

M. McGurrin Ehrhard, '*Protecting the Seasonal Arts: Fashion Designs, Copyright Law, and the Viability of the Innovative Design Protection & Piracy Prevention Act*', Connecticut Law Review, Vol. 45, No. 1, 2012, p. 298.

MGM Studios, Inc. vs. Grokster, Ltd., 545 U.S. 913 (2005).

MOFFAT (2004)

V.M. Moffat, '*Mutant Copyrights and Backdoor Patents: The Problem of Overlapping Intellectual Property Protection*', Berkeley Technology Law Journal, Vol. 19. No. 1473, 2004.

OSBORN (2014)

L.S. Osborn, '*Of PhDs, Pirates, and the Public: Three- Dimensional Printing Technology and the Arts*', Texas A&M Law Review, draft version January 15, 2014.

OSBORN (2013)

L.S. Osborn, '*Regulating Three-Dimensional Printing: the Converging Worlds of Bits and Atoms*', San Diego Law Review, 2013.

OXFORD DICTIONARIES

<http://www.oxforddictionaries.com>

PASQUALE (2002)

F. Pasquale, '*Beyond Napster: Using Antitrust Law to Advance and Enhance Online Music Distribution*', Boston University Journal of Science and Technology Law, 2002.

POTTER (2011)

W. Potter, '*Intellectual Property's Fashion Faux Pas: A Critical Look at the Lack of Protection Afforded Apparel Design Under the Current Legal Regime*', University of San Francisco Intellectual Property Law Review, Vol. 16, No. 1, 2011.

PRIGG (2014)

M. Prigg, '*The "Back to the Future" 3D Printed Sneakers you can Make at Home- and Simply Scrunch Up to Put in Your Bag*' (March 14, 2014) in the Daily Mail available at <http://www.dailymail.co.uk/sciencetech/article-2581335/The-Back-Future-3D-printed-sneakers-make-home.html>.

Qualitex Co. v. Jacobson Prods. Co., 514 U.S. 159, 34 USPQ2d 1161, 1163-64 (1995)

RAUSTIALA & SPRIGMAN (2006)

K. Raustiala & C. Sprigman, *'The Piracy Paradox: Innovation and Intellectual Property in Fashion Design'* Virginia Law Review, Vol. 92, No. 8, 2006.

RIDEOUT (2011)

B. Rideout, *'Printing the Impossible Triangle: the Copyright Implications of Three-Dimensional Printing'*, *Journal of Business, Entrepreneurship & the Law*, Vol. 5, Issue 1, 2011.

SAUERS (2011)

J. Sauers, *'How Forever 21 Keeps Getting Away With Designer Knockoffs'*, JEZEBEL.com

SCAFIDI (2006)

S. Scafidi, *'Intellectual Property and Fashion Design'*, *Intellectual Property and Information Wealth*, Vol. 1, No. 115, 2006.

SCOTT HEMPHILL & SUK (2009)

C. Scott Hemphill & J. Suk, *'The Law, Culture and Economics of Fashion'*, *Stanford Law Review*, Vol. 61, 2009.

SCHUTTE (2011)

L. Schutte, *'Copyright for Couture'*, *Duke Law and Technology Review*, No. 011, 2011.

SISSONS & THOMPSON (2012)

A. Sissons & S. Thompson, *'Three Dimensional Policy: Why Britain needs a policy framework for 3D printing'*, The Big Innovation Centre, 2012.

SRINIVASAN & BASSAN (2012)

V. Srinivasan & J. Bassan, *'3D Printing and the Future of Manufacturing; Remaking Manufacturing'*, CSC Leading Edge Forum, 2012.

SUSSON (2013)

M.A. Susson, *'Watch the World "Burn": Copyright, Micropatent and the Emergence of 3D Printing'*, Chapman University School of Law, 2013.

TORRANCE (2012)

A.W. Torrance, *'Beauty Fades: An Experimental Study of Federal Court Design Patent Aesthetics'*, University of Kansas, *Journal of Intellectual Property Law*, Vol. 19, No. 2, 2012.

TraFFix Devices, Inc. v. Mktg. Displays, Inc., 532 U.S. 23 (2001).

TRITTON (2008)

G. Tritton, *Intellectual Property in Europe*, Sweet & Maxwell, 3rd edition, 2008.

TU (2010)

K.V. Tu, *Counterfeit Fashion: the Interplay Between Copyright and Trademark Law in Original fashion Designs and Designer Knockoffs*, Texas Intellectual Property Law Journal, Vol. 18, No. 3, 2010.

UNITED STATES CODE

U.S. Code, Legal Information Institute, Cornell University Law School.

UNITED STATES COPYRIGHT OFFICE

United States Copyright Office, <http://www.copyright.gov>.

UNITED STATES PATENT AND TRADEMARK OFFICE

United States Patent and Trademark Office, <http://www.uspto.gov>.

Wal-Mart Stores v. Samara Brothers, INC. 529 U.S. 205 (2000).

WEINBERG (2010)

M. Weinberg, *It Will be Awesome if They Don't Screw it up: 3D Printing, Intellectual Property, and the Fight Over the Next Great Disruptive Technology*, Public Knowledge, 2010.

WEISER (2012)

B. Weiser, *Shoe Designer Can Protect Its 'Pop' of Red, Court Says*, in the New York Times, (September 5, 2012) available at <http://www.nytimes.com/2012/09/06/nyregion/court-rules-louboutin-can-enforce-a-trademark-on-its-red-outsoles.html>.

WONG (2012)

T. Wong, *To Copy or Not To Copy, That is the Question: the Game Theory Approach to Protecting Fashion Designs*, University of Pennsylvania Law Review, Vol. 160, 2012.

YU (2005)

P.K. Yu, *P2P and the Future of Private Copying*, Michigan State University College of Law, Research Paper No. 02-08, 2005.