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Sophia: Exploring the Ways AI May Change Intellectual Property Protections

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SOPHIA: EXPLORING THE WAYS AI MAY CHANGE INTELLECTUAL PROPERTY PROTECTIONS

Elizabeth Rocha*

I.INTRODUCTION

The technological advances made within the last five years seems to be something out of a movie.[1] We now have or are within reach of technologies similar to the wearable glasses used by Marty McFly in *Back to the Future II*;[2] high end self-driving cars comparable to the Audi Detective Spooner uses in *I, Robot.*[3] Of course no one can forget the incredible T-1000, a shape shifting liquid metal robot, chasing Sarah and John Connor in *Terminator 2* [4] or the

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[1] Vanessa Divers, *10 great innovations and ideas of the past 5 years*, TORONTO.COM (Aug.05,2015),https://www.toronto.com/whatson-story/5783694-10-great innovations-and-ideas-of-the-past-5-years/ (last visited Jan 21, 2018).

[2] *Back to the Future II* is a science fiction film first released in 1989. The film follows Marty McFly (Michael J. Fox) who is sent to the future by Dr. Emmett "Doc" Brown (Christopher Lloyd) via a car time machine he has created. Once in the future McFly (Fox) is supposed to complete certain tasks, usually focused on preventing certain events from happening that would alter the course of history. There McFly is able to see the future technology that will be available in that time. Paul Lilly, *16 Classic Films that Got Future Tech Right,* GIZMODO (8/22/13, 4:00pm),https://gizmodo.com/16-classic-films-that-got-future-tech-right1184346443 (last visited Feb 19, 2018).

[3] *I, Robot* set in 2035 follows detective Del Spooner of the Chicago PD as he heads the investigation of the questionable suicide of a leading robotics scientist. Detective Spooner's investigation reveals many secrets and hidden agendas within the United States Robotics corporation including suspicions of murder. I, Robot (2004), IMDb, http://www.imdb.com/title/tt0343818/ (last visited Jan 28, 2018).

[4] *Terminator 2,* the sequel to *The Terminator* a science fiction and action film originally centered around an Android robot known as the terminator (Arnold

designer babies seen in *Gattaca*[5] that were created by technology that is now within arms' reach.[6] A technology that is quickly evolving is the use of devices powered by Artificial Intelligence ("AI") and Machine Learning ("ML").[7]

The Oxford dictionary describes Artificial Intelligence as "[t]he theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages."[8] While machine learning may seem similar, it is

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Schwarzenegger) that is sent from 2029 to 1984 to assassinate Sarah Connor (Linda Hamilton), whose unborn son will lead humanity in a war against the machines. Now in *Terminator 2* another Terminator, the T-1000 (Robert Patrick) which is more advanced and more powerful than its predecessor, is sent back to kill John Connor (Edward Furlong), the future leader of the human resistance, when he's still a child. *Terminator 2* (1991), IMDb, http://www.imdb.com/title/tt0103064/?ref_=nv_sr_2 (last visited Jan 28, 2018).

[5] *Gattaca*, a science fiction drama is set in the future where bew eugenics is common and most babies are conceived through the use of this. Babies conceived through this method are viewed as being superior and "valid" to those conceived by traditional means, known as "invalid", as they are less susceptible to genetic disorders. Vincent Freeman (Ethan Hawk) is conceived without the aid of genetic selection and dreams of a career in space travel but is limited because of his perceived genetic inferiority. To move ahead, he assumes the identity of Jerome Morrow, a perfect genetic specimen who is a paraplegic as a result of a car accident. With professional advice, Vincent learns to deceive DNA and urine sample testing. Just when he is finally scheduled for a space mission, his program director is killed, and the police begin an investigation, jeopardizing his secret.
Gattaca (1997), IMDb, http://www.imdb.com/title/tt0119177/?ref_=nv_sr_1 (last visited Apr 14, 2018).

[6] Gautam Narula, Everyday Examples of Artificial Intelligence and Machine LearningTechEmergence(2018),https://www.techemergence.com/everydayexamples-of-ai/ (last visited Apr 14, 2018).

[7] Machine learning is discussed to describe what Sophia is but for purposes of this article, only AI will be discussed.
Adam Satariano, *Artificial intelligence is growing so fast, even Google's co-founder is surprised*, CHICAGO TRIBUNE (Jan. 19, 2017),
http://www.chicagotribune.com/bluesky/technology/ct-artificial-intelligence-google brin-blm-bsi-20170119-story.html.

[8] *Artificial Intelligence*, OXFORD DICTIONARY, https://en.oxforddictionaries.com /definition/artificial_intelligence (last visited Apr. 22, 2018).

not quite the same as Artificial Intelligence.[9] Forbes magazine describes Machine Learning as "a current application of AI based around the idea that we should really just be able to give machines access to data and let them learn for themselves."[10]

The recent technological creation of Sophia, a humanoid[11] robot created using Artificial Intelligence, Machine Learning and breakthrough robotics, [12] was recently granted citizenship by Saudi Arabia.[13] This citizenship, granted to a robot, will have widespread effects in the law due to the many questions that will need to be addressed.

This article analyzes the legal consequences in granting citizenship to Sophia.[14] Part II[15] will provide a background discussing the United States' responsibility, under international law, to recognize citizenship granted by a foreign country. This section also provides background of patent law: what can be patented and the patentability of Sophia, if she is now considered a "person" under United States law.[16] Part II further discusses what is eligible for trademark protection, who may assert a right of publicity, and in what ways these protections may be invalidated. Part III examines the legal implications on intellectual property protections if Sophia is recognized as a citizenship eligible person in the United States or if

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[9] Bernard Marr, *What Is The Difference Between Artificial Intelligence And Machine Learning?,* FORBES (Dec. 6, 2016), https://www.forbes.com/sites/bernardmarr/2016/12/06/what-is-the-difference-between-artificial-intelligence-and-machine-learning/#2305b0872742.

[10] *Id.*

[11] Humanoid is defined as having an appearance or character resembling that of a human. *Humanoid*, OXFORD DICTIONARIES, https://en.oxforddictionaries.com/definition/humanoid (last visited Mar. 20, 2018).

[12] *Sophia*, HANSON ROBOTICS LTD., http://www.hansonrobotics.com/robot/sophia/ (last visited Jan. 21, 2018).

[13] John Frank Weaver, *What Exactly Does It Mean to Give a Robot Citizenship: It's Complicated*, SLATE (Nov. 6, 2017), http://www.slate.com/articles/technology/future_tense/2017/11/what_rights_does_a_robot_get_with_citizenship.html (last visited April 6, 2018).

[14] I am Sophia the latest breakthrough AI robot from Hanson Robotics, SOPHIA AI: ABOUT ME, http://sophiabot.com/about-me/ (last visited Jan 21, 2018).

[15] *See infra* Part II.

[16] *Id.*

the United States recognizes Sophia's Saudi Arabian citizenship.[17] Part III further examines the future implications on the legal system if Sophia is recognized as a person under U.S. law.[18] Part IV concludes the overall discussion.[19]

II.BACKGROUND

A. Legal Personhood

Discussions regarding the ethical use and rights of humanoid robots, such as Sophia, are currently underway in legislatures in Japan[20] and the European parliament.[21] The European parliament began their discussion on this issue as recently as 2017.[22] During those discussions, the European Union[23] ("EU") urged the drafting of a set of regulations to govern the use and creation of robots and AI.[24] This included a form of "electronic personhood" aimed at ensuring rights and responsibilities of capable Artificial Intelligence beings.[25] Under Article 6 of the Universal Declaration of Human Rights, "[e]veryone has the right to recognition everywhere as a person before the law."[26] While not legally binding, as a signatory, the

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[17] *See infra* Part III.

[18] *Id.*

[19] *See infra* Part IV.

[20] *Ethical code for robots in works, South Korea says*, CBC (Mar. 07, 2007), http://www.cbc.ca/news/technology/ethical-code-for-robots-in-works-south-korea-says-1.634822.

[21] Alex Hern, *Give robots 'personhood' status, EU committee argues,* THE GUARDIAN (Jan. 12, 2017), https://www.theguardian.com/technology/2017/jan/12/give-robots-personhood-status-eu-committee-argues.

[22] *Id.*

[23] The European Union is a political and economic union of 28-member states. The goals of the EU include promoting peace and the well-being of its citizens; security and justice without internal borders; and promotion of scientific and technological progress.
https://europa.eu/european-union/about-eu/eu-in-brief_en

[24] Hern, *supra* note 21.

[25] *Id.*

[26] Universal Declaration of Human Rights, UNITED NATIONS, http://www.un.org/en/universal-declaration-human-rights/ (last visited Apr 14, 2018).

United States has committed to upholding the ideas contained in the declaration.[27] This leads to the question will the United States follow in recognizing Sophia as a legal person before the law?

B. Patents

There are several requirements that must be met before a patent will be issued. An invention must be novel and not anticipated by prior art.[28] To be patent eligible, the invention must be non-obvious subject matter.[29] Section 101 of the America Invents Act, describes what is and is not eligible for patent protection.[30] Patent protection does not extend to claims that monopolize the building blocks of human ingenuity, claims directed to laws of nature, natural phenomena, and abstract ideas.[31]

In April 1988, Dr. Philip Leder, geneticist at Harvard Medical School, and Dr. Timothy A. Stewart, a former Harvard researcher, obtained a patent for "transgenic nonhuman mammals."[32] Known as the "Harvard Mouse," the United States Patent and Trademark Office ("USPTO") issued a patent to Harvard University for a mouse developed through genetic manipulation techniques.[33] This patent was historical and contrary to what would normally be patentable, as it was the first patent in the United States granted to an animal.[34] The validity of a patented animal paves the way for patent protections

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[27] Universal Declaration of Human Rights, UNITED NATIONS, http://www.un.org/en/udhrbook/pdf/udhr_booklet_en_web.pdf (last visited Apr. 14, 2018);Glossary,https://treaties.un.org/Pages/Overview.aspx?path=overview/glossary/page1_en.xml#declarations (last visited Apr. 14, 2018).

[28] 35 U.S.C. § 102 (2012) (Novel and not anticipated by prior art means a patent must be a new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement).

[29] 35 U.S.C. § 103 (2012) (Nonobvious mean the differences between the "new" invention and the prior invention would not have been obvious to a person who is skilled in the art to which the claimed invention pertains).

[30] 35 U.S.C. § 101 (2012).

[31] Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980).

[32] Keith Schneider, *Harvard Gets Mouse Patent, A World First,* THE NEW YORK TIMES (1988), https://www.nytimes.com/1988/04/13/us/harvard-gets-mouse-patent-a-world-first.html

[33] *Id.*

[34] *Id.*

granted to Sophia to remain valid if she is recognized as a legal person in the United States.

C. Trademarking Sophia

The purpose of a trademark is to identify and distinguish the source of goods of one party from those of others.[35] Section 1301.02(B) of the Trademark Manual of Examining Procedure ("TMEP") sets out the procedure by which a name may be approved as a service mark.[36] Here, it is noted that individuals or group names function as a mark only if it identifies and distinguishes the services and not merely the individual or group.[37] This means the "name of a character or person *is* registrable as a service mark if the record shows that it is used in a manner that would be perceived by purchasers as identifying the services in addition to the character or person."[38]

A personal name generally falls in the descriptive category[39] and usually requires secondary meaning.[40] To show a personal name

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[35] *See Protecting Your Trademark*, U.S. PATENT AND TRADEMARK OFFICE, https://www.uspto.gov/sites/default/files/documents/BasicFacts.pdf (providing basic facts about trademarks).

[36] Trademark Manual of Examining Procedure § 1301.2(b) (2017).

[37] *Id.*

[38] *Id.*

[39] There are four categories of trademark:

1. Generic– Defines an everyday or general term which everyone has the right to use. Generic marks are not protectable.
2. Descriptive– A mark which describes the goods or services and will be allowed protection if the owner can show secondary meaning.
3. Suggestive– A mark which suggests the quality or attributes of a good or service. Suggestive trademarks are different from descriptive marks in which they don't describe the product, but instead, suggest a feature that requires some thought or perception on the consumer's part.
4. Arbitrary or Fanciful–a fanciful trademark is one that is completely made up, such as Kodak. Fanciful marks are afforded the most protection. An arbitrary trademark is one with common meaning, but the meaning doesn't relate to the goods or services offered. An example is the name Apple for a computer. A computer has no connection to fruit and is therefore arbitrary.

See Protecting Your Trademark, U.S. PATENT AND TRADEMARK OFFICE, https://www.uspto.gov/sites/default/files/documents/BasicFacts.pdf (providing basic facts about trademarks).

[40] *Parks LLC v. Tyson Foods, Inc.*, 863 F.3d 220 (3d Cir. 2017).

has acquired secondary meaning, the name and what it represents must become synonymous in the public mind.[41] This means, for Sophia to be eligible for registration, the name Sophia must call to mind the humanoid robot and not another Sophia, for instance the famous actress Sophia Loren.[42]

D. Right of Publicity

The right of publicity is a state law protection that guards an individual's right to control the commercial use of his or her identity.[43] This intellectual property right, when infringed, is a commercial tort of unfair competition.[44] The right of publicity protects the identity of a celebrity from exploitive commercial use.[45] As seen in *Parks v. LaFace Records*, to have protection in one's right of publicity, the party seeking protection must establish an economic interest in her name.[46] A plaintiff need only prove, in a right of publicity action, that there is economic interest in her identity, and that her identity has been commercially exploited by a defendant.[47]

III. ANALYSIS

It is not uncommon for a product to have several intellectual property protections.[48] A product can have patent protection, along with a trademark or copyright protection.[49] The granting of

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[41] *Harp v. Rahme*, 984 F. Supp. 2d 398, 414 (E.D. Pa. 2013).
[42] Sophia Loren, BIOGRAPHY.COM (2017), https://www.biography.com/people/sophia-loren-9386318 (last visited Jan 21, 2018).
[43] *Parks v. LaFace Records*, 329 F.3d 437, 459 (6th Cir. 2003).
[44] § 31:139. Balancing trademark enforcement with free speech principles, 6 McCarthy on Trademarks and Unfair Competition § 31:139 (5th ed.)
[45] *LaFace Records*, 329 F.3d at 459.
[46] *Id. at* 460.
[47] *See Landham,* 227 F.3d at 624.
[48] The iPhone is an example of a product that has patents, copyright and trademark protections. *Guidelines for Using Apple Trademarks and Copyrights*, APPLE, https://www.apple.com/legal/intellectual-property/guidelinesfor3rdparties.html (last visited Apr 14, 2018).
[49] *Id.*

citizenship to something that has been manufactured can affects many areas of the law. Living things have had patents attached to them[50], however, this is a different situation. Here, the granting of citizenship to Sophia potentially creates a legal person in the United States. This legal personhood creates a need to address whether the assigned intellectual protections that Sophia may have, will remain valid.

A. Legal Personhood[51]

When Sophia was granted honorary citizenship in Saudi Arabia[52], there were speculations that this event was merely a publicity stunt by the Saudi Arabian government.[53] Whether or not this is true, the growing use of AI robotics presents a very important legal and ethical issue that legislatures around the world will eventually need to grapple with.[54] If the United States chooses not to fully recognize Sophia with all the legal rights of a citizen, Sophia's legal personality will need to be determined.[55] If Sophia is recognized as a legal entity and given rights as such, would Sophia be on the hook for a lawsuit or will Hanson Robotics be liable?[56] Recent decisions in the United States Supreme Court may help determine how Sophia may have limited rights as a person if the United States

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[50] Schneider, *supra* note 32.

[51] This topic is one that could be explored entirely as its own separate article. This article presents a brief and broad overview of personhood both domestically and international for the purpose of setting up how the recognition as a person affects the protections granted by certain intellectual property rights.

[52] Zara Stone, *Everything You Need To Know About Sophia, The World's First Robot Citizen*, FORBES (Nov. 7, 2017), https://www.forbes.com/sites/zarastone/2017/11/07/everything-you-need-to-know-about-sophia-the-worlds-first-robot-citizen/#980789546fa1.

[53] James Vincent, *Pretending to give a robot citizenship helps no one*, THE VERGE (Oct. 30, 2017), https://www.theverge.com/2017/10/30/16552006/robot-rights-citizenship-saudi-arabia-sophia.

[54] *Id.*

[55] A legal personality is defined as the lawful characteristics and qualities of an entity. These include a person's age or asset ownership. From this, an entity's legal capacity and status in the jurisdiction or society's legal order. An example is how a law is applicable if one is a home owner versus a renter, *Legal Personality*, BLACK'S LAW DICTIONARY, 2nd ed. available at https://thelawdictionary.org/legal-personality/ (last visited Apr 14, 2018).

[56] Hanson Robtics is the company who made Sophia. *Sofia, supra* note 12.

chooses not to recognize Sophia with all the rights a natural born person is entitled to.

In the landmark decision *Burwell v. Hobby Lobby*, the Supreme Court held the Religious Freedom Restoration Act's protection of a person's exercise of religion, includes for-profit corporations.[57] A business will never to go to church or a synagogue and will never undertake a pilgrimage to Mecca now has a right to religious freedom.[58] In *Hobby Lobby*, the United States Department of Health and Human Services ("HHS") passed regulations, under the Patient Protection and Affordable Care Act of 2010 ("ACA"), that required employers' group health plans to provide preventive care and screenings for women without any cost sharing requirements.[59] Nonexempt employers were generally required to provide coverage for roughly twenty contraceptive methods including four that might prevent an already fertilized egg from further developing.[60] In *Hobby Lobby*, the owners of three closely held for-profit corporations held the sincere Christian belief that life begins at conception and that providing access to contraceptive drugs or devices that operate after that point would violate their religion.[61] The Religious Freedom Restoration Act itself does not define the term "person" and therefore, the Court looked to the Dictionary Act, which must be consulted to determine "the meaning of any Act of Congress, unless the context indicates otherwise."[62] The Court noted under the Dictionary Act,

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[57] "The Religious Freedom Restoration Act of 1993, 42 U.S.C. § 2000bb prevented the federal government from acting in any way that burdened a person's free exercise of religion unless the action was the least-restrictive means of serving a compelling government interest." *Burwell v. Hobby Lobby* 134 S. Ct. 2751, 2759 (2014).

[58] *Id.* at 2759.

[59] *Id.* at 2754; 42 U.S.C. § 300gg–13(a)(4) (2012).

[60] *Hobby Lobby*, 134 S.Ct. at 2754. Development of fertilized egg is prevented by inhibiting its attachment to the uterus. Religious employers and nonprofit religious based organizations were exempt from this contraceptive mandate. Under this accommodation, the insurance issuer must exclude contraceptive coverage from the employer's plan and provide plan participants with separate payments for contraceptive services without imposing any cost-sharing requirements on the employer, its insurance plan, or its employee beneficiaries.

[61] *Id. at* 2754–55.

[62] *Id.* at 2768

"the wor[d] 'person' ... include[s] corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals."[63]

If a for-profit corporation can now have religious freedoms, it may be possible for Sophia to at least have the same legal personhood as a for-profit corporation. Sophia, unlike a corporation, is a being capable of understanding things, such as religion and can make the choice to attend a place of worship. In *FCC v. AT & T Inc.*, the court noted "[w]e have no doubt that 'person,' in a legal setting, often refers to *artificial entities*." [64] Case law suggests an artificial entity, such as Sophia, may be entitled to certain rights under U.S. Law.[65] *Hobby Lobby* protects religious rights of a for-profit corporation that many would believe belong only to a natural born person.[66] *Hobby Lobby* allows owners of a for-profit corporation to exert their religious beliefs and claim them as the beliefs of the corporation.[67] If a corporation can have religious beliefs under U.S. law, it is certainly plausible for a robot to have similar rights.

B. Patents

A person may obtain a patent if he or she "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent."[68] Section 101 defines the word process as a "process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.[69] The term "manufacture" refers to articles that are made, and includes all

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[63] *Id.*

[64] The Court said The Dictionary Act makes it that clear that artificial entities are often included in the definition of person. 1 U.S.C. § 1 (defining "person" to include "corporations, companies, associations, firms, partnerships,). *FCC v. AT & T Inc.*, 562 U.S. 397, 404–05 (2011) (emphasis added).

[65] *Id.*

[66] *See generally, Burwell v. Hobby Lobby*, 134 S. Ct. 2751 (2014).

[67] *Id.*

[68] 35 U.S.C. § 101 (2012).

[69] *Id.*

manufactured articles.[70] The term "composition of matter" relates to chemical compositions and may include mixtures of ingredients, as well as new chemical compounds.[71] These classes of subject matter taken together include practically everything that is made by man and the processes for making the products.[72] Furthermore, to obtain an invention, it must be novel and not anticipated by prior art.[73] Patent protections used to create Sophia will likely remain in effect if she is recognized as a legal person.

Technology, if we are lucky, is constantly changing as new inventions and discoveries continue to be made. This change, however, forces the legislature and judicial systems across the world to redefine how patents are granted or upheld in terms of biotechnology or Artificial Intelligence.[74] It has long been held that the "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable.[75] Patents, a legal monopoly, are granted to promote the development of useful arts, which benefits society as a whole. Granting a monopoly to a something naturally occurring would only take away from society, and therefore it is something that should not be owned by one person. The court in *Gottschalk v. Benson* noted "phenomena of nature, through just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work."[76] However, Sophia does not fall into the categories that United States Congress is trying to protect, rather, Sophia is more akin to the microorganisms that the court in *Diamond v. Chakrabarty*[77] found to be patentable.

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[70] *See General Information Concerning Patents*, U.S. PAT. AND TRADEMARK OFF., https://www.uspto.gov/patents-getting-started/general-information-concerning-patents#heading-4 (providing a beginner's guide to general information regarding patent process.)
[71] *Id.*
[72] 35 U.S.C. § 101 (2012).
[73] *Id.*
[74] CBS, *supra* note 20.
[75] *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980).
[76] *Gottschalk v. Benson* 409 U.S. 63, 67 (2012).
[77] *Chakrabarty*, 447 U.S. at 309.

In *Diamond v. Chakrabarty*, the court held that the human-made genetically modified bacterium was patentable because it had a "property which is possessed by no naturally occurring bacteria."[78] Under the *Chakrabarty* decision, "a non-naturally occurring manufacture or composition of matter—a product of human ingenuity" may be patentable subject matter.[79] Sophia is not a naturally occurring composition of matter, nor does she function merely based on the application of a law of nature. Recognition of Sophia as a citizen in the United States or as a legal personality should not remove the patent protection that Hanson Robotics,[80] or another party owns because that legal recognition of Sophia will not automatically convert her from a manufactured being into a naturally occurring human organism. At her core, Sophia will continue to be made up of software and machine that operates similar to but not exactly like a human organism. Sophia's "biological make-up" will continue to be machine process and method that is currently or that the legislature and judicial systems seeks to protect.

In *Association for Molecular Pathology v. Myriad Genetics, Inc.*, the Supreme Court held that that Myriad's creation of the synthetic version of the genes ("cDNA") is patentable because the cDNA is created in a lab and is not naturally occurring.[81] Although petitioners acknowledged that cDNA differed from natural DNA, by removing non-coding regions, they nonetheless argued that cDNA should not be patent eligible because "[t]he nucleotide sequence of

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[78] *Id.* at 303.

[79] *Id.* at 310. ("Here, by contrast, the patentee has produced a new bacterium with markedly different characteristics from any found in nature and one having the potential for significant utility. His discovery is not nature's handiwork, but his own; accordingly, it is patentable subject matter under § 101.").

[80] Hanson Robotics owns patents such as Frubber, a proprietary nanotech skin that mimics real human musculature and skin. This allows our robots to exhibit high-quality expressions and interactivity, simulating humanlike facial features and expressions.
Innovations / Technology, HANSON ROBOTICS LTD.,
http://www.hansonrobotics.com/about/innovations-technology/ (last visited Apr 14, 2018).

[81] These DNA sequences were used for diagnostic breast cancer examinations.
Association for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576 (2013).

cDNA is dictated by nature, not by the lab technician."[82] However, the Court noted that cDNA did not face the same obstacles to patentability that naturally occurring isolated DNA segments faced.[83] The Court reasoned that the creation of a cDNA results in an exons-only molecule that is not naturally occurring and

> The lab technician unquestionably creates something new when cDNA is made. cDNA retains the naturally occurring exons of DNA, but it is distinct from the DNA from which it was derived. As a result, cDNA is not a 'product of nature' and is patent eligible under § 101, except insofar as very short series of DNA may have no intervening introns to remove when creating cDNA. In that situation, a short strand of cDNA may be indistinguishable from natural DNA.[84]

Sophia is similar to cDNA, she may act and function as a natural person, but she is a creation of a lab technician. She is not naturally occurring and while she may function the same or similar to the way humans function, she is distinct from the original, similar to the way cDNA is distinct from the DNA. Under *Myriad*, Sophia, as a non-naturally occurring person, should be able to retain patent protection if her citizenship is legally recognized in the United States.[85]

Similarly, in April 1988, the "Harvard Mouse" was granted patent protection by the USPTO. [86] This patent was for "transgenic nonhuman mammals."[87] This mouse was developed through genetic manipulation techniques.[88] The Harvard Mouse was a "transgenic non-human eukaryotic animal whose germ cells and somatic cells

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[82] *Id.* at 594–95.
[83] *Id.*
[84] *Id.*
[85] Under the AIA 35 U.S.C. Section 33(a) "no patent may issue on a claim directed to or encompassing a human organism," However, if Congress broadens the definition of human organism to include beings such as Sophia, her patentability may change. 35 U.S.C. 33(a) (2012).
[86] Schneider, *supra* note 2.
[87] *Id.*
[88] *Id.*

contain an activated oncogene sequence introduced into the animal, or an ancestor of the animal, at an embryonic stage."[89] The granting and validity of the patent of the Harvard Mouse, a living organism, should allow for the patents, granted to the creators of Sophia, to remain valid if Sophia is legally recognized as a person in the United States. The processes, methods and composition of Sophia should continue to be protected despite the legal status of Sophia as a person in the United States.

Although the court in *Diamond v. Diehr*, found that laws of nature, natural phenomena, and abstract ideas are excluded from patent protection,[90] the court noted that unpatentable subject matter, such as laws of nature, may be made patent-eligible if a patent does more than simply state the law of nature while adding the words "apply it."[91] The creators of Sophia do just that. Sophia does not function on nor was she created based upon the mere application of a law of nature; she is a complex combination of methods and processes that synergistically create a being that functions at the level of human intelligence.[92]

Both the "Harvard Mouse" and cDNA were forms of unpatentable organisms, such as a person, that still gained protection through transformation.[93] Sophia would be a person if legally recognized as such, but similar to the "Harvard Mouse" and cDNA, she would not be naturally occurring and therefore should retain patent protections. If the USPTO granted patent protection for a process that developed a mouse, it should follow that patent protections granted to Sophia and future AI robots should not be invalidated based on her legal recognition as a person.

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[89] Leder, P. and Stewart, T. (2018). *U.S. Patent No. 4,736,866A* (filed on June 22, 1984).
[90] *Diamond v. Diehr*, 450 U.S. 175, 185 (1981).
[91] *Id.*
[92] *Sophia, supra* note 12.
[93] *Myriad Genetics*, 133 S.Ct.; Schneider, *supra* note 32.

C. Trademarking Sophia

The purpose of a trademark is to identify and distinguish the source of goods of one party from those of others.[94] Similarly, a service mark identifies and distinguishes the source of services rather than goods.[95] A person's name may be approved as a service mark.[96] However, an individual's or group's name functions as a mark only if it identifies and distinguishes the services and not merely the individual or group.[97] This means the "name of a character or person *is* registrable as a service mark if the record shows that it is used in a manner that would be perceived by purchasers as identifying the services in addition to the character or person."[98] Sophia has spoken at several engagements as an ambassador for robotics and AI.[99] Sophia has appeared on the *Tonight Show* with Jimmy Fallon, was featured on the cover of *Elle* magazine, has appeared on Chinese television and has spoken before the United Nations General Assembly.[100] This self-appointment as an ambassador for AI can be the service for which Sophia seeks a service mark. For Sophia to obtain a service mark in her name, she would be required to show proof of secondary meaning.[101]

The crux of the secondary meaning is that the mark identifies not only the goods, but also the source of those goods.[102] Secondary meaning is established by showing that the mark in the mind of the consuming public does not first evoke the product but rather it evokes, in the mind of the consumer, the producer of that product or service.[103] To show a personal name has acquired secondary meaning, the name and what it represents must become synonymous

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[94] *See Protecting Your Trademark*, *supra*, note 35.
[95] *Id.*
[96] Trademark Manual of Examining Procedure § 1300 (2017).
[97] *Id.*
[98] *Id.*
[99] *Speaker Sophia*, APB, https://www.apbspeakers.com/speaker/sophia/ (last visited Apr. 26, 2018).
[100] *Id.*
[101] *See Protecting Your Trademark*, *supra*, note 35.
[102] *Id.*
[103] Trademark Manual of Exam. Proc. § 1212 (2017); *Ralston Purina Co. v. Thomas J. Lipton, Inc.*, 341 F. Supp. 129, 133 (S.D.N.Y. 1972).

in the public mind.[104] That is to say, that when the public thinks of advocacy for the future of AI, Sophia should be the person who comes to mind.

In 2011, former Vice-Presidential candidate, Sarah Palin, filed an application for a service mark of her name.[105] Initially, her application was for "educational and entertainment services, namely, providing motivational speaking services in the field of politics, culture, business and values."[106] Later, Sarah Palin expanded her service description in her application to include "information about political elections" and "a website featuring information about political issues."[107] The USPTO granted registration of her name as a mark.[108] Sophia's name is closely connected to the topic of the future of AI and will no doubt be able to achieve the secondary meaning required by the USPTO to be granted registration of her name as a mark.

If Sophia's citizenship is recognized by the United States, the protection granted by a trademark registration should be unchanged since persons are not completely barred from obtaining a trademark or a service mark. If the United States recognizes Sophia's citizen, this recognition would strengthen Sophia's mark as it would reinforce the necessary synonymous connection needed between Sophia and AI.[109] The government's recognition of Sophia would create the front of mind connection needed for secondary meaning. For some, it would be an affirmation of their belief that AI robotics, such as Sophia, can be a person. For others, the connection between Sophia and AI would be created in their mind because of their opposition to

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[104] *Rahme*, 984 F. Supp. 2d at 414.

[105] Katie Glueck, *Sarah Palin, Daughter Bristol Trade,* THE WALL STREET JOURNAL (Jun 21, 2011), https://blogs.wsj.com/washwire/2011/06/21/sarah-palin-daughter-bristol-trademark-their-names/?mod=e2tw.;
Beth Hutchens, *Trademarking of Sarah Palin, You Can Trademark Your Name*, IPWATCHDOG (Feb. 11, 2011), http://www.ipwatchdog.com/2011/02/11/trademark-of-sarah-palin/id=15274/.

[106] *Id.*

[107] *Id.*

[108] *Id.*

[109] *Rahme*, 984 F. Supp. 2d at 414.

the recognition of a robot as a person. Or possibly as a result of the fear surrounding the possible destruction of society as a result of the development of AI.[110]

D. Right of Publicity

The right of publicity is a state law protection that guards an individual's right to control the commercial use of his or her identity.[111] This protection extends to more than just someone's likeness.[112] Protection can extend to the use of another's name, voice, signature, photograph, or likeness in advertising or soliciting without prior consent.[113]

As seen in *White v. Samsung Elecs. Am., Inc.,* likeness can be given a broad interpretation.[114] In 1991, Vanna White filed suit against Samsung Electronics and David Deutsch Associates, Inc., for a violation of her famous personal and intellectual property rights.[115] Samsung aired a commercial advertisement that depicted a robot, dressed in a wig, gown, and jewelry, which Deutsch allegedly made the conscious decision to select these items to resemble White's hair and dress.[116] The robot was posed next to a game board, which is instantly recognizable as the "Wheel of Fortune" game show set, in a stance for which White is famous.[117] The robot turned letters, similar to White on "Wheel of Fortune."[118] The court found in favor of

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[110]Renowned physicist Stephen Hawking warned of the potential for destruction of human civilization as a result of the development of artificial intelligence (AI). Hawking's feared it could be the worst thing to happen to society.
Hannah Osborne, *Stephen Hawking AI Warning: Artificial Intelligence Could Destroy Civilization*, NEWSWEEK (Nov. 7, 2017),
http://www.newsweek.com/stephen-hawking-artificial-intelligence-warningdestroy-civilization-703630.

[111] *LaFace Records*, 329 F.3d at 459.

[112] *Id.*

[113] California Civil Code § 3344 (2018).

[114] *See White v. Samsung Elecs. Am., Inc.*, 971 F.2d 1395 (9th Cir. 1992).

[115] *Id.* at 1397.

[116] *Id.*

[117] *Id.* at 1396.

[118] *Id.*

White.[119] Here, the robot alone used by Samsung would likely not be enough to evoke the image of White in the views mind.[120] Rather it is through the use of the game board similar to Wheel of Fortune that Samsung was able to achieve this image of White.[121]

This intellectual property right is one that Sophia is likely able to retain regardless of how she is classified. If Sophia is viewed as an artificial entity in the manner that some businesses are viewed, she will likely be able to maintain her right of publicity.[122] The right of publicity is an economic protection that aims at allowing the rightful owner the opportunity to exploit one's own recognizable or unique trait.[123] In fact, legalized recognition of Sophia's personhood would strengthen her claim to her right of publicity.[124] State statutes are written as protecting a "person's" likeness, voice, or image; therefore, governmental recognition of Sophia as a person would clarify any question surrounding her eligibility for protection under state statute.[125] If Sophia is able to establish a right of publicity, it will not be without its challenges. One obstacle that she may encounter is the scope of her rights. Unlike celebrities, where there is only one person, Sophia is a humanoid robot and her likeness may be difficult to determine.[126] Sophia's uniqueness is derived from being the first AI robot with citizenship, but the idea of an AI humanoid is not unique.

The idea of a robot that is human has been a part of science fiction for over twenty years. In 1985, Howard Leeds created *Small Wonder*, a comedy science fiction sitcom premised on an android

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[119] *Id.*

[120] *Samsung,* 971 F.2d at 1396.

[121] *Id.* at 1397.

[122] § 31:139. Balancing trademark enforcement with free speech principles, 6 McCarthy on Trademarks and Unfair Competition § 31:139 (5th ed.)

[123] *Id.*

[124] *Id.*

[125] Use of Another's Name, Voice, Signature, Photograph, or Likeness in Advertising or Soliciting Without Prior Consent. California Civil Code § 3344 (2018).
A person, firm or corporation that uses for advertising purposes, or for the purposes of trade, the name, portrait or picture of any living person without having first obtained the written consent of such person, or if a minor of his or her parent or guardian, is guilty of a misdemeanor. N.Y. Civ. Rights Law § 50 (2018).

[126] *Sophia, supra* note 12.

human robot.[127] The *Small Wonder* series revolves around V.I.C.I. (Voice Input Child Identicant, pronounced Vicky), an android robot designed to look like a 10-year-old girl.[128] V.I.C.I. was built by Ted Lawson, an inventor working for United Robotronics, in an effort to assist handicapped children.[129] Lawson then takes V.I.C.I. home for her to mature within a family environment.[130]

This storyline is similar to Sophia's background. She is a humanoid AI robot that thinks, acts, and for all intents and purposes is a person.[131] In *Small Wonder*, V.I.C.I. is made to look like a natural-born person.[132] Sophia similarly was designed to look like a natural-born person, specifically Audrey Hepburn.[133] Since V.I.C.I. is played by an natural born person[134], she has a more natural appearance than Sophia, but Sophia has features, such as her patented Frubber (flesh rubber) skin that mimics the way human flesh moves, that allows her to have a realistic appearance.[135]

The physical differences in appearance raises the question, would a humanoid robot that is acting as a person be within the scope of Sophia's right of publicity? *White v. Samsung* does not provide a clear answer to this question.[136] In *White v. Samsung* the robot did not physically resemble White and would likely not be recognized as White, but for the "Wheel of Fortune" style game board.[137] There are many questions as to the scope of Sophia's likeness that will need to be addressed. Would Sophia's likeness encompass all humanoid robots that resemble Audrey Hepburn? Would another humanoid

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[127] *Small Wonder* (TV Series 1985–1989), IMDb, http://www.imdb.com/title/tt0088610/ (last visited Mar. 14, 2018).
[128] *Id.*
[129] *Id.*
[130] *Id.*
[131] *Sophia*, *supra* note 12.
[132] SMALL WONDER *supra*, note 128.
[133] *Sophia*, *supra* note 12.
[134] SMALL WONDER *supra*, note 128.
[135] Matthew Hart, *'Frubber'-Covered Robot Faces Are Disturbingly Realistic*, NERDIST (Mar. 23, 2016), https://nerdist.com/frubber-covered-robot-faces-are-disturbingly-realistic/.
[136] *Samsung*, 971 F.2d at 1396.
[137] *Id.*

robot with the same appearance be a violation of Sophia's right of publicity if that robot is also granted personhood? Or would this be a violation of Audrey Hepburn's right of publicity? Does Sophia have to establish some signature to distinguish herself from other robots in order to be granted protection? Does Sophia's right of publicity extend to all android humanoid robots since there have been several somewhat famous human type robots or only robots that are taken to have citizenship? These questions may potentially complicate Sophia's right of publicity and will likely have to be addressed in the near future.

IV. CONCLUSION

Sophia's citizenship may very well have been a publicity stunt by the Saudi Arabian government; however, it brings up very real legal questions that must be considered. AI robots are no longer a phenomenon of science fiction. While we are not in the *Terminator*, fighting against the raise of machines trying to take over the world[138], we are in a place to prepare ourselves for the inevitable fact that fully-functioning AI robots are in the very near future.[139] It is doubtful that at this point in time we will be able to determine all the rights that an AI robot will have, since we still struggle with defining the civil rights of natural born persons of color, gender and sexual orientation, but we can begin to have these discussions now.[140]

There are also numerous other issues associated with AI development that have not been discussed here, such as the ethical issues associated with developing this kind of technology.[141] Do we

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[138] *Terminator 2*, *supra* Note 4.

[139] Sophie Brookes, *The AI robots are coming - but don't panic, just adapt* | LEXOLOGY (2018), https://www.lexology.com/library/detail.aspx?g=d523d7ef-2f05-47e3-8849-f8599d0bd845 (last visited Mar 14, 2018).

[140] Human Rights Watch, *World Report 2017: Rights Trends in United States*, HRW (2017), https://www.hrw.org/world-report/2017/country-chapters/united-states (last visited Mar 14, 2018).

[141] Julia Bossmann, *Top 9 Ethical Issues in Artificial Intelligence,* WORLD ECON. F. (Oc. 21, 2016),

need AI that is at our level of intelligence or even possibly beyond ours that will likely understand and emotions and religion? AI robots that are likely to understand that they are not free but owned and lacking human level rights.[142] Whatever the answers, how granting or not granting an AI robot citizenship will affect different areas of the law. This is an issue that must begin to be discussed today.

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https://www.weforum.org/agenda/2016/10/top-10-ethical-issues-in-artificial-intelligence/ (last visited April 10, 2018).

[142] *Id.*