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# The Rearden Problem: Defining Ownership in a Changing Landscape

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# The Rearden Problem: Defining Ownership in a Changing Landscape

Jake Altobello\*

*This paper will address the problem that is currently being confronted by the Walt Disney World Company; who owns the creative works made from software stolen from the original creator? Furthermore, does the court's application of the "lion's share" theory effectively further the Constitution's intent to promote the growth of arts and sciences? By looking at the historical progression of intellectual property law and the holdings of key cases in copyright law, this paper will distill into a summary of key concerns the jurisprudence regarding associating property rights in intellectual property. By narrowing the key considerations of the court, this paper will contend that Margaret Radin's theory of Personhood Perspective can play an important role in solving the issue Disney is facing, as well as future problems companies may face.*

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## I. THE INTERSECTION OF INTELLECTUAL PROPERTY RIGHTS AND THE REARDEN PROBLEM

With the proliferation and advancements in technology and innovation, the marketplace has been flooded with new inventions, ideas and brands. With each new advancement, our understanding of the rights associated with the creation changes. Through the years of technological advancement, copyright law, patent law and trademark law have evolved into a system that attempts to reconcile theories of economic utility and personal incentive.<sup>1</sup> Courts dealing with intellectual property rights have always faced a unique dilemma; how to allocate the rights of property that is non-tangible and abstract? Intellectual property presents unique aspects that distinguish it from tangible property, and, as such, the traditional understandings of property rights do not cleanly translate between the two. While tangible property can be possessed by one person at one given time, intellectual property is non-rival, allowing it to be simultaneously possessed by multiple people.<sup>2</sup> Ideas, information or designs can all be held by multiple people, and the use of one person does not interfere with the use of another person.<sup>3</sup>

Intellectual property law does in fact draw upon fundamental property laws, namely, rewarding those who capture an idea and by rewarding that person with exclusivity rights. However, they differ in many regards and that has been seen throughout the application of the law in the courts. Intellectual property is a private good with the unique quality of being

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<sup>1</sup> 1 PETER MENELL, MARK LEMLEY, & ROBERT MERGES, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGY AGE*: 2017 3–20 (2017).

<sup>2</sup> *Id.* at 13.

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

inherently public. The implications of such a good are profound and expressly shape how the courts recognize the rights of intellectual property. Because of the inherently public nature of intellectual property, courts have stressed the importance of promoting intellectual creativity.<sup>4</sup> Any decisions or laws that chill innovation hurt the public by depriving them of a novel idea. Additionally, intellectual property law, as developed by the court system, maintains the goal of protecting future innovation by providing incentives for someone to create, as mandated by the Constitution.<sup>5</sup>

This paper will address a topic that is a growing issue in the technology industry, which will continue to be a problem as the use of software applications expands. How do the courts and intellectual property laws reconcile the rights associated with creative works when the software used to create it was stolen? Does a software creator gain rights over the creative works produced by their software? Does the company that uses and manipulates the software with their own creative genius acquire the rights of the works created? How does this analysis change when the software is allegedly misused and stolen? By demonstrating the varying theoretical justifications for intellectual property law, while discussing current cases addressing these very issues, this paper will attempt to find a solution to these problems by looking at the foundational principles of intellectual property law.

## II. BACKGROUND

The United States Constitution provides that Congress has the power “to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”<sup>6</sup> This proposition, known as the Intellectual Property Clause,<sup>7</sup> gives the bare minimum level of standards necessary for any intellectual property question and analysis. Furthermore, the clause bestows two powers: the power to secure exclusive rights in writing for a limited time, and the power to secure, for a limited time, exclusive rights to discoveries that turn into invention.<sup>8</sup> The language in the clause also requires some analysis because much of the language is used in antiquated ways. For example, “useful arts” refers to the work of people skilled in manufacturing, and “sciences” refers to all knowledge, not just modern

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<sup>4</sup> *Id.* at 2.

<sup>5</sup> *See* U.S. CONST. art. 1, § 8, cl. 8.

<sup>6</sup> *Id.*

<sup>7</sup> *See id.*

<sup>8</sup> *See* MENELL ET AL., *supra* note 1, at 3–5.

sciences.<sup>9</sup> In attempting to understand the Intellectual Property Clause, and specifically the copyright provision, at its most basic level, the courts have shown a propensity to lean on the Framers' intent and original public understanding of the clause.<sup>10</sup>

The protections given by the clause also are limited in some respects. To avoid overprotecting and limiting growth in the industry, while also encouraging novel ideas, the courts have determined that writings may be protected only if they are original.<sup>11</sup> Additionally, it has been established that inventions are protectable only if they are not simple improvements on existing technology.<sup>12</sup> In *Feist*, the United States Supreme Court was faced with the problem of original works, and whether or not something is considered original enough to warrant copyright protection.<sup>13</sup> The Court determined that the alphabetical listings of a phonebook are not creative enough to be considered original work. Because of this determination, along with holding facts are not copyrightable, the compilation of facts in an uncreative way does not create enough originality.<sup>14</sup>

Another example of the Supreme Court extending their understanding of the Intellectual Property Clause is in *Graham v. John Deere Co.* in which the Court determined whether an invention that is an obvious improvement over the prior art is patentable.<sup>15</sup> The Court reasoned that it was not patentable, drawing on Thomas Jefferson's views that the government should grant patents only where something truly inventive has been disclosed.<sup>16</sup> From this case, the Court developed a test for non-obviousness: determining the prior art, differentiating the prior art from the new invention, determining the level of skill in the art and determining any secondary considerations of non-obviousness.<sup>17</sup>

#### A. *Theoretical Justifications for Intellectual Property Law*

While the above two cases are examples of the court system teasing out the requirements set forth in the Intellectual Property Clause, there are three theoretical justifications for the application of intellectual property

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<sup>9</sup> PETER K. YU, INTELLECTUAL PROPERTY AND INFORMATION WEALTH: COPYRIGHT AND RELATED RIGHTS 133 (2006).

<sup>10</sup> Edward C. Walterscheid, *Originalism and the IP Clause: A Commentary on Professor O'liar's "New Reading"*, 58 UCLA L. REV. DISC. 113, 114 (2009) (citations omitted).

<sup>11</sup> See *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345–46 (1991).

<sup>12</sup> *Graham v. John Deere Co.*, 383 U.S. 1, 9 (1966) (stating "[o]nly inventions and discoveries which furthered human knowledge, and were new and useful, justified the special inducement of a limited private monopoly.").

<sup>13</sup> See *Feist Publications, Inc.*, 499 U.S. at 344–45.

<sup>14</sup> *Id.*

<sup>15</sup> *Graham*, 383 U.S. at 8–9.

<sup>16</sup> *Id.* at 11.

<sup>17</sup> *Id.* at 2.

law that have been used by the courts to solve intellectual property issues. These theoretical justifications help play a role in how a court approaches an issue of intellectual property.

The first approach courts have used in tackling an intellectual property question is the Natural Rights Perspective, or the Lockean Approach.<sup>18</sup> John Locke astutely stated, “Whatsoever, then, he removes out of the state that Nature hath provided and left it in, he hath mixed his labor with it, and joined to it something that is his own, and thereby makes it his property.”<sup>19</sup> Required from this theory is a balancing test: balancing whether the person who created the work could withhold it from the world by never inventing it, against society’s interest in receiving the benefits of that work.<sup>20</sup>

This theory treats intellectual property similarly to tangible property. A strict adherence to the Lockean Model would argue that the labor of a person’s body and work of his hands are rightfully his. While this theoretical framework strongly favors the rights of authors and inventors, it also disregards the economic effects of such decisions. This model rewards all property rights to the creator of something; however, by doing so, it removes things from the common use of the public. Additionally, by giving absolute rights to a person, society may invariably be worse off. This theory indirectly spurs monopolies on inventions and works by people by creating a system in which one person holds all the rights to something. Another issue with this theory is the implications of accidental discoveries, group discoveries or discoveries dependent on prior works.<sup>21</sup> This problem of cumulative innovation is something Lockean theorists have difficulty reconciling.

The second of the major theoretical justifications in intellectual property law is the Personhood Perspective put forth by Margaret Jane Radin. This model states that an individual can become a “person” only when they take control of their external environment.<sup>22</sup> As such, what we own, develop and create is fundamental to who we are as a person. Additionally, this framework assumes identity is bound up in an object, with market value being insufficient.<sup>23</sup> This creates a spectrum. One side represents fungible property—that is, property that market value can perfectly replace—and the other personal property, or property with value that can never be fully recovered. For example, poems and novels that have significant meaning to them could not be fully compensated for with

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<sup>18</sup> MENELL ET AL., *supra* note 1, at 3.

<sup>19</sup> *Id.* at 3.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* at 5.

<sup>22</sup> Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 1015 (1982).

<sup>23</sup> MENELL ET AL., *supra* note 1, at 8.

cash if they were lost. However, if one were to lose an ordinary shirt, the market value of that shirt would recoup the loss you may feel.

This theory postulates that protections should be oriented towards the inventor's personal connection with the invention or work.<sup>24</sup> By allowing for people to control and possess objects they feel are almost a part of themselves, property rights can be allocated to someone based on the level of pain felt from its loss. However, this theory faces its downsides. For Radin's theory to effectively work, a modicum of creativity is almost always needed, as it is extremely difficult to establish the level of personal connection one would need in an object. Additionally, the Personhood Perspective relates more easily to tangible property, which is finite. A more philosophical critique identifies that the concept of authorship is such a social construct that it is dangerous to identify a creative work too closely to a particular author, because all creations are largely products of communal forces.<sup>25</sup> As such, we see the implications of this play out when multiple people are involved on a project. Facebook, for example, has many coders working towards its final product, and if each coder felt a personal connection to their respective code, who in fact controls the rights to Facebook?

The final of the theoretical models used in analyzing intellectual property rights is the one most dominantly used: Utilitarian and Economic Incentive Perspectives.<sup>26</sup> This theory begins with the premise that public goods, which are defined as goods hard to consume without payment, cannot be depleted.<sup>27</sup> Furthermore, public goods face three conditions that make it problematic for them to be produced without state intervention: high fixed cost of creation, low fixed cost of copying and low marginal cost of production and distribution.<sup>28</sup> Without legal system intervention, private actors will underproduce public goods. By keeping in mind the principle objective of intellectual property law to promote new and improved works, the economic justification model lies in rewarding creators, which in turn incentivizes them to engage in creative activities.<sup>29</sup> It is largely understood that, to the extent that we form intellectual property rights around this idea of economic rationality, we can foster investment in research, development and knowledge creation.<sup>30</sup>

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<sup>24</sup> Radin, *supra* note 22.

<sup>25</sup> MENELL ET AL., *supra* note 1, at 8.

<sup>26</sup> *Id.*, at 16.

<sup>27</sup> *See id.* at 17.

<sup>28</sup> *Id.*

<sup>29</sup> *See id.* at 18.

<sup>30</sup> Carlos A. Primo Braga & Carsten Fink, *The Economic Justification for the Grant of Intellectual Property Rights: Patterns of Convergence and Conflict - The Implications of the New Regime for Global Competition Policy*, 72 CHI.-KENT. L. REV. 439, 440 (1996).

The Utilitarian and Economic Incentive model, however, faces the competing concepts of incentive and competition. Benefits of this model include the promotion of innovation and creativity through rewards. It follows that without the protections in place, there is less incentive for a person to create and innovate because others can copy the new ideas, while the original creator gets no benefit from the copying.<sup>31</sup> Arguments against this theory, however, state that if you lock up ideas, then you will limit the proliferation of ideas and prevent society from benefiting from them.<sup>32</sup> Additionally, opponents of this theory argue that exclusive creator control makes it difficult to build or improve on creative works.<sup>33</sup> In summation, the theory calls for a balancing of the economic incentives against the costs to society for limiting the diffusion of the new knowledge.

### B. *The Rearden Dilemma*

These theories are all important in addressing intellectual property in the modern legal landscape, and they have become increasingly more relevant with the proliferation of stolen technologies. How do the courts reconcile ownership and property rights in intellectual property when the chain of ownership is broken, and it is difficult to determine the main source of the created work? This is an issue being currently played out in court with Disney, Paramount Pictures, Twentieth Century Fox and Rearden Technologies.<sup>34</sup> The case is unique and requires the application of all avenues of intellectual property law. At a basic, fundamental level, the case questions who owns the creation made from a stolen piece of technology. If you were to use a black-market version of Word, do you own the article you write with it?<sup>35</sup>

Rearden Technologies was created by a former scientist at Apple and Microsoft named Steve Perlman.<sup>36</sup> Perlman funded a technology incubator in the late 1990's, and created MOVA, which was first unveiled in 2006.<sup>37</sup> MOVA technology is a multi-camera, high resolution facial capture system. By digitally recording actors' faces, the system allows for the very

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<sup>31</sup> *Id.* at 443.

<sup>32</sup> *Id.* at 441.

<sup>33</sup> Lemley, *supra* note 1, at 18.

<sup>34</sup> Eriq Gardner, *Hollywood's Use of "Stolen" Computer Technology Tests Ownership Theories*, HOLLYWOOD REP. (Sept. 18, 2017, 8:32 AM), <http://www.hollywoodreporter.com/thr-esq/hollywoods-use-stolen-computer-technology-tests-limits-ownership-1040572>.

<sup>35</sup> *Id.*

<sup>36</sup> Eriq Gardner, *Disney Facing VFX Firm's Injunction Bid on Three Blockbuster Films*, HOLLYWOOD REP. (July 17, 2017, 1:40 PM), <https://www.hollywoodreporter.com/thr-esq/disney-facing-vfx-firms-injunction-bid-three-blockbuster-films-1021841>.

<sup>37</sup> Gardner, *supra* note 34.



detailed digitalization and manipulation of an actor's face.<sup>38</sup> The technology was first used commercially *In The Curious Case of Benjamin Button*, and it has been used in over 15 feature films.<sup>39</sup> According to Rearden, a former employee named Greg LaSalle transferred the MOVA technology to non-Rearden entities, which includes Digital Domain 3.0, a Hollywood FX company.<sup>40</sup> Later on, Digital Domain 3.0 would be acquired by Shenzhenshi Haitiecheng Science and Technology Co. Because of Shenzhenshi Haitiecheng Science and Technology Co.'s close ties to the Peoples Republic of China, an FBI investigation ensued.<sup>41</sup> From this, a federal judge in San Francisco issued a preliminary injunction targeting the two Chinese firms that now own MOVA, which is licensed by Digital Domain.<sup>42</sup> The Court held that the Chinese companies behaved "fraudulently" in regards to how the MOVA technology was transferred between various Chinese firms after its 2013 acquisition from Greg LaSalle.<sup>43</sup> Along the road, Rearden has obtained an injunction against Digital Domain. During this time, however, Disney, Fox, Paramount contracted use of MOVA technology from the company, who may be illegitimately providing it.<sup>44</sup>

### C. *Copyright in Rearden Case*

The lawsuit filed by Rearden Technologies against The Walt Disney Company is demanding an injunction be placed on Disney from distributing *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*. The complaint filed by Perlman and his company Rearden Technologies states, "Disney used the stolen MOVA Contour systems and methods, made derivative works, and reproduced, distributed, performed, and displayed at least *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*, in knowing or willfully blind violation of Rearden Mova LLC's intellectual property rights."<sup>45</sup> Rearden is asserting copyright, trademark and patent claims. First in their copyright claim, it is evident the software at issue is protected by copyright law. However, Rearden argues in its complaint that the author of the software gets to

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<sup>38</sup> John Markoff, *Now staring . . . Digital People: Camera System Creates Sophisticated 3-D Effects*, N.Y. TIMES, July 31, 2006, at C1.

<sup>39</sup> Gardner, *supra* note 34.

<sup>40</sup> *Id.*

<sup>41</sup> *Id.*

<sup>42</sup> Scott Johnson, *Digital Domain's New Legal Setback Freezes VFX Tech Used by Major Studios*, HOLLYWOOD REP. (June 28, 2016, 12:28 PM), <http://www.hollywoodreporter.com/news/digital-domain-mova-tech-banned-906902>.

<sup>43</sup> *Id.*

<sup>44</sup> Gardner, *supra* note 36.

<sup>45</sup> *Id.*

control output files: “It follows that at all material times Plaintiff Rearden Mova owned the exclusive right to reproduce, distribute copies of, perform, and display the Contour Program output files including Skin Texture, Makeup Pattern, Captured Surface, and Tracking Mesh output files.”<sup>46</sup>

Studios fighting the lawsuit argue that this theory of ownership is much too broad and, if held into law, all work done by “Adobe or Microsoft would be deemed to be the author–owner of whatever expressive works the users of Photoshop or Word generate by using those programs.”<sup>47</sup> Furthermore, the movie studios, including Disney, assert that, even if MOVA Contour copyright did extend to the output files, Rearden failed to allege that the output files themselves are “substantially incorporated into the computer–generated characters or the movies in issue.”<sup>48</sup> It is the position of Disney, Fox and Paramount that human input, specifically film direction and an actor’s performance, are “critical and indispensable elements” to whatever expression is embodied in the output files.<sup>49</sup> To support this proposition, the studios cite to an 1884 Supreme Court Opinion, *Burrow–Giles Lithographic Co. v. Sarony*, which holds whoever is superintending the arrangement is the true author.<sup>50</sup> In *Burrow–Giles*, the Court, faced with the lack of originality and creativity necessary for copyright protections, held that the camera was the tool for the picture but neither “negated nor co–opted the process of artistic production.”<sup>51</sup> Furthermore, because the camera was a means to the end of the creative vision of the human, copyright protections should be given to the user of the camera.<sup>52</sup> The studios argue that the Courts have been clear: the person who arranges the picture, not the creator of the equipment, is the author of the images. As such, the studio’s use of the MOVA technology is the same as the user of the camera in *Burrows–Giles*: the MOVA is simply a tool for the expression of the studio’s creative vision.<sup>53</sup> As for the issue of the allegedly stolen technology, the “fair use” doctrine comes into play. Rearden will argue that the MVOA technology does not fall within the permitted level of copying under the Copyright Doctrine, because Disney knew that the technology was allegedly stolen.<sup>54</sup>

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<sup>46</sup> *Id.*

<sup>47</sup> Gardner, *supra* note 34.

<sup>48</sup> *Id.*

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

<sup>50</sup> *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 61 (1884).

<sup>51</sup> *Id.* at 50.

<sup>52</sup> *Id.* at 61.

<sup>53</sup> Gardner, *supra* note 34.

<sup>54</sup> *Id.*

#### D. *Trademark in Rearden Case*

Rearden's complaint also puts forth trademark claims. Rearden postulates that MOVA is trademark protected, and that credits on films, such as *Avengers*, tells audiences that the motion capture technology was provided by Digital Domain.<sup>55</sup> Additionally, Rearden points to promotion of films such as *Beauty and the Beast*. Specifically, *Beauty and the Beast* actor Dan Stevens was quoted as saying, "[T]he facial capture [for the Beast] was done separately using a technology called 'MOVA.' So, every ten days, two weeks, I'd go into a booth and spray my face with UV paint and 27 little cameras would capture the facial expressions of all the scenes we had done on previous days. They would take that information and morph it onto the Beast, his face."<sup>56</sup> The studios assert that this claim is without merit and lacks substance, because the statements about MOVA could be attributable to any studio and is nominative fair use.

#### E. *Patent in Rearden Case*

Finally, Rearden's complaint alleges that the studios "had actual knowledge of, or were willfully blind to, the patents at issue because the studios had performed an intellectual property due diligence with Rearden."<sup>57</sup> Evidenced by this is Rearden's prior work with the companies on films such as *Curious Case of Benjamin Button* and *Pirates of the Caribbean*.<sup>58</sup> The complaint goes on to say that "Disney MPG induced each instance of Digital Domain 3.0's use of the MOVA Contour facial motion capture system" in movies such as *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* without authorization in the performance of its contract with Disney MPG.<sup>59</sup> As such, Rearden alleges Disney MPG's active inducement of direct infringement by Digital Domain 3.0 constitutes acts of infringement.

Disney, Fox and Paramount do not attack this legal theory but instead argue that these allegations are conclusory.<sup>60</sup> They assert the complaint does not show what constitutes diligence, and "it does not even allege that Disney actually learned of the five patents-in-suit (or any others) through either alleged diligence effort. A claim of induced infringement requires that the defendant appreciated the specific importance of the specific patents to the infringement at issue."<sup>61</sup> Furthermore, Disney argues the

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<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

<sup>57</sup> *Id.*

<sup>58</sup> *Id.*

<sup>59</sup> Gardner, *supra* note 34.

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

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

willful blindness theory holds no weight, as there is no affirmative duty to find a potential patent.

### III. STATEMENT OF THE CASE

The fundamental question is who owns intellectual property created by allegedly stolen software. Does MOVA technology, or any technology that can create something new, imbue the users who create the new content with rights because the end user brought their own creative vision, which was vital for the creation?<sup>62</sup> As we move into a continued state of advancement of technologies, however, we move slowly to an age in which digital works produced from software are indistinguishable from works based on human authorship.<sup>63</sup> This advancement, while beneficial to society, poses the threat of killing authorship as we know it.

This question becomes more important when dealing with the massive economic value of some of these properties. Intellectual property rights, and the economic value derived from them, are some of the largest assets a company can possess. Whether it be the creation of fictional characters or patented technology, major corporations heavily value these intangible properties. Evidence of such massive economic value can be demonstrated throughout the market place, with companies purchasing assets that are entirely filled with intellectual property, for billions of dollars. For example, The Walt Disney World Company, the defendant in the above state case, purchased Marvel Entertainment for \$4 billion of cash and stock.<sup>64</sup> This deal, containing over 5,000 characters, gives Disney the ability to create an infinite amount of products or licensing fees, and invariably making a massive profit.<sup>65</sup> Since Disney's acquisition of Marvel Entertainment in 2009, it has made nearly \$12 billion in the worldwide box office, further cementing the potential economic boon some intellectual properties may possess, specifically fictional characters.<sup>66</sup>

So, how does the law protect such valuable assets, and how does it provide preventative measures to ensure corporate bad faith dealings and

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<sup>62</sup> Hugh Armitage, *Disney, Fox and Paramount Could Lose the Rights to their CGI Characters*, DIGITAL SPY (Oct. 25, 2017), <http://www.digitalspy.com/movies/news/a841451/disney-cgi-characters-court-case-mova/>.

<sup>63</sup> Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2012 STAN. TECH. L. REV. 1, 3 (2012).

<sup>64</sup> Julia Boorstin, *Why Disney's Surprise \$4 Billion Marvel Acquisition Makes Sense*, CNBC, <https://www.cnbc.com/id/32631895> (last updated Aug. 2, 2010).

<sup>65</sup> *Id.*

<sup>66</sup> Rob Cain, *The Marvel Cinematic Universe Just Topped \$12 Billion In Worldwide Box Office*, FORBES, (July 10, 2017), <https://www.forbes.com/sites/robcaain/2017/07/10/the-marvel-cinematic-universe-has-now-topped-12-billion-in-total-worldwide-gross/#7e082dab7775>.

use of stolen technologies are limited? In the Rearden and Disney problem highlighted above, Rearden had actively been in suit against a Chinese company who allegedly stole their MOVA technology, which was then used by Disney and many other major studios to make movies.<sup>67</sup> The property rights created by the movie studios with MOVA technology are now actively being fought for. Because of lobbying from the Motion Picture Association of America, strong copyright laws are in place for the American film industry.<sup>68</sup> Due to this inherent bias in copyright laws towards the American film industry, the argument from Rearden faces challenges. It is necessary to determine the level of protections that must be afforded to each party in this case and in cases similar to it. Punishing Disney may stifle the innovative spark of the company from using technologies to create new characters because of fear it may be sued. If insufficient punishment is enforced onto Disney, it may give too much leeway for a company to operate in bad faith. The balance a court must strike is narrow and perilous, with any overreach negatively affecting the relevant industry.

#### *A. The Lion's Share Theory*

While the balancing act for the court is to ensure any decision it reaches avoids burdening a party unfairly or undermining the basic principles of the Constitution,<sup>69</sup> the legal system is faced with another difficult challenge. The presumption in the law regarding creative works derived from a software has been consistent and unambiguous for many years. The standard for outputs from software has been that the outputs are the creations of the end user, not the developer of the software itself. It can be argued that this "lion's share" theory is rooted in the economic incentive and utilitarian theories of intellectual property. To hold that the user who provided the bulk of creative genius and skill does not obtain intellectual property rights in his or her work would severely decrease the incentive to create. Consumers will have a significantly lower desire to invest their time working with a given technology if they knew any end-product is owned by the technology's creator because there would be little economic benefit in creating. Coupling this with underlying economic rationale in human behavior regarding creative works, it is significantly amplified when dealing with major intellectual assets that represent a potential economic windfall. Given a creative output that has the potential

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<sup>67</sup> Armitage, *supra* note 62.

<sup>68</sup> Dennis Wharton, *MPAA's Rebel With Cause Fights for Copyright Coin*, VARIETY, Aug. 3, 1992, at 18.

<sup>69</sup> Office of Tech. Assessment, U.S. Cong., *Intellectual Property Rights in an Age of Electronic and Information*, OTA-CIT-302 (1986).

to be worth \$500 million when used in a movie, the argument becomes more intense.<sup>70</sup>

With that said, the contentious lawsuit between Disney and Rearden possesses widespread economic repercussions. Based on the traditional understanding of outputs created from a software, Disney conceded, that even if all the facts Rearden has claimed are true, it would be irrelevant because of the precedent of authorship–ownership laws.<sup>71</sup> For the court to hold that copyrights on CG characters belonged to Rearden, the software developer, it would suggest “Adobe and Microsoft would be deemed to be the author–owner of whatever expressive works the users of Photoshop or Word generate by using those programs.”<sup>72</sup> By doing so, Disney claims creativity would be stifled and stopped to a halt. Furthermore, Disney contends it is impossible for MOVA to be doing the “lion’s share” of the work because of the extremely gifted, and talented, visual effects engineers they employ.<sup>73</sup> Because of the creative genius of these workers, and the fact they are not mindlessly inputting things into software but rather inputting carefully thought out parameters, the creativity of the output is derived largely from the end user.<sup>74</sup> However, crucial to the fundamental question involving this case, and other cases like it, is the possibility that software developers do in fact obtain intellectual property rights in the creations of their software.

In support of this idea, Rearden has used a 2001 case, *Torah Soft Ltd. v. Drosnin*, as evidence to support this proposition.<sup>75</sup> In *Torah*, the court held that copyright in a software program’s output can be owned by the programmer instead of the end user.<sup>76</sup> The case examined scholars whom were using technology to determine whether the Hebrew Bible had hidden messages telling future events. One scholar, using the technology in question, loaded the Torah into a database and wrote code to help him find these messages of future events. Subsequently, another scholar purchased a copy of the software, used it, and published some of the output in matrix form in a book.<sup>77</sup> Writing on summary judgment, the court reasoned that

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<sup>70</sup> Eriq Gardner, *Hollywood Confronts a Copyright Argument With Potential for Mass Disruption*, HOLLYWOOD REP. (Oct. 17, 2017, 9:50 AM), <https://www.hollywoodreporter.com/thr-esq/hollywood-confronts-a-copyright-argument-potential-mass-disruption-1049516>.

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

<sup>72</sup> Michael Rosen, *Hollywood CGI Copyrights Under Fire in New Technology Lawsuit*, AEIDEAS (Nov. 21, 2017, 6:00 AM), <http://www.aei.org/publication/hollywood-cgi-copyrights-under-fire-in-new-technology-lawsuit/>.

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

<sup>75</sup> Gardner, *supra* note 70.

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

<sup>77</sup> *Id.*

an end user who merely imputes words and phrases into a software does not get ownership rights because the software does the lion's share of the work. Analogizing this case with its own, Rearden has argued that visual effects engineers at movie studios are simply inputting stock parameters into MOVA, and the creativity derived from the software is the result of the developer, who performed "substantially all . . . of the operations required to produce the outputs."<sup>78</sup>

This case not only undermined the understanding of end user creative works from software and their ownership rights, but also opened the door for future litigation as is seen in the Disney/Rearden dispute. Whether or not the MOVA technology, or any software that outputs creative works, imbues an end user or a developer with the rights to the works depends on how a court looks at the technology in question. If the technology is analogous to Microsoft Word, any output from the software is from the end user whose creativity did the "lion's share" of the work. However, if the technology is analogous to the bible technology in *Torah*, the output from the software is created with the creative genius of the developer and any input from the end user was marginal in the creative work. Such a holding would award the creator of the software with the copyrights in the derived work.

#### IV. LION'S SHARE THEORY, PERSONHOOD PERSPECTIVE AND THE FUTURE OF COPYRIGHT LAW

The issue is what is the best way to deal with the issue presented in the *Disney v. Rearden* case, not only for that specific case but also for the future of intellectual property. Due to the rapidly changing technological landscape, technology advancements are challenging the intellectual property system in significant ways.<sup>79</sup> This sharp advancement has largely outpaced the legal structure, requiring Congress to address significant issues in intellectual property law.<sup>80</sup> Additionally, as the advancement of technology moves forward at breakneck speed, software will invariably become more complex. This complexity will prove to be a major obstacle for the current regime of intellectual property law.<sup>81</sup> Because of the shifting sentiment towards software developers in cases such as *Torah*, lawsuits like *Disney v. Rearden* show a glimpse into the future of intellectual property law. Due to these rapid advancements, new parties

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<sup>78</sup> Rosen, *supra* note 72.

<sup>79</sup> See Office of Tech. Assessment, *supra* note 69, at 3.

<sup>80</sup> *Id.* at 19.

<sup>81</sup> *Id.* at 88.

that are part of the intellectual property debate holds different values from the traditional parties the system has typically governed.<sup>82</sup>

This paper contends that, due to these rapid advancements in technology, the theoretical justifications for intellectual property law fail to address the needs of the present-day system. The Constitution's imperative to foster the progress of science and useful arts and to encourage the creation of information and knowledge to the public remain the core principles of intellectual property law;<sup>83</sup> however, one may question how they may be fulfilled with our current application of intellectual property law. The Disney and Rearden lawsuit demonstrates the inadequacy of the current theoretical justifications for intellectual property rights in today's technological climate. Because of MOVA's advanced technology, the court must determine whether or not the software is doing the "lion's share" of the work or the end user is. However, by using these economic and utilitarian theories to determine the owner of a creative work, the system may destroy all end user ownership rights in the coming technological boom. The ability for any end user to obtain intellectual property rights when using advanced technologies and software will be dramatically reduced if the holding in *Torah* will translate to the given dispute of technological outputs.<sup>84</sup>

#### A. *The Issue with Rearden's Argument and the Torah Argument*

In the dispute between Disney and Rearden, Rearden vehemently argues that, due to the advanced nature of the software, the end user (i.e. Disney, Fox and Paramount) did little to produce the creative works outputted by MOVA. Rearden argues that film directors and other creative employees of the movie studios involved in the suit have severely limited artistic choices because of the decisions made by the programmer.<sup>85</sup> Because the software has limited creative options for the end user, the software and its developer are the brunt of the creative output files. From this argument, Rearden contends that, at all times, it owned the "exclusive rights to reproduce, distribute copies of, perform, and display the Contour Program output files" created through the MOVA technology.<sup>86</sup>

This argument, supported by the holding in *Torah*, is extremely problematic. The argument suggests that, if the software is so advanced and performs so much of the work, the end user's creative genius and work cannot award them intellectual property rights. A holding such as this

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<sup>82</sup> *Id.* at 213.

<sup>83</sup> U.S. CONST. art. 1, § 8, cl. 8.

<sup>84</sup> Gardner, *supra* note 70.

<sup>85</sup> *See id.*

<sup>86</sup> Gardner, *supra* note 34.



would be a monumental loss to end users of any software in the coming technological age. When a movie studio employs the use of advanced technology to create works for its movies, the creations are not alone the result of the technology itself. As such, movie studios have pointed to directors and other artists they deem are “critical and indispensable creative elements” to whatever expressive work is created from MOVA.<sup>87</sup> These end users of Rearden’s technology, under the understanding of *Torah* and Rearden’s argument, have provided little significance to the creative output and, as such, they hold no rights in the output itself. This holding would largely dissuade some of the largest movie studios in the world from producing creative works because of fear that their creative efforts would not be sufficiently rewarded. Even though the software provides a significant portion of the output, the efforts and labor of the end user will go largely unrewarded. The mission and intent of the Constitution in promoting the growth of intellectual property would be severely undermined by such a decision.<sup>88</sup>

While the legal spat between Rearden and various movie studios may not seem like a monumental tragedy to intellectual property law protections, the holding has significant repercussions for future iterations of technology. With the advent of advanced technologies, such as IBM’s Watson and artificial intelligence, higher-thinking programs are becoming more prevalent. Even now we see the beginnings of mass market technologies that would provide obstacles for the current intellectual property system, such as advanced editing tools for pictures, augmented reality apps for cell phones, and the expansion of 3D printing. The creative spark that has been the driving force behind some of the most valuable creative works may be stifled by a decision to award rights to a software developer in a work only because a software is responsible for so much of the output. As software and technology become increasingly advanced, the argument that the developer deserves the rights of the end users’ work only becomes stronger.

### *B. The Solution: Personhood Perspective*

With that, how does the intellectual property system not only reconcile this “lion’s share” theory with the underlying theoretical lynchpins of intellectual property law, but also ensures that the promotion of creative works continues as the Constitution mandates? While the law has the possibility of coming to the right conclusion, applying some form of social norms among the relevant community can be better than what the law is

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<sup>87</sup> *Id.*

<sup>88</sup> U.S. CONST. art. 1, § 8, cl. 8.

capable of achieving.<sup>89</sup> Instead of using a purely utilitarian and labor-minded approach for ownership rights in such a situation, a flexible application of the Personhood Perspective—in conjunction with the economic, utilitarian and labor theories—may be a more viable solution.

Radin's theory postulates that, if someone gains such a connection with an object that market value becomes insufficient to replace the object, he or she gains intellectual property rights.<sup>90</sup> Radin's theory postulates that a creator acquires intellectual property rights when the value of his or her connection with the object is greater than its market value.<sup>91</sup> If courts adopted a system in which they consider the creative works' relationship to its creator, while balancing the respective efforts and labor by each party along the way, they can develop a standard that not only promotes the growth of intellectual property, but also ensures property rights go to the most deserving person. The first prong of this analysis would require a balancing of the hardships, efforts and labor of each party of the dispute. This prong would be consistent with the labor and economic incentive framework that is prevalent in many intellectual property disputes.<sup>92</sup> The second prong, the application of Radin's Personhood Perspective, would analyze the connection of the creator with the new creation.

Applying this approach to the Rearden and Disney dispute could be jurisprudentially beneficial. In that case, the creative works and outputs from Disney's use of the MOVA technology included the various fictional characters that were brought to life into movies. In applying the dual prong analysis, we first look at the labor and economic incentives of the creative outputs from the studios and MOVA. Here, the software developer, Rearden, did substantial work. The software held significant economic value, evidenced by its use among Hollywood's elite movie studios.<sup>93</sup> Additionally, its widespread use among Hollywood studios suggests there was no other comparable competition in the market place that produced the same quality as Rearden's MOVA technology.<sup>94</sup> Also relevant is Rearden's assertion that MOVA technology has set parameters that can be input into the technology, limiting the creative input of the end user.<sup>95</sup> Because of all these factors, the first prong suggests that Rearden does have a substantial economic interest in having rights in the creative works of its software, especially if the efforts in creating the software intended for it to be closed to outside creativity by others.

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<sup>89</sup> See James Grimmelmann, *Regulation by Software*, 114 YALE L. J. 1719, 1725 (2005).

<sup>90</sup> See generally Radin, *supra* note 22, at 1002–06.

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

<sup>92</sup> MENELL ET AL., *supra* note 1, at 8.

<sup>93</sup> Gardner, *supra* note 34.

<sup>94</sup> *Id.*

<sup>95</sup> *Id.*

In contrast to this argument by Rearden, Disney argues that its labor and efforts throughout its usage of the MOVA technology is substantial, and, as such, it should be rewarded the rights of their creations.<sup>96</sup> Disney points to the studio's employees, specifically visual engineers and film makers, as outside creative and artistic skill that was put into use in conjunction with the MOVA software.<sup>97</sup> It argues these creative minds were essential to the outputs from the MOVA software and, absent their creativity and skills, there would be no creative works to argue over. Absent the inclusion of the second prong of the proposed analysis, Disney and movie studios face a difficult time arguing this point. While they point to case law such as *Garcia* or *Burrow-Giles*, the rationale in those cases is less applicable due to the advancement of technology and the complexities of the MOVA facial software. As stated above, this has massive implications for future technology as well, due to the advancing complexity of software. Because it can be argued by any software or technology developer that their software has done the "lion's share" of the work, evidenced by the complex nature of the software and the limited artistic flexibility of the end user, simply addressing the labor and economic theories in the new technological marketplace would damage the Constitutional imperative to promote the growth of science and useful arts.

However, by applying Radin's Personhood Perspective in the given situation, intellectual property law can assure that the above-mentioned misapplication does not grind away copyright protections. In the Disney/Rearden dispute, the creative works that are made through MOVA technology are made by the creative minds at Disney and other movie studios. While these filmmakers and visual engineers are limited in their input capacity because of the MOVA software, their personal vision is directly attached to the end product. Because they have final discretion on the various elements of the finished creative product, their work is inherently tied into the product itself. More importantly, because the MOVA technology is used in conjunction with the skills of these various studio employees and actors, the performances and application of these skills are all necessary and vital pieces to the formula of the final product. Because of this, a work made with MOVA such as Dan Stevens' Beast in *Beauty of the Beast* is directly and inherently linked to not only his person, but the person of those working behind the scenes to craft the most perfect realization of the fictional character.<sup>98</sup> In using this Personhood Perspective, Rearden would have little personal connection to an end

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<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

<sup>98</sup> Gardner, *supra* note 34.

user's creative work. Rearden would have zero creative input or direction as to the use of the MOVA technology, and the final product would not be tied to the identity of Rearden nor the software developer.

This flexible two-pronged application of both a labor and economic framework, and a Personhood Perspective, can be applied to a variety of situations, not just the dispute between Disney and Rearden. Because of the ease in which this additional factor can be used in an analysis, applying it to future technologies will have consistent results. As software invariably becomes more advanced and complex, the end user of software faces the dilemma of having their creative works taken from them. However, in establishing a protection of these rights for the end user by looking at their personal connection to the final product itself, the software developer can be blocked from claiming rights to the output.

By adding to the analysis a determination of the created works connection to the personhood of the parties involved, we can also confront issues of bad faith usage of another's technology. One of the crucial facts in the Disney/Rearden dispute was Rearden's assertion that Disney knowingly used the MOVA software through Digital Domain, which was on legal notice for stealing the technology.<sup>99</sup> Because of this, Disney fully understood that the technology it was using may have been illegally obtained. By using Radin's theory in conjunction with the other theoretical frameworks for intellectual property rights, Disney could not achieve that intertwining of person and creation required to obtain rights under Radin's theory.<sup>100</sup> Because Radin's theory of Personhood requires an individual to develop such an intimate bond with the creation that their person becomes one with the creation, the end users of technology in a situation such as this could not reach that point of unity between person and creation. Due to Disney's notice, along with the bad faith arguments against them, there was always an underlying understanding that Rearden may find fault with Disney's use of MOVA throughout the creative process. I believe that, by applying Radin's theory we can reconcile the connection multiple parties have with a creation by looking to see what connection is without an "asterisk."

### *C. Computers, AI and Advanced Software: The Problems of Copyright Law*

The radical shift in technology has significant implications for the future of copyright law in the United States. For the economic power of new intellectual properties to reach their full potential, it is necessary to recognize the legitimate concerns this new technological age may have on

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<sup>99</sup> *Id.*

<sup>100</sup> Radin, *supra* note 22, at 1015.

both end users and developers of the new technologies in question. The Constitutional imperative to promote the arts and sciences holds an underlying economic rationale, incorporating the economic/utilitarian theories to maximize growth and prosperity.<sup>101</sup> However, the progress of the technological landscape comes with the risk of outpacing the legal system that attempts to govern it. Whether due to negligence, lack of foresight, or both, current United States law does not require actual human authorship under the Copyright Act.<sup>102</sup> The courts' assumption has always been that authorship is a human phenomenon.<sup>103</sup> If that assumption is carried to the new age of technology, what does it mean for copyright laws?

As seen throughout various copyright law and computer cases, infringement is not found when computers make copies of a work, only when humans do it.<sup>104</sup> This basic idea that “computers don’t count” played out as early as 1908 when the Supreme Court heard *White-Smith Music Publishing Co. v. Apollo Co.*<sup>105</sup> In that case, the Court held that paper rolls “read” by player pianos were not infringing because they were simply mechanical inventions made for the purpose of performing tunes mechanically.<sup>106</sup> This holding establishes the beginning of what we know of the nexus between created works and technology. While it has been sufficient in regulating the industry to this point, the current copyright laws fail to satisfactorily address work largely created by the technology itself. Unlike the simple player pianos in 1908, MOVA technology is a highly advanced piece of software with high level algorithms and coding.<sup>107</sup> Moreover, we see examples now of AI from companies such as Google that creates sounds humans have never heard.<sup>108</sup> The general understanding of authorship does not adequately address these types of technologies, and while the current policy of the United States Copyright Office is to reject claims made for works not authored by humans,<sup>109</sup> there lacks clear consensus on these newer, highly advanced technologies.

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<sup>101</sup> See U.S. CONST. art. 1, § 8, cl. 8.

<sup>102</sup> Robert Hart, *If an AI Creates a Work of Art, Who Owns the Rights to It?*, QUARTZ, (Aug. 15, 2017), <https://qz.com/1054039/google-deepdream-art-if-an-ai-creates-a-work-of-art-who-owns-the-rights-to-it/>.

<sup>103</sup> *Id.*

<sup>104</sup> James Grimmelmann, *Computers and Robots Don't Count*, SLATE, (Aug. 23, 2016, 7:15 AM), <https://slate.com/technology/2016/08/in-copyright-law-computers-and-robots-dont-count.html>.

<sup>105</sup> *Id.*

<sup>106</sup> See *White-Smith Music Publishing Co. v. Apollo Co.*, 209 U.S. 1, 12 (1908).

<sup>107</sup> *Camera System Creates Sophisticated 3-D Effects*, N.Y. TIMES, (Dec. 5, 2015).

<sup>108</sup> Hart, *supra* note 102.

<sup>109</sup> *Id.*

In looking at these larger scale issues, the problem facing Disney and the copyright law system are one in the same: At what point does the technology deserve the credit over the end user? One potential problem for the proliferation of higher level technology, and the widespread use of AI, is the issue of liability for infringement.<sup>110</sup> A glimpse of how these issues may present themselves can be seen in a case involving a monkey name Naruto who, under its own volition, picked up a photographer's camera and accidentally took a selfie.<sup>111</sup> When the owner of the photographer claimed ownership of the picture, the US Copyright Office agreed and determined human authorship is required for copyright protection.<sup>112</sup> Now, with the case on appeal, the dilemma facing copyright law is apparent. In the absence of direct human authorship, copyright law is unable to clearly define ownership. While not a direct parallel, the issue between Disney and Rearden is similar in many regards. Because of the MOVA's high level of complexity, the lines of authorship are blurred, which invariably blur the lines of ownership.<sup>113</sup>

Another example of these issues being further highlighted with the new technologies seen recently is in automatic writing.<sup>114</sup> In *Penguin Books U.S.A., Inc. v. New Christian of Full Endeavor, Ltd.*, an author transcribed a work to paper from a "voice" they heard.<sup>115</sup> After writing down what was heard, the plaintiff edited and organized several drafts, maintaining that their personal preferences played no role in the work; rather, all were from the "voice."<sup>116</sup> The Court held that the work can be copyrightable because of the plaintiff's editorial choices, which met the minimal thresholds of creativity of *Feist*.<sup>117</sup> Furthermore, the Ninth Circuit has shown a propensity to allow copyrights in the absence of human authorship because the laws do not "expressly require human authorship."<sup>118</sup> These holdings suggest that, where there is a sufficient nexus between the human creativity and the created work, copyrights should be granted, regardless of the human authorship. This understanding of copyright law may be a valuable resource in Disney's argument against Rearden. If Rearden is successful in showing its software does the bulk of

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<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*

<sup>113</sup> Rosen, *supra* note 72.

<sup>114</sup> See Bridy, *supra* note 63, at 18.

<sup>115</sup> See *Penguin Books U.S.A., Inc. v. New Christian of Full Endeavor, Ltd.*, 288 F.Supp.2d 544, 548 (2003).

<sup>116</sup> *See id.*

<sup>117</sup> *See id.* at 558.

<sup>118</sup> See Bridy, *supra* note 63, at 20.

the work, or, the “lion’s share,” Disney can point to its creative input as a nexus for copyrights just as the Court in *Penguin Books* did.<sup>119</sup>

This is problematic for a multitude of reasons, but, most importantly, because of the economic and utilitarian repercussions that trickle down to the public. Harnessing the value of these new technologies, both economically and for the improvement of society as a whole, is essential for continued intellectual property growth. When authorship is blurred because of an antiquated legal system, the possibility of legal problems dramatically increases. Those creators that are cognizant of this potential cost may view it as an obstacle to entry, deterring them from ever creating because of the fear their work will not be sufficiently rewarding. The narrowing of authorship fundamentally shifts the scale of balance in favor of open access.<sup>120</sup> However, while this shift may open access for companies such as Disney to use software freely, it may also curtail the economic incentives of companies like Rearden from making MOVA.

## V. CONCLUSION

The historical foundations that anchor intellectual property law derived from the Constitution’s mandate to promote the growth of the useful arts and sciences. From this simple clause in the Constitution, hundreds of Court cases have further cemented the economic and utilitarian rationales inherently placed within intellectual property law. With that, however, a significant gap is present between the theoretical and precedential foundations, and the growing advancement in today’s technology. Due to this rapid advancement in the technology field, the legal structures that define authorship and grant protections fail to adequately promote the very mandate the Constitution so explicitly demands.

The case involving Disney and Rearden is only the beginning of the issues that will fill the courts with intellectual property cases. The limits of authorship are being subtly blurred with technology advancements. Because the MOVA technology was so capable of performing much of the work presented in the end, those end users faced significant obstacles in protecting their rights in the created works. It is overly burdensome and inefficient for the courts to look at the technology and determine whose creative genius—the end user or the software developer—is more vital to the end product to determine who gains protections and rights. These inefficiencies will only be exacerbated by AI and self-thinking

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<sup>119</sup> *Id.*

<sup>120</sup> See Richard Posner, *Intellectual Property: The Law and Economics Approach*, 19 J. OF ECON. PERSP. 57, 69 (2005).

technologies that are capable of creating without any human intervention. Due to these issues, instead of using simply the economic and utilitarian justifications for intellectual property protections, the use of a test that couples the economic justifications with the Personhood Perspective of Margret Radin would allow for a more efficient method to capture the creative genius of people while promoting the growth of intellectual property as a whole.